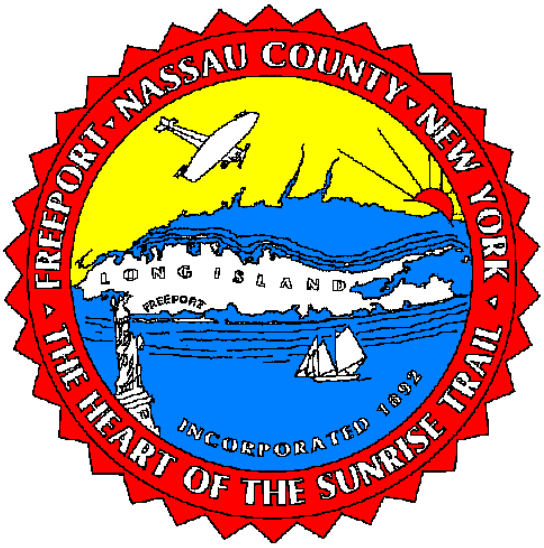

Incorporated Village of Freeport, Nassau County, New York

2020 ALL HAZARD MITIGATION PLAN

Mayor Robert T. Kennedy

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VILLAGE OF FREEPORT
ALL HAZARD MITIGATION PLAN

1 Introduction

1.1 EXECUTIVE SUMMARY

The purpose of hazard mitigation is the reduction or elimination of long-term risk to population, structures, and systems/infrastructure from hazards. The Village of Freeport developed this 2020 Local Hazard Mitigation Plan Update (Update) of its 2014 Hazard Mitigation Plan to reduce future losses to the community resulting from natural hazards. The plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 (Public Law 106-390) and the implementing regulations set forth by the Interim Final Rule published in the Federal Register on February 26, 2002, (44 CFR §201.6) and finalized on October 31, 2007 (hereafter, these requirements and regulations will be referred to collectively as DMA 2000). The Plan Update was also written to ensure that the Village is eligible for the Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance Grant Programs.

The planning process followed a methodology prescribed by FEMA, which began with the formation of a Hazard Mitigation Planning Committee (Planning Committee or Committee). The Committee was and is comprised of key stakeholders from the Village of Freeport and other agencies in the community. The Planning Committee reviewed, revised, and updated all data contained in the previous plan and used this updated information to develop all hazard profiles and risk assessments. The Planning Committee conducted a risk assessment that identified and profiled hazards that pose a risk to the Village, assessed the Village's vulnerability to these hazards, and examined the capabilities in place to mitigate them. The Village is vulnerable to several hazards that are identified, profiled, and analyzed in this plan. Hurricanes and flooding are among the hazards that have a significant impact on the Village.

Based upon the risk assessment, the Planning Committee identified goals for reducing risk from hazards. Goals Developed by the Planning Committee are listed below:

Goal 1: Minimize future damage from hazards.
Goal 2: Use existing programs and internal governmental systems to enhance mitigation opportunities for the Village of Freeport.
Goal 3: Enhance mitigation opportunities through the use of Geospatial Information Systems (GIS) and computers.

To attain the identified goals, the plan recommends the mitigation actions detailed in the final section of this 2020 Plan Update. The Planning Committee developed an implementation plan for each action that identifies priority level, background information, implementation methodology, responsible agency, timeline, cost estimate, potential funding sources, and more. These additional details are also provided in the mitigation section of the plan.

1.2 PURPOSE

The Village of Freeport prepared this 2020 Hazard Mitigation Plan Update to guide hazard mitigation planning. Mitigation planning will insure better protection of population, structures and systems/infrastructure from the effects of natural hazard events. The 2020 Update serves as the plan update of the Hazard Mitigation Plan that was developed and approved by FEMA in 2014.

This plan demonstrates the Village of Freeport's commitment to reducing risks from hazards and serves as a tool to help decision-makers direct mitigation activities and resources. This plan was also developed to make Freeport eligible for certain federal grant programs; specifically, the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Assistance (HMA) grants such as the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program.

1.3 BACKGROUND AND SCOPE

Natural disasters take peoples' lives and injure thousands on an annual basis. Taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. These funds only partially reflect the true cost of disasters. The amounts do not take into account expenses to insurance companies and nongovernmental organizations that are not reimbursed by tax dollars. Many natural disasters are predictable, and much of the damage caused by these events can be alleviated or even eliminated.

Hazard mitigation is defined by FEMA as "any sustained action taken to reduce or eliminate long-term risk to human life and property from a hazard event." A three-year, congressionally mandated independent study to assess future savings from mitigation activities provides evidence that mitigation activities are highly cost-effective. The study found that on average, each dollar spent on mitigation saves society an average of four dollars in avoided future losses. In addition, mitigation helps to save lives and prevent injuries (National Institute of Building Science Multi-Hazard Mitigation Council 2005).

Hazard mitigation planning is the process through which hazards that threaten communities are identified, likely impacts of those hazards are determined, mitigation goals are set, and appropriate strategies are determined, prioritized, and implemented. This plan documents the hazard mitigation planning process undertaken by the Village of Freeport's Planning Committee. It identifies relevant hazards and vulnerabilities in the planning area and sets forth a mitigation strategy to decrease vulnerability and increase resiliency and sustainability in Freeport.

The Freeport 2020 Update was prepared pursuant to the requirements of the DMA 2000. DMA 2000 emphasized the need for mitigation plan development for the establishment of more coordinated mitigation planning and implementation efforts. It established the requirements that local hazard mitigation plans must meet in order for a local jurisdiction to be eligible for certain federal disaster assistance and hazard mitigation funding under the Robert T. Stafford Disaster Relief and Emergency Act (Public Law 93-288). FEMA's Local Mitigation Plan Review Guide of October 1, 2011 was also referenced.

Information in this Update will be used to help guide and coordinate mitigation activities and decisions for Freeport land use policy in the future. Proactive mitigation planning will help reduce the cost of disaster response and recovery to Freeport and its residents by protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruptions. The planning area has been affected by hazards in the past and is therefore committed to reducing future impacts from hazard events and becoming eligible for mitigation-related federal funding.

1.4 HISTORY OF HAZARD MITIGATION PLANNING IN FREEPORT

In 1996 the Village of Freeport started the process of Hazard Mitigation Plan development. Freeport's proactive approach to disaster prevention and mitigation had its beginning at this time. The Village was able to obtain the assistance of an Urban and Regional Planner from the New York State Emergency Management Office (SEMO). Freeport representatives met with him and the Nassau County Emergency Manager. This started the process of taking a hard look at the natural hazards facing Freeport. At this meeting, it was recommended that a Hazard Mitigation Planning Committee be established. The Village Board of Trustees passed a resolution creating the Planning Committee. The purpose of the Committee was to update the community's 1993 Floodplain Management Repetitive Loss Plan to include hazard mitigation. The Committee was also to seek pre-disaster funding and to set up incentive programs to mitigate hazards. The Committee recognized that though flooding was concentrated in south Freeport, a major flood would devastate the whole community.

Public input was solicited for the 1996 effort through the Village Outreach Program which included a survey and request for photos that illustrated how flooding had impacted citizens. In addition to the survey, interviews were conducted by phone and in person. On January 13, 1997, the Village Board of Trustees approved a Directive to schedule a public hearing for the adoption of this plan. A Mitigation Plan was adopted on February 3, 1997.

In September 2002, the Village of Freeport requested financial and technical assistance in the update of the Village's Floodplain Management and Hazard Mitigation Plan, adopted and approved by FEMA in 1997. The scope of the update was to include and identify all hazards that pose a threat to the community. In October of 2002, the Village received approval from the New York State Emergency Management Office for financial and technical assistance.

In January of 2003, the Mayor of the Incorporated Village of Freeport appointed new members to the Hazard Mitigation Planning Committee. The task of the Committee was to update the Village's 1997 Hazard Mitigation Plan. The Committee was comprised of government officials; elected officials; representatives from public safety departments, utilities, the school district, and

the local business community; and community leaders. In addition to the committee members, several other state, county, and private-sector employees were included in meetings to provide technical resources. The Plan was adopted by the Freeport Board of Trustees on April 18, 2005, and was approved by FEMA and SEMO on April 27, 2005.

In August of 2010, the Mayor of the Incorporated Village of Freeport appointed new members to the Hazard Mitigation Planning Committee. The task of the Committee was to update the Village's 2005 Hazard Mitigation Plan. The Committee was comprised of government officials; elected officials; representatives from public safety departments, utilities, the school district, and the local business community; and community leaders. In addition to the committee members, several other state, county, and private-sector employees were included in meetings to provide technical resources. The Plan was adopted by the Freeport Board of Trustees, FEMA and SEMO in 2014.

The Committee met every other week from September 2 to November 18, 2010. The planning process began with an informational meeting on September 2, 2010. The purpose of this meeting was to organize the Planning Committee and provide overview information about the planning process to be followed.

During subsequent meetings the Planning Committee reviewed each section of the plan to identify those items requiring an update. The meetings dates were: September 2, September 16, September 30, October 14, October 20, November 4, November 10, and November 18, 2010. Each hazard in the 2005 Plan was analyzed for relevancy for the Plan Update. The Planning Committee determined that a more streamlined list of hazards would be a better use of already scarce Village resources. To this end, each hazard profile was considered in accordance with the specifications of FEMA's Plan Guidance. Some hazards were eliminated from further consideration, and some were combined, pursuant to FEMA technical assistance offered in 2012.

Also pursuant to FEMA technical assistance offered in 2012, the Planning Committee determined that a reorganization of the hazard profiles to more closely align with specifications in FEMA Guidance would be appropriate. The new profiles would include information under the following headings:

- Description of Hazard
- Geographical Location/Extent
- Previous Occurrences
- Probability
- Vulnerability/Impact

During the 2010 meetings, the Planning Committee found that its hazard ranking had changed since 2005 due to subsequent hazard events and disaster declarations that occurred since then. FEMA technical assistance offered in 2012 resulted in development of a new and less complex ranking methodology. These changes are reflected in the Hazard Risk Analysis section of the plan.

During the meetings of September 30 to November 18, 2010, the Planning Committee reviewed each of the 2005 Plan's proposed actions. Progress on those actions was analyzed. Reasons for progress or lack of progress were discussed. Some actions were deleted, and some were added. FEMA technical assistance in 2012 resulted in reorganization of the 2005 actions into a format that more closely aligns with FEMA Guidance. The details of these activities are chronicled in the Strategy Chapter of the Plan Update.

Prior to the meeting of December 16, 2010, the Planning Committee and the Board of Trustees received a draft of the Plan. At the meeting of December 16, 2010, the Committee discussed final changes and comments received. Comments were evaluated for content and were either noted and/or included in the final version of the plan.

At a Planning Committee meeting held on April 24, 2013, the Planning Committee reviewed and discussed the plan reorganization that resulted from FEMA technical assistance offered in December 2012 and January 2013. It was the decision of the Planning Committee to revise the plan in order to comply with DMA 2000. Meetings were held from May 2013 to August 2013.

