



9.6 Town of Brookhaven

This section presents the jurisdictional annex for the Town of Brookhaven. 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 Town participated in the planning process; an assessment of the Town of Brookhaven’s risk and vulnerability; the different capabilities utilized in the Town; and an action plan that will be implemented to achieve a more resilient community.

9.6.1 Hazard Mitigation Planning Team

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

Table 9.6-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: John Meehan, Commissioner of Public Safety Address: 1 Independence Hill Farmingville, NY 11738 Phone Number: 631-451-6900 Email: jmeehan@brookhavenny.gov	Name/Title: Chris Mehrman, Chief Fire Marshal Address: 1 Independence Hill Farmingville, NY 11738 Phone Number: 631-451-6529 x6262 Email: cmehman@brookhavenny.gov
NFIP Floodplain Administrator	
Name/Title: Angus Graham, Chief Building Inspector Address: 1 Independence Hill Farmingville NY 11738 Phone Number: 631-451-6236 Email: agraham@brookhavenny.gov	

9.6.2 Municipal Profile

The history of Brookhaven, and subsequently, its pattern of growth and development from a land use, transportation, economic, environmental and cultural perspective, goes back to the founding of the United States. In the 17th century, both the Dutch and the English began settling on Long Island. A 1654 peace agreement between the two countries resulted in a north-south boundary transecting Long Island from the westernmost part of Oyster Bay, with the west end belonging to the Dutch and the east end to the English.

After six men, John Scudder, John Swesie, Jonathan Porter, Thomas Mabbs, Roger Cheston and Thomas Charles, purchased approximately 30 square miles from the first known inhabitants, Algonquian-speaking Native Americans of the Setauket and Unkechaug tribes, in April 1655, Brookhaven became the fifth English town to be settled on Long Island following Southampton, Southold, Huntington, and East Hampton. The purchased area, which constitutes the north shore of today’s Brookhaven, running east to Mount Sinai, was purchased for various commercial goods including 10 coats, 100 needles, 6 kettles, and 1 pair of child stockings. At the time the Town was known as Cromwell’s Bay and as part of the purchase agreement, the Native Americans and colonists agreed to live in peace with one another and to warn one another of any threats.

The town continued to grow with people “seeking land, the wealth of that century, and freedom from oppression in their home life and choice of their church.” As evident today, Cromwell’s Bay was a desirable place to settle with its great soil and trees, abundance of marine life and game animals, access to fresh, potable water, and ease of travel through the many harbors and bays. Early settlement patterns, which follow the geography of the land, are still evident in these early north shore neighborhoods, in areas such as East Setauket.





Section 9.6: Town of Brookhaven

In July 1657, a second, major tract of land was purchased from the Native Americans. Located on the south shore, encompassing Brookhaven to Smith Point, this land met the boundaries of the first purchase along Middle Country Road. With other additional, smaller purchases, the Town of Brookhaven was composed of approximately 323 square miles, including 20 miles of shore on the Long Island Sound and 30 miles of Atlantic coast by the end of the 1660's.

In the thirty years proceeding its founding, Cromwell's Bay began developing a more organized form of government. On August 6, 1659 Cromwell's Bay petitioned to be part of the Colony of Hartford, under the Confederation of Colonies, in order to receive the protection of their armies. Hartford accepted, while changing the Town's name to Setauket and the Bay's name to Conscience Bay for political reasons. Attendance at Town meetings was very important, and consequentially a fine for being late or absent was established at the first recorded town meeting on December 1, 1659. Setauket residents also started paying taxes to the Colony on May 16, 1661 based on their individual wealth, which was determined by the number of cattle they owned.

In 1663 Setauket's name was temporarily changed to Ashford after the English birthplace of Brookhaven's new magistrate, John Scott; however after being arrested in 1665 under a number of various charges, the Town reverted back to the name Setauket. The Town's name changed one last time when Governor Richard Nicolls approved the Town's patent on March 7, 1667 giving the "Town of Brookhaven" the right and title to all the lands within their current boundaries. In 1686, a second patent was issued by Governor Thomas Dongan serving as the foundation for Brookhaven Town government, by establishing an early representative form of government, with a board of trustees and annual elections. The Dongan Patent also granted the Town public lands, the rights to all waterways, the power to raise tax and sell or dispose of Town lands, and established the town seal. This historic, legal document is still used today to address many issues regarding the Town's natural resources and use of its waterways.

Due to its strategic location and valuable views of the harbors of the Long Island Sound and the Atlantic Ocean, the British forcibly occupied the Town of Brookhaven during the Revolutionary War. The Redcoats used Setauket Presbyterian Church, which still stands today as both a place of worship and of historic significance, as a fort to house their supplies and horses, placing guns in the upper windows of church, and upending graves to build a protective berm around the church. Some residents fled to safety in Connecticut or Westchester County as soldiers lived in the residents' homes and took their food, blankets and animals.

Despite British occupation, the Town assisted with the Patriot's ultimate victory. Residents served as spies for the Patriots and under General George Washington's orders Benjamin Tallmadge and the Patriots attacked, burned and destroyed the British fort, St. George's Manor, in Mastic on November 23, 1780 killing or wounding seven British and capturing fifty-three others. The Patriot army then rode on to Coram and burned 300 tons of hay, the entire winter supply of food for the British's horses. A boulder and plaque memorialize the victorious spot at the corner of Middle Country Road and Route 112, and Tallmadge trail tracks the route the Patriot's took from Mt. Sinai to Mastic to Coram. Additionally, the first Purple Heart recipient, Sergeant Elijah Churchill, fought at Fort. St. George.

Throughout the 1600's Long Island towns separately established highways to suit their individual needs, resulting in poor connections and a difficult time traversing the Island. Legislation passed in 1704 required collaboration in laying out a direct route from Brooklyn to East Hampton. By 1714, three parallel roads, which are still important transportation routes in Brookhaven today, were established on Long Island - North Country Road (Route 25a), Middle Country Road (Route 25) and South Country Road (Sunrise Highway/ Route 27). These roads were often constructed out of logs or clamshells and gravel, and travelers paid tolls at some locations.





Section 9.6: Town of Brookhaven

Advances in transportation made it possible for Brookhaven to move beyond its agrarian roots. In addition to the developing road network, the Long Island Rail Road opened on April 18, 1836, running from South Ferry in Brooklyn to Jamaica, Queens, extending out to western portion of Long Island by 1837 and finally to Port Jefferson in 1872. The railroad was instrumental in transitioning parts of the Town, including Lake Ronkonkoma, Bellport, Rocky Point and the Moriches, into popular summer vacation destinations for many New York City residents.

Travel by ship and railroad allowed manufacturing, including gravel farming and rubber manufacturing to successfully take root in the Town through the last few decades of the 19th century. By the early 1900's Brookhaven was becoming a haven for inventors and technological research. Nikola Tesla, a famous inventor, researched wireless transmission from his lab in Shoreham and held patents for alternating current motors and electric power transmission. The RCA Corporation, built in the Rocky Point Pine Barrens during the 1920's, was the largest radio facility in the world and was credited with many radio and television innovations until it closed in 1961.

To support the United States' entry into World War I, 19,000 acres of woodlands were cleared from the Town from 1917 through 1918, to create Camp Upton. The military base was an important source of economic growth for both Brookhaven and Suffolk County, and resulted in a doubling of the County's population. After the war, Camp Upton was decommissioned, but was reactivated with the threat of WW II and later converted to a hospital for injured soldiers. Once the facility was decommissioned at the end of the second war, nine major universities including Harvard, Cornell, MIT and Yale, established a nonprofit corporation in 1946 to study nuclear science at the Camp. The facility was transferred to the US Atomic Energy Commission in 1947, as the Brookhaven National Lab, a place to research peaceful uses of the atom, and is still in operation today.

On March 27, 1954, Governor Thomas E. Dewey approved plans for a 70-mile-long, six-lane highway between Manhattan and the east end of Long Island, in order to alleviate current and future traffic problems. Furthermore, officials feared economic impacts, due to the loss of business and industry, if this speedier and more direct means of transportation for Long Islanders was not built. The LIE did not reach Brookhaven's borders until 1970, but its arrival was an important catalyst in the fast-paced growth of Brookhaven throughout the 70's 80's, 90's and today.

Since the post-war boom of the 1950's, Brookhaven's landscape has rapidly changed. New farming techniques meant less land was needed to yield greater amount of crops, while returning soldiers sought affordable homes for their new families. Agricultural land was subdivided, and the Town began to transition from a rural to suburban community. The increased affordability of the private automobile and the beginning of commercial air travel, meant vacation seekers could easily travel to destinations further away, and consequentially the tourism industry slowed down and many summer homes were converted to year round homes.

Although many valued natural resources still exist, much of the diversity has been lost due to habitat destruction. Wetlands along the Peconic River were altered to serve as cranberry bogs, large portions of woodlands were clear-cut for the profitable cordwood industry, and at times the government offered bounties for each wolf and fox killed. Over picking, pollution and uncontrolled hunting resulted in a loss of certain plant, marine and animal species. Suburban sprawl led to, and continues to lead to, habitat destruction, the loss of sense of place and a dependency on automobiles resulting in air and water quality issues. However it is important to note that not all of these losses were due to negligence, but a very different value system relevant to land and natural resources in the past. Land was thought to be purely for human cultivation and exploitation, as an 1888 Brookhaven history book noted that the Town has "more waste land" than other Long Island towns as the "greater part of the best farming land of this town is yet unreclaimed and almost worthless woodland." At the time there was little value, economically, aesthetically, ecologically, and culturally, in conserving the area's natural character, flora and fauna.





Section 9.6: Town of Brookhaven

As this historical review has discussed, the mixture of abundant natural resources, historic colonial villages, late 19th-century vacation communities, post-WWII suburban developments, and the expansion of the Long Island Expressway into Brookhaven, has resulted in a very unique and diverse Town, with a colorful past. Now, in the early part of the 21st century, as we reflect on Brookhaven's remarkable social and cultural past in relation to its fragile, yet vital environmental context, we will continue to make history together.

The Town of Brookhaven is located in central Suffolk County, New York and extends from the Long Island Sound along the North Shore to Fire Island, a barrier island located off of the South Shore. The Towns of Smithtown and Islip border the Town to the west and Riverhead and Southampton to the east. Brookhaven is located approximately fifty miles from New York City and is part of and influenced by the New York Metropolitan Area.



As designated by the U.S. Census Bureau, Brookhaven is part of the New York-Northern New Jersey-Long Island (NY-NJ-CT-PA) Consolidated Metropolitan Statistical Area (CMSA), the largest MSA in the country. According to the 2000 US Census, Brookhaven has a total area of 531.52 square miles, which is composed of 272.23 square miles of water and 259.69 square miles of land, making it the largest town in the State of New York. However this figure varies depending on the source.

The Town of Brookhaven has 10 elected officials including the Supervisor, six Town Council members, a Town Clerk, Superintendent of Highways, and Receiver of Taxes. The Town Board Members are voted in by a council district system. The Supervisor and Town Council are elected to two-year terms. The Town Clerk is elected for a four-year term, the Superintendent of Highways is elected for a 2-year term, and the Receiver of Taxes is elected for a four-year term.

According to the U.S. Census, the 2010 population for the Town of Brookhaven was 434,886. The estimated 2017 population was 448,342, a 3.1 percent increase from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 5.3 percent of the population is 5 years of age or younger and 15.1 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.





9.6.3 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 9.6-2 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 9.6-2. 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	Information unavailable at this time											
Multi-Family												
Other (commercial, mixed-use, etc.)												
Total Permits Issued												
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												
Information unavailable at this time												
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years												
Information unavailable at this time												

SFHA Special Flood Hazard Area (1% flood event)

* Only location-specific hazard zones or vulnerabilities identified.

9.6.4 Capability Assessment

The Town of Brookhaven 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





Section 9.6: Town of Brookhaven

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 9.6.4). The Town of Brookhaven 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 Town of Brookhaven and where hazard mitigation has been integrated.

Table 9.6-3. 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	Code of the Town of Brookhaven, Chapter 16	Local	Division of Building	Yes	Yes	-
Comment: The administration and enforcement of the New York State Uniform Fire Prevention and Building Code and all other applicable laws, ordinances, rules and regulations relating to the use, occupancy and/or construction of real property or buildings or structures located thereon, and such other matters as may from time to time be referred to such Division.							
Zoning Code	Yes	Zoning, Code of the Town of Brookhaven, Chapter 85	Local and County	Chief Building Inspector	No	Yes	-
Comment: In interpreting and applying the provisions of this chapter, they shall be held to be the minimum requirements adopted for the promotion of the public health, safety, morals, comfort, convenience and general welfare. Whenever the provisions of this chapter impose or prescribe any greater requirements or higher standards on premises, buildings or structures or on the use thereof than are imposed or prescribed by any other laws, local laws, rules or regulations, grants or permits or by easements, covenants or agreements, the provisions of this chapter shall govern.							
Subdivisions	Yes	Subdivision Regulations, Chapter SR, Code of the Town of Brookhaven (4/3/1990)	Local	Planning Board	No	Yes	-
Comment: The preliminary layout and the supporting documents for a proposed subdivision constitute the material to be officially submitted to the Town Planning Board. The layout shows the general design of the subdivision and its public improvements so that the Planning Board can indicate its approval or disapproval of the subdivision prior to the time that the final plat, including the design and detailing of the public improvements and utilities, is completed. Approval of the preliminary layout does not constitute an approval of the final plat nor should it be considered a valid basis for the construction of site improvements or for other commitments which depend upon its design characteristics.							
Stormwater Management	Yes	Stormwater Management & Erosion Control, Code of the Town of Brookhaven, Chapter 86 (1/22/2008)	Local	Highway Department Division of Stormwater	Yes	Yes	-
Comment: The purpose of this chapter is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the residents of and the general public within the Town of Brookhaven by achieving the following objectives: (1) Meet the requirements of minimum measures four and five of the NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s), Permit No. GP-0-10-002 or as amended or revised; (2) Require land development activities to conform to the substantive requirements of the NYSDEC SPDES General Permit for Construction Activities GP-0-10-001 or as amended or revised;							





Section 9.6: Town of Brookhaven

	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?
(3) Minimize increases in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature, and stream bank erosion; (4) Minimize increases in pollution caused by stormwater runoff from land development activities, which would otherwise degrade local water quality; (5) Minimize the total annual volume of stormwater runoff, which flows from any specific site during and following development to the maximum extent practicable; and (6) Reduce stormwater runoff rates and volumes, soil erosion and nonpoint source pollution, wherever possible, through stormwater management practices and to ensure that these management practices are properly maintained and eliminate threats to public safety.							
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	-
Comment: The Act is referred to in the Town Code: Chapter 28, Code of Ethics and Disclosure (12/20/2005)							
Growth Management	Yes	Chapter 20, Departments and Bureaus, (6/16/1987)	Local	Division of Planning	No	Yes	-
Comment: The powers and duties of the Planning Division shall be as follows: to update the Town of Brookhaven Master Plan and suggest any modifications thereto and to initiate development policy recommendations for the Town Board. Additionally, the Division will perform all the duties, studies and supervision, as delegated by the Town Board, in order to provide for the orderly growth of the Town and to achieve the highest and most efficient levels of service for its residents. The Division also shall serve as staff to the seven-member Planning Board as established under Town Law and will, as necessary, prepare studies, reports and programs as the Planning Board may require.							
Site Plan Review	Yes	Chapter 85, Zoning, Site Plan Review (4/3/1990)	Local	Planning Department	No	Yes	-
Comment: Site plan review and approval is required in all zoning districts for all buildings and structures or land use and/or for all alterations or changes in use thereto, except for the following: single-family dwellings; subdivision maps or plats, including residential land divisions, notwithstanding any provision to the contrary in this chapter; permitted agricultural uses other than horse farms, and customary accessory uses thereto; and the exceptions set forth in § 85-116. Notwithstanding the aforementioned requirements, the Town Board may, upon proper application therefor, grant a waiver from the within site plan review and approval requirements for properties located within the Fire Island National Seashore (a/k/a Great South Beach at Fire Island National Seashore).							
Environmental Protection	Yes	Chapter 76, Coastal Erosion and Hazard Areas (4/3/2001); Chapter 80, Critical Environmental Areas; Sepra Implementation (10/6/1987); Chapter 81, Wetlands and Waterways (6/14/2011)	Local	Division of Environmental Protection; Town Board	Yes	Yes	-
Comment: Division of Environmental Protection. The powers and duties of said Division shall be as follows: to administer, supervise, manage, implement, initiate and direct all matters to protect the environment of the Town from all activities which in any way impair, damage, destroy, infringe or hinder the enjoyment by the present Town residents and those generations yet unborn of the natural resources of the Town and for the protection of the environment of the Town; to continue to administer all local laws of the Code of the Town of Brookhaven now or formerly assigned to the Department of Environmental Protection; to conduct a comprehensive bay management program and a shellfish program; to run educational programs consistent with policy and position set forth by the Division of Environmental Protection; to set forth rules and regulations, subject to Town Board approval, to effect the purposes set forth in this subsection entitled							





Section 9.6: Town of Brookhaven

	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?
<p>"Division of Environmental Protection"; and to be responsible for complying with all federal, state and county laws, rules and regulations pertaining to the environment and make recommendations to the Town Board, as necessary, concerning matters affecting the environment and natural resources of the Town and to be responsible for ensuring such compliance by other parties.</p>							
Flood Damage Prevention	Yes	Flood Damage Prevention Code, Chapter 33 (2009)	Local	Chief Building Inspector	Yes - BFE+2 feet for all construction in the SFHA (residential and non-residential)	Yes	-
<p>Comment: The purpose of the flood damage prevention ordinance is to:</p> <ol style="list-style-type: none"> (1) Protect human life and health; (2) Minimize expenditure of public money for costly flood control projects; (3) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; (4) Minimize prolonged business interruptions; (5) Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, sewer lines, streets and bridges located in areas of special flood hazard; (6) 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; (7) Provide that developers are notified that property is in an area of special flood hazard; and (8) Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. 							
Municipal Separate Storm Sewer System (MS4)	Yes	Chapter 86A, Stormwater Management and Erosion Control, Prohibition of Illicit Discharges and Connections to the Town of Brookhaven Municipal Separate Storm Sewer System (11/25/2014)	Local	Stormwater Management Officer	Yes	Yes	-
<p>Comment: The purpose of this chapter is to provide for the health, safety, and general welfare of the residents of and general public within the Town of Brookhaven through the regulation of non-stormwater discharges to the municipal separate storm sewer system (MS4) to the maximum extent practicable as required by federal and state law. This chapter establishes methods for controlling the introduction of pollutants into the MS4 in order to comply with requirements of the SPDES General Permit for Municipal Separate Storm Sewer Systems. The objectives of this chapter are as follows:</p> <ol style="list-style-type: none"> A. To meet the requirements of the SPDES General Permit for Stormwater Discharges from MS4s, Permit No. GP-0-15-003 or as amended or revised; B. To regulate the contribution of pollutants to the MS4 since such systems are not designed to accept, process or discharge non-stormwater wastes; C. To prohibit illicit connections, activities and discharges to the MS4; D. To ensure all stormwater runoff is contained on-site by approved drainage systems or natural drainage, except where otherwise approved by an authorized body; E. To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this chapter; and F. 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 into the MS4. 							
Emergency Management	Yes	Chapter 30, Fire Prevention (6/16/1987)	Local	Division of Fire Prevention and Division of Public Safety	Yes	Yes	-
<p>Comment: It is the intent of this chapter to prescribe regulations consistent with nationally recognized good practice for the safeguarding, to a reasonable degree, of life and property from the hazards of fire and explosion arising from the storage, handling and use of hazardous substances, materials and devices and from conditions hazardous to life or property in the use or occupancy of buildings or premises.</p>							