Input from interested stakeholders, such as the Town of Hempstead, Nassau County Soil and Water Conservation District, Nassau County Department of Public Works, New York Sea Grant Extension Program, New York State Department of Environmental Conservation, New York State Division of Military and Naval Affairs, New York State Office of Parks, Recreation and Historic Preservation and New York State Department of State was solicited.

Neighboring jurisdictions, local agencies and businesses, local community planning and school district representatives, and volunteer agencies was actively solicited using a variety of methodologies. For example, in October 2010 and in October 2013 a Bilingual (Spanish and English) Notice and request for written comments was mailed to all 43,016 residents and all businesses located within the Village. Included in the mailing was a pamphlet titled Hurricane and Flooding Safety Tips, information on the early warning system, a storm surge map, and emergency phone numbers. This information was provided so that the recipients understood the hazards that our community faces and the importance of the Hazard Mitigation Plan. A copy of the 2014 draft plan and a request for comments was posted on the Village's website in October 2013. Notice of a Public Hearing soliciting public input was published in local papers and on the Village's website. A public hearing was held on October 28, 2013. Copies of the 2014 draft plan were distributed at the public hearing. A copy of the draft plan was also provided to the New York Rising Community Reconstruction Steering Committee, New York State Department of State, Freeport School District, Board of Trustees and other stakeholders such as S.P.L.A.S.H and United Cerebral Palsy Association of Nassau County. Results from the meeting and responses to the request for comments are outlined below. Citizens are concerned about the:

- Potential for a chemical/hazardous materials spill on major roadways such as Sunrise Highway and Merrick Road
- Potential for a fire or explosion in a building that stores chemical/hazardous materials in Industrial Park
- Potential for a freight train derailment transporting chemical/hazardous materials
- Terrorism

- Power outages caused by high winds and the downing of trees
- Damage to Power Plant II as a result of hazard events
- Flooding of South Long Beach Avenue south of Suffolk Street
- Evacuation of homebound residents.
- Need for an evacuation center located in the Village of Freeport
- Need for the relocation of the Dept. of Public Works

The Plan was adopted by the Freeport Board of Trustees, FEMA and SEMO in 2014.

1.5 PLANNING PROCESS

Village of Freeport administration and elected officials determined that the Freeport Emergency Management Office would take the lead role in coordinating the development of Freeport's 2020 Plan Update. The role of the Freeport Emergency Management Office in the plan development process included the following activities:

- Assist in establishing the Planning Committee as defined by the DMA 2000
- Ensure the developed plan meets the DMA 2000 requirements as established by federal regulations and follows FEMA's most recent planning guidance
- Facilitate the entire planning process
- Identify the data that Planning Committee participants could provide, conduct needed research, and provide documentation
- Assist in facilitating the public input process
- Produce the draft and final plan documents and
- Coordinate the State Office of Emergency Management and FEMA plan reviews

Members of the 2020 Plan Update Planning Committee included the following individuals:

Jerry Cardoso, Freeport Water Department, Superintendent
Howard Colton, Freeport Counsel's Office, Village Attorney
Ronald J. Ellerbe, Village Board of Trustee and Freeport School Board Member
Robert Fisenne, Freeport Public Works Department, Superintendent
Dante Grover, Grover's High and Dry Marina, Business Owner
Rick Holdener, Freeport Emergency Management Office, Director/EMO Coordinator
Ray Horton, Freeport Police Department, Chief of Police
Robert T. Kennedy, Mayor
Vilma Lancaster – Schools & Churches
Al Livingston, Freeport Electric Department, Superintendent
Joseph Madigan, Freeport Building Dept, Superintendent and Floodplain Administrator
Ray Maguire, Freeport Fire Department, Executive Director
Sergio Mauras – Freeport Building Department
Shawn O'Sullivan - Freeport Police Department
Frank Prisciandaro – IT

Don Rowan, Freeport Emergency Management Team Member & Freeport Fire Dept
Michael Smith - Freeport Police Department
Jonathan Smith – Building Department
Nora Sudars, Freeport Public Works Department, Grants Administrator
Rob Weltner, SPLASH[1], President
William H. White, Jr., White & Re Insurance, Business Owner

The Planning Committee was tasked with the following duties:

- Develop partnerships with community members, agencies and organizations to contribute to data collection activities, and contact state and federal agencies as additional resources for information
- Provide opportunities for the public to participate in the plan development process
- Develop methods for gaining input from the public included informal solicitation by conversations, emails, social media, and telephone, as well as Village-wide mailings, public meetings, and public hearings
- Develop a list of potential hazard events impacting the planning area
- Profile hazards using information developed in the previous steps to determine the risks each hazard presented to the community
- Prepare a hazard analysis report
- Inventory community assets by developing a list of critical facilities
- For each hazard, determine if any critical facilities are located within the hazard areas
- For each hazard, determine the potential losses to the community and critical facilities, with loss estimation to include structural, contents and loss of function components.
- Review existing policies, authorities, and programs for use in mitigation strategy
- Complete the risk assessment and review of information gathered.
- Develop a mitigation strategy for the community
- Identify specific mitigation measures/actions that are feasible and cost-effective, and assign entity responsible for implementation and administration of measures/actions
- Conduct outreach to solicit public participation and comment on the updated plan through a variety of means, including posting the completed draft Plan Update on the Village website, Social Media, making available a copy at Village Hall, and advertising scheduled public meetings
- Develop a schedule for reviewing and updating the plan on a regular basis
- Ensure the plan is formally adopted by the local governing authority

The Committee had meetings every other week from January 22 to March 18th 2020 when the Coronavirus forced a shut down of all face to face meetings. The planning process began with an informational meeting on January 22, 2020. The purpose of this meeting was to organize the

[1] Operation SPLASH (Stop Polluting Littering and Save Harbors) is a volunteer non-profit organization started in 1990 to provide a solution to the growing problem of waterfront pollution through public awareness and individual participation.

Planning Committee and provide overview information about the planning process to be followed.

During subsequent meetings the Planning Committee reviewed each section of the plan to identify those items requiring an update. The meetings dates were: February 12, March 4 and March 18,. The Updated plan was proceeding in a very timely manner with great results when the Coronavirus pandemic struck. From March 22nd on we needed to switch to conference calls and emails to continue our work due to social distancing requirements.

On May 1, 2020 the committee had a conference call with Susan Parks from Nassau County OEM and Shannon Clarke from NYS DHES (New York State Division of Homeland Security and Emergency Services) about the possibility of extending the deadline for updating our Hazard Mitigation Plan due to COVID 19. Unfortunately, we were informed we could not and needed to get the plan updated ASAP.

Don Rowan and Nora Sudars came up with a plan to do this while we were all still social distancing. Don would go through the rest of the plan not updated to date and submit a list of information needed to the various department heads. They were requested to respond in a timely manner with needed information. Don would personally reach out and speak directly to members of the committee that he needed information from.

While this was going on Frank Prisciandaro from our IT department would set up an online survey. Susan Park sent us examples other municipalities used as a template. The survey would be sent out on numerous Social Media outlets like Freeport's Facebook and website pages. We needed to gain the input from the public in order to finalize our draft plan.

Members of the committee would be getting drafts of the updated plan emailed to them with all changes in red text to review as we proceed.

On May 8th the Villages IT department started working on a template for a resident survey to be posted on social media. Updates to the survey were made on May 15th, 28th and June 2nd because of input from committee members.

On May 11th all department heads were emailed with requested information and the survey form draft was sent out. Survey can be viewed at:
https://www.surveymonkey.com/r/FreeportHMP

The full resident survey is included at the end of this plan.

Between May 11th and June 1st numerous emails and phone calls were made between members gathering information that was needed for the plan while they were quarantined at home.

On June 5th the resident survey went live on the Freeport Emergency Management facebook page along with the Fire Departments. On June 8th it went live on the Village of Freeports Facebook and websites.

Each hazard in the 2014 Plan was analyzed for relevancy in the Plan Update. During these conference calls the Planning Committee reviewed each of the 2014 Plan's proposed actions. Progress on those actions was analyzed. Reasons for progress or lack of progress were discussed.

Pursuant to FEMA technical assistance offered in 2012, the Planning Committee determined that a reorganization of the hazard profiles to more closely align with specifications in FEMA Guidance would be appropriate. The new profiles would include information under the following headings:

- Description of Hazard
- Geographical Location/Extent
- Previous Occurrences
- Probability
- Vulnerability/Impact

During the 2020 meetings, the Planning Committee found that its hazard ranking had changed since 2014 due to subsequent hazard events and disaster declarations that occurred since then. Pandemic which had been removed in years past was added back into our plan. FEMA technical assistance offered in 2012 resulted in development of a new and less complex ranking methodology. These changes are reflected in the Hazard Risk Analysis section of the plan.

On June 11th, the Planning Committee received a final draft of the Plan. At the meeting the Committee discussed final changes and comments received. The resident survey that was posted on social media was discussed, comments were evaluated for content and were either noted and/or included in the final version of the plan.

Input from interested stakeholders, such as the Town of Hempstead, Nassau County Soil and Water Conservation District, Nassau County Department of Public Works, New York Sea Grant Extension Program, New York State Department of Environmental Conservation, New York State Division of Military and Naval Affairs, New York State Office of Parks, Recreation and Historic Preservation and New York State Department of State was solicited.

Neighboring jurisdictions, local agencies and businesses, local community planning and school district representatives, and volunteer agencies was actively solicited using a variety of methodologies.

A request for comments was posted on the Village's website and on the Freeport Emergency Management and the Freeport Fire Dept. Facebook pages on June 5, 2020. A copy of the draft plan was provided to New York State, Nassau County, Freeport School District, Freeport Police Dept., Freeport Fire Dept. Freeport Utilities, Board of Trustees and other stakeholders such as S.P.L.A.S.H and the Freeport Chamber of Commerce. The survey remained open until August 15, 2020. Results from the survey and responses to the request for comments are outlined below. Citizens are concerned about the:

- From the feedback from our resident survey, the number 1 concern to residents currently is a Pandemic. With Freeport experiencing so many COVID-19 cases, businesses closed and residents in quarantine, this was expected.
- Potential for a chemical/hazardous materials spill on major roadways such as Sunrise Highway and Merrick Road
- Potential for a fire or explosion in a building that stores chemical/hazardous materials in Industrial Park
- Power outages caused by high winds and the downing of trees
- Damage to Power Plant II as a result of hazard events
- Flooding of South Long Beach Avenue south of Suffolk Street
- Evacuation of homebound residents.
- Need for an evacuation center located in the Village of Freeport
- Need for the relocation of the Dept. of Public Works

This Plan reflects the input of the initial 1996 Planning Committee, the 2005 Committee, the 2014 Committee, the 2020 Committee, the general public, and other state and federal agencies.

1.6 COMMUNITY PROFILE, LOCATION AND SETTING

The Incorporated Village of Freeport is a coastal community bordered on the south by the Great South Bay. The Village is located on the south shore of Long Island in western Nassau County, New York. The Village is known as "The Boating and Fishing Capital of the East". Freeport, which was incorporated in 1892, occupies approximately five (5) square miles and has approximately 10.4 miles of canals and waterways. It is approximately 30 miles east of Manhattan.