Section 9.6: Town of Brookhaven

	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?	
Climate Change Comment:	No	-	-	-	Yes	-	-
Disaster Recovery Ordinance Comment:	No	-	-	-	No	-	-
Disaster Reconstruction Ordinance Comment:	No	-	-	-	No	-	-
Other Comment:	No	-	-	-	-	-	-
Planning Documents							
Comprehensive Plan Comment: Several Hamlet plans exist (Ronkonkoma, Mastic, Shirley). Mastic Beach recently dissolved and was absorbed by the Town.	Yes	Chapter SR, Subdivision Regulations, (4/3/1990)	Local	Planning Department	No	No	-
Capital Improvement Plan Comment:	Yes	Chapter 18, Capital Budget System (6/16/1987)	Local	Finance Department	No	Yes	-
Disaster Debris Management Plan 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.	Yes	Suffolk County Multi-Jurisdictional Debris Management Plan	County, Local	Suffolk County FRES	No	Yes	-
Floodplain or Watershed Plan Comment:	Yes	Watershed specific Watershed Plans	Local	Division of Environmental Protection.	No	Yes	-
Stormwater Plan Comment: The Town of Brookhaven is an MS4 community. The 2016 Stormwater Management Plan identifies the following goals:	Yes	Stormwater Management Plan (2016)	Local and State	Highway Department, Division of Environmental Protection, Engineering Department, Parks Department, and Waste Management Department	Yes	Yes	-





Section 9.6: Town of Brookhaven

	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?
<ul style="list-style-type: none"> Construction site stormwater runoff control Post-construction stormwater management in new development / redevelopment Pollution prevention / good housekeeping for municipal operations <p>The 2019 Annual Report identifies the following goals:</p> <ul style="list-style-type: none"> To educate as many residents as possible through educational brochures, literature and articles. To provide educational materials that inform residents on how to limit / modify behaviors which may result in pollution-generating activities. To educate as many citizens as possible through outreach and public education programs. Education and outreach programs are conducted through the Holtsville Ecology Site, Cedar Beach Nature Center, West Meadow Beach, the Parks Department, and at Town-sponsored community events and festivals. To recruit citizen volunteers to assist with clean up events, thus preventing debris from entering local water bodies. To continue to recruit volunteers to assist with green initiatives such as large scale plant-ins and maintenance of community green spaces. One such example is the Adopt-A-Spot program in which roadside areas are "adopted" by residents and community groups that take on the responsibility of maintaining and beautifying the area. To provide an opportunity for the public to participate in the development and implementation of watershed management plans by participating in citizen advisory committees. To map stormwater structures and conveyances, and to perform an outfall reconnaissance inventory at least once every five years with reasonable progress every year. To incorporate SWPPP review procedures into all relevant applications for construction sites disturbing one acre or greater. To educate construction site owners and operators on Best Management Practices for erosion and sediment control; and to provide contractor education regarding the SWPPP process and procedures. To conduct as many stormwater retrofit projects as possible using leaching basins, retention basins, and proprietary products. To use the Town permitting process to require property owners to manage and contain runoff on site To acquire property in sensitive areas which will reduce / prevent the direct discharge of stormwater runoff into surface water. To evaluate Town facilities and operations to determine how Best Management Practices are being implemented, therefore minimizing the potential that pollutants will find their way into local waterbodies. To participate in local coalitions that provide a regional approach to implementing Best Management Practices to achieve water quality goals. To develop and implement new programs and initiatives to protect surface water. 							
Open Space Plan	Yes	Open Space Plan	Local	Law Department	Yes	Yes	-
Comment:							
Urban Water Management Plan	No	-	-	-	No	-	-
Comment:							
Habitat Conservation Plan	Yes	Chapter 77 (10/15/1991)			No	Yes	-
Comment:							
Economic Development Plan	Yes	Chapter 20, Departments and Bureaus (6/16/1987), Chapter 25, Economic Development Zone (2/15/1994)	Local	Economic Development Division of Planning	No	Yes	-
Comment:							
Shoreline Management Plan	Yes	Chapter 76, Coastal Erosion Hazard Areas (4/3/2001)	Local		Yes	Yes	-
Comment:							
Community Wildfire Protection Plan	Yes, in progress	Community Wildfire Protection Plan	Regional, Local	Central Pine Barrens Commission	No	Yes	-





Section 9.6: Town of Brookhaven

	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?	
		for the Ridge-Manorville-Calverton Communities					
<p>Comment: The Central Pine Barrens Commission is working with the Ridge and Manorville Fire Departments and other municipal, state and federal land management agencies to develop a Community Wildfire Protection Plan that seeks to identify the most at risk areas of the Ridge, Manorville and Calverton Hamlets to wildfire. The Plan area encompasses the Ridge Hamlet and portions of the Manorville and Calverton Hamlets as indicated in the aerial below. The Plan will identify strategies to mitigate wildfire on the public lands in this area and will also provide an outreach to homeowners on measures that they can readily implement to protect their properties and significantly reduce their loss and damage to their homes from a wildfire through programs such as Firewise and by learning how to become a Firewise Community .</p>							
Forest Management Plan	No	-	-		No	-	-
<p>Comment:</p>							
Transportation Plan	Yes	Route 25A - Three Village Area: Visioning Report for the Hamlets of Stony Brook, Setauket and East Setauket (2017)	Local	Planning Department	No	Yes	-
<p>Comment:</p>							
Agriculture Plan	No	NYCRR Part 390 Agricultural and Farmland Protection -	-	-	Yes	-	-
<p>Comment:</p>							
Other (this could include a climate action plan, tourism plan, business development plan, etc.)	No	-	-	-	-	-	-
<p>Comment:</p>							
<p>Response/Recovery Planning</p>							
Comprehensive Emergency Management Plan	Yes	Suffolk County Comprehensive Emergency Management Plan	Local, County, and State	Division of Fire Prevention and Division of Public Safety	Yes	Yes	2020-Brookhaven-006
<p>Comment: In addition to the County CEMP, the Town plans to develop a Town specific CEMP.</p>							
Strategic Recovery Planning Report	No	-	-	-	-	-	-
<p>Comment:</p>							
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	Yes	-	-
<p>Comment:</p>							





Section 9.6: Town of Brookhaven

	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?	
Post-Disaster Recovery Plan Comment:	No	-	-	-	No	-	-
Continuity of Operations Plan Comment: Currently have an informal plan. With the development of a new CEMP, the Town plans to include continuity of operations.	No	-	-	-	No	-	2020-Brookhaven-006
Public Health Plan Comment: Handled at County	No	-	-	-	No	-	-
Other Comment: All seven hamlets on Fire Island are organized as erosion control districts to fund beach maintenance and nourishment projects – five are “engineered beaches” (Seaview, Ocean Bay Pines, Fire Island Pines, Davis, Point of Woods)	Yes	Coastal Erosion Control Districts	Local	Town Board	No	Yes	-

Table 9.6-4. Development and Permitting Capability

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

Administrative and Technical Capability

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

Table 9.6-5. Administrative and Technical Capabilities

Resources	Available? (Yes or No)	Department/ Agency/Position
Administrative Capability		
Planning Board	Yes	Planning
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	Open Space Committee
Open Space Board/Committee	Yes	Open Space Committee
Economic Development Commission/Committee	Yes	Industrial Development Agency
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Through County (Reverse 911) Town IT and Public Information
Maintenance programs to reduce risk	Yes	Highway/Parks
Mutual aid agreements	Yes	Other Towns for Hazardous Material Removal LIRR to Maintain Stations Village of Shoreham for snow removal





Section 9.6: Town of Brookhaven

Resources	Available? (Yes or No)	Department/ Agency/Position
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Town of Brookhaven (TOB) Department of Planning, Environment, and Land Management; Engineering Division; Highway Department
Engineers or professionals trained in building or infrastructure construction practices	Yes	TOB Department of Building and Fire Prevention; Department of Planning, Environment, and Land Management – sometimes contract out
Planners or engineers with an understanding of natural hazards	Yes	TOB Department of Planning, Environment, and Land Management; Highway Department
Staff with expertise or training in benefit/cost analysis	Yes	TOB Division of Audit and Control; Finance Department
Professionals trained in conducting damage assessments	Yes	Building
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	TOB Division of Information Technology
Scientist familiar with natural hazards	Yes	TOB Department of Planning, Environment, and Land Management, Highway Department
NFIP Floodplain Administrator (FPA)	Yes	Chief Building Inspector (currently Arthur Gerhauser)
Surveyor(s)	No	Contract Surveyors
Emergency Manager	Yes	Town of Brookhaven Department of Building and Fire Prevention
Grant writer(s)	Yes	Multiple Departments and Divisions and by contract
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	Yes	Pine Barrens Wildfire Task Force, TOB Division of Audit and Control

Fiscal Capability

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

Table 9.6-6. Fiscal Capabilities

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





Section 9.6: Town of Brookhaven

Financial Resources	Accessible or Eligible to Use (Yes/No)
Open Space Acquisition funding programs	Yes
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 Town of Brookhaven.

Table 9.6-7. Education and Outreach Capabilities

Indicate if your jurisdiction has the following resources	Yes/No; Please describe
Public information officer or communications office?	Public Information Department
Personnel skilled or trained in website development?	IT
Hazard mitigation information available on your website; if yes, describe	OEM and Hurricane Plan
Social media for hazard mitigation education and outreach; if yes, briefly describe.	No, but developing
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.	No
Warning systems for hazard events; if yes, briefly describe.	Reverse 911, NY State Alert
Natural disaster/safety programs in place for schools; if yes, briefly describe.	Done through county and individual municipalities
Other	None

Community Classifications

The table below summarizes classifications for community programs available to the Town of Brookhaven.

Table 9.6-8. 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	Yes	N/A	N/A
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 9.6-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low*
Coastal Erosion	Medium
Cyber Security	Medium
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	High
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 Town utilizes information available from NYSERDA to determine the possible impacts of climate change upon the municipality. The administration is supportive of integrating climate change in policies or actions. Any project designed by the Highway Department consider future climate impacts.

9.6.5 National Flood Insurance Program

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

NFIP Floodplain Administrator (FPA)

Angus Graham, Chief Building Inspector

National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Town of Brookhaven.

Table 9.6-10. NFIP Summary

Municipality	# Policies	# Claims (Losses)	Total Loss Payments	# RL Properties
Town of Brookhaven	4,612	4,331	\$113,909,647	447

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





Flood Vulnerability Summary

Damage was sustained to approximately 2,400 structures following Hurricane Sandy in 2012. Substantial Damage determinations were issued for 66 of the 67 properties assessed. The Town of Brookhaven Building Division performed the Substantial Damage Estimates. Four sources have been identified to fund mitigation for those Substantial Damage properties: Federal flood insurance ICC, private flood insurance, NY Rising, and personal resources.

A very general list of properties that have been flood damaged is kept. Brookhaven found that the flooded properties very closely followed the flood areas as designated on the FIRMs and the Category One and some Category Two areas of the SLOSH maps. Lists of properties were generated in these zones. Additionally, specific communities, the Fire Island communities, had a building by building Rapid Assessment performed following Hurricane Sandy. The buildings designated as damaged are maintained in a database.

Resources

The community FDPO identifies the Chief Building Inspector as the local NFIP Floodplain Administrator, for which floodplain administration is an auxiliary duty. The Floodplain Administrator is supported by a staff of 3 building plans examiners and 15 Building Inspectors. NFIP administration services to the community include: building plan review, permit application review, damage assessments, respond to property owner inquiries for flood zone designation determination, maintain record of permits, inspections, maintaining the FIRM as overlays on our GIS maps; and maintaining the flood zone status in our permit issuing software, and certificates. Information has also been provided during a limited number community meetings. The Town of Brookhaven has also adopted a More Restrictive Local Standard and has NYS DOS approval for adoption of LiMWA standards.

The FPA feels he is adequately supported and trained to fulfill his responsibilities as the municipal floodplain administrator. The FPA is not certified in floodplain management, however attends regular continuing education programs for code enforcement.

Town of Brookhaven has the following educational and/or outreach activities related to the NFIP by the Building Division: information on flood zone construction requirements to all who contact the Building Division seeking flood zone construction information.

A major barrier to running an effective floodplain management program in Brookhaven is many of those who own property in the Fire Island communities do not reside there and are in the community for only the summer season. This restricts outreach and connecting with property owners.

Compliance History

The Town of Brookhaven joined the NFIP on August 31, 1972, and is currently an active member of the NFIP. The current effective Flood Insurance Rate Maps are dated September 25, 2009. The community is currently in good standing in the NFIP and has no outstanding compliance issues. Brookhaven has completed Community Assistance Visits (CAV), with the most recent visit completed on March 25, 2015.

Regulatory

The communities Flood Damage Prevention Ordinance (FDPO) was last updated on June 23, 2009, and is found at Chapter 33 of the local code. The Town of Brookhaven adopted a More Restrictive Local Standard, as approved by the NYS Dept. of State Codes Council, in that we require V zone construction standards for buildings constructed in the Limit of Moderate Wave Action (LiMWA). Local Law #14-2009. The Planning Department has jurisdiction on sites other than one- and two-family dwellings. Planning Department staff





factors in their review of proposed development if a property and building(s) are situated in a flood zone and require compliance with regulations. The Planning staff also administers the New York State Coastal Erosion Hazard Area program at the local level. This program affects a series of properties located along the Atlantic Ocean side of Fire Island within the Town of Brookhaven. This plan provides another source of regulation that may be in accordance with the aims of the NFIP.

Community Rating System

The Town of Brookhaven does not participate in the Community Rating System.

9.6.6 Integration with Other Planning Initiatives

As this HMP update is implemented, the Town of Brookhaven 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

- **Planning Board:** The Planning Board is an independent body comprised of seven members appointed by the Town Board. The Board's review powers are conferred, and also limited, by statutory framework of state laws and the Town's zoning ordinance. Virtually all new development within the town, whether residential or commercial subdivision maps and/or site plan proposals are subject to the Board's review and approval. Procedurally, such development proposals or applications are subject to a public hearing, conducted by the Board, which provides an opportunity for neighbors, Town residents and other members of the community to fully comment on the development proposal.
- **Zoning Board of Appeals:** The Board of Zoning Appeals consists of 7 members appointed by the Town Board. The function of the Board of Appeals is to timely and responsibly address appeals from land use legislation and administrative decisions of Town officers and agencies, and to interpret the Town Code. Appeals from land use legislation include use and area variances, special permits, lighting, signage and land subdivision applications.
- **Department of Planning and the Environment:** The Mission of the Department of Planning and Environment is to serve as guardians for the future of the Town of Brookhaven, and to enhance the quality of life for all its residents, through excellence in community planning, environmental stewardship, education, and citizen empowerment, based on the effective support and tools to assure the Town's ability to meet the challenges of growth and change in the 21st Century.
- **Department of Public Safety:** Public Safety is charged with administering the Office of Emergency Management (OEM) for the Town of Brookhaven and actively participates in all phases, including hurricane preparedness, hazardous material mitigation, and any and all natural or man-made disasters that may affect the township. The OEM is part of the Federal Emergency Management Agency (FEMA) Hurricane Preparedness Program having personnel trained by the State Emergency Management Office (SEMO), National Hurricane Center (NHC) and the Suffolk County Office of Emergency Preparedness. During times of emergency, the OEM fully integrates with these agencies, as well as other entities public and private, in providing disaster relief, emergency evacuation, and transportation for dislocated residents. It is particularly sensitive to the special needs of the Barrier Beach (Fire Island) which invariably suffers the first and most extensive damage during hurricanes.
- **Highway Department:** The Brookhaven Highway Department is one of the largest in the State of New York, behind only the New York State Department of Transportation and the New York City Department of Transportation. Brookhaven is geographically the largest town in the state, larger than the entire county of Nassau. The Highway Superintendent is charged with maintaining more than 3,500 lane miles of roadway within the Town of Brookhaven. Maintenance of town roadways includes the



Section 9.6: Town of Brookhaven

repair of pot holes and sweeping of all roadways with particular attention to intersections in the Town of Brookhaven. Other major community improvements undertaken on behalf of our residents include drainage projects, road resurfacing, tree trimming and removal, maintenance of recharge basins (sumps), and installation and maintenance of catch basins. Keeping main and secondary roads clear of snow and ice during inclement weather is a top priority for the Department. The Highway Department also repairs and replaces damaged or missing Town signs.

- **General Services:** The General Services Department's mission is to provide quality, efficient Fleet Management, Purchasing and Space Management support services to enable other departments to meet their goals as they service our community. Additionally, this department will meet the challenges of operating a safe and economically viable airport and to raise the level of awareness and support for the operation of the animal shelter and adoption center.
- **Department of Information Technology:** The mission of the Department of Information Technology is to maintain and secure the Town's digital assets, including databases, software and computing equipment, as well as provide technical support to the all departments within the Town. The Department's technical staff provides project management, application development and technical support for a large array of servers, personal computers, printers, mobile devices and network infrastructure throughout the Town of Brookhaven
- **Land Use Plans-** The Town considers low-density land use in high-risk coastal, surface water and groundwater zones.
- **Public Education and Outreach-** The Town implements public education programs that inform the public of local coastal erosion hazard area ordinances (TOB Code Chapter 76).

Opportunities for Future Integration

- **Comprehensive Emergency Management Plan (2020-Brookhaven-006):** The Town is developing a Town specific Comprehensive Emergency Management Plan. The Plan will be incorporated into existing emergency management plans including this Hazard Mitigation Plan at the next available comprehensive update to the SCHMP.

9.6.7 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

The Town of Brookhaven utilizes the County established evacuation routes and follows County and State guidance for evacuation decision making.

Sheltering

The sheltering of individuals seeking housing rests with the American Red Cross. The responsibility for evacuation is shared by Suffolk County FRES, Suffolk County Police and Brookhaven Town. The responsibility for security at the shelters was initially assumed by the Suffolk County Police Department. During Hurricane Sandy, security at the shelters was initially supplied by Suffolk County Police. However, as it became clear that the Police Department could not sustain this coverage, it was assumed by Suffolk County Probation Department.

Temporary Housing

The Town of Brookhaven has identified the Town's parks as locations that could house temporary housing units in the event that a disaster destroys residential properties which need to be rebuilt. The parks have available space but utilities would need to be connected to support temporary housing units.





Permanent Housing

The Town of Brookhaven would use its Land Management Department’s GIS layers to determine where permanent housing units could be moved to or reconstructed when transfer out of high risk flood areas is desired.

9.6.8 Hazard Event History Specific to the Town of Brookhaven

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 Town of Brookhaven’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 9.6-11 provides details regarding municipal-specific loss and damages the Town 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 9.6-11. 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.	Although the County was impacted, the Town of Brookhaven did not report damages
August 13, 2014	Severe Storm	No	A surface low with its associated warm front approached the area early in the morning before partially lifting through. This boundary provided the focus for very heavy rain in an extremely moist air mass and resulted in historic flash flooding on Long Island. New York State's 24 hour rainfall record was broken with 13.78 inches of rainfall being reported by the Automated Surface Observing System at Islip MacArthur Airport.	Structures were washed off foundations and sumps overflowed
August 4, 2015	Severe Storm	No	An approaching cold front triggered a cluster of severe thunderstorms producing multiple macrobursts that impacted the North Shore of Long Island, from Northwest Nassau County onto the North Fork of Long Island.	Damage to houses and vehicles. Downed trees blocked major roads.
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.	Overtime costs totaled \$96,351, equipment costs totaled \$70,724, costs for salt/sand/snowmelt totaled





Section 9.6: Town of Brookhaven

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Damages and Losses
				\$161,974, and outside contracts totaled \$428,636.
June 2017	Cyber Attack	No	A cyber attack on the Town website occurred.	Town website defaced by ISIS
October 27, 2018	High Wind	No	A coastal storm moved to the east of the area.	Major storm in Davis Park in addition to gradual erosion. Docks at the marina needed to be replaced.

Notes:

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

9.6.9 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 Town of Brookhaven. 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).





Section 9.6: Town of Brookhaven

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain and presents Hazards United States (HAZUS) – Multi-Hazards (MH) estimates of the damage and loss of use to critical facilities as a result of a 1-percent annual chance flood event.

Table 9.6-12. 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			
0227 - Long Island DDSO*	OPWDD	X	-	X	Unknown	2020-Brookhaven-013
Little Flower Children & Family Svcs*	OPWDD	X	-	X	Unknown	2020-Brookhaven-013
Holy Trinity Lutheran Church	Religious Institution	X	-	X	Unknown	2020-Brookhaven-013
Saint Angelas Convent	Religious Institution	X	-	X	Unknown	2020-Brookhaven-013
Saint Andrew Episcopal Church	Religious Institution	X	-	X	Unknown	2020-Brookhaven-013
Ocean Bay Park FD HQ*	Fire/EMS	X	-	X	Unknown	2020-Brookhaven-013
Point O Woods FD HQ*	Fire/EMS	X	-	X	Unknown	2020-Brookhaven-013
Cherry Grove FD HQ*	Fire/EMS	X	-	X	Unknown	2020-Brookhaven-013
Cherry Grove 1 st Responder*	Fire/EMS	X	-	X	Unknown	2020-Brookhaven-013
Fire Island Pines FD HQ*	Fire/EMS	X	-	X	Unknown	2020-Brookhaven-013
Davis Park FD HQ*	Fire/EMS	X	-	X	Unknown	2020-Brookhaven-013
Ocean Bay Park Fire House	Polling Location	X	-	X	Unknown	2020-Brookhaven-013
Police Booth*	County Building	X	-	X	Unknown	2020-Brookhaven-013
Coreys Creek Bridge*	Transportation	X	-	X	Yes	-
Red Bridge*	Transportation	X	-	X	Yes	-
Carmans River Bridge*	Transportation	X	-	X	Yes	-





Section 9.6: Town of Brookhaven

Swan Creek Bridge*	Transportation	X	-	X	Yes	-
WALK 1370*	Communication	X	-	X	Unknown	2020-Brookhaven-013
WALK 1370*	Communication	X	-	X	Unknown	2020-Brookhaven-013
Shoreham-8z*	Electric/Power	X	-	X	Unknown	2020-Brookhaven-013
Potable Water Asset*	Potable Water	-	X	X	Unknown	2020-Brookhaven-013
Potable Water Asset*	Potable Water	X	-	X	Unknown	2020-Brookhaven-013
Potable Water Asset*	Potable Water	X	-	X	Unknown	2020-Brookhaven-013
Potable Water Asset*	Potable Water	X	-	X	Unknown	2020-Brookhaven-013
Potable Water Asset*	Potable Water	X	-	X	Unknown	2020-Brookhaven-013
Potable Water Asset*	Potable Water	X	-	X	Unknown	2020-Brookhaven-013
Potable Water Asset*	Potable Water	X	-	X	Unknown	2020-Brookhaven-013
Potable Water Asset*	Potable Water	X	-	X	Unknown	2020-Brookhaven-013
Potable Water Asset*	Potable Water	X	-	X	Unknown	2020-Brookhaven-013
Potable Water Asset*	Potable Water	X	-	X	Unknown	2020-Brookhaven-013
Potable Water Asset*	Potable Water	X	-	X	Unknown	2020-Brookhaven-013
Moriches Coast Guard Station*	Military	X	-	X	Unknown	2020-Brookhaven-013
East Walk Well Field & Pump Station*	SCWA	X	-	X	Unknown	2020-Brookhaven-013
Fisherman's Path Well Field & Pump Station*	SCWA	X	-	X	Unknown	2020-Brookhaven-013
Harbor Walk Well Field & Pump Station*	SCWA	X	-	X	Unknown	2020-Brookhaven-013
Bay View Walk Well Field & Pump Station*	SCWA	X	-	X	Unknown	2020-Brookhaven-013





Section 9.6: Town of Brookhaven

Point O'Woods Well Field & Pump Station*	SCWA	X	-	X	Unknown	2020-Brookhaven-013
Watch Hill Well Field & Pump Station*	SCWA	X	-	X	Unknown	2020-Brookhaven-013
Ocean Bay Park (Traffic Walk) Well Field & Pump Station*	SCWA	X	-	X	Unknown	2020-Brookhaven-013
Heins Lf	Tier 2	X	-	X	Unknown	2020-Brookhaven-013

Source: Suffolk County 2020; FEMA 2009

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

*Community Lifeline

Commented [MA1]: Please be sure to asterisk the critical facilities are noted as a lifeline in column of the Excel

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 Town of Brookhaven. The Town of Brookhaven 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 Town of Brookhaven indicated the following:

- The Town agreed with the calculated hazard rankings.

Table 9.6-13. Hazard Ranking

Coastal Erosion High	Cyber Security Medium	Disease Outbreak Medium	Drought Medium	Earthquake Medium	Expansive Soils Low
Extreme Temperature Medium	Flood High	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 in Davis Park necessitates frequent replacement of docks and marinas
- Constant attacks on the IT infrastructure of the town
- Slow return of utilities after major events
- Dune erosion and subsequent restoration and maintenance on Fire Island
- 50+ road endings on the South Shore that require mitigation
- Infrastructure for sufficient fuel delivery after a major hazard event

Specific areas of concern based on resident response to the Suffolk County Hazard Mitigation Citizen survey include:

- Carlton Drive East, near Rowlinson Drive floods with heavy rains to nearly the point of not being able to drive through.
- South Howell, Centereach at Middle Country Road floods when there is heavy rain.

9.6.10 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 9.6.15). 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 9.6-14. Status of Previous Mitigation Actions

Project #	Project Name	Hazards 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) Blank		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	Damages Avoided; Evidence of Success	
Brookhaven Town-1	Mt. Sinai Harbor Jetty Rehabilitation	Flood, Coastal Erosion	Town of Brookhaven		In Progress. This job has been bid out and is currently underway. This project should be completed 4-5 weeks from 3/23/20 provided COVID 19 does not halt this project. We added the replacement of the fishing Pier to this project. The entire project is funded at \$8,600,000 with \$3,000,000 from a Grant and the balance from the Town	Cost		1. Discontinue 2. 3. Soon to be completed
Brookhaven Town-2	Port Jefferson Pier Rehabilitation	Coastal Erosion, Flooding, Hurricane, Nor'Easters, Severe Storms, Severe Winter Storm	Town of Brookhaven		No Progress	Cost		1. Include in 2020 HMP 2. 3.
						Level of Protection		
Brookhaven Town-3	Sandspit Marina East Bulkhead. (Sandy HMGP LOI #196)	Flooding, Hurricane, Severe Storms	Town of Brookhaven		In Progress; We engaged an Engineering firm to complete an assessment and permitting. Their design and permitting services are needed to	Cost		1. Include in 2020 HMP 2. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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 Damages Avoided; Evidence of Success	
					prepare complete construction drawings for a contract to be procured through the public bidding process. The observed damage includes approximately 71 linear feet of timber bulkhead on the east side and approximately 446 linear feet of timber bulkhead on the south side.			
Brookhaven Town-4	Davis Park Marina - Harbor Master Tower. (Sandy HMGP LOI #197)	Hurricane, Severe Storms	Town of Brookhaven		Complete, Engaged Engineer to design & permit, survey, prepare bid package as well as provide construction support services. Awarded bid to Terry Contracting, Contract 20180005. Contractor completed job late 2019.	Cost	\$156,758	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-5	Davis Park Marina - Ferry Dock Structure (Sandy HMGP LOI #198)	Flooding, Hurricane, Severe Storms	Town of Brookhaven		Complete, Engaged Engineer to design & permit, survey, prepare bid package as well as provide construction support services.	Cost	\$1,148,661	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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	
					Awarded bid to Terry Contracting, Contract 20180005. Contractor completed job late 2019.			
Brookhaven Town-6	Davis Park Marina - Water Break	Hurricane, Severe Storms	Town of Brookhaven	In Progress, Engaged an engineering firm for professional engineering and surveying services in conjunction with the design of the new breakwater system. The breakwater system will consist of steel sheeting and constructed with a CCA timber frame comprised of horizontal wales and vertical piles to resist the maximum anticipated wave forces. Engineer will prepare a bid package and oversee the project.	Cost		1. Include in 2020 HMP 2. 3.	
					Level of Protection			
					Damages Avoided; Evidence of Success			
Brookhaven Town-7	Davis Park Marina - Landing Craft Receiving Area	Hurricane, Severe Storms	Town of Brookhaven	Complete, Engaged Engineer to design & permit, survey,	Cost	\$190,049.00	1. Discontinue 2. 3. Complete	
					Level of Protection			





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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.
						Damages Avoided; Evidence of Success		
					prepare bid package as well as provide construction support services. Awarded bid to Terry Contracting, Contract 20180005. Contractor completed job late 2019.	Damages Avoided; Evidence of Success		
Brookhaven Town-8	Pipe Stave Hollow Road Raising	Flooding, Hurricane, Severe Storms	Town of Brookhaven		In Progress	Cost	\$2,895,344	1. Include in 2020 HMP 2. Project is still scheduled to move forward. Project scope is being redesigned and will consider new projections for sea level rise. Recent property acquisitions will enable the Town to create a project design that is more conducive to climate change predictions.
Brookhaven Town-9	Clearview Place - Drainage & Stormwater Mitigation	Flooding, Hurricane, Severe Storms	Town of Brookhaven		Complete, Project included the installation of additional drainage structures and an in-line back flow preventer valve. (Structure # SMS-043078)	Cost	\$33,893.07	3. 1. Discontinue 2. 3. Complete
Brookhaven Town-10	Gully Landing Road - Hazard Mitigation	Flooding, Hurricane, Severe Storms	Town of Brookhaven		Complete; Project included replacement of the existing outfall	Cost Level of Protection	\$1,449,669.43	1. Discontinue 2. 3. Complete





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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.
						Damages Avoided; Evidence of Success	Cost	
Brookhaven Town-11	Broadway - Hazard Mitigation	Coastal Erosion	Town of Brookhaven	pipe, installation of a water quality unit, the construction of a new bulkhead with armor stone, shoreline revetment, and replacement of the pedestrian beach access stairway. Complete: June 2020. Project included the construction of a new bulkhead with armoring, shoreline and bluff stabilization, and the installation of additional stormwater management systems with a water quality unit.	Complete; Project included the installation of a steel bulkhead with armor, replacement of the outfall pipe and pedestrian beach access stairway, slope stabilization, and improvements to the stormwater management system.	Damages Avoided; Evidence of Success	\$1,165,036.40	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-12	Friendship Drive - Hazard Mitigation	Coastal Erosion	Town of Brookhaven	Complete; Project included the installation of a steel bulkhead with armor, replacement of the outfall pipe and pedestrian beach access stairway, slope stabilization, and improvements to the stormwater management system.	Complete; Project included the installation of a steel bulkhead with armor, replacement of the outfall pipe and pedestrian beach access stairway, slope stabilization, and improvements to the stormwater management system.	Cost	\$1,093,084.68	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		
						Cost	\$2,193,519	1. Discontinue





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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.
						Level of Protection	Cost	
Brookhaven Town-13	Fire Island Concrete Walkways & Aprons - Rehabilitation & Mitigation	Flooding, Hurricane, Severe Storm	Town of Brookhaven		Complete; 14,000 square feet of concrete walkway were removed and reconstructed with 8" thick concrete slabs. Walkways encompassed 131 distinct concrete walkway sections throughout the Ocean Bay Park community on Fire Island.	Level of Protection		2. 3. Complete
Brookhaven Town-14	Hagerman Landing - Hazard Mitigation	Coastal Erosion	Town of Brookhaven		Complete; Project included the removal of a deteriorated bulkhead and the installation of a stone revetment with native vegetation.	Cost	\$43,572.67	1. Discontinue 2. 3. Complete
						Level of Protection		
Brookhaven Town-15	Cedar Beach Marina Shoreline Restoration and Mitigation	Coastal Erosion, Hurricanes, Severe Storms	Town of Brookhaven		Complete; We have budgeted this project and will begin work hopefully fall 2020. Our Budget line is H7185-3412-9MD08 with \$350,000.00 allocated for this project	Cost	\$10,785,247	1. Discontinue 2. 3. Complete
						Level of Protection		
Brookhaven Town-16	Amagansett Drive, Sound Beach, New York Drainage Improvements	Coastal Erosion, Flooding,	Town of Brookhaven		Complete; Project included the removal and	Cost	\$1,296,006	1. Discontinue 2. 3. Complete
						Level of Protection		





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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.
						Damages Avoided; Evidence of Success	Cost	
Brookhaven Town-17	Roe Avenue Mitigation, East Patchogue, NY.	Hurricane, Nor'Easters, Severe Storms, Severe Winter Storm Coastal erosion, flooding, hurricane, Nor'Easters, Severe Storms, Severe Winter Storm	Town of Brookhaven	relocation of an outfall pipe, the addition of upland drainage, creation of a recharge basin, formation of a shoreline revetment, and the installation of a pedestrian beach access stairway. Complete; Project included the removal of a section of asphalt at the terminus of Roe Avenue, the creation of a drainage swale and bio-retention area, upgrades to the stormwater management system, and installation of a stone revetment.	Complete; Project was bid out in 2015 and awarded to Quintal Contracting, Corp for \$ 175,877 and the engineer overseeing the job was DCAK for \$19,400. It was complete early 2016 and all invoices for the above vendors were paid.	Damages Avoided; Evidence of Success	\$82,422.40	1. Discontinue 2. 3. Complete
Brookhaven Town-18	Elevation of the Gamecock Cottage at West Meadow Beach Historic District	Coastal Erosion, Flooding, Hurricane, Nor'Easters, Severe Storms, Severe Winter Storms	Town of Brookhaven	Complete; Project was bid out in 2015 and awarded to Quintal Contracting, Corp for \$ 175,877 and the engineer overseeing the job was DCAK for \$19,400. It was complete early 2016 and all invoices for the above vendors were paid.	Complete; Project was bid out in 2015 and awarded to Quintal Contracting, Corp for \$ 175,877 and the engineer overseeing the job was DCAK for \$19,400. It was complete early 2016 and all invoices for the above vendors were paid.	Damages Avoided; Evidence of Success	\$ 195,277	1. Discontinue 2. 3. Complete





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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		
Brookhaven Town-19	Flood & Damage Prevention at Webby's Beach, East Moriches, NY.	Coastal Erosion, Flooding, Nor'easters, Hurricanes, Severe Storms, Severe Winter Storm	Town of Brookhaven		Complete; This project was completed and funded by the Army Corps of Engineers and we do not have any cost information on this project.	Cost	\$318,300	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-20	Hazard Mitigation Disaster Recovery and Business Continuity for the Town of Brookhaven	All Hazards	Town of Brookhaven		In Progress; This project is awaiting the authorization of funding.	Cost		1. Include in 2020 HMP 2. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-21	Sills Gully Road Outfall, Sound Beach, NY	Coastal Erosion, Flooding, Hurricane, Nor'easters, Severe Storms, Severe Winter Storms	Town of Brookhaven		Complete; Project included the removal and replacement of gabion walls, removal and replacement of the bulkhead with stone armoring, creation of a bio-retention area, and upgrades to the stormwater management system.	Cost	\$980,412.96	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-22	Hallock Landing Road Outfall, Rocky Point, NY	Coastal Erosion, Flooding, Hurricane, Nor'easters, Severe Storms, Severe Winter storm	Town of Brookhaven		Complete; Project included removal and replacement of the gabion system, removal and replacement of the concrete ramp, construction of a pedestrian	Cost	\$961,317.35	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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	Damages Avoided; Evidence of Success	
Brookhaven Town-23	Riverhead Drive, Sound Beach, New York	Coastal Erosion, Flooding, Hurricane, Nor'Easters, Severe Storms, Severe Winter Storm	Town of Brookhaven		Complete; Project included bluff stabilization and repairs to the existing bulkhead.	Cost Level of Protection Damages Avoided; Evidence of Success	\$239,576.09	1. Discontinue 2. 3. Complete
Brookhaven Town-24	Brookhaven North Shore Properties - Hazard Mitigation.	Coastal Erosion	Town of Brookhaven		Complete; Project completed through project-specific actions referenced elsewhere in the plan. Refer to Brookhaven Town project numbers 10, 12, 14, 16, 21, 22, 23, and 30.	Cost Level of Protection Damages Avoided; Evidence of Success	In excess of \$6.25M	1. Discontinue 2. 3. Complete
Brookhaven Town-25	Purchase of a Generator for Town Parks Administration Building.	Coastal Erosion, Drought, Flooding, Hurricane, Infestation, Nor'Easters, Severe Storms, Severe Winter Storms, Wildfire.	Town of Brookhaven		In Progress: We have purchase the generators for \$127,929.30. They are 2 portable generators purchased with FEMA grant monies. The town has purchased the supplies to connect these items to the Administration Building totaling \$7,753.96. The	Cost Level of Protection Damages Avoided; Evidence of Success		1. Include in 2020 HMP 2. Install purchased generators 3.