The land use breakdown for the community is as follows:

Residential –	Low density	571 acres
	Medium density	0 acres
	Intermediate density	2 acres
	High density	562 acres
Commercial –		5 acres
Marine Commercial –		40 acres
Industrial –		35 acres
Transportation, Utility, Communications –		13 acres
Institutional –		35 acres
Recreation –		297 acres
Agricultural –		0 acres
Vacant –		14 acres

There are 292 acres of open space located in the floodplain.

1.6.1 Environmental Significance of the Village

Despite the Village's urban and suburban character, the area is rich in ecological features and natural resources. The Village is part of the Long Island South Shore Estuary. The Estuary is New York State's largest with 17,000 acres of undeveloped islands. These numerous islands are dominated by tidal wetlands and interconnecting channels between barrier islands and the Long Island mainland. It contains the greatest diversity of habitat in New York State. Commercially and recreationally important shellfish species harvested in the waters surrounding the Village including hard clam, soft shell clam, and scallop. Large concentrations of waterfowl can be found in the wetland around the Village during the fall and winter season. The federally-endangered peregrine falcon may be found in the area during its fall migration.

1.6.2 Economic Significance of the Village

The Village of Freeport holds a unique role as the largest center of water-dependent businesses and facilities in the South Shore Estuary Reserve. It is the only large, diverse working waterfront in Nassau County. Freeport's heritage as a regional maritime center spans three centuries. It is a defining element of the community's identity as one of Long Island's historic residential, commercial and recreational centers. Freeport is one of the few places remaining in the greater New York City and New Jersey areas, where small maritime industries can locate. Freeport's Woodcleft Avenue, called the Nautical Mile, is a well-known destination for tourists to enjoy the atmosphere of a working waterfront. It has fish markets, party/fishing boats, commercial fishing operations, boat sales and moorings, restaurants, and other related activities. Woodcleft Avenue has an active seaport museum reflecting a rich maritime history that also provides educational programs. The museum also hosts an annual Summer Festival that draws 200,000 people. Many of the residents of Freeport are oriented to a water-related lifestyle. They own boats or other watercraft which they moor at one of the 30+ marinas, or along the bulkheaded waterways behind residential properties. Others enjoy fishing from party boats or waterfront parks and piers. Recently Freeport has become a major destination for high end car dealerships with Cadillac, Jaguar, Porsche, BMW, Jeep, Mini, Chevrolet and Lexus all having built new showrooms along Sunrise Highway.

1.6.3 General Demographic Characteristics (2010 Census)

The population of the Village is approximately 43,016 (2011 Census) with a diverse cultural background. Twelve percent of the population is over 65 years of age and 12.7 percent of the population's income is below the poverty level (compared to the State of New York as a whole with 14.5 percent). Median household income is (2007-2011) $71,041. The median age is 38.0 years. Average household size is 3.05 people per household. The total school enrollment at the end of 2011 was 10,581, with 6.7 percent in nursery school/preschool, 3.6 percent in kindergarten, 45.6 percent in elementary school (grades 1-8), 18.5 percent in high school (grades 9-12), and 25.6 percent in college or graduate school. The Village of Freeport is comprised of three School districts; Freeport, Baldwin and Roosevelt.

The community has a high Hispanic/Latino population, comprising 41.7 percent of the total population, as compared to New York State with a figure of 17.1 percent.

1.6.4 Housing Characteristics (2010 Census)

There are 14,589 housing units in Freeport, according to the 2010 census, with 66.8 percent owner-occupied and 36.9 percent rented. 61.2 percent are one (1) unit detached homes, 1.8

percent are one (1) unit attached homes, 6.5 percent are located in 2 to 4 unit buildings, 2.3 percent are located in 5 to 9 unit buildings, 1.9 percent of the population is located in 10 to 19 unit buildings and 23.0 percent are located in 20 or more unit buildings. Of the housing units in Freeport, 26.1 percent of the housing units were built prior to 1940, 57.8 percent were built from 1940 to 1969, and 16.1 percent built from 1970 to 2000. In 2019, the median cost of a house was $420,377.00.

The assessed value based on the 2020 tax roll is $70,136,865. This number includes tax exempt properties.

1.7 CRITICAL FACILITIES, INFRASTRUCTURE AND AREAS OF CONCERN

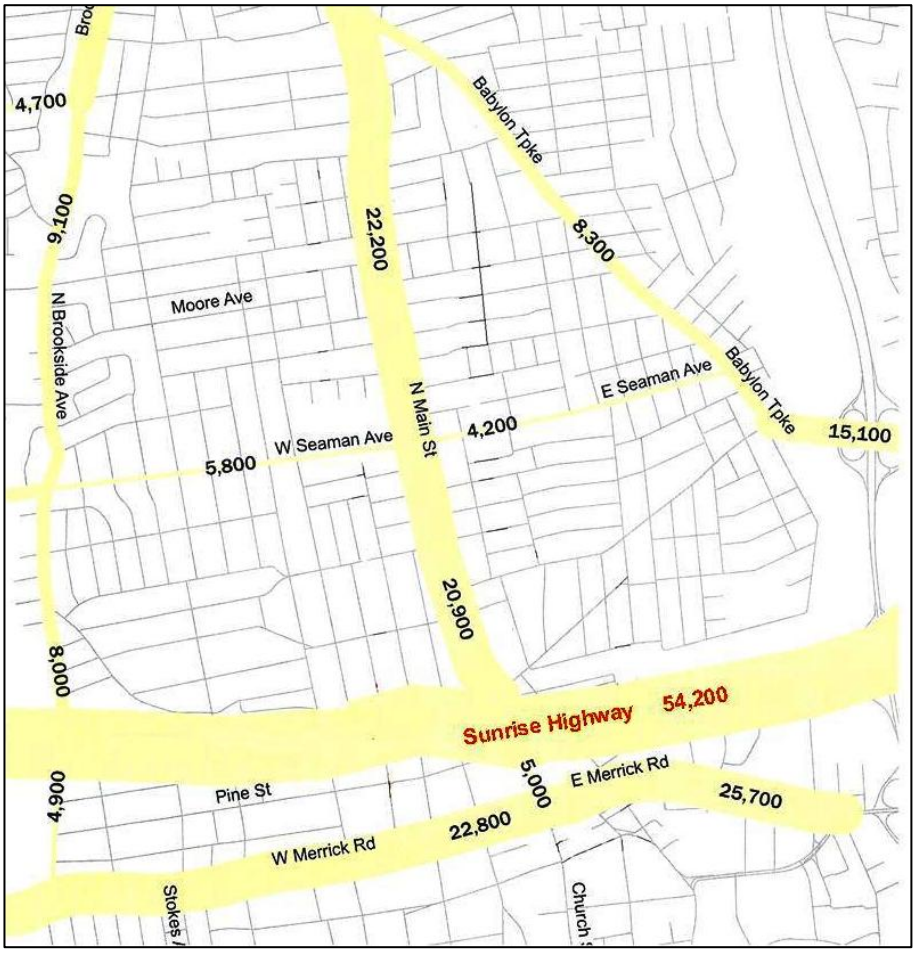
The Hazard Mitigation Planning Committee conducted a detailed analysis of critical services and facilities for both private and public sectors.

1.7.1 Roads and Transportation

The transportation system is a vital component to the quality of life of Freeport's residents. With increased traffic congestion, residents who work in New York City and its boroughs utilize the mass transit system. 63 percent of Freeport residents drive to work, 13 percent car pool and 15 percent use public transportation. The ability to commute by rail, bus or automobile is essential to the economics of the Village. Freeport has one major highway, Sunrise Highway (NYS Route 27), an arterial under the jurisdiction of New York State Department of Transportation (NYSDOT). It provides east-west access from Queens County to Suffolk County, and is a common route used by many different commercial haulers. In a Nassau County 2008 traffic count, the most recent date for which data was available, this stretch of Sunrise Highway had an Average Annual Daily Traffic (AADT) volume of 54,200 vehicles, based on 24-hour machine counts. A map of selected roads and traffic volumes is found on the following page.

Meadowbrook Parkway (a/k/a Senator Norman J. Levy Memorial Parkway), south of Southern State Parkway, is part of the eastern boundary of the Village of Freeport. This parkway is designated as a scenic byway under the New York State Scenic Byways Program and is listed in the State and National Registers of Historic Places. The parkway is owned by the New York State Office of Parks, Recreation and Historic Preservation (NYS OPRHP) and is maintained by the New York State Department of Transportation (NYSDOT). According to annual average traffic counts compiled by the NYSDOT in 2011, the section south of Southern State Parkway sees an average of about 54,000 vehicles daily. However, there is a large seasonal variation, with much greater traffic volumes during the summer. Meadowbrook Parkway provides a major access route to Jones Beach State Park, as well as several town parks, beaches and small residential communities. For 2018, Jones Beach State Park hosted almost 6,500,000 visitors, up almost 3 million annual visitors from 6 years earlier! On an average sunny July Sunday, park attendance is 200,000 to 250,000 visitors.

The Village has 88 miles of secondary roadways that are all paved. The major point of congestion is the Meadowbrook Parkway and Merrick Road. There is one waterway crossing in the Village that runs east-west on Atlantic Avenue over Milburn Creek. Two (2) bridge crossings that permit traffic to pass over the Meadowbrook Parkway are located on Merrick Road (east-west crossing) and Babylon Turnpike (east-west crossing). There is also a bridge



AADT, selected streets Village of Freeport

on the Meadowbrook Parkway crossing north-south over the Sunrise Highway that permits traffic to cross below the parkway. AADT volumes for other routes in the Village of Freeport are as follows:

ROUTE	ROAD NUMBER	FROM	TO	SECTION LENGTH	AADT	YEAR	STATION NUMBER
ALBANY AVE	0040	MERRICK RD EAS	DOX SEE DR	0.50	2887	2004	4154
BROADWAY	C210	NO MAIN ST NO	NO COLUMBUS AV	0.36	9098	2001	8606
BROOKLYN AVE	C230	NO GROVE ST	NO MAIN ST	0.10	34791	2002	8601
BROOKLYN AVE	0230	NORTH GROVE ST	NO OCEAN AVE	0.08	4617	2009	1463
BROOKSIDE AV S.	C240	MERRICK RD	SUNRISE HGWY	0.31	5908	2001	8241
BUFFALO AVE	0270	EAST MERRICK R	EAST SUNRISE H	0.23	7107	2005	4155
BUFFALO AVE	0270	ST MARYS PL	EAST MERRICK R	0.26	2240	2008	4153
BUFFALO AVE EXT	0280	ST MARYS PLACE	ENTR TO PWR HS	0.33	2639	2009	1464
CASINO ST	0320	SOUTH LONG BEA	SOUTH BAYVIEW	0.34	1519	2009	1465
CEDAR ST	0330	GUY LOMBARDO A	BRANCH AVE	0.51	498	2009	2215
CHURCH ST	C400	MERRICK RD	NO MAIN ST	0.20	4362	2009	8240
COLONIAL AVE	0420	NORTH MAIN ST	BABYLON TURNPI	0.50	724	2009	2202
FREEPORT PLAZA	0770	SOUTH MAIN ST	BENSON AVE	0.24	1017	2009	1466
FRONT ST	0790	SO OCEAN AVE	GUY LOMBARDO A	0.07	4118	2009	1467
GRAND AVE	0890	NORTH MAIN ST	NO COLUMBUS AV	0.40	5144	2005	4147
GROVE ST NO	D045	SUNRISE HGWY	BROOKLYN AVE	0.05	5600	2009	8552
GUY LOMBARDO AV	0920	HOWARD AVE	FRONT ST	1.13	6247	2009	1468
HANSE AVE	0970	MILL RD	ENT TO POWER H	0.57	4669	2004	4152
INDEPENDENCE AV	1120	NORTH MAIN ST	BABYLON TURNPI	0.56	726	2009	2203
MEISTER BLVD	1550	WEST END AVE	SO BAYVIEW AVE	0.10	891	2009	1469
MERRICK RD	0270	HEMPSTEAD TL	S MAIN ST	1.23	22206	2001	8136
MERRICK RD	0270	BUFFALO AVE	HEMPSTEAD T/L	0.26	46016	2005	6916
MERRICK RD	0270	S MAIN ST	BUFFALO AVE	0.57	25700	2008	8175
NASSAU AVE	1660	FRONT ST	700 SOUTH OF S	0.69	218	2009	2200
NO MAIN ST	007B	SUNRISE HGWY	BROOKLYN AVE	0.07	19415	2001	8013
NO MAIN ST	007B	FREEPORT PLZ	W SEAMAN AVE	0.57	20900	2008	8033
NO MAIN ST	007B	W SEAMAN AVE	BABYLON TPK	0.94	22200	2008	8875
NORTH BAYVIEW A	1720	PENNSYLVANIA A	NORTH BROOKSID	0.46	1463	2009	1470
NORTH LONG BEAC	1770	BROOKLYN AVE	W SEAMAN AVE	0.54	1665	2004	4143
NORTH LONG BEAC	1770	W SEAMAN AVE	EVANS AVE	0.47	824	2009	1473
NORTH OCEAN AVE	1780	LIRAILROAD	BROOKLYN AVE	0.03	4132	2009	1474
NORTH OCEAN AVE	1780	BROOKLYN AVE	WEST SEAMAN AV	0.55	1811	2009	1475
PARKWAY-908E		INT M8 RT 27 SUNRISE HGWY	INT M7 BABYLON PK	0.53	75921	2008	0951
PARKWAY-908E		INT M9 MERRICK RD	INT M8 RT 27 SUNRISE HGWY	0.27	40505	2006	0952
PENNSYLVANIA AV	1880	NO BAYVIEW AVE	W SEAMAN AVE	0.55	1366	2002	4142
PENNSYLVANIA AV	1880	W SEAMAN AVE	PRINCE AVE	0.45	2565	2009	1476
PENNSYLVANIA AV	1880	PRINCE AVE	NO VILLAGE LIN	0.15	3175	2009	1478
PINE STREET	1910	SOUTH BAYVIEW	SOUTH BROOKSID	0.40	921	2006	4148
PINE STREET	1910	MAIN STREET	SOUTH BAYVIEW	0.67	1532	2009	1477
PRINCE AVE	1970	WEST VILLAGE L	PENNSYLVANIA A	0.22	1538	2009	1479
PRINCE AVE	1970	PENNSYLVANIA A	NORTH MAIN ST	0.54	1762	2003	2123
SO MAIN ST	007B	MERRICK RD	SUNRISE HGWY	0.15	5000	2008	8010
SO LONG BEACH	2210	LONG ISLAND RR	WEST SUNRISE	0.04	4699	2009	1472
SO LONG BEACH	2210	WEST SUNRISE	WEST MERRICK R	0.26	5038	2009	1485
SO LONG BEACH	2210	WEST MERRICK R	ATLANTIC AVENU	0.52	4523	2005	4150
SO LONG BEACH	2310	ATLANTIC AVENU	SUFFOLK ST	0.91	4796	2009	1486
SOUTH BAYVIEW A	2360	WEST SUNRISE H	WEST MERRICK R	0.27	900	2009	1480
SOUTH BAYVIEW A	2360	WEST MERRICK R	ATLANTIC AVE	0.50	6629	2005	4149
SOUTH BAYVIEW A	2360	ATLANTIC AVE	CASINO STREET	0.39	2919	2009	1481
SOUTH BAYVIEW A	2260	LONG ISLAND R	WEST SUNRISE H	0.06	4412	2009	1471
SOUTH BROOKSIDE	2280	LONG ISLAND R	WEST SUNRISE H	0.03	7805	2009	1483
SOUTH BROOKSIDE	2280	WEST SUNRISE H	SIGMOND ST	0.17	5598	2009	1484
SOUTH BROOKSIDE	2280	SIGMOND ST	SOUTHSIDE AVE	0.33	1626	2006	4269
SOUTH OCEAN AVE	2320	ROSE ST	ATLANTIC AVE	0.33	4861	2008	4151
SOUTH OCEAN AVE	2320	ATLANTIC AVE	FRONT ST	0.39	2676	2009	1489
SOUTH OCEAN AVE	2320	PINE STREET	ROSE ST	0.35	5421	2009	1488
SOUTH OCEAN AVE	2320	WEST SUNRISE H	PINE STREET	0.11	4831	2009	1487
SOUTHSIDE AVE	2330	WESTEND AVE	SOUTH BROOKSID	0.14	1127	2009	1490
ST MARYS PLACE	2370	HANSE AVE	BUFFALO AVE	0.16	2638	2009	1491
SUFFOLK ST	2450	SOUTH LONG BEA	WOODCLEFT AVE	0.22	616	2009	1492
WESTEND AVE	2700	MEISTER BLVD	SOUTHSIDE AVE	0.59	1986	2009	1493
WOODCLEFT AVE	2810	SUFFOLK ST	FRONT ST	0.49	3375	2009	1495
WOODCLEFT AVE	2810	LITTLE SWIFT C	SUFFOLK ST	0.42	1981	2009	1494

The Long Island Rail Road (LIRR) operates through the Village on elevated tracks. The LIRR is the nation's largest commuter railroad. The railroad operates east-west commuter service from New York City to the entire length of Nassau-Suffolk County Region. According to the 2012-2014 LIRR Origin and Destination Study, the most recent one conducted, the average daily ridership served by the Freeport railroad station was 8298.

1.7.2 Emergency Personnel and Centers

The Village of Freeport has its own Police Department, located in Village Hall at 40 North Ocean Avenue. The Department consists of 99 police officers and 15 civilian employees/volunteers, for a total force of 143.

Police Officers	**Civilian Employees/Volunteers**
Vacant Chief of Police	4 Civilian Dispatchers
1 Assistant Chief of Police	6 Parking Meter Attendants
1 Deputy Chief of Police	5 Clerks
Vacant Detective Lieutenant	
1 Detective Sergeant	
5 Watch Commander/Lieutenants	
9 Patrol Supervisor/Sergeants	
6 Detectives	
76 Police Officers	

The Police Headquarters is not located in the Special Flood Hazard Areas (SFHA).

The Village has six (6) firehouses, none of which are in SFHAs. The Fire Department consists of 304 fireman and 21 emergency medical technicians, all volunteers. The location, apparatus, and personnel of each firehouse are as follows:

Fire Stations	**Apparatus**	**Personnel**
15 Broadway (Headquarters)	1500 GPM Class A Pumper 2000 GPM Class A Pumper Ambulance Personnel Carrier	109
47 Leonard Avenue	1500 GPM Class A Pumper	35
212 West Sunrise Highway	1750 GPM Class A Pumper w/foam Foam/Hazmat Unit	35
76 Church Street	100' Aerial Ladder Truck 95' Ladder Tower Technical Heavy Rescue	58

22 Southside Avenue	1500 GPM Class A Pumper Disaster Response Vehicle	50
375 South Bayview Avenue	1500 GPM Class A Pumper Disaster Response Vehicle	38

The Department also has the following apparatus:

Fire Police Van
Dive Team Response Vehicle
Mask Service Vehicle
Incident Command Vehicles (6)
Utility Truck with Snow Plow
Maintenance Van
Fire Boat

The Village has an Emergency Management Department and an Emergency Management Office. The EMO is located at 76 Church Street. Freeport EMO also had a storage building built in 2017 on North Long Beach Ave and the LIRR for storage of high-water vehicles, boats and other special equipment. The Village employs a full-time Emergency Management Director who coordinates ten emergency management team members. The emergency management team consists of the following:

Team	**Represented Agency**
Chairperson	Fire Department
Co-Chairperson	Fire Department
Mitigation Coordinator	Building Department
Team Member	Police Department (2)
Team Member	Public Works
Team Member	Electric Department
Team Member	Water Department
Team Member	Public Relations
Team Member	Mayor's Office

1.7.3 Governmental Buildings

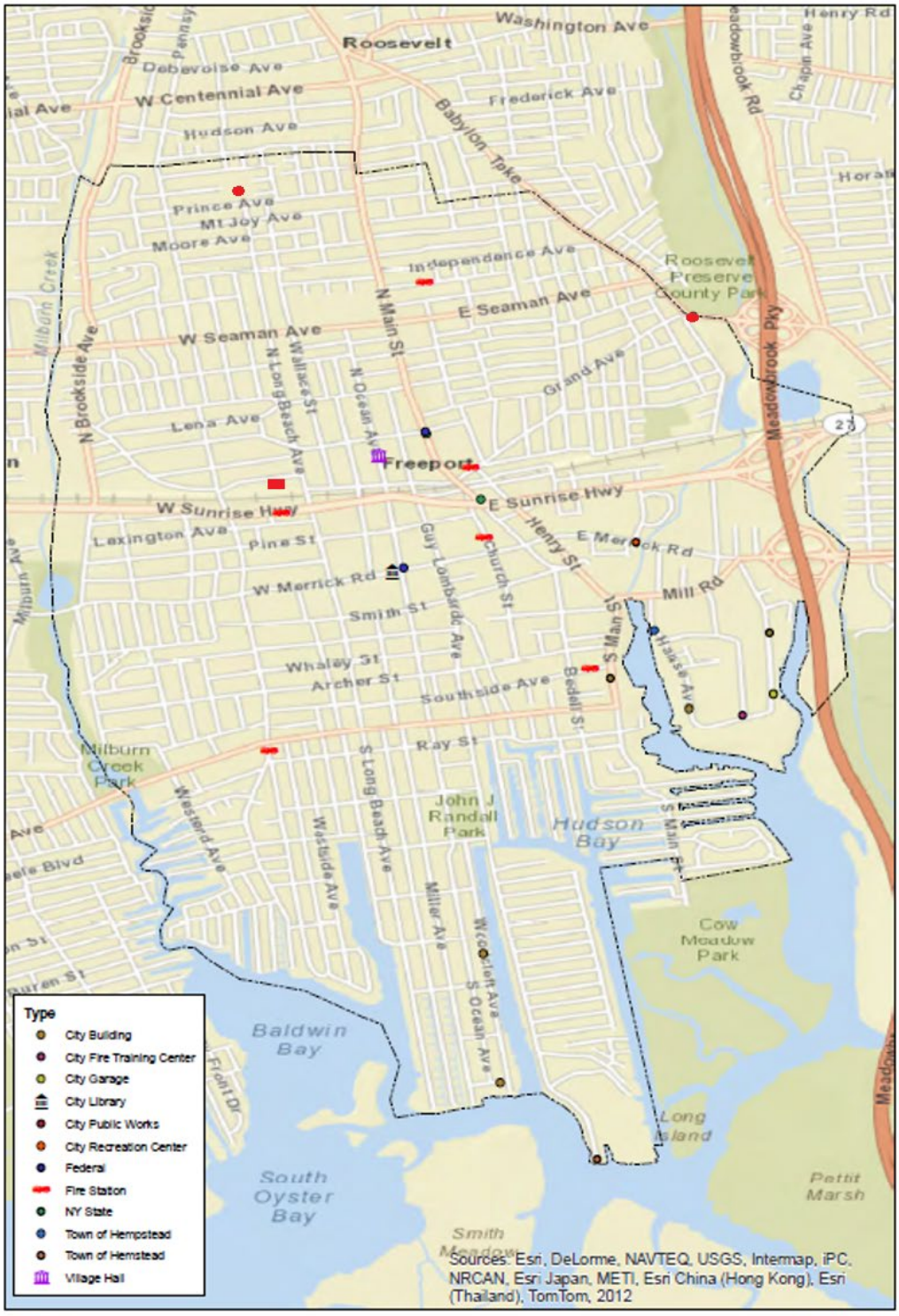
Key government buildings are shown on the map on page 14.