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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		
					materials to connect have not yet been installed.			
Brookhaven Town-26	Construction of Emergency Operations Center in Coram with Backup Power Generation	Coastal Erosion, Flooding, Hurricane, Nor'Easters, severe Storms, Severe Winter Storm, Wildfire	Town of Brookhaven		Complete; Highway Department established EOC	Cost	\$340,100	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-27	Purchase of Interoperable 7 10MHz Communication System.	Coastal Erosion, Flooding, Hurricane, Nor'Easters, Severe Storms, Severe Winter Storms, Wildfire	Town of Brookhaven		Complete	Cost	\$780,000	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-28	Generator Replacement at Brookhaven Town Hall	Coastal Erosion, Flooding, Hurricane, Nor'Easters, Severe Storms, severe Winter Storms, Wildfire	Town of Brookhaven		No Progress; The existing generator and interior electrical distribution system was reconfigured to supply power to critical operational areas in Town Hall	Cost		1. Discontinue 2. 3. No longer needed
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-29	Dedicated Emergency Operations Center and Purchase of Back-Up Generators	Coastal Erosion, Flooding, Hurricane, Nor'Easters, Severe Storms, Severe Winter	Town of Brookhaven		Complete	Cost	\$750,000	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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.
		Storms, Wildfire						
Brookhaven Town-30	Woodhull Landing Shoreline Revetment	Coastal Erosion, Flooding, Hurricane, Nor'Easters, Severe Storms, Severe Winter storm	Town of Brookhaven		Complete; Project included removal and replacement of a gabion mattress, replacement of the existing outfall pipe, repairs to the concrete headwall, and installation of a concrete splash pad.	Cost	\$69,992.06	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-31	Brookhaven -56' Landing Craft Vessel	Coastal Erosion, Flooding, Hurricane, Nor'Easters, Severe Storms, Severe Winter Storm	Town of Brookhaven		Complete; A used 56' all welded steel US Navy mechanized landing craft boat was purchased in 2016 for use by the Highway Department beach crew to transport heavy equipment, materials and other supplies to and from Fire Island.	Cost	\$100,000	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-32	Bay Avenue – Bulkhead & Stormwater Improvements	Coastal Erosion, Flooding, Hurricane, Severe Storms	Town of Brookhaven		Complete; Project included repair and replacement of the existing bulkhead and outfall pipe, and installation of a new water quality unit. This project is scheduled for enhancement with the installation of	Cost	\$159,449	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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.
					additional stormwater management systems, creation of bio-retention areas, and modifications to road profiles in the immediate contributing area.			
Brookhaven Town-33	Cranberry Drive - Fishing Pier	Hurricane, Severe Storms	Town of Brookhaven		Complete; We engaged an engineer to prepare complete construction drawings related to the improvements of Cranberry Dock Ramp/Walkway and proposed parking & landscaping improvements in 2019. We purchased materials necessary for this work to be done using in house labor as well as engaging contract vendors for the landscaping, timber guide rail and parking lot replacement. This job will be complete before the 2020 season.	Cost	\$97,000	1. Discontinue 2. 3. Complete
						Level of Protection		
						Damages Avoided; Evidence of Success		
						Cost	\$100,000	1. Discontinue





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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.
						Level of Protection	Damages Avoided; Evidence of Success	
Brookhaven Town-34	Donald Court East - Bulkhead & Stormwater Improvements	Coastal Erosion, Flooding, Hurricane, Severe Storms	Town of Brookhaven		Complete; Project included replacement of the existing bulkhead, installation of additional stormwater management structures, and the creation of a bio-retention area.	Level of Protection		2. 3. Complete
Brookhaven Town-35	Great Gun Marina - Coastal Protection Features	Coastal Erosion, Hurricane, Severe Storms	Town of Brookhaven		No Progress; We will begin job as soon as funds are available for this project.	Cost Level of Protection		1. Include in 2020 HMP 2. 3.
TOB-36	Montauk Avenue - Stormwater Runoff & Tidal Mitigation	Flooding, Hurricane, Severe Storms	Town of Brookhaven		Complete; Project included the removal of asphalt at the Montauk Avenue Road terminus, reduction of the existing bulkhead to grade, reconstruction of portions of the road, improvements to the stormwater management system, and creation of a bio-retention area.	Cost	\$56,666	1. Discontinue 2. 3. Complete
Brookhaven Town-37	Roberts Street - Roadway Development	Flooding, Hurricane, Severe Storms	Town of Brookhaven		Complete; Project included the construction of	Level of Protection		
						Cost	\$710,161	1. Discontinue 2. 3. Complete





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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	Damages Avoided; Evidence of Success	
					new roads along previously undeveloped sections of Roberts Street and Southaven Avenue, and the installation of a stormwater management system to service the new road network.			
Brookhaven Town-38	Roe Avenue - Stormwater Runoff & Tidal Mitigation	Flooding, Hurricane, Severe Storms	Town of Brookhaven		Complete; Refer to Project # 17	Cost		1. Discontinue 2. 3. Complete
						Level of Protection		
Brookhaven Town-39	Sandspit Marina - Bathroom Rehabilitation & Mitigation	Hurricane, Severe Storms	Town of Brookhaven		Ongoing capability; According to deputy Commissioner of Parks the Town will be removing the bathrooms and using the Ferry Terminal Bathrooms. Bathrooms.	Cost		1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
Brookhaven Town-40	Scott Beach Hazard Mitigation Project. (Sandy HMGP LOI #1106)	Coastal Erosion, Hurricane, Severe Storms	Town of Brookhaven		No Progress	Cost		1. Discontinue 2. 3. Privately owned property and not a Town priority
						Level of Protection		
						Damages Avoided; Evidence of Success		





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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		
Brookhaven Town-41	Underwater Investigations – Hazard Mitigation	Coastal Erosion, Hurricane, Severe Storms	Town of Brookhaven		No Progress	Cost		1. Discontinue 2. 3. No longer a priority
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-42	Compile Comprehensive Emergency Management Plan	All	Town of Brookhaven		No Progress	Cost		1. Include in 2020 HMP 2. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-43	Cornell Cooperative Extension - Cedar Beach Facility Storm Surge Mitigation. (Sandy HMGP LOI #1331)	Flooding, Hurricanes, Nor'Easters, Severe Storms	Suffolk County, Town of Southold, and Cornell Cooperative Extension of Suffolk County		No Progress	Cost		1. Discontinue 2. 3. Not in Town of Brookhaven
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-44	Back-Up Power Plan for the Gordon Heights Fire District. (Sandy HMGP LOI #1920)	All			No Progress	Cost		1. Discontinue 2. 3. Fire District, not under Town jurisdiction.
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-45	Generator for Critical Fire Protection Facility – Holtsville	All			No Progress	Cost		1. Discontinue 2.
						Level of Protection		





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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	
	Fire District (Sandy HMGP LOI #1952)					Damages Avoided; Evidence of Success		3. Fire District, not under Town jurisdiction.
Brookhaven Town-46	Maintain Operability of Point O' Woods Volunteer Fire Department; a premiere first responder team on Fire Island. (Sandy HMGP LOI #698)	All			Ongoing Capability	Cost		1. Discontinue 2. 3. Ongoing Capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-47	Emergency Backup Power for the Village Central School District	All	Suffolk County, as supported by relevant local department leads,		No Progress	Cost		1. Discontinue 2. 3. No longer a priority
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-48	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-disaster assessment and recovery capabilities)* County-Wide Debris Management Plan 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). *The Town has indicated that it will host relevant workshops for countywide participation, and will be joining the NFIP Community Rating System.	All	Town of Brookhaven		Ongoing Capability	Cost		1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
	See above	All	Town of Brookhaven		Ongoing Capability	Cost	Low	1. Discontinue





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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.
						Level of Protection	Damages Avoided; Evidence of Success	
Brookhaven Town-49	Construct an Emergency Operations Center within one of the existing Town facilities. The Town is working to identify a suitable facility, then to secure funding to outfit as a proper EOC.		Town of Brookhaven Public Safety			Level of Protection		2. 3. Complete
Brookhaven Town-50	Continue to develop, enhance and implement existing emergency response plans to utilize new and developing technology, information as it becomes available. Specifically, the Town is working on the following relevant projects:	All	Town of Brookhaven Town Council		Ongoing capability	Cost		1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-51	Incorporate continuity of operations planning principals into existing plans that address post disaster operations. I.T. is currently working to secure funding to develop a COOP, COG plan (see previous Sandy HMGP initiatives).	Coastal Erosion	Town of Brookhaven		Ongoing capability	Cost		1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-52	Stabilize vulnerable bluffs by introducing natural vegetation and through the use of hardened structures. 10 North Shore bluff projects have applied for funding; eight have been through engineering, two have gone to bid	Nor' Easter, Coastal Erosion, Hurricane, Flood	Army Corps, NYSDOS		Ongoing Capability	Cost		1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-53	Encourage Federal and State agencies to identify new reliable and consistent sources of sand for beach nourishment programs, building on recommendations of existing feasibility studies concerning coastal sand budgets.	Nor' Easter, Coastal Erosion, Hurricane, Flood, Severe Storm	Town of Brookhaven, NYSDEC		Ongoing Capability	Cost		1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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		
Brookhaven Town-54	Institute a recharge basin reconstruction program, possibly by partnering with local businesses, to restore & increase drainage capacity by reducing invasive species, trash, excess sediment, etc	Nor'Easters, Coastal Erosion, Severe Storms, Hurricane, Flood,	FEMA		Ongoing Capability; Actions include general overall maintenance, grubbing, fence repair, clearing access paths, repairing / replacing gates, and repairing headwalls as needed.	Cost	\$500,000	1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-55	Participate in homeowner partnership program to elevate vulnerable properties in high-risk areas impacted by coastal storms, surface Flood, and, or . High-risk areas include: those properties identified as "repetitive loss" by FEMA and those areas of concern identified by the Town of Brookhaven.	Nor'Easters, Coastal Erosion, Severe Storms, Hurricane, Flood,	FEMA		Ongoing Capability	Cost		1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-56	Consider low-density land use in high-risk coastal, surface water and groundwater zones.	Nor'Easters, Coastal Erosion, Severe Storms, Hurricane, Flood,	Town of Brookhaven		Ongoing Capability	Cost		1. Discontinue 2. 3. Ongoing capability
						Level of Protection		
						Damages Avoided; Evidence of Success		
Brookhaven Town-57	Encourage NYS and FEMA to document erosion rates by taking standardized aerial photographs of our shorelines on a yearly basis, and when necessary after severe storms.	Nor'Easters, Coastal Erosion, Severe Storms, Hurricane, Flood,	NYSDOS, NYSEDEC, NYSCSIC, NYSEMO, FEMA, and all other agencies currently producing aerial photography		In Progress	Cost		1. Include in 2020 HMP 2. 3.
						Level of Protection		
						Damages Avoided; Evidence of Success		
						Cost		1. Discontinue





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		Next Steps
						Level of Protection	Damages Avoided; Evidence of Success	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.
Brookhaven Town-58	Water Island Wells (Fire Island), NY	Wildfire, Severe Storms, Hurricane, Flooding, severe Winter Storm	Town of Brookhaven		Complete; This project was modified. A water main was installed by the Suffolk County Water Authority	Level of Protection		2. 3. Complete
MB-1 (Sandy HMGP LOI #679)	Rebuild and raise Riviera Drive.	Flood, Hurricane, Nor'Easter, Severe Storm	Village of Mastic Beach: Susan Draghi, Village Clerk		Ongoing Capability	Cost Level of Protection		1. Discontinue 2. 3. Ongoing Capability; Village dissolution effective December 31, 2017
MB-2 (Sandy HMGP LOI #680)	Raise homes along the waterfront.	Coastal Erosion, Flood, Hurricane, Nor'Easter, Severe Storm	Village of Mastic Beach: Susan Draghi, Village Clerk		Ongoing Capability; Absorbed into existing Town programs	Cost Level of Protection		1. Discontinue 2. 3. Ongoing Capability; Village dissolution effective December 31, 2017
MB-3 (Sandy HMGP LOI #868)	Raise homes along the waterfront.	Coastal Erosion, Flood, Hurricane, Nor'Easter, Severe Storm	Village of Mastic Beach: Susan Draghi, Village Clerk		Ongoing Capability; Absorbed into existing Town programs	Cost Level of Protection		1. Discontinue 2. 3. Ongoing Capability; Village dissolution effective December 31, 2017
MB-4 (Sandy HMGP LOI #866)	Rebuild and elevate Riviera Drive West.	Flood, Hurricane, Nor'Easter, Severe Storm	Village of Mastic Beach: Susan Draghi, Village Clerk		Ongoing Capability; Absorbed into existing Town programs	Cost Level of Protection		1. Discontinue 2. 3. Ongoing Capability; Village dissolution effective December 31, 2017
MB-5 (Sandy HMGP LOI #1124)	Provide training for additional Code Enforcement Officers and Inspectors	Coastal Erosion, Earthquake, Expansive Soils, Flood, Hurricane,	Village of Mastic Beach: Susan Draghi, Village Clerk		No Progress	Cost Level of Protection Damages Avoided;		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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.
						Evidence of Success	Cost	
		Infestation, Nor'Easter, Severe Storm, Shallow GW, Wildfire, Winter Storm				Evidence of Success		
MB-6 (Sandy HMGP LOI #914)	Install an Enhanced Monitoring and Alerting System throughout the community.	Coastal Erosion, Drought, Flood, Hurricane, Nor'Easter, Severe Storm, Winter Storm	Village of Mastic Beach: Susan Draghi, Village Clerk		No Progress	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-7 (Sandy HMGP LOI #909)	Install back-up power supply to Village Hall.	Earthquake, Flood, Hurricane, Nor'Easter, Severe Storm, Wildfire, Winter Storm	Village of Mastic Beach: Susan Draghi, Village Clerk		No Progress	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-8 (Sandy HMGP LOI 2036)	Install back-up power supply to Village Hall.	Earthquake, Flood, Hurricane, Nor'Easter, Severe Storm, Wildfire, Winter Storm	Village of Mastic Beach: Susan Draghi, Village Clerk		No Progress	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-9	Storm water run-off management system	Flood, Hurricane,	Village of Mastic Beach: Susan		Ongoing Capability; Absorbed into	Cost Level of Protection		1. Discontinue 2.





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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.
						Damages Avoided; Evidence of Success		
(Sandy HMGP LOI #908)		Nor'Easter, Severe Storm, Winter Storm	Draghi, Village Clerk		existing Town programs	Damages Avoided; Evidence of Success		3. Ongoing Capability; Village dissolution effective December 31, 2017
MB-10 (Sandy HMGP LOI #1139)	Build a community in-place shelter for residents and their pets.	Earthquake, Flood, Hurricane, Nor'Easter, Severe Storm, Shallow GW, Wildfire, Winter Storm	Village of Mastic Beach: Susan Draghi, Village Clerk		No Progress	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-11 (Sandy HMGP LOI #793)	Flood-proof Village Hall.	Flood, Hurricane, Nor'Easter, Severe Storm	Village of Mastic Beach: Susan Draghi, Village Clerk		No Progress	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-12 (Sandy HMGP LOI #905)	Construct a wastewater treatment facility.	Earthquake, Flood, Groundwater Contam, Hurricane, Infestation, Nor'Easter, Severe Storm, Shallow GW, Winter Storm	Village of Mastic Beach: Susan Draghi, Village Clerk		No Progress	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-13 (Sandy HMGP LOI #1207)	Restore the wetlands, and develop and reinforce the natural barriers of the waterfront.	Coastal Erosion, Flood, Hurricane, Nor'Easter, Severe Storm	Village of Mastic Beach: Susan Draghi, Village Clerk		Ongoing Capability; Absorbed into existing Town programs	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Ongoing Capability; Village dissolution effective December 31, 2017
MB-14		Earthquake, Flood,	Village of Mastic Beach: Susan		No Progress	Cost Level of Protection		1. Discontinue 2.





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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	
(Action Worksheet)	Install backup generator to the Department of Public Works Facility	Hurricane, Nor'Easter, Severe Storm, Wildfire, Winter Storm	Draghi, Village Clerk			Damages Avoided; Evidence of Success		3. Village incorporated into Town, effective December 31, 2017
MB-15 (NEW)	Assess and prioritize options to elevate approximately 1,000 homes in the 1% annual chance floodplain, and implement as funding becomes available.	Flood, Hurricane, Nor'Easter, Severe Storm	Village		Ongoing Capability; Absorbed into existing Town programs	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Ongoing Capability; Village dissolution effective December 31, 2017
MB-16 (NEW)	Conduct a wastewater treatment facility survey.	Earthquake, Flood, Groundwater Contam, Hurricane, Infestation, Nor'Easter, Severe Storm, Shallow GW, Winter Storm	Village		No Progress	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-17 (NEW)	Assess and prioritize options to elevate roadways in the waterfront district.	Flood, Hurricane, Nor'Easter, Severe Storm	Village		Ongoing Capability; Absorbed into existing Town programs	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Ongoing Capability; Village dissolution effective December 31, 2017
MB-18 (NEW)	Assess and prioritize options to protect the inland areas of the Village from storm and tidal surges, and implement	Coastal Erosion, Flood, Hurricane,	Village		Ongoing Capability; Absorbed into existing Town programs	Cost Level of Protection Damages Avoided;		1. Discontinue 2. 3. Ongoing Capability; Village dissolution





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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.
						Evidence of Success	Cost	
	as funding becomes available.	Nor'Easter, Severe Storm				Evidence of Success		effective December 31, 2017
MB-19 (NEW)	Assess and prioritize options to acquire properties in the Extreme Risk area for flooding, and implement as funding becomes available.	Flood, Nor'Easter, Hurricane, Severe Storm	County/ Village		Ongoing Capability; Absorbed into existing Town programs	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Ongoing Capability; Village dissolution effective December 31, 2017
MB-20 (NEW)	Establish a program to dredge Moriches Inlet, creeks, and canals, and implement as funding becomes available.	Nor'Easters; Hurricane; Flooding; Shallow Groundwater	SCDPW		No Progress	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-21 (NEW)	Assess and prioritize options to protect key utility and water infrastructure, and implement as funding becomes available.	All Hazards	County/Village		Ongoing Capability; Absorbed into existing Town programs	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Ongoing Capability; Village dissolution effective December 31, 2017
MB-22 (NEW)	Assess and prioritize options, such as elevation, to ensure access to primary roadways, and implement as funding becomes available.	Flood, Nor'Easter, Hurricane, Severe Storm	Village		Ongoing Capability; Absorbed into existing Town programs	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Ongoing Capability; Village dissolution effective December 31, 2017
MB-23 (NEW)	Assess and prioritize options to provide back-up power supply for cell towers, and implement as funding becomes available.	Earthquake, Flood, Hurricane, Nor'Easter, Severe Storm, Wildfire, Winter Storm	County		No Progress	Cost Level of Protection Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-24	Investigate the feasibility of Movable Inlet Barriers	Flood, Hurricane, Nor'Easter,	County/ Village		No Progress	Cost Level of Protection		1. Discontinue 2.





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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	
(NEW)		Severe Storm, Coastal Erosion				Damages Avoided; Evidence of Success		3. Village incorporated into Town, effective December 31, 2017
MB-25 (NEW)	Assess and prioritize options to restore the Barrier Island Dune System, and implement as funding becomes available.	Flood, Hurricane, Nor'Easter, Severe Storm, Coastal Erosion	County/ Village/ NYSDEC/ USACE		No Progress	Level of Protection		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-26 (NEW)	Work together with the County and others to bring CRS training/workshops into the community where appropriate community officials and staff will actively participate.	Coastal Erosion, Flood, Hurricane, Nor'Easter, Severe Storm, Shallow GW	Village		No Progress	Cost		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-27 (NEW)	Assess and prioritize options to build a wastewater treatment system to protect the environment and human health, and implement as funding becomes available.	Earthquake, Flood, Groundwater Contam, Hurricane, Infestation, Nor'Easter, Severe Storm, Shallow GW, Winter Storm	Village		No Progress	Level of Protection		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-28 (NEW)	Provide Parking Areas for Vehicle Storage	Flood, Nor'Easter, Hurricane, Severe Storm	County/ Village		No Progress	Damages Avoided; Evidence of Success		1. Discontinue 2. 3. Village incorporated into Town, effective December 31, 2017
MB-29 (NEW)	Determine those areas where the use of structural mitigation measures would be feasible and appropriate	Flood, Nor'Easter, Hurricane, Severe Storm, Coastal Erosion	County/ Village		Ongoing Capability; Absorbed into existing Town programs	Cost		1. Discontinue 2. 3. Ongoing Capability; Village dissolution effective December 31, 2017
						Level of Protection		
						Damages Avoided;		





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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.
						Evidence of Success	Cost	
MB-30 (NEW)	Develop and institute a tree maintenance program as funding becomes available	Nor'Easter, Hurricane, Severe Storm, Wildfire, Winter Storm, Invasive Species	Village		No Progress	Evidence of Success		<ol style="list-style-type: none"> Discontinue Village incorporated into Town, effective December 31, 2017
MB-31 (NEW)	Support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with repetitive loss and severe repetitive loss properties as a priority when applicable. Phase 1: Identify appropriate candidates and determine most cost-effective mitigation option (in progress). Phase 2: Work with the property owners to implement selected action based on available funding and local match availability.	Flood, Coastal Erosion, Hurricane, Nor'Easter, Severe Storm, Wildfire, Winter Storm	Town/Village Engineering via NFIP FPA) with NYSOEM, FEMA support		Ongoing Capability; Absorbed into existing Town programs	Evidence of Success		<ol style="list-style-type: none"> Discontinue Ongoing Capability; Village dissolution effective December 31, 2017
MB-32 (NEW)	Support and participate in county led initiatives intended to build local and regional mitigation and risk-reduction capabilities (see Section 9.1), specifically:	All Hazards	Suffolk County, as supported by relevant local department leads		Ongoing Capability; Absorbed into existing Town programs	Evidence of Success		<ol style="list-style-type: none"> Discontinue Ongoing Capability; Village dissolution effective December 31, 2017





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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"> • 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-disaster assessment and recovery capabilities) • County-Wide Debris Management Plan • Jurisdictional Knowledge of Mitigation Needs of Property Owners (improved understanding of damages and mitigation interest/activity of private property owners) 							





Section 9.6: Town of Brookhaven

Project #	Project Name	Hazards 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) Blank		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"> 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). 							
MB-33 (NEW)	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	PSEG, County		Ongoing Capability; Absorbed into existing Town programs	Cost Level of Protection	Damages Avoided; Evidence of Success	<ol style="list-style-type: none"> Discontinue Ongoing Capability; Village dissolution effective December 31, 2017





DRAFT





Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Town of Brookhaven 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 Town of Brookhaven 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 9.6-15 summarizes the comprehensive-range of specific mitigation initiatives the Town of Brookhaven 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 9.6-16 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 9.6-15. 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-Brookhaven-001	Davis Park Marina - Water Break	2, 3, 5	Flood, Coastal Erosion	<p>Problem: The Davis Park Marina on Fire Island is protected on all four sides of the marina by boardwalks supported by piles and earth. The four boardwalks provide some protection of the 270 slip marina. A 60' long steel water break was installed along the north end of the west boardwalk and extends into the Great South Bay to protect the marina from west wind storms. The north and east sides of the marina have a more substantial level of protection. Unfortunately the storms that come from the west side of marina cause significant damage to the boardwalks, piers, mooring piles and some features landward of the marina. In 2007 the Town hired L.K. McLean Associates to prepare permit drawings for a 150' extension to the existing 60' long breakwater and a wave guard to protect the ferry dock. The Town would like to extend the existing steel water break by 150' to close the opening of the marina and provide further protection to the marina and its infrastructure. The existing 60' long water break has helped the marina during storm events but has not protected some of the northerly features situated within the marina. The cost to replace these features combined with the constant costs</p>	No	Permitting	Within 2 years	Engineer	\$251,590	Flood and erosion protection of Davis Park Marina	HMGP, BRIC, Town budget	Medium	SIP	PP



Table 9.6-15. 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
				<p>associated with dredging the marina would far exceed the cost of the 150 foot long steel water break.</p> <p>Solution: Engaged an engineering firm for professional engineering and surveying services in conjunction with the design of the new breakwater system. The breakwater system will consist of steel sheeting and constructed with a CCA timber frame comprised of horizontal wales and vertical piles to resist the maximum anticipated wave forces. Engineer will prepare a bid package and oversee the project.</p>										
2020-Brookhaven-002	Pipe Stave Hollow Road Raising	1, 2	Flood, Severe Storm	<p>Problem: This low-lying section of Town roadway experiences routine Flood due to tidal waters (Mt. Sinai Harbor) and the height of the roadway. The Town has installed stormwater runoff basins up-gradient to intercept the volume of runoff during rain events. Most of the Flood is attributed to high tides and tidal surges that occur when a severe storm occurs. When the road is flooded it prohibits safe access by emergency vehicles in a residential area.</p> <p>Solution: The Highway Department proposes to raise the roadway 6" to 12" and install shallow drainage structures that will provide additional storage for both</p>	No	None	Within 2 years	Highway Department	\$2.9 million	Flood risk reduced. Recent damages of \$100,000	HMGP, BRIC, Municipal bonds	High	SIP	PP





Table 9.6-15. 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-Brookhaven-003	Hazard Mitigation Disaster Recovery and Business Continuity	8	All Hazards	<p>stormwater runoff and tidal waters. A stormwater treatment structure is included in the plan to treat the stormwater runoff prior to discharge into Mount Sinai Harbor. The road-raising project will provide safe access for residents and emergency vehicles during and after severe storm events. The new roadway will decrease the amount of maintenance required along the roadway relative to buckled asphalt, debris-filled drainage structures and vehicles driving on private property beyond the limits of the Town right-of-way. Project scope is being redesigned and will consider new projections for sea level rise. Recent property acquisitions will enable the Town to create a project design that is more conducive to climate change predictions.</p> <p>Problem: The highest priority/essential operations of and services provided by the Town's Division of Information Technology The recent Hurricane Irene, Lee and Sandy and Superstorm Nemo all had an adverse impact on Town operations. Many of the Town's operations were shut-down and the impact on the health and safety of constituents was significant, especially during Sandy and Nemo, when the Town suffered both extended power and network outages.</p>	No	None	Within 5 years	Division of Information Technology	\$350,000	Proactively assess, analyze and plan for the implementation of solutions to ensure that the Town's highest priority operations can function in the event of a disaster or other	HMGP	Medium	LP R	ES





Table 9.6-15. 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
				<p>Solution: The Town of Brookhaven is seeking \$350,000 in grant funds in order to hire a qualified consulting firm to compile a hazard mitigation, disaster recovery and business continuity plan for each of the following:</p> <ul style="list-style-type: none"> •The 451-Town Call Center, which is the primary interface for constituents to contact the Town •The disaster-related operations of the Town's Highway Department including snow plowing, removal of ice hazards and downed trees and unblocking clogged storm drainage infrastructure. 						unforeseen interruption to normal business operations.				
2020-Brookhaven-004	Generator for Town Parks Administration Building	1, 2, 7	All Hazards	<p>Problem: Based on the quantity of the Town's parks and recreational facilities, the installation of a generator for the Parks Administration Building in Centereach is a priority. Based on the size of the Town and the demand for emergency services during disaster events, the need for a generator at the Town Parks facility is crucial. There are many resources located within the Town's jurisdiction where a level of safety and protection is required during a major disaster. These resources include both public and private facilities and infrastructure.</p> <p>Solution: They are 2 portable generators purchased with FEMA grant monies. The</p>	No	None	Within 1 year	Parks Department	The Town has purchased the generators for \$127,929.30. The town has purchased the supplies to connect these items to the Administration Building totaling \$7,753.96.	Continuity of service	FEMA was used for purchase of generators and supplies. Town budget for hookup.	Medium	SIP	PP





Table 9.6-15. 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-Brookhaven-005	Great Gun Marina	2, 3, 4, 5	Coastal Erosion, Hurricane, Severe Storms	<p>materials to connect have not yet been installed. The Town will connect the generators and complete hookup.</p> <p>Problem: The Town owns and operates a transient marina off of the east end of Fire Island called Great Gun Marina. The marina accommodates approximately 120 boats of various sizes. The Town has a playground, picnic area, boardwalk and bathroom facility (solar-powered) landward of the beach and bulkhead. Each time a significant storm occurs the tidal surge causes beach erosion and damage to the recreational site features. The damage is caused primarily along the two (2) unprotected coastlines of the facility. The area behind the central boardwalk remains unaffected by the strong tidal surges.</p> <p>Solution: In order to protect the recent investments made by the Town in 2012 and in the immediate aftermath of Super Storm Sandy, the Town proposes to mitigate the reoccurring problem of beach erosion and damage from the tidal surge by constructing coastline protection measures (either bulkhead or stone revetment) along the east and primarily the west side of the marina. The hardening of the coastlines would minimize the</p>	No	Permitting required	Within 2 years	Town of Brookhaven, Chief of Operations	\$450,000	Reduction in flooding and erosion damages	HMGP, BRIC, Town budget	High	SIP	PP





Table 9.6-15. 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-Brookhaven-006	Compile Comprehensive Emergency Management Plan	7	All Hazards	<p>cost to replace sections of boardwalk, the bathrooms (solar power system, water filtration system), playground equipment and other park amenities. The overall cost of these mitigation measures would provide protection for many years versus the increasing annual cost for maintenance and replacement.</p> <p>Problem: The Town lacks a town-specific comprehensive emergency management plan.</p> <p>Solution: The Town will develop a comprehensive emergency management plan, building off of the county plan and using information from the hazard mitigation plan.</p>	No	None	Within 2 years	OEM	\$5,000	Town specific plan developed	Town budget	High	LP R	ES
2020-Brookhaven-007	Coastal Erosion Monitoring	1, 2, 3, 5	Nor'Easter, Coastal Erosion, Hurricane, Flood	<p>Problem: The Town has shoreline which could be exposed to coastal erosion and has experienced erosion events in the past.</p> <p>Solution: The Town will participate in a county led erosion monitoring program.</p>	No	None	Within 1 year	Suffolk County SWCD	Staff time	Identification of coastal erosion	NYS and County budgets	High	NS P	N R
2020-Brookhaven-008	Repetitive Loss Properties	1, 2	Flood, Severe Storm	<p>Problem: Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims.</p> <p>The Town has flood prone residential areas south of the Montauk Highway, focused in the Mastic Beach and Fire Island areas.</p>	No	None	3 years	NFIP Floodplain Administrator, supported by homeowners	\$3 million	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





Table 9.6-15. 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-Brookhaven-009	Communications Center Upgrades	7	All Hazards	<p>Solution: Conduct outreach to 30 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/evacuating residential homes in the flood prone areas that experience frequent flooding (high risk areas).</p> <p>Problem: The Communications Center requires upgraded hardware and software to allow for computer based dispatch.</p> <p>Solution: The Town will upgrade the Communications Center.</p>	Yes	None	Within 1 year	Department of Public Safety	\$300,000	Increased emergency communications capacity	Emergency Management Performance Grants (EMPG) Program, Town budget	High	SIP	ES
2020-Brookhaven-010	Northwest Sector Gas Pumps	7, 8	All Hazards	<p>Problem: Strategically located municipal fueling stations are critical to timely hazard responses. Fueling stations are lacking in the northwest section of the 263 square mile Town.</p> <p>Solution: A new municipal fueling station is proposed for the Setauket Highway yard facility. Three fuel pumps, including one diesel, will be permitted and installed.</p>	Yes	Permitting	Within 5 years	Highway Department	\$900,000	Continuity of services maintained	HMGP, Emergency Management Performance Grants (EMPG) Program, Town budget	Medium	SIP	ES
	Salt Shed Upgrades	1, 2, 3, 7	Winter Storm,	<p>Problem: Several salt sheds are degraded. This increases risk of</p>	Yes	None	Within 5 years	Highway Department	\$2,400,000	Maintain winter storm	HMGP, Emergenc	High	SIP	PP





Table 9.6-15. 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-Brookhaven-011			Severe Storm, Groundwater Contamination	runoff and potential groundwater contamination. Solution: The Town will repair the salt sheds that are degraded. If repairs are not possible, the Town will replace them with structurally sound and weather-proof structures to protect the Town salt and sand supply for winter storm response. Design is expected to consist of a cement pad and dome top tent. Proposed locations in need of upgrades include Mastic, Setauket and Rocky Point.						capabilities, reduce runoff	Management Performance Grants (EMPG) Program, Town budget			
2020-Brookhaven-012	South Shore Road Ends	1, 2	Flood, Coastal Erosion	Problem: Many of the Town's south shore roads are situated in low-lying communities at mean sea level and are regularly impacted by cyclic tides and storm events. Shallow depth to groundwater exacerbates issues associated with hazards and limits functionality of existing infrastructure. Solution: The Town will evaluate and develop engineered plans for 15 roadway endings and determine which improvements are necessary such as: <ul style="list-style-type: none"> • Bulkhead replacement • Stormwater upgrades • Check valves • Roadway raising 	No	Will require permitting	Within 5 years	Town of Brookhaven Highway Dept / Stormwater Management	\$6,209,546	Public safety / Protection of public and private infrastructure	HMGP, BRIC, Town budget	High	SIP	PP, SP
2020-Brookhaven-013	Critical Facility Outreach	2, 6	Flood	Problem: The Town of Brookhaven has numerous critical facilities located in the	Yes	None	Within 6 months	FPA	Staff time	Facility managers aware of	Town budget	High	EAP	PI





Table 9.6-15. 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-Brookhaven-014	Bellhaven Road Mitigation (Brookhaven hamlet)	2	Flood, Hurricane, Nor'easter, Shallow Groundwater, Severe Storm	<p>100-year floodplain. None of these facilities are owned by the Town.</p> <p>Solution: The Town FPA will conduct outreach with critical facility managers to discuss flood exposure and potential mitigation actions.</p> <p>Problem: The Bellhaven road network is a low-lying suburban area that is at or near sea level. The road network is bounded by ditched tidal wetlands and a series of canals. The road end is fully exposed to tidal / wave action.</p> <p>Solution: This project will protect public and private infrastructure from future climate risk and extreme storm events. This will be achieved through a series of best management practices that incorporate green infrastructure, water quality units, increased retention and disconnection of direct discharges.</p>	No	None	3 years	Town of Brookhaven Highway Dept / Stormwater Management	\$1,375,000	flood risk and potential mitigation actions Public and private infrastructure upgrades, protection from damages, reduction in flooding	HMGP, BRIC, Town budget	High	SIP	PP
2020-Brookhaven-015	Highway Department Communications Upgrade	7	Hurricane, Nor'easter, Severe Storm, Severe Winter Storm, Wildfire	<p>Problem: Suffolk County plans to upgrade their communication system to a 700MHz system. Once this upgrade is completed, the Town will require communication upgrades to utilize the County's system.</p> <p>Solution: The Town will purchase GPS modules that allow the Town's existing communication system to integrate with the County's upgraded 700MHz system. This communication system is</p>	Yes	None	1 year	Town of Brookhaven Highway Dept	Medium	Improved emergency response	HMGP, Community Facilities Grant Program, Town budget	Medium	LP R	ES





Table 9.6-15. 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
				critical for emergency response to storm events.										
2020-Brookhaven-016	Dyke Road (East Setauket) – road raising	1, 2	Flood, Severe Storm	<p>Problem: Dyke Road is a narrow low-lying road that is bounded by ditched tidal wetlands. It is the singular access road to the Strong's Neck community.</p> <p>Solution: Approximately 1,100 linear feet of roadbed will be raised and mitigated to reduce tidally influenced and storm surge flooding. The roadbed will be raised approximately 12-18 inches above existing grade.</p>	No	None	4 years	Town of Brookhaven Highway Dept	\$250,000	Public infrastructure / access to private property	HMGP, BRIC, Town budget	High	SIP	PP
2020-Brookhaven-017	Storm Response Equipment	7	Hurricane, Nor'easter, Severe Storm, Severe Winter Storm	<p>Problem: Due to the size of the Town and availability of response equipment, response time and access to equipment is hampered during hazardous weather events. Brookhaven Town has over 263 square miles of land within its jurisdiction and is responsible for 3,500 lane miles of roadway. Access to critical storm response equipment is vital to protect life and property.</p> <p>Solution: The Town seeks to acquire additional equipment to support storm event preparedness and response. Critical equipment needs include a Rovver X pipeline investigational camera system, a Cat 336 Excavator with grabble bucket and a Street</p>	No	None	4 years	Town of Brookhaven Highway Dept	\$810,000	Public accessibility	HMGP, Town budget	High	LP R	ES



Table 9.6-15. 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-Brookhaven-018	Fire Island Boardwalks and Public Access Facilities	2	Coastal Erosion, Hurricane, Nor'easter, and Severe Storm	<p>Problem: Boardwalks, concrete walk overs and stairways on Fire Island are highly vulnerable to storm events. Boardwalks, concrete walkways and staircases are regularly damaged during hazardous storm events.</p> <p>Solution: Concrete walkways, staircases and 51,874 feet of wooded boardwalks will be replaced to FEMA building standards. Communities in need of structural upgrades include Pines, Davis Park, Cherry Grove and Water Island.</p>	No	May require permitting	5 years	Town of Brookhaven Highway Dept	\$9,753,137	Public infrastructure / access protection from storm damages	HMGP, BRIC, Town budget	High	SIP	PP
2020-Brookhaven-019	Laura Lee Drive Mitigation (Center Moriches)	2	Flood, Hurricane, Nor'easter, Severe Storm, Shallow Groundwater, Severe Winter Storm	<p>Problem: Laura Lee Drive is a low-lying road network situated at mean sea level and regularly impacted by cyclic tides and storms. The western-most extent of the road terminates with a boat ramp that is inundated during every high tide. The road frontage bounds a small public beach that is over washed during extreme storm events. The adjoining road network regularly floods during modest storm events. The entire project is in FEMA Zone AE.</p> <p>Solution: This project will aid in flood mitigation and protect surface waters from urban runoff. Project goals will be achieved through a series of mitigation measures that include creating several bio-retention areas at key locations.</p>	No	None	3 years	Town of Brookhaven Highway Dept / Stormwater Management	\$2,475,000	Public and private infrastructure / access to private property protected	HMGP, BRIC, Town budget	High	SIP, NSP	SP





Table 9.6-15. 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-Brookhaven-020	Shoreline Drone Aerial Imagery	1, 2, 6	Coastal Erosion, Hurricane, Nor'easter, and Severe Winter Storms	<p>modifying the road profile and installing additional drainage infrastructure.</p> <p>Problem: Brookhaven is a coastal Township with approximately 153 miles of shoreline. Shoreline profiles on the north and south shores are continuously altered due to climate change and storm events. Changes in shoreline conditions impact regulatory policies and the need for mitigation measures on private and public property.</p> <p>Solution: Drone aerial photography will be used to capture shoreline conditions along the entire coastal region every three years to document trends and conditions of shoreline features. This will supplement work proposed by the Suffolk County Soil and Water District to monitor shoreline erosion.</p>	No	None	1 year	Town of Brookhaven Highway Dept and Public Safety	\$23,000 (per annual flight)	Public Safety	HMGP, Town budget	High	LP R, NS P	P R

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

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:





Section 9.6: Town of Brookhaven

FPA Floodplain Administrator
HMA Hazard Mitigation Assistance
N/A Not applicable
NFIP National Flood Insurance Program
OEM Office of Emergency Management