Village of Freeport

Building	Address	Type
Village Hall	46 North Ocean Avenue	Main Village Offices
Public Works	46 North Ocean Avenue	Public Works and Water Depts.
Village Garage	355 Albany Avenue	Gas pumps and vehicle maintenance
Freeport Rec. Center	130 East Merrick Road	Rec. facilities (pools, ice skating rink etc.)
Fire Training Center	Hanse Avenue	Fire Dept. training center
Freeport Library	144 West Merrick Road	Public Library

EMO Storage Building	Long Beach Ave	Garage for special equipment
Armory	49 Babylon Turnpike	Armory
Dock Master's Building	Sea Breeze Park (End of Woodcleft Avenue)	Offices, bathrooms, showers

Freeport, NY Government Locations



Town of Hempstead

Building	Address	Type
Conservation & Waterways	40 Hanse Avenue	Office and equipment
Marina	End of Guy Lombardo Avenue	Docking facilities, pump-outs

New York State

Building	Address	Type
Department of Transportation	Sunrise Highway	DOT maintenance yard
Department of Labor	84 North Main Street	Unemployment Office

Federal

Building	Address	Type
Post Office	132 West Merrick Road.	Freeport Main Office
Social Security Office	88 North Main Street	Local Office

The listed governmental buildings are located in the Special Flood Hazard Area:

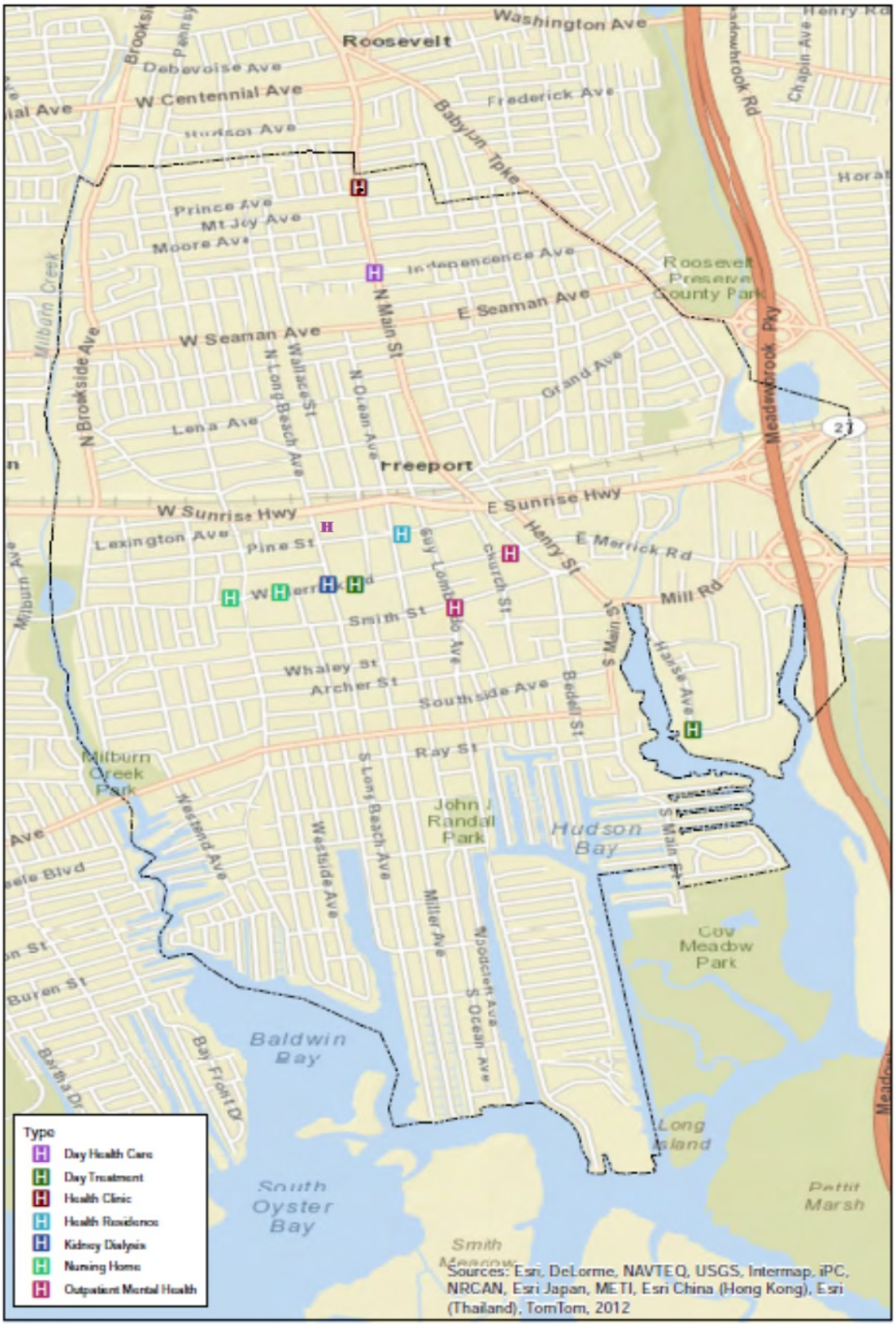
Village Facilities
Public Works Village Garage
Freeport Recreation Center
Fire Training Center
Dock Master's Building

Town of Hempstead Facilities
Conservation & Waterways Marina

1.7.4 Routine Health Care Centers and Hospitals

The Village of Freeport has one county health care center, two long-term care centers (nursing homes), one outpatient kidney dialysis center, two outpatient psychiatric youth services centers, one day treatment center for emotionally disturbed youth, one day treatment center for children and adults with intellectual and developmental disabilities (AHRC), one adult AIDS day health care center, and one residence operated by Mercy Hospital for teenage maternity patients. There are no hospitals. Five of the facilities are located on West Merrick Road less than 3/4 of a mile from each other. The location of each facility is as follows:

Freeport, NY Health Locations



Facility	Location	Type of Facility
Pro Health Urgent Care	129 W Sunrise Hwy	Urgent care
Meadowbrook Care Center	320 West Merrick Road	Nursing Home
South Shore HealthCare	275 West Merrick Road	Nursing Home
Freeport Kidney Center	3 N Main St	Kidney Dialysis
South Shore Child Guidance Center	7 West Merrick Road	Outpatient Mental
Health Family & Children Association, Inc.	55 Guy Lombardo Ave	Outpatient Mental
Health Woodward Mental Health Center	201 West Merrick Road	Day Treatment
AHRC	230 Hanse Avenue	Day Treatment
AIDS Catholic Charities Health Systems	333 North Main Street	Day Care
Mercy Hall	95 Pine Street	Residence
Mercy New Hope	150 Buffalo Ave	Clinic
Maryhaven Center of Hope	150 Buffalo Ave	Rehab

None of the routine health care centers are located in SFHAs.

1.7.5 Schools and Child Care Facilities

The governing authority for the public schools is the Freeport Union Free School District. The Administration office is located at 235 North Ocean Avenue. The district consists of eight schools with a 2019 enrollment of 7147. There is one early childhood center (pre-kindergarten and kindergarten), four elementary schools (grades K-4), one intermediate (grades 5-6), one middle school (grades 7-8) and one high school (grades 9-12). The location and current enrollment of each public school is as follows:

School	Location	Grades	Enrollment
Columbus Ave. School	150 N. Columbus Ave.	pre-K -- K	523
Archer St. School	255 Archer Street	K – 4	577
Bayview Ave. School	325 W. Merrick Road	K – 4	556
Leo F. Giblyn School	450 S. Ocean Avenue	K– 4	588
New Visions School	80 Raynor Street	K – 4	493
Carolyn G. Atkinson School	58 W. Seamen Avenue	5 – 6	1100
John W. Dodd Jr. High School	25 Pine Street	7 – 8	1067
Freeport High School	50 S. Brookside Avenue	9 – 12	2243

The Freeport School District also maintains an athletic field house at Albany Avenue. The field house is used as a locker room for the Cleveland Avenue Athletic Field and also for equipment storage. The following Non-Public Schools are located in Freeport:

School	Location	Grades	Enrollment
De La Salle School	87 Pine Street	5 -- 8	64
Woodward Children's Center	201 West Merrick Road	K -- 12	80
Advanced Learning Academy of Long Island	209 Pine St	K – 5	98
Freeport Christian Academy	50 North Main Street	K – 6	117

The following large capacity preschool/daycare (childcare) facilities are also located in Freeport:

School	**Location**	**Capacity**
Freeport Head Start	74 North Main Street	53
Little Learners Day Care	90 Mill Rd	80
Carousel of Learning	351 Atlantic Avenue	30
Twin Oaks Day School	458 Babylon Turnpike	197
Giant Step	178 South Ocean Avenue	50

The following small capacity preschool/daycare (childcare) facilities are also located in Freeport:

School	**Location**	**Capacity**
Rosa Playhouse	16 Atlantic Ave	16
Cobblestone Day School	339 Seaman Ave	14
Freeport Day Care Inc	330 S Long Beach Ave	16
Little Explorers Day Care Inc	246 S Long Beach Ave	16
Maria Rodriquez	126 Glenada Court	16
Blair Care Chioldrens Center Inc	12 Tanglewood Lane	16
Peace Child Care Services	6 Delisle Ave	16
Ruby Angels Day Care	224 Rutland Ave	16
Precious Minds Day Care Inc	92 W Milton St	16
Sunbeam Star Quality Daycare Inc	116 N Ocean Ave	16
Nueva Jerusalen Day Care	42 Madison Ave	16
Grandmas House	111 Front St	16
New Beginnings Child Care	129 Moore Ave	16
Choice Day Care Corp	175 Park Ave	16
Little Learners Day Care Center	90 Mill Rd	16
ECO Kids Child Care Inc	234 East Dean St	16
Josette Beltre	288 Southside Ave	16
Eidys Day Care	194A Park Ave	16