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 9.6-16. 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-Brookhaven-001	Davis Park Marina - Water Break	0	1	1	1	1	0	0	1	1	1	1	1	1	1	11	High
2020-Brookhaven-002	Pipe Stave Hollow Road Raising	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2020-Brookhaven-003	Hazard Mitigation Disaster Recovery and Business Continuity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2020-Brookhaven-004	Generator for Town Parks Administration Building	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2020-Brookhaven-005	Great Gun Marina	0	1	1	1	1	1	0	1	1	1	1	1	1	1	12	High
2020-Brookhaven-006	Compile Comprehensive Emergency Management Plan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2020-Brookhaven-007	Coastal Erosion Monitoring	0	1	1	1	1	1	0	1	1	1	0	1	1	1	11	High
2020-Brookhaven-008	Repetitive Loss Properties	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High
2020-Brookhaven-009	Communications Center Upgrades	1	1	1	1	1	1	1	1	1	1	1	0	1	1	13	High
2020-Brookhaven-010	Northwest Sector Gas Pumps	1	-1	1	1	-1	-1	0	0	1	1	1	1	1	1	8	Medium
2020-Brookhaven-011	Salt Shed Upgrades	1	0	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2020-Brookhaven-012	South Shore Road Ends	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2020-Brookhaven-013	Critical Facility Outreach	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2020-Brookhaven-014	Bellhaven Road Mitigation (Brookhaven hamlet)	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2020-Brookhaven-015	Highway Department Communications Upgrade	1	0	0	1	0	1	-1	0	0	1	1	1	1	1	8	Medium
2020-Brookhaven-016	Dyke Road (East Setauket) – road raising	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High





Table 9.6-16. 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-Brookhaven-017	Storm Response Equipment	0	1	1	0	0	1	0	1	0	1	1	1	1	0	9	High
2020-Brookhaven-018	Fire Island Boardwalks and Public Access Facilities	0	1	1	1	-1	0	-1	1	1	0	1	0	1	0	7	Medium
2020-Brookhaven-019	Laura Lee Drive Mitigation (Center Moriches)	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2020-Brookhaven-020	Shoreline Drone Aerial Imagery	1	1	1	1	-1	0	1	1	0	1	1	1	1	0	9	High

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

DRAFT



9.6.11 Proposed Mitigation Action Types

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

Table 9.6-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Coastal Erosion	2020-Brookha ven-003, 2020-Brookha ven-006, 2020-Brookah ven-020	2020-Brookha ven-001, 2020-Brookha ven-004, 2020-Brookha ven-005, 2020-Brookha ven-009, 2020-Brookha ven-010, 2020-Brookha ven-012.	2020-Brookha ven-007, 2020-Brookah ven-020		2020-Brookah ven-020	2020-Brookha ven-001, 2020-Brookha ven-004, 2020-Brookha ven-005, 2020-Brookha ven-012.		2020-Brookha ven-007,		2020-Brookha ven-003, 2020-Brookha ven-006, 2020-Brookha ven-009, 2020-Brookha ven-010,
Cyber Security	2020-Brookha ven-003, 2020-Brookha ven-006,	2020-Brookha ven-004, 2020-Brookha ven-009, 2020-Brookha ven-010,				2020-Brookha ven-004,				2020-Brookha ven-003, 2020-Brookha ven-006, 2020-Brookha ven-009, 2020-Brookha ven-010,
Disease Outbreak	2020-Brookha ven-003, 2020-Brookha ven-006,	2020-Brookha ven-004, 2020-Brookha ven-009, 2020-Brookha ven-010,				2020-Brookha ven-004,				2020-Brookha ven-003, 2020-Brookha ven-006, 2020-Brookha ven-009, 2020-Brookha ven-010,
Drought	2020-Brookha ven-003, 2020-Brookha ven-006,	2020-Brookha ven-004, 2020-Brookha ven-009, 2020-Brookha ven-010,				2020-Brookha ven-004,				2020-Brookha ven-003, 2020-Brookha ven-006, 2020-Brookha ven-009, 2020-Brookha ven-010,
Earthquake	2020-Brookha ven-003, 2020-Brookha ven-006,	2020-Brookha ven-004, 2020-Brookha ven-009,				2020-Brookha ven-004,				2020-Brookha ven-003, 2020-Brookha ven-006,





Section 9.6: Town of Brookhaven

Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
		2020-Brookhaven-010,								2020-Brookhaven-009, 2020-Brookhaven-010,
Expansive Soils	2020-Brookhaven-003, 2020-Brookhaven-006,	2020-Brookhaven-004, 2020-Brookhaven-009, 2020-Brookhaven-010,				2020-Brookhaven-004,				2020-Brookhaven-003, 2020-Brookhaven-006, 2020-Brookhaven-009, 2020-Brookhaven-010,
Extreme Temperature	2020-Brookhaven-003, 2020-Brookhaven-006,	2020-Brookhaven-004, 2020-Brookhaven-009, 2020-Brookhaven-010,				2020-Brookhaven-004,				2020-Brookhaven-003, 2020-Brookhaven-006, 2020-Brookhaven-009, 2020-Brookhaven-010,
Flood	2020-Brookhaven-003, 2020-Brookhaven-006,	2020-Brookhaven-001, 2020-Brookhaven-002, 2020-Brookhaven-004, 2020-Brookhaven-008, 2020-Brookhaven-009, 2020-Brookhaven-010, 2020-Brookhaven-012, 2020-Brookhaven-014, 2020-Brookhaven-016, 2020-Brookhaven-019	2020-Brookhaven-007, 2020-Brookhaven-019	2020-Brookhaven-013		2020-Brookhaven-001, 2020-Brookhaven-002, 2020-Brookhaven-004, 2020-Brookhaven-008, 2020-Brookhaven-012, 2020-Brookhaven-014, 2020-Brookhaven-016	2020-Brookhaven-013	2020-Brookhaven-007,	2020-Brookhaven-019	2020-Brookhaven-003, 2020-Brookhaven-006, 2020-Brookhaven-009, 2020-Brookhaven-010,
Groundwater Contamination	2020-Brookhaven-003, 2020-Brookhaven-006,	2020-Brookhaven-004, 2020-Brookhaven-009, 2020-Brookhaven-				2020-Brookhaven-004, 2020-Brookhaven-011,				2020-Brookhaven-003, 2020-Brookhaven-006, 2020-Brookhaven-





Section 9.6: Town of Brookhaven

Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
		ven-010, 2020- Brookha ven-011,								ven-009, 2020- Brookha ven-010,
Hurricane	2020- Brookha ven-003, 2020- Brookha ven-006, 2020- Brookha ven-015, 2020- Brookha ven-017, 2020- Brookah ven-020	2020- Brookha ven-004, 2020- Brookha ven-005, 2020- Brookha ven-009, 2020- Brookha ven-010, 2020- Brookha ven-014, 2020- Brookha ven-019	2020- Brookha ven-007, 2020- Brookha ven-019, 2020- Brookah ven-020		2020- Brookah ven-020	2020- Brookha ven-004, 2020- Brookha ven-005, 2020- Brookha ven-014		2020- Brookha ven-007,	2020- Brookha ven-019	2020- Brookha ven-003, 2020- Brookha ven-006, 2020- Brookha ven-009, 2020- Brookha ven-010, 2020- Brookha ven-015, 2020- Brookha ven-017
Infestation and Invasive Species	2020- Brookha ven-003, 2020- Brookha ven-006,	2020- Brookha ven-004, 2020- Brookha ven-009, 2020- Brookha ven-010,				2020- Brookha ven-004,				2020- Brookha ven-003, 2020- Brookha ven-006, 2020- Brookha ven-009, 2020- Brookha ven-010,
Nor'Easter	2020- Brookha ven-003, 2020- Brookha ven-006, 2020- Brookha ven-015, 2020- Brookha ven-017, 2020- Brookah ven-020	2020- Brookha ven-004, 2020- Brookha ven-009, 2020- Brookha ven-010, 2020- Brookha ven-014, 2020- Brookha ven-019	2020- Brookha ven-007, 2020- Brookha ven-019, 2020- Brookah ven-020		2020- Brookah ven-020	2020- Brookha ven-004, 2020- Brookha ven-014		2020- Brookha ven-007,	2020- Brookha ven-019	2020- Brookha ven-003, 2020- Brookha ven-006, 2020- Brookha ven-009, 2020- Brookha ven-010, 2020- Brookha ven-015, 2020- Brookha ven-017
Severe Storm	2020- Brookha ven-003, 2020- Brookha ven-006, 2020- Brookha ven-015, 2020- Brookha ven-017	2020- Brookha ven-002, 2020- Brookha ven-004, 2020- Brookha ven-005, 2020- Brookha ven-008, 2020- Brookha ven-009, 2020-	2020- Brookha ven-019			2020- Brookha ven-002, 2020- Brookha ven-004, 2020- Brookha ven-005, 2020- Brookha ven-008, 2020- Brookha ven-011, 2020-			2020- Brookha ven-019	2020- Brookha ven-003, 2020- Brookha ven-006, 2020- Brookha ven-009, 2020- Brookha ven-010, 2020- Brookha ven-015, 2020-





Section 9.6: Town of Brookhaven

Hazard	FEMA				CRS						
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES	
		Brookha ven-010, 2020- Brookha ven-011, 2020- Brookha ven-014, 2020- Brookha ven-016, 2020- Brookha ven-019				Brookha ven-014, 2020- Brookha ven-016					Brookha ven-017
Severe Winter Storm	2020- Brookha ven-003, 2020- Brookha ven-006, 2020- Brookha ven-015, 2020- Brookha ven-017, 2020- Brookah ven-020	2020- Brookha ven-004, 2020- Brookha ven-009, 2020- Brookha ven-010, 2020- Brookha ven-011, 2020- Brookha ven-019	2020- Brookha ven-019, 2020- Brookah ven-020		2020- Brookah ven-020	2020- Brookha ven-004, 2020- Brookha ven-011,			2020- Brookha ven-019	2020- Brookha ven-003, 2020- Brookha ven-006, 2020- Brookha ven-009, 2020- Brookha ven-010, 2020- Brookha ven-015, 2020- Brookha ven-017	
Shallow Groundwater	2020- Brookha ven-003, 2020- Brookha ven-006,	2020- Brookha ven-004, 2020- Brookha ven-009, 2020- Brookha ven-010, 2020- Brookha ven-014, 2020- Brookha ven-019	2020- Brookha ven-019			2020- Brookha ven-004, 2020- Brookha ven-014			2020- Brookha ven-019	2020- Brookha ven-003, 2020- Brookha ven-006, 2020- Brookha ven-009, 2020- Brookha ven-010,	
Wildfire	2020- Brookha ven-003, 2020- Brookha ven-006, 2020- Brookha ven-015	2020- Brookha ven-004, 2020- Brookha ven-009, 2020- Brookha ven-010,				2020- Brookha ven-004,				2020- Brookha ven-003, 2020- Brookha ven-006, 2020- Brookha ven-009, 2020- Brookha ven-010, 2020- Brookha ven-015	

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





9.6.12 Staff and Local Stakeholder Involvement in Annex Development

The Town of Brookhaven 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 Town departments, including: Building Department, Parks Department, Highway Department, IT Department, Public Safety, PELM, and the Stonybrook University Hospital. The Public Safety Department represented the community on the Suffolk County Hazard Mitigation Plan Planning Partnership, Steering Committee, 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 9.6-18. Contributors to the Annex

Name	Title/Entity	Method of Participation
Cathy Curry	Parks Department	Attended plan participant meetings, provided impact data, contributed to mitigation strategy
Steve Tricarico	Highway Department	Attended plan participant meetings, provided impact data, contributed to mitigation strategy
Kevin Geiger	Highway Department	Attended plan participant meetings, provided impact data, contributed to mitigation strategy
Veronica King	Highway Department/Stormwater	Attended plan participant meetings, provided impact data, contributed to mitigation strategy
Scott Bradley	IT Department	Attended plan participant meetings, provided impact data, contributed to mitigation strategy
Michelle DiBrita	PELM	Attended plan participant meetings, provided impact data, contributed to mitigation strategy
Chris Mehrman	Public Safety	Secondary POC, attended plan participant meetings, provided impact data, contributed to mitigation strategy
John Meehan	Public Safety	Primary POC, attended plan participant meetings, provided impact data, contributed to mitigation strategy
Angus Graham	Building Department	NFIP FPA, attended plan participant meetings, provided impact data, contributed to mitigation strategy
Tara McLaughlin	Building/Planning	Attended plan participant meetings, provided impact data, contributed to mitigation strategy
Donna Hall	IT Department	Attended plan participant meetings, provided impact data, contributed to mitigation strategy
Jen Mesiano Higham	Town of Brookhaven/Stonybrook University Hospital	Attended plan participant meetings, provided impact data, contributed to mitigation strategy

9.6.13 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the Town of Brookhaven 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 Town of Brookhaven has significant exposure.