School	**Location**	**Capacity**
Babies First Step Daycare Corp	197 Lena Ave	16
Create & Learn Daycare Corp	10 Wilshire Ct	16

Boss Babies Learning Academy	11 Atlantic Ave	16
Tina's Tiny Clubhouse Academy LLC	48 St Marks Ave	16
Carousel of Learning	351 Atlantic Ave	30
Raquel's Day Care II Corp	302 Smith St	16
Rosie's Playhouse Day Care Center	20 N Bayview Ave	16
Learning House Daycare Inc	325 S Ocean Ave	16
Country Club Day Program	91 N Bayview Ave	16
Nana's Fun Daycare Inc	119 S Bayview Ave	16
All Blessings Childcare	286 Pine St	16
Little Wonders Childf Care LLC	159 Whaley St	16
Thalia Haynes-Beku	151 St Marks Ave	16
Yarissa's Day Care Inc	149 N Long Beach Ave	16
Learning Ladder Inc	46 Agnes St	16
The Learning Tree Childrens Ctr Corp	57 Hillside Ave	16
G.G. Daycare Inc	741 S Long Beach Ave	16
Garden of Angels Day Care Inc	49 Rosedale Ave	16
Jo Leen Jenkins	254 E Seaman Ave	16
Connie Baez	85 Bedford Ave	16
I am the Light Day Care Inc	115 Lillian Ave	16
Elsa's Little Angels Daycare	52 Porterfield Pl	16
Jhosy Day Care	5 Johnson Pl	16
New Adventures Family Day Care Inc	32 Hollaway	16
Ready, Set, Grow Child Care Inc	75 N Bergen Pl	16
Where Children Become Friends Inc	213 Juanita Ave	16
Elba's Group Family Day Care	189 Woodside Ave	16
Loren's Day Care	7 Lafayette Pl	16
Gio's Little Angels Daycare	185 Wallace St	16
Amazing Stars Dat Care	43 Russell Pl	16
Colorin Colorado Daycare	265 S Long Beach Ave	16
Johanny Lopez	71 Harrison Ave	16
Sharon Toole-Marshall	195 E Merrick Rd	6
Sophie's Daycare	85 Sportsman Ave	16
Diomi's Little Stars Day care	10 Star Pl	16
Harmonie Day Care	62 Harrison Ave	16
Reasons to Love Day Care	55 W Milton St	16
Rising Star Too	220 Randall Ave	16
Raquel's Day Care 3 Corp	244 S Bayview Ave	16

Leo F. Giblyn Public School is located in a SFHA. None of the non-public schools are located in SFHAs.

1.7.6 Utilities

1.7.6.1 Water

Located at the northeast watershed, 150 Lakeview Avenue, are four wells (1-A, 3, 4-A and 8). Well 4-A also has a control building. In addition, there are also an operations building, Quonset hut, chemical storage building, one-half million-gallon storage tank and a workshop located below the tank.

Located at the northwest watershed, 220 Sunrise Highway, there are two wells (5 and 6), a chemical storage building, a one-million gallon storage tank, and a workshop below the storage tank. Located at Bayview Avenue and Sunrise Highway is Well 7 and on Bayview Avenue, west of Pennsylvania Avenue, is Well 9.

Construction of three additional wells on Prince Avenue, Wells 10, 11 and 12, was completed in the summer of 2006.

None of the wells are located in SFHAs.

1.7.6.2 Sewer

Sewer Lift Stations are located at:

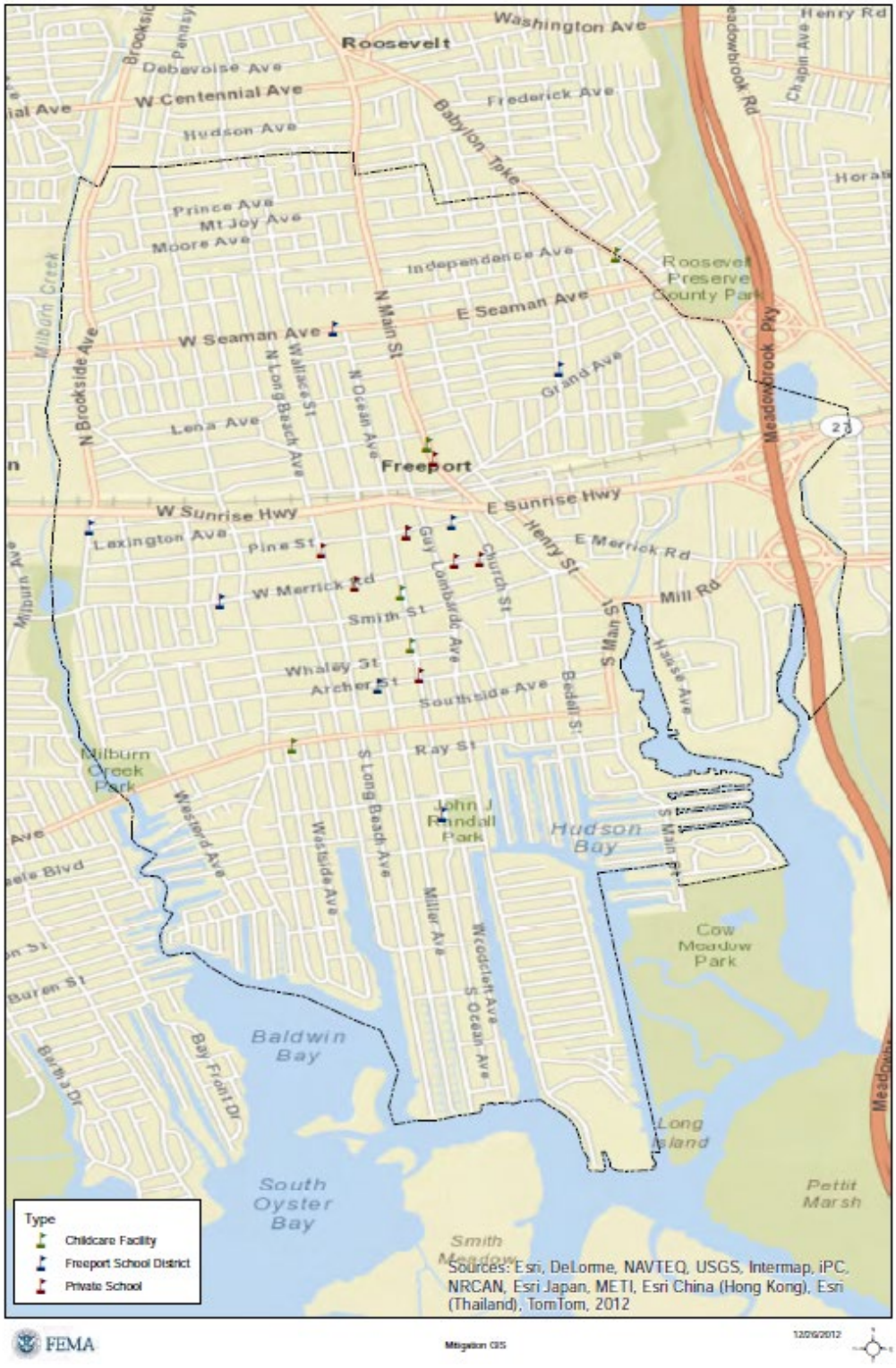
Howard Avenue
Northeast corner of Suffolk Street and Miller Avenue
South Bayview Avenue at Meister Boulevard
Buffalo Avenue

All sewer lift stations are within SFHAs.

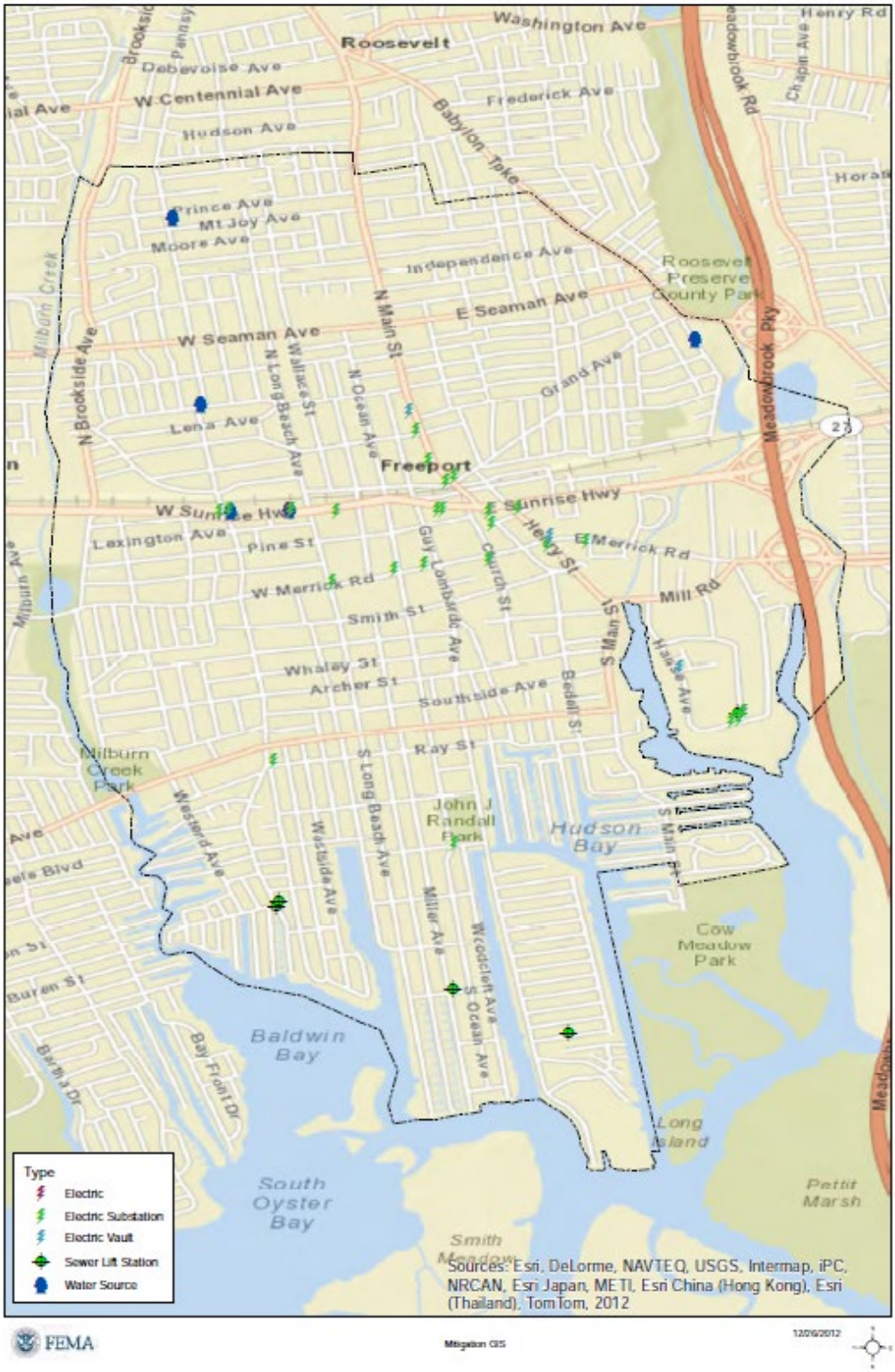
1.7.6.3 Electric

Power Plant I is located at 220 West Sunrise Highway
Power Plant II is located at 289 Buffalo Avenue *(in SFHA)*