Figure 9.6-1. Town of Brookhaven Hazard Area Extent and Location Map 1

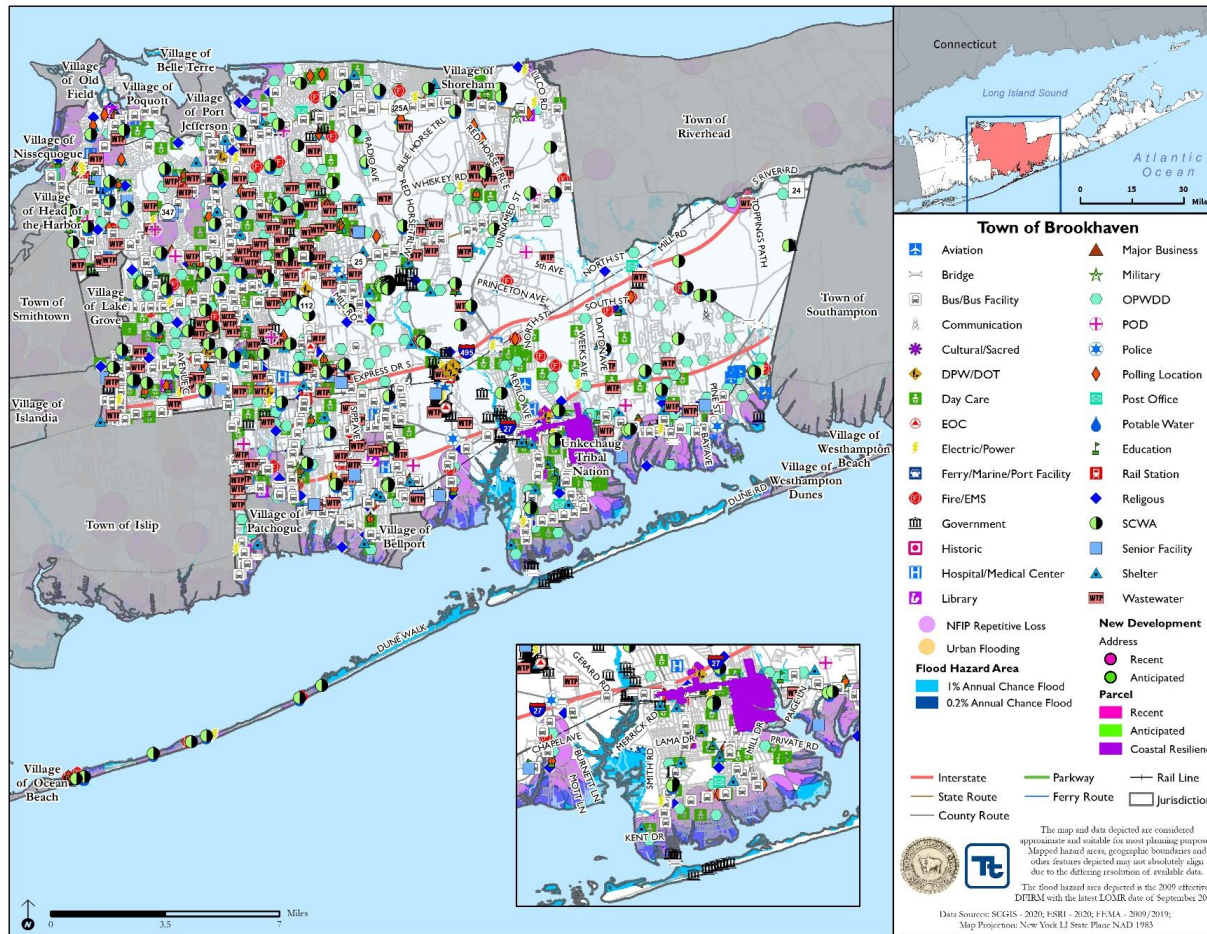




Figure 9.6-2. Town of Brookhaven Hazard Area Extent and Location Map 2

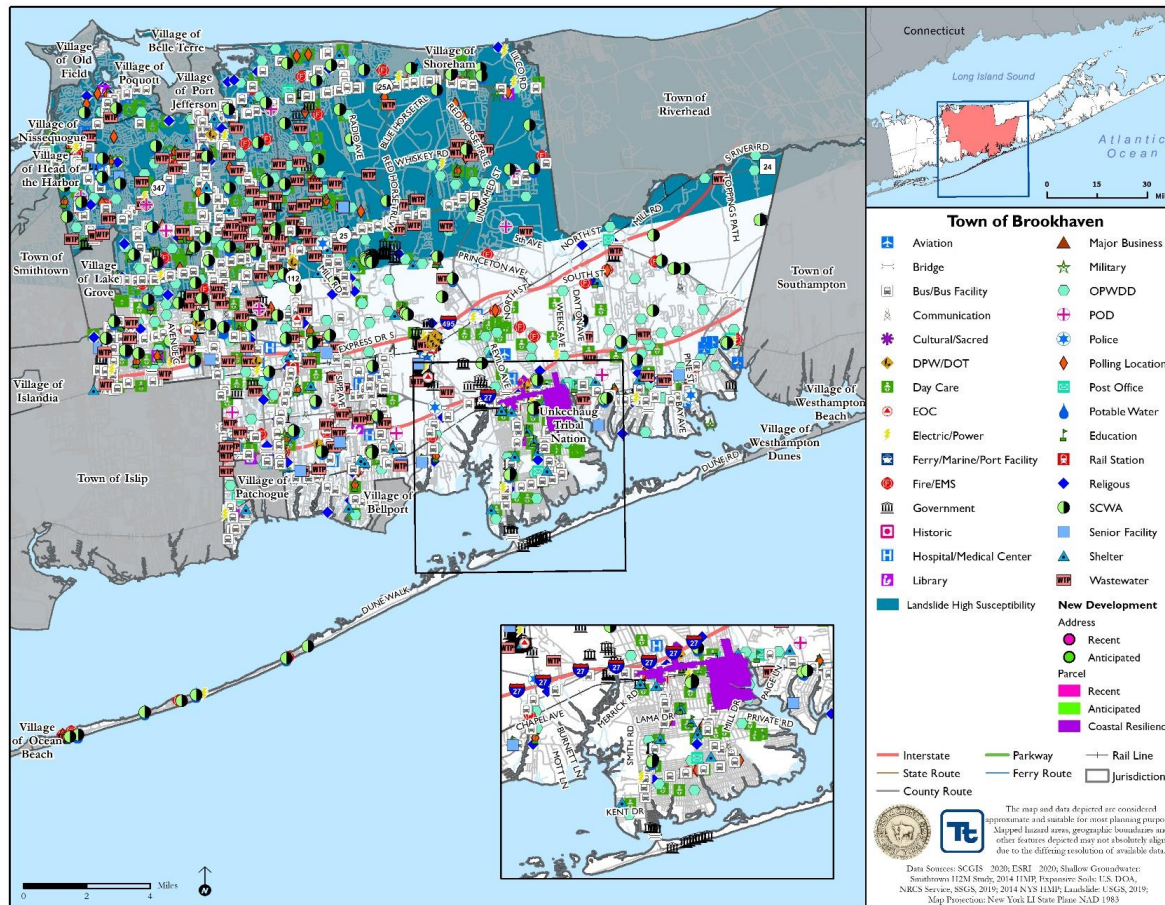




Figure 9.6-3. Town of Brookhaven Hazard Area Extent and Location Map 3

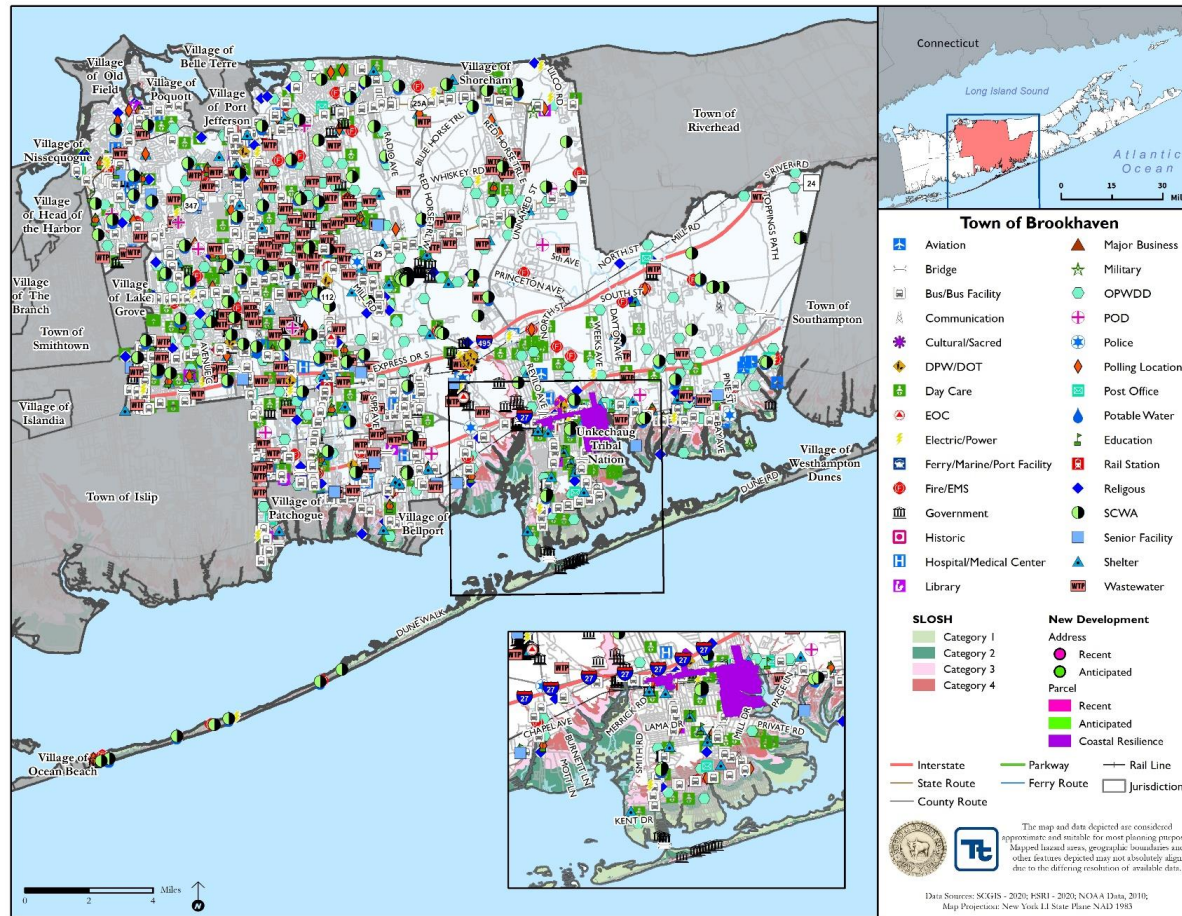




Figure 9.6-4. Town of Brookhaven Hazard Area Extent and Location Map 4

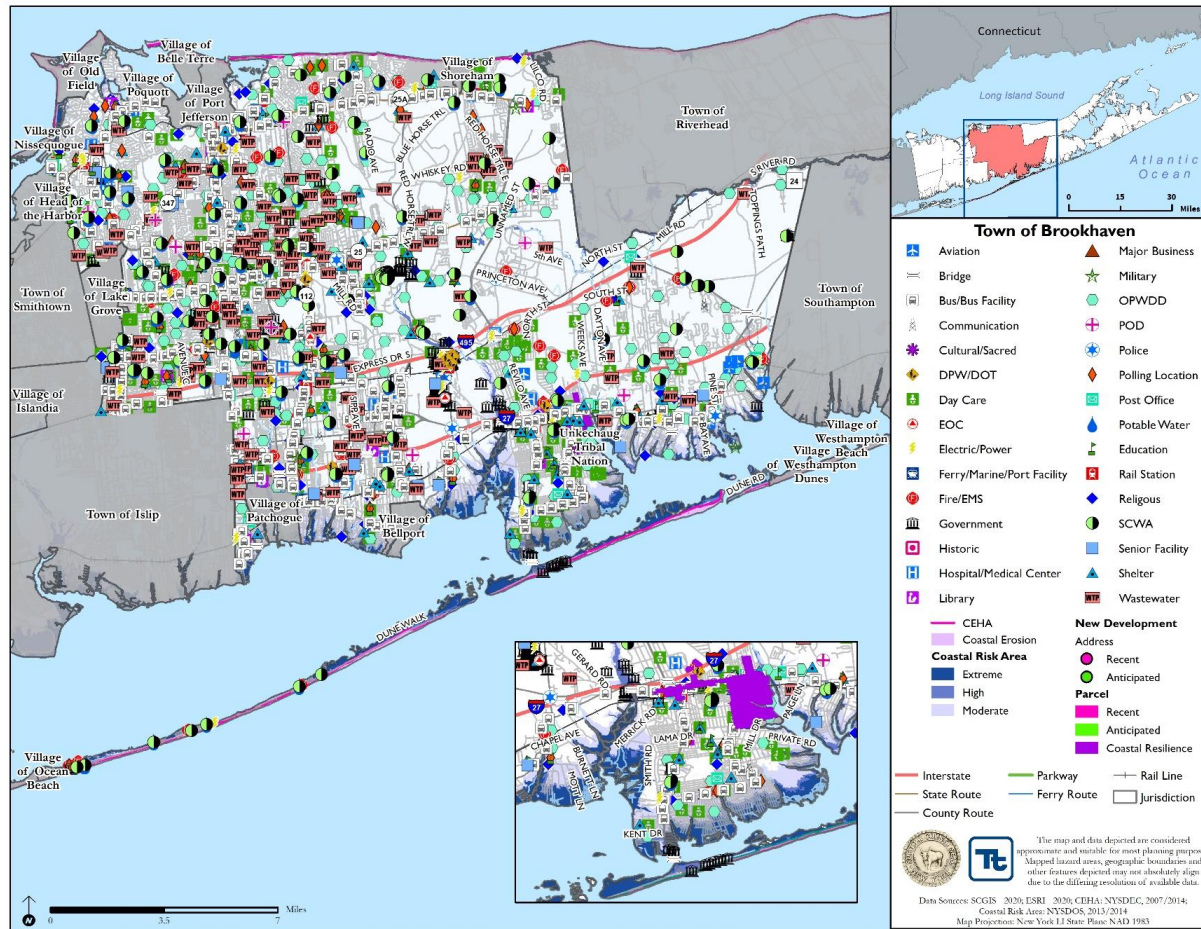




Figure 9.6-5. Town of Brookhaven Hazard Area Extent and Location Map 5

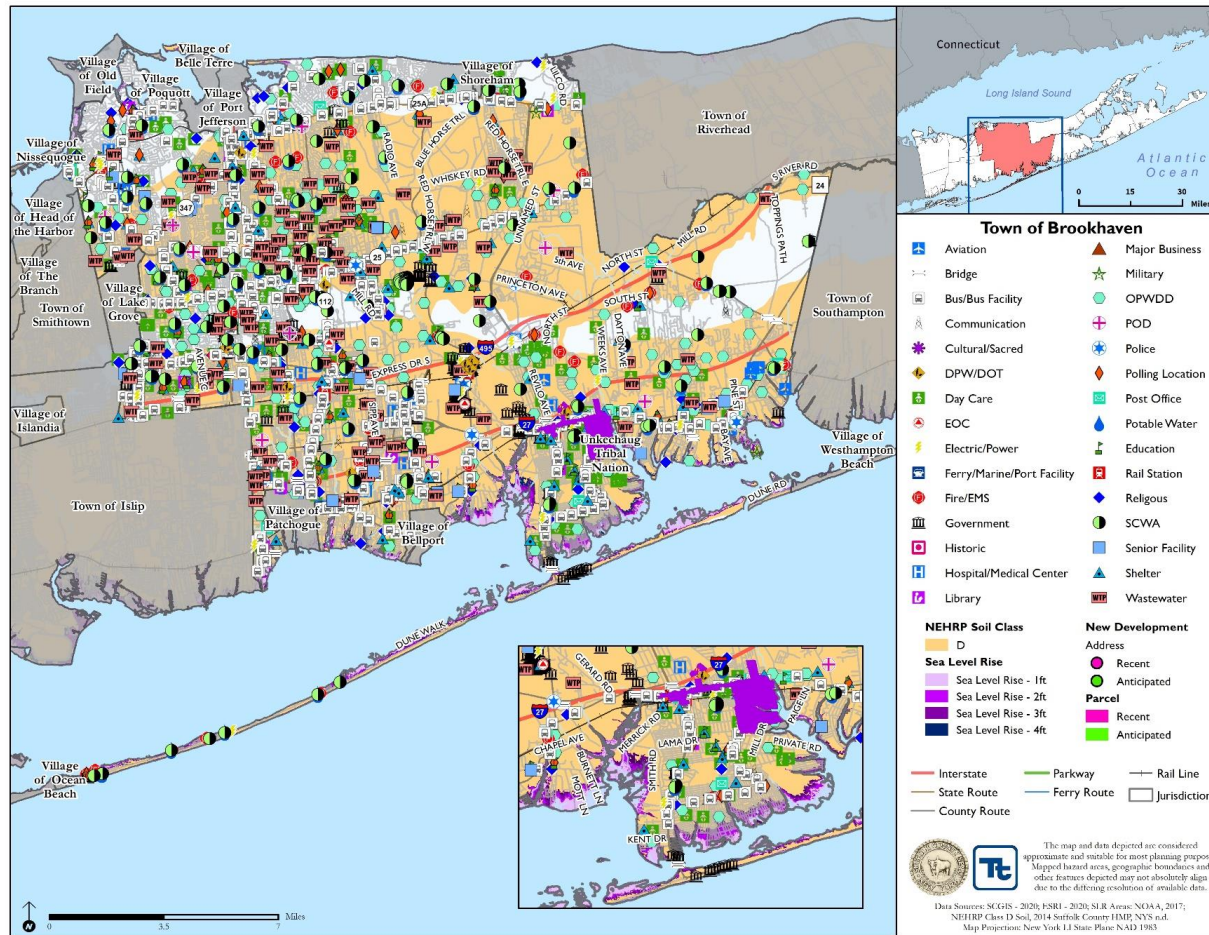
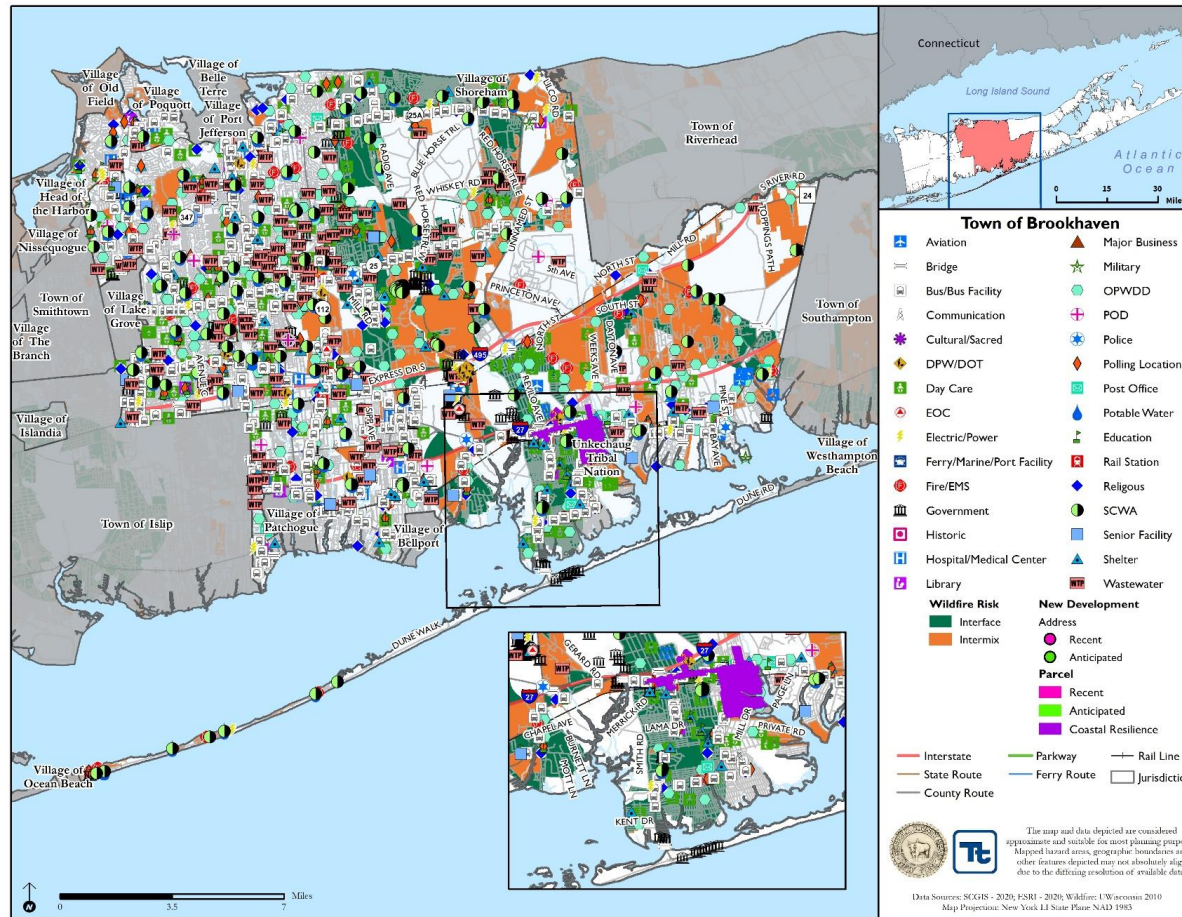




Figure 9.6-6. Town of Brookhaven Hazard Area Extent and Location Map 6





Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	Davis Park Marina - Water Break		
Project Number:	2020-Brookhaven-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Coastal Erosion		
Description of the Problem:	The Davis Park Marina on Fire Island is protected on all four sides of the marina by boardwalks supported by piles and earth. The four boardwalks provide some protection of the 270 slip marina. A 60' long steel water break was installed along the north end of the west boardwalk and extends into the Great South Bay to protect the marina from west wind storms. The north and east sides of the marina have a more substantial level of protection. Unfortunately the storms that come from the west side of marina cause significant damage to the boardwalks, piers, mooring piles and some features landward of the marina. In 2007 the Town hired L.K. McLean Associates to prepare permit drawings for a 150' extension to the existing 60' long breakwater and a wave guard to protect the ferry dock		
Action or Project Intended for Implementation			
Description of the Solution:	Engaged an engineering firm for professional engineering and surveying services in conjunction with the design of the new breakwater system. The breakwater system will consist of steel sheeting and constructed with a CCA timber frame comprised of horizontal wales and vertical piles to resist the maximum anticipated wave forces. Engineer will prepare a bid package and oversee the project.		
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 to the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	Engineered breakwater and wave guard	Estimated Benefits (losses avoided):	Flood and erosion protection of Davis Park Marina
Useful Life:	50 years	Goals Met:	2, 3, 5
Estimated Cost:	\$251,590.00	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 2 years
Estimated Time Required for Project Implementation:	2 years	Potential Funding Sources:	HMGP, BRIC, Town budget
Responsible Organization:	Engineer	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	Problem continues.
	Remove marina	\$1M	Loss of marina, water access
	Install stone breakwater	\$1 million	Costly
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Section 9.6: Town of Brookhaven

Evaluation and Prioritization		
Project Name:	Davis Park Marina - Water Break	
Project Number:	2020-Brookhaven-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project protects Marina from flood and wave damage
Cost-Effectiveness	1	
Technical	1	The project has been designed and is technically feasible
Political	1	There is public support for the project
Legal	0	The project may require permitting
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Coastal Erosion
Timeline	1	
Agency Champion	1	Engineer
Other Community Objectives	1	
Total	11	
Priority (High/Med/Low)	High	





Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	Pipe Stave Hollow Road Raising		
Project Number:	2020-Brookhaven-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	This low-lying section of Town roadway experiences routine Flood due to tidal waters (Mt. Sinai Harbor) and the height of the roadway. The Town has installed stormwater runoff basins up-gradient to intercept the volume of runoff during rain events. Most of the Flood is attributed to high tides and tidal surges that occur when a severe storm occurs. When the road is flooded it prohibits safe access by emergency vehicles in a residential area.		
Action or Project Intended for Implementation			
Description of the Solution:	The Highway Department proposes to raise the roadway 6" to 12" and install shallow drainage structures that will provide additional storage for both stormwater runoff and tidal waters. A stormwater treatment structure is included in the plan to treat the stormwater runoff prior to discharge into Mount Sinai Harbor. The road-raising project will provide safe access for residents and emergency vehicles during and after severe storm events. The new roadway will decrease the amount of maintenance required along the roadway relative to buckled asphalt, debris-filled drainage structures and vehicles driving on private property beyond the limits of the Town right-of-way. Project scope is being redesigned and will consider new projections for sea level rise. Recent property acquisitions will enable the Town to create a project design that is more conducive to climate change predictions.		
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 to the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	6" to 12" elevation and stormwater upgrades	Estimated Benefits (losses avoided):	Flood risk reduced. Recent damages of \$100,000
Useful Life:	50 years	Goals Met:	1, 2
Estimated Cost:	\$2.9 million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 2 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, Municipal bonds
Responsible Organization:	Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Remove flood prone roadway	N/A	Loss of access to neighborhoods, increased emergency risk
	Buyout properties that exist along flood prone roadways	\$Tens of Millions	Costly, loss of large portion of community
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Section 9.6: Town of Brookhaven