Freeport, NY Education Locations



Freeport, NY Utility Locations



Locations of the substations and vaults are as follows

Substation	Location
4f	Sunrise Highway west of Pennsylvania Avenue
A	Intersection of Bayview and Atlantic Ave
B	Intersection of South Main Street. and Mill Road
C	Intersection of Jay Street and Seaman Avenue
D	Intersection of Ocean Ave and Front Street

Vault	Location
A	NE. corner of Merrick Road and South Long Beach Avenue
B	NW corner of Merrick Road and Ocean Avenue
C	North side of Merrick Road between Ocean and Guy Lombardo avenues
D	SW corner of Merrick Road and Church Street
E	SW corner of Merrick Road and South Main Street
F	SW corner of Merrick Road and Gold Street
G	NW corner of South Main Street and Newton Boulevard
H	SE corner of Sunrise Highway and South Main Street
I	NE corner of North Main Street and Commercial Street
J	NE corner of Sunrise Highway and Pennsylvania Avenue
K	South side of Sunrise Hwy. between Long Beach Avenue and Bergen Street
L	South side of Sunrise Hwy. between Guy Lombardo Avenue and Church St.
M	NW corner of Brooklyn Avenue and North Main Street
N	West side of North Main Street between Brooklyn and Randall avenues
O	Near NW corner of North Main Street and Randall Avenue
P	SE corner of Henry Street and Sunrise Highway
Q	Near Intersection of Hanse Avenue and Buffalo Avenue Extension *(in SFHA)*
R	West of Intersection of Hanse Avenue and Buffalo Avenue *(in SFHA)*
S	South side of Sunrise Hwy. between Guy Lombardo Ave. and Church Street
T	NE corner of Merrick Road and Henry Street
U	Near intersection of Hanse Avenue and Rider Place *(in SFHA)*
V	West side of North Main Street between Grand and Lena avenues
W	So. End Place across canal from Power Plant 2
X	South Main St between President and Ray St
Y	SE of Ray St between Bedell St and South Main St

1.7.7 Museums

Freeport also is home to one (1) museum. The museum is in flood hazard zone (AE)

Museum	Location	Type	Operates
Freeport Historical Museum	350 South Main Street	Local History	Late April – Dec.

1.7.8 Places of Worship

The following places of worship are located in Freeport:

A House of Prayer	405 Baylon Tpke
Bethel A.M.E. Church	420 North Main Street
Centro Christiano Renacer	475 North Brookside Avenue
Christ Lutheran Church	61 North Grove Street
Church of God	580 Babylon Turnpike
Church of Jesus Christ of Latter-Day Saints	70 West Merrick Road
Church of the Nazarene	301 Atlantic Avenue
Church of the Transfiguration	73 South Long Beach Avenue
Congregation Bnai Israel	91 North Bayview Avenue
Dean Street Chapel	23 West Dean Street
Ebenezer Seventh-day Adventist Church	97 Broadway
First Baptist Church of Freeport	195 Pine Street
Freeport First Presbyterian Church	178 South Ocean Avenue
Freeport Full Gospel Assembly	67 North Main Street
Freeport United Methodist Church	46 Pine St
Freewill Baptist Church	443 North Main Street
Gospel Church	26 Lena Avenue
Greater Second Baptist Church	129 East Merrick Road
Hare Krishna Temple	197 South Ocean Avenue
Iglesia Cristiana Fundamental	91 North Bayview Avenue
Iglesia De Dios Septimodia Hispana De NY	35 North Main Street
Jehovah's Witnesses Congregation	65 Colonial Avenue
Nassau First Latin American Church	50 N Main St
Our Holy Redeemer Church	37 South Ocean Avenue
Perfecting Faith Church	311 North Main Street
Refuge Church of Christ	106 Broadway
Spanish Evangelic Church	404 North Main Street
Tabernacle of Faith	298 West Merrick Road
The Salvation Army	66 Church Street
Unitarian South Nassau Church	228 South Ocean Avenue
Iglesia Evangelica De Freeport	76-82 West Merrick Road
Zion Cathedral Church of God in Christ	312 Grand Avenue

Church of the Nazarene, 301 Atlantic Avenue, is located in a SFHA.

1.7.9 Senior Citizen Housing

The Freeport Housing Authority operates two (2) senior citizen housing facilities in Freeport. Both facilities are owned by the U.S. Department of Housing and Urban Development. They are located at 100 North Main Street (100 units) and 240–260 South Main Street (150 units).

Catholic Charities, Diocese of Rockville Centre, operates a senior citizen housing facility known as Peternana Terrace at 45 Wallace Street (97 units).

None of the senior citizen housing facilities are located in SFHAs.

1.7.10 Public Housing

The Freeport Housing Authority also operates a newly built federally-assisted public housing complex, Moxey Rigby, located at 195 East Merrick Road which has 101 units.

The U.S. Department of Housing and Urban Renewal operates a 100-unit housing development at 227 Liberty Park Drive.

Neither of the public housing facilities is located in a SFHA.

1.7.11 Industrial Park

Freeport's Industrial Park is bound by Mill Road to the north, Albany Avenue to the east, Hanse Avenue to the west, and Freeport Creek to the south.

The entire Industrial Park is located in a SFHA.

2 HAZARD RISK ANALYSIS

FEMA regulations included in 44 CFR §201.6(c)(2) require that hazard mitigation plans include a risk assessment "that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards." Risk assessments must include enough information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The Freeport Hazard Mitigation Planning Committee revised the 2020 Plan Update risk assessment from the 2014 risk assessment with these regulations in mind.

The Freeport 2020 risk assessment process identifies and profiles relevant hazards and assesses the exposure of lives, property, and infrastructure within Freeport, New York to these hazards. The goal of the risk assessment is to estimate the potential loss in the planning area, including loss of life, personal injury, property damage, and economic loss, from a hazard event. Specific information with which to base loss estimates is not available for all hazards impacting Freeport. In addition, information on structural valuations by building category - residential, commercial, and manufacturing - is lacking. For this reason damage estimates by structure types were not calculated. However, the Planning Committee used the best and most current information available. The Planning Committee intends to use additional information to develop more detailed and precise risk assessments for the next Plan Update.

The 2020 risk assessment process allowed the Planning Committee and participants to better understand their potential risk to natural hazards. In addition, it provided a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events.

2.1 HAZARD IDENTIFICATION

The first step of the 2020 risk assessment was to identify the hazards impacting the planning area. The Planning Committee reviewed the list of hazards identified in the 2014 Freeport Hazard Mitigation Plan. The 2014 hazards were as follows.

- Flooding
- Hurricane
- Nor'easter/Winter Storm/Ice Storm
- Terrorism
- Hazardous Materials at fixed sites and in transport
- Cyber-Terrorism
- Urban and Structural Fire
- Earthquake
- Tornado

The 2014 Planning Committee decided on a more streamlined risk assessment for the 2014 Update. This was done with the goal of a more efficient use of Freeport's limited resources. Because FEMA regulations require inclusion of only natural hazards, the Planning Committee decided to focus on the natural hazards impacting the planning area. In another streamlining activity, several of the 2005 hazards with similar characteristics were combined for the 2014 Plan (ice storms and winter storms, for example) while others were eliminated entirely. The eliminated hazards and the rationale behind their elimination are listed below:

- Epidemic/Infestation: The Planning Committee reviewed records of previous hazard events and information in the New York State Hazard Mitigation Plan. They determined that an epidemic or infestation severe enough to be hazardous to the community would have a low probability of occurrence. Other plans and programs, such as emergency operation plans, generally address such hazards. In addition, mitigation measures are few, and would be funded through programs other than hazard mitigation grants. Unfortunately the Coronavirus pandemic that created a world wide pandemic in 2020 had a huge impact on Freeport and this Hazard was added back into our plan.

- Explosion: An explosion is an event that could happen during the occurrence of another hazard, such as an act of terrorism or a hurricane, that is already profiled in the plan. In addition, predicting an explosion is not possible. Developing projects to lessen injuries are more appropriately addressed in emergency response plans. Finally, as a man-made hazard, FEMA regulations do not require including this hazard.

- Water Supply and Air Contamination: The Planning Committee determined that some of the elements of water supply and air contamination are covered in the terrorism hazard profile. In addition, the Committee reviewed the risks of these hazards and determined that they were low enough that they did not warrant inclusion in the 2014 Plan. Finally, as man-made hazards, FEMA regulations do not require including them in the plan.

- Oil Spill: Freeport is not a shipping port and therefore, oil and chemicals are not transported through this area. The Planning Committee could find no records of a spill having ever occurred in the planning area. Finally, as a man-made hazard, FEMA regulations do not require including this hazard.

- Fuel Shortage, Utility Failure, and Structural Collapse: These hazards were included in the 2005 Plan, but they are not profiled in the 2014 Update. The Planning Committee determined that the risk is low and possible mitigation actions would not be cost-effective. In addition, all the hazards could be considered incidents that occur as a result of other hazard events, such as hurricanes. Finally, all are man-made hazards, which are more appropriately addressed in other emergency management plans.

- Civil Unrest: As a man-made hazard, inclusion of civil unrest is not a requirement. In addition, this hazard is difficult to predict and mitigate.

- Tsunami: This hazard was included in the 2005 Plan. However, the chances of an earthquake causing a tsunami in the Atlantic Ocean are remote due to the lack of seismic activity. Therefore, the threat of a tsunami affecting the Village is very small. The Village is also protected from the Atlantic Ocean by a barrier island. Finally, there is no record of a tsunami ever occurring in Freeport. The hazard was eliminated from further consideration.

- Extreme Temperature: The Planning Committee eliminated this hazard from the 2014 Update because of the lack of information on damages caused by this hazard. The lack of damages is due to the fact that agriculture is not part of Freeport's economy. In addition, mitigation actions to address extreme temperatures are limited to educational outreach. The Planning Committee also determined that extremely cold temperatures are covered in the Winter Storm category.

- Severe Storm: The Planning Committee determined that the negative impact of severe storms is adequately covered under discussions for flooding, hurricanes, tornadoes, and nor'easters/severe winter storms. For this reason, it is not covered separately in the 2014 Update.

Cyber-terrorism was extensively profiled in the 2005 Plan within the hazard Terrorism. Because the characteristics of cyber-terrorism differ greatly from the general category of terrorism, the Planning Committee profiled the two hazards separately in the 2014 Update.

In addition, certain individual 2005 Plan hazards were combined for analysis in the 2014 Update as follows:

- Ice Storm was combined with Winter Storm/Nor'easter
- Hazardous Materials in Transit was combined with Hazardous Materials at Fixed Sites.