Evaluation and Prioritization		
Project Name:	Pipe Stave Hollow Road Raising	
Project Number:	2020-Brookhaven-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect emergency access
Property Protection	1	Project will protect roadway from flood damage
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Town has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm
Timeline	1	Within 2 years
Agency Champion	1	Highway Department
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	



Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	Repetitive Loss Properties		
Project Number:	2020-Brookhaven-008		
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.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct outreach to 30 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 (in accordance with flood ordinance)	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)		
Estimated Cost:	\$3Million	Goals Met:	1, 2
		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:			





Section 9.6: Town of Brookhaven

Action Worksheet		
Project Name:	Repetitive Loss Properties	
Project Number:	2020-Brookhaven-008	
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 Town 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 Town.
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	





Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	Northwest Sector Gas Pumps		
Project Number:	2020-Brookhaven-010		
Risk / Vulnerability			
Hazard(s) of Concern:	All hazards		
Description of the Problem:	Strategically located municipal fueling stations are critical to timely hazard responses. Fueling stations are lacking in the northwest section of the 263 square mile Town.		
Action or Project Intended for Implementation			
Description of the Solution:	A new municipal fueling station is proposed for the Setauket Highway yard facility. Three fuel pumps, including one diesel, will be permitted and installed.		
Is this project related to a Critical Facility?	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"/>	
<small>(If yes, this project must intend to protect to the 500-year flood event or the actual worse case damage scenario, whichever is greater)</small>			
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Continuity of services maintained
Useful Life:	30+ years	Goals Met:	7, 8
Estimated Cost:	\$900,00	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	2 years
Estimated Time Required for Project Implementation:	1.5 years	Potential Funding Sources:	FEMA and State grants
Responsible Organization:	Town of Brookhaven Highway Dept	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	Problem continues.
	Establish contracts with private vendors	TBD	Reliant on private sources
	Purchase gas storage trucks	\$200,000	Requires trucks to be in the area at all times.
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Section 9.6: Town of Brookhaven

Evaluation and Prioritization		
Project Name:	Northwest Sector Gas Pumps	
Project Number:	2020-Brookhaven-010	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects continuity of emergency services
Property Protection	-1	
Cost-Effectiveness	1	
Technical	1	
Political	-1	
Legal	-1	Project requires permitting
Fiscal	0	Project requires funding support
Environmental	0	
Social	1	
Administrative	1	
Multi-Hazard	1	All hazards
Timeline	1	
Agency Champion	1	Highway Department
Other Community Objectives	0	
Total	8	
Priority (High/Med/Low)	Medium	





Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	Salt Shed Upgrades		
Project Number:	2020-Brookhaven-011		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Storm, Winter Storm, Nor'Easter, Groundwater Contamination		
Description of the Problem:	Salt shed capacities are limited in several locations throughout the Town. Numerous salt sheds are undersized or in disrepair.		
Action or Project Intended for Implementation			
Description of the Solution:	The Town seeks to replace and/or expand salt storage capacity at several strategic locations throughout its jurisdiction. Locations in need of improved salt storage capacity include a new salt storage structure at the Mastic Highway yard, and expanded capacity / replacement of existing salt storage structures at the Setauket and Rocky Pont Highway yards.		
Is this project related to a Critical Facility?	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 type="checkbox"/>	No <input checked="" type="checkbox"/>	
(If yes, this project must intend to protect to the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	Structure to meet building code	Estimated Benefits (losses avoided):	Continuity of road clearing services in winter, reduction in runoff
Useful Life:	50 years	Goals Met:	1, 2, 3, 7
Estimated Cost:	\$2,400,000	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:	4 years	Potential Funding Sources:	FEMA HMGP and PDM, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget
Responsible Organization:	Highway Department	Local Planning Mechanisms to be Used in Implementation if any:	Capital Improvements, Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Hire contractor for roadway treatment	Variable based on rate and number of applications per year; assumed at \$600 per mile	Costly, most contractors are too small to service the entire Town
	Contract with other Towns for roadway treatment	Variable based on rate and number of applications per year; assumed at \$600 per mile	Costly
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Section 9.6: Town of Brookhaven

Evaluation and Prioritization		
Project Name:	Salt Shed Upgrades	
Project Number:	2020-Brookhaven-011	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects continuity of services to keep roadways clear for safe travel and emergency response.
Property Protection	0	
Cost-Effectiveness	1	
Technical	1	The project is technically sound
Political	1	There is public support for the project
Legal	1	The Town has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	Project will reduce chance of runoff and groundwater contamination
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Storm, Winter Storm, Nor'Easter, Groundwater Contamination
Timeline	0	Within 5 years
Agency Champion	1	Highway Department
Other Community Objectives	1	Continuity of critical services
Total	11	
Priority (High/Med/Low)	High	





Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	South Shore Road Ends		
Project Number:	2020-Brookhaven-012		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Hurricane, Nor'easter, Severe storm, Shallow groundwater, and Severe winter weather		
Description of the Problem:	Many of the Town's south shore roads are situated in low-lying communities at mean sea level and are regularly impacted by cyclic tides and storm events. Shallow depth to groundwater exacerbates issues associated with hazards and limits functionality of existing infrastructure.		
Action or Project Intended for Implementation			
Description of the Solution:	The Town seeks to assess the most vulnerable road ends within jurisdiction. Plans are currently underway to assess approximately 15 road ends to determine necessary modifications to address drainage and flooding hazards. Engineered plans will be developed for each road end. Projects will be constructed systematically based on a prioritization rubric.		
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 to the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	100-year storm event	Estimated Benefits (losses avoided):	Public safety / Protection of public and private infrastructure
Useful Life:	30+ years	Goals Met:	1, 2
Estimated Cost:	\$6,209,546	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	2 years
Estimated Time Required for Project Implementation:	10+ years	Potential Funding Sources:	HMGP, BRIC, Town budget
Responsible Organization:	Town of Brookhaven Highway Dept / Stormwater Management	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Remove flood prone roadways	N/A	Loss of access to neighborhoods, increased emergency risk
	Buyout properties that exist along flood prone roadways	\$Tens of Millions	Costly, loss of large portion of community
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Section 9.6: Town of Brookhaven

Evaluation and Prioritization		
Project Name:	South Shore Road Ends	
Project Number:	2020-Brookhaven-012	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect emergency access
Property Protection	1	Project will protect roadways from flood and storm damage
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Town has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm
Timeline	1	Within 2 years
Agency Champion	1	Highway Department
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	



Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	Bellhaven Road Mitigation (Brookhaven hamlet)		
Project Number:	2020-Brookhaven-014		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Hurricane, Nor'easter, Shallow groundwater, and Severe storm		
Description of the Problem:	The Bellhaven road network is a low-lying suburban area that is at or near sea level. The road network is bounded by ditched tidal wetlands and a series of canals. The road end is fully exposed to tidal / wave action.		
Action or Project Intended for Implementation			
Description of the Solution:	This project will protect public and private infrastructure from future climate risk and extreme storm events. This will be achieved through a series of best management practices that incorporate green infrastructure, water quality units, increased retention and disconnection of direct discharges.		
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 to the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	Climate change risk factor projections	Estimated Benefits (losses avoided):	Public and private infrastructure upgrades, protection from damages, reduction in flooding
Useful Life:	30+ years	Goals Met:	2
Estimated Cost:	\$1,375,000	Mitigation Action Type:	Structure and Infrastructure Project & Natural Systems Protection
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	3 years
Estimated Time Required for Project Implementation:	2.5 years	Potential Funding Sources:	HMGP, BRIC, Town budget
Responsible Organization:	Town of Brookhaven Highway Dept / Stormwater Management	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Remove flood prone roadway	N/A	Loss of access to neighborhoods, increased emergency risk
	Buyout properties that exist along flood prone roadways	\$Tens of Millions	Costly, loss of large portion of community
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Section 9.6: Town of Brookhaven

Evaluation and Prioritization		
Project Name:	Bellhaven Road Mitigation (Brookhaven hamlet)	
Project Number:	2020-Brookhaven-014	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect emergency access
Property Protection	1	Project will protect roadway from flood and storm damage
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Town has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Hurricane, Nor'easter, Shallow groundwater, and Severe storm
Timeline	0	3 years
Agency Champion	1	Highway Department
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	





Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	Highway Department Communications Upgrade		
Project Number:	2020-Brookhaven-015		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane, Nor'easter, Severe Storm, Severe Winter Weather and Wildfire		
Description of the Problem:	Suffolk County plans to upgrade their communication system to a 700mHz system. Once this upgrade is completed, the Town will require communication upgrades to utilize the County's system.		
Action or Project Intended for Implementation			
Description of the Solution:	The Town will purchase GPS modules that allow the Town's existing communication system to integrate with the County's upgraded 700mHz system. This communication system is critical for emergency response to storm events.		
Is this project related to a Critical Facility?	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 type="checkbox"/>	No <input checked="" type="checkbox"/>	
<small>(If yes, this project must intend to protect to the 500-year flood event or the actual worse case damage scenario, whichever is greater)</small>			
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Improved emergency response
Useful Life:	10 years	Goals Met:	7
Estimated Cost:	Medium	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Med	Desired Timeframe for Implementation:	1 year
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	FEMA and State grants
Responsible Organization:	Town of Brookhaven Highway Dept	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	Problem continues.
	Continue to update current system	Low	Less effective
	Satellite phones	Medium	More costly, less effective
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Section 9.6: Town of Brookhaven

Evaluation and Prioritization		
Project Name:	Highway Department Communications Upgrade	
Project Number:	2020-Brookhaven-015	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Increases emergency capabilities
Property Protection	0	
Cost-Effectiveness	0	
Technical	1	The project is technically feasible
Political	0	
Legal	1	The Town has the legal authority to complete the project
Fiscal	-1	Project requires funding support
Environmental	0	
Social	0	
Administrative	1	
Multi-Hazard	1	Hurricane, Nor'easter, Severe Storm, Severe Winter Weather and Wildfire
Timeline	1	1 year
Agency Champion	1	Highway Department
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	Med	





Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	Dyke Road (East Setauket) – road raising		
Project Number:	2020-Brookhaven-016		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Storm		
Description of the Problem:	Dyke Road is a narrow low-lying road that is bounded by ditched tidal wetlands. It is the singular access road to the Strong's Neck community.		
Action or Project Intended for Implementation			
Description of the Solution:	Approximately 1,100 linear feet of roadbed will be raised and mitigated to reduce tidally influenced and storm surge flooding. The roadbed will be raised approximately 12-18 inches above existing grade.		
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"/>	
<small>(If yes, this project must intend to protect to the 500-year flood event or the actual worse case damage scenario, whichever is greater)</small>			
Level of Protection:	Climate change risk factor projections	Estimated Benefits (losses avoided):	Public infrastructure / access to private property
Useful Life:	30+ years	Goals Met:	1, 2
Estimated Cost:	\$250,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	4 years
Estimated Time Required for Project Implementation:	8 months	Potential Funding Sources:	HMGP, BRIC, Town budget
Responsible Organization:	Town of Brookhaven Highway Dept	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Remove flood prone roadway	N/A	Loss of access to neighborhoods, increased emergency risk
	Buyout properties that exist along flood prone roadways	\$Tens of Millions	Costly, loss of large portion of community
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Section 9.6: Town of Brookhaven

Evaluation and Prioritization		
Project Name:	Dyke Road (East Setauket) – road raising	
Project Number:	2020-Brookhaven-03	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect emergency access
Property Protection	1	Project will protect roadway from flood damage
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Town has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Storm
Timeline	1	Within 2 years
Agency Champion	1	Highway Department
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	





Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	Storm Response Equipment		
Project Number:	2020-Brookhaven-017		
Risk / Vulnerability			
Hazard(s) of Concern:	Hurricane, Nor'easter, Severe Storm, Severe Winter Storm		
Description of the Problem:	Due to the size of the Town and availability of response equipment, response time and access to equipment is hampered during hazardous weather events. Brookhaven Town has over 263 square miles of land within its jurisdiction and is responsible for 3,500 lane miles of roadway. Access to critical storm response equipment is vital to protect life and property.		
Action or Project Intended for Implementation			
Description of the Solution:	The Town seeks to acquire additional equipment to support storm event preparedness and response. Critical equipment needs include a Rover X pipeline investigational camera system, a Cat 336 Excavator with grapple bucket and a Street Sweeper with a 5yard hopper on a 3700lb chassis.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
(If yes, this project must intend to protect to the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Public accessibility
Useful Life:	20 years	Goals Met:	7
Estimated Cost:	\$810,000	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	4 years
Estimated Time Required for Project Implementation:	4 years	Potential Funding Sources:	HMGP, Town budget
Responsible Organization:	Town of Brookhaven Highway Dept	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	Problem continues.
	Contract out for equipment	High	Costly over time.
	Rent equipment	High	Costly over time.
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Section 9.6: Town of Brookhaven

Evaluation and Prioritization		
Project Name:	Storm Response Equipment	
Project Number:	2020-Brookhaven-017	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will increase Highway Department ability to protect property
Cost-Effectiveness	1	
Technical	0	
Political	0	
Legal	1	The Town has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	0	
Administrative	1	
Multi-Hazard	1	Hurricane, Nor'easter, Severe Storm, Severe Winter Storm
Timeline	1	
Agency Champion	1	Highway Department
Other Community Objectives	0	
Total	9	
Priority (High/Med/Low)	High	





Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	Fire Island Boardwalks and Public Access Facilities		
Project Number:	2020-Brookhaven-018		
Risk / Vulnerability			
Hazard(s) of Concern:	Coastal Erosion, Hurricane, Nor'Easter, and Severe Storm		
Description of the Problem:	Boardwalks, concrete walk overs and stairways on Fire Island are highly vulnerable to storm events. Boardwalks, concrete walkways and staircases are regularly damaged during hazardous storm events.		
Action or Project Intended for Implementation			
Description of the Solution:	Concrete walkways, staircases and 51,874 feet of wooded boardwalks will be replaced to FEMA building standards. Communities in need of structural upgrades include Pines, Davis Park, Cherry Grove and Water Island.		
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"/>	
<small>(If yes, this project must intend to protect to the 500-year flood event or the actual worse case damage scenario, whichever is greater)</small>			
Level of Protection:	Climate change risk factor projections	Estimated Benefits (losses avoided):	Public infrastructure / access protection from storm damages
Useful Life:	30+ years	Goals Met:	2
Estimated Cost:	\$9,753,137	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	Medium	Desired Timeframe for Implementation:	5 years
Estimated Time Required for Project Implementation:	3 years	Potential Funding Sources:	HMGP, BRIC, Town budget
Responsible Organization:	Town of Brookhaven Highway Dept	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	Problem continues.
	Remove boardwalks	High	Loss of access
	Replace boardwalks with rollout boardwalks which can be removed prior to storms	High	Would require removal and storage, lack of space and resources to implement.
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Section 9.6: Town of Brookhaven

Evaluation and Prioritization		
Project Name:	Fire Island Boardwalks and Public Access Facilities	
Project Number:	2020-Brookhaven-018	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect boardwalks from future damages
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	-1	
Legal	0	May require permitting
Fiscal	-1	Project requires funding support
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	Coastal Erosion, Hurricane, Nor'Easter, and Severe Storm
Timeline	0	5 years
Agency Champion	1	Highway Department
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	Med	





Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	Laura Lee Drive Mitigation (Center Moriches)		
Project Number:	2020-Brookhaven-019		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Hurricane, Nor'easter, Severe Storm, Shallow Groundwater, Severe Winter Storm		
Description of the Problem:	Laura Lee Drive is a low-lying road network situated at mean sea level and regularly impacted by cyclic tides and storms. The western-most extent of the road terminates with a boat ramp that is inundated during every high tide. The road frontage bounds a small public beach that is over washed during extreme storm events. The adjoining road network regularly floods during modest storm events. The entire project is in FEMA Zone AE.		
Action or Project Intended for Implementation			
Description of the Solution:	This project will aid in flood mitigation and protect surface waters from urban runoff. Project goals will be achieved through a series of mitigation measures that include creating several bio-retention areas at key locations, modifying the road profile and installing additional drainage infrastructure.		
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 to the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	100-year storm event /climate change risk factor projections	Estimated Benefits (losses avoided):	Public and private infrastructure / access to private property protected
Useful Life:	30+ years	Goals Met:	2
Estimated Cost:	\$2,475,000	Mitigation Action Type:	Structure and Infrastructure Project & Natural Systems Protection
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	3 years
Estimated Time Required for Project Implementation:	3 years	Potential Funding Sources:	HMGP, BRIC, Town budget
Responsible Organization:	Town of Brookhaven Highway Dept / Stormwater Management	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Remove flood prone roadway	N/A	Loss of access to neighborhoods, increased emergency risk
	Buyout properties that exist along flood prone roadways	\$Tens of Millions	Costly, loss of large portion of community
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Section 9.6: Town of Brookhaven

Evaluation and Prioritization		
Project Name:	Laura Lee Drive Mitigation (Center Moriches)	
Project Number:	2020-Brookhaven-019	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect emergency access
Property Protection	1	Project will protect roadway from flood damage
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Town has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	Restores natural drainage
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Hurricane, Nor'easter, Severe Storm, Shallow Groundwater, Severe Winter Storm
Timeline	0	3 years
Agency Champion	1	Highway Department
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	





Section 9.6: Town of Brookhaven

Action Worksheet			
Project Name:	Shoreline Drone Aerial Imagery		
Project Number:	2020-Brookhaven-020		
Risk / Vulnerability			
Hazard(s) of Concern:	Coastal erosion, Hurricane, Nor'easter, and Severe winter storms		
Description of the Problem:	Brookhaven is a coastal Township with approximately 153 miles of shoreline. Shoreline profiles on the north and south shores are continuously altered due to climate change and storm events. Changes in shoreline conditions impact regulatory policies and the need for mitigation measures on private and public property.		
Action or Project Intended for Implementation			
Description of the Solution:	Drone aerial photography will be used to capture shoreline conditions along the entire coastal region every three years to document trends and conditions of shoreline features. This will supplement work proposed by the Suffolk County Soil and Water District to monitor shoreline erosion.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Is this project related to a Critical Facility located within the 100-year floodplain?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
(If yes, this project must intend to protect to the 500-year flood event or the actual worse case damage scenario, whichever is greater)			
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Public safety
Useful Life:	20+ years	Goals Met:	1,2 & 6
Estimated Cost:	\$23,000 (per annual flight)	Mitigation Action Type:	LPR & NSP
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	1 year
Estimated Time Required for Project Implementation:	Once every three years	Potential Funding Sources:	HMGP, Town budget
Responsible Organization:	Town of Brookhaven Highway Dept and Public Safety	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation, Shoreline Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Rely on SWCD action	\$0	May not be as in depth as desired by the Town
	On foot surveys	\$40,000	Not as precise
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			





Section 9.6: Town of Brookhaven

Evaluation and Prioritization		
Project Name:	Shoreline Drone Aerial Imagery	
Project Number:	2020-Brookahven-020	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	-1	
Legal	0	
Fiscal	1	Requires funding support
Environmental	1	
Social	0	
Administrative	1	
Multi-Hazard	1	Coastal Erosion, Hurricane, Nor'easter, and Severe Winter Storms
Timeline	1	
Agency Champion	1	Town of Brookhaven Highway Dept and Public Safety
Other Community Objectives	0	
Total	9	
Priority (High/Med/Low)	High	