The Freeport Hazard Mitigation Planning Committee also reviewed the 2011 New York State (NYS) Hazard Mitigation Plan's list of hazards for applicability to the planning area. The Committee determined that several of the hazards in the State Plan are not applicable to Freeport, and were not profiled in the 2014 Freeport Plan. Those hazards are listed below, along with the rationale for their elimination:

- Wildfire: The planning area is completely developed and has no wild land. Wildfires do not occur in the planning area.
- Drought: Agriculture is not part of Freeport's economy. It is unlikely that drought would impact the community's water supplies. Other impacts from drought would not be major in character.
- Landslide: The terrain in the planning area is quite flat with no hills. Landslides do not occur in Freeport.
- Land Subsidence: According to the maps included in the NYS Plan, the underlying rock of Freeport is not prone to land subsidence. This was confirmed by the lack of history of occurrence in the planning area.
- Power Failure: This man-made hazard is more appropriately addressed in emergency operations and/or response plans.

The Planning Committee determined that other modifications to the 2005 Freeport Plan were warranted. For example, the 2005 Freeport Plan used an automated interactive spreadsheet called HAZNY to rank the hazards by the amount of risk they pose. Numeric ranking of hazards is not a requirement for a FEMA-approvable plan. In addition, HAZNY is seldom used in more recent hazard mitigation plan development. For these reasons, the 2014 Planning Committee decided not to use HAZNY. The Committee instead based the estimated risk posed by each hazard on the information in the hazard profiles included on the following pages. It was determined that this is a more accurate risk prioritization methodology.

After review of the data on all hazards in the 2014 plan, the Planning Committee categorized each as low, moderate, or high risk. Low-risk hazards are those that can be addressed with projects to mitigate their impacts eventually, but not necessarily in the next five years. Moderate-risk hazards are those that could be addressed with mitigation projects implemented in the next three to five years. High-risk hazards are those that could be addressed by projects implemented within the next two years. The categories are listed at the end of the Risk Assessment section of this plan update.

The 2020 Planning Committee decided to follow the plan that the 2014 committee followed.

2.2 DISASTER DECLARATION HISTORY

The Planning Committee used additional information to identify hazards for inclusion in the 2014 Freeport Update by examining events that triggered past disaster declarations. Federal and/or state declarations may be granted when the severity and magnitude of an event surpasses the ability of the local government to respond and recover. When the local government's capacity has been surpassed, a state disaster declaration may be issued, allowing for the provision of state assistance. If the disaster is so severe that the capacities of both the local and state governments are exceeded, a federal emergency or disaster declaration may be issued allowing for the provision of federal assistance.

In addition to standard federal disaster declarations, FEMA also issues emergency declarations. They are more limited in scope and do not include the long-term federal recovery programs of major disaster declarations. Declaration decisions are based on the scale and type of damages, as well as the institutions or industrial sectors affected.

All planning area declarations were reviewed to understand the type and scope of damages caused by these disaster events. The following table lists all declarations that affected Nassau County from 2005 to the present:

Number	Date	Event and Incident Period	Type of Declaration
4480	01/20/2020	COVID 19 Pandemic March 4 – still open	Major Disaster Declaration
4085	10/30/2012	Hurricane Sandy October 27-November 8, 2012	Major Disaster Declaration
3351	10/28/2012	Hurricane Sandy October 27-November 8, 2012	Emergency Declaration
4020	08/31/2011	Hurricane Irene August 26-September 5, 2011	Major Disaster Declaration
3328	08/26/2011	Hurricane Irene August 26-September 5, 2011	Emergency Declaration
1957	02/18/2011	Severe Winter Storm and Snowstorm December 26-27, 2010	Major Disaster Declaration
1899	04/16/2010	Severe Storms and Flooding March 13-March 31, 2010	Major Disaster Declaration
1869	12/31/2009	Severe Storms and Flooding Associated with Tropical Depression Ida and a Nor'easter November 12-14, 2009	Major Disaster Declaration

2.3 HAZARDS IMPACTING THE PLANNING AREA

The Planning Committee used a number of documents and resources to choose hazards to profile for 2020 Update. Included in the review were the following documents:

- 2014 Freeport Hazard Mitigation Plan

- 2011 New York State Hazard Mitigation Plan
- Disaster declarations involving the planning area
- The most recent Suffolk and Nassau County hazard mitigation plans and drafts
- Information on past extreme weather and climate events from the National Oceanic and Atmospheric Administration‘s (NOAA) National Climatic Data Center (NCDC)

After these reviews, the following list of hazards was chosen for the 2020 Freeport Plan:

- Hurricane/High Wind
- Flooding
- Winter Storm/Nor’easter/Ice Storm
- Terrorism
- Hazardous Materials at Fixed Sites and in Transit
- Cyber-terrorism
- Urban/Structural Fire
- Earthquake
- Tornado
- Epidemic

Note that it is not always easy to separate hazard events into separate categories. A hurricane in the planning area usually is accompanied by flooding and high winds. An earthquake can be accompanied by structural fires. Nor’easters include high winds. The lines separating one event from another are blurred.

2.3.1 Process

Each hazard identified above is profiled separately in the risk assessment. The level of information presented in the hazard profiles varies based on its availability. Each future update of the 2020 Hazard Mitigation Plan will incorporate new information to better evaluate and prioritize the hazards that affect the planning area. Detailed profiles describing a typical or average hazard event were used for the analysis of each hazard element, including description, location/extent, previous occurrences, and probability. The information gathered to develop these four elements was then analyzed to develop the plan’s updated risk assessment.

2.3.2 Hazard Description

This section consists of a general description of the hazard and the types of impacts it may have on a community. It also describes typical warning times and duration of hazard events. Most natural hazards have some advance warning while man-made hazards tend to occur with little or no warning. Duration was determined by two factors, the length of time the hazard remains active as well as the length of time that emergency operations would continue.

2.3.3 Geographic Location/Extent

This section describes the geographic location of the hazard in the planning area. Where available, maps are used to show specific locations of the planning area that are vulnerable. This section also provides information about the extent of the hazard (i.e. the size or degree of impacts). Some hazards such as flooding are more likely to occur in a Special Flood Hazard Areas (SFHAs). However, other hazards, such as earthquakes, tornados, and ice storms, can

occur and impact any portion of the Village or the entire Village. Hazards such as the release of hazardous materials in transit can also occur in any area of the Village. However, the greatest probably of occurrence would be on major roads, in Freeport's industrial park, or at an Environmental Protection Agency (EPA) regulated site.

2.3.4 Previous Occurrences

This section includes information on historic incidents and their impacts on the planning area.

2.3.5 Probability of Future Occurrence

The frequency of past events is used to gauge the likelihood of future occurrences. Where possible, the probability or chance of occurrence was calculated based on the best available historical data. Probability was determined by dividing the number of observed events by the number of years and multiplying by 100. This gives the percent chance of the event happening in any given year. An example would be three tornadoes occurring over a 30-year period, which results in a 10 percent chance of a tornado occurring in any given year. The methodology used to calculate probability will be re-examined during the next plan update for possible revision. The goal would be to establish a more precise probability estimate.

2.3.6 Vulnerability/Impact

Each hazard profile is followed by a vulnerability assessment. The vulnerability assessment further defines and quantifies populations, buildings, critical facilities, and other community assets at risk to natural hazards. The vulnerability assessments were conducted based on the best available data, and begin with a general overview of Freeport's vulnerability to the hazard. The magnitude/severity of the hazard is determined based on past events and perceptions, and includes evaluations of the population, structures and systems/infrastructure impacted. Some estimates of potential losses to existing development are provided. Where data is available, this section provides estimated financial losses as well as the methodology used.

2.3.7 Summary Matrix

A hazard matrix containing the following summary information is provided for each hazard.

Hazard Description	Location/Extent	Previous Events	Probability	Vulnerability/Impact
A general summarized description of the hazard	General areas within the planning area that are vulnerable to the identified hazard. Magnitude of each hazard, depicted by commonly-used scales	Reported previous events of the hazard and time frame	**High**: 100% probability in the next year **Medium:** 10% to 99% probability in the next year, or the probability of at least one occurrence in the next 10 years **Low:** 1% to 9% probability of occurrence in the next year, or at least one occurrence in the next 100 years	Types of structures impacted, and the amount of damages caused

3 Hazard Profiles and Vulnerability

The following profiles summarize each of the hazards that may impact the Village of Freeport. Similar hazards are combined for the purposes of discussion.

3.1 HURRICANE/HIGH WIND

Hazard Description	Location/ Extent	Previous Events	Probability	Vulnerability/Impact
Hurricanes are tropical storms with winds of 74 mph or more. High winds are those of 40 mph or greater for at least one hour.	The risk of hurricane and high wind events is planning-area wide.	42 high wind events in 39 years; 11 hurricanes, including Sandy, since 1938.	High Winds: High Hurricanes: Medium	According to models more than 30 percent of the planning area would be damaged by a worst-case hurricane event,. High wind damages are liable to be lower. Utilities, trees, structures, personal property, and human life would be at risk. According to BureauNet[2] Hurricane Irene (2011) produced 6 -12+" of rain, winds of 74+ mph, waves 25 feet+.

3.1.1 Hazard Description

A hurricane is a low-pressure system that generally forms in the tropics. Accompanying the system are thunderstorms/high winds and, in the Northern Hemisphere, a counterclockwise circulation of winds near the earth's surface. Hurricanes form off the coast of Africa or in the southern Atlantic Ocean, Caribbean Sea, or Gulf of Mexico. Hurricanes require warm tropical oceans, moisture, and light winds above them to form. A hurricane can produce violent winds, tornadoes (primarily on the leading and trailing edges of the hurricane), powerful waves and storm surge, and torrential rains and floods.

Hurricane season for the planning area lasts from June 1st to November 30th. The greatest risk is between August and October. This is because water temperatures in the Northern Atlantic are most likely to reach a temperature warm enough to develop and sustain a hurricane. According to the National Hurricane Center, the Atlantic hurricane season is currently in a period of heightened activity that started around 1995 and could last at least another decade.

[2] BureauNet is a database maintained by the National Flood Insurance Program's (NFIP) Bureau and Statistical Agent and access is available through FEMA. It provides summaries of flood insurance and claims information, such as dates and values of claims, amounts of claims paid, etc. This information can be used to identify general areas of repetitive flooding, locate clusters of flood-prone structures, and determine which structures have incurred the most frequent or severe losses.

High winds are often associated with other storms, such as hurricanes or nor'easters, but may occur independently. High winds can cause downed trees and power lines, flying debris, and building collapses, all of which may lead to power outages, transportation disruptions, damage to buildings and vehicles, and injury or death. Flying debris is the primary cause of damage during a windstorm. While a building may be generally structurally sound, broken glass from windows can cause injuries inside and outside the building and can damage building content.

Heavy rain, coastal flooding, and powerful winds are commonly associated with hurricanes/high winds. Storm surge is often the greatest hurricane-related hazard. Storm surge is water that is pushed toward the shore by the force of the winds swirling around the storm. This advancing surge combines with the normal tides to create the hurricane storm tide, which can increase the mean water level by fifteen feet or more. In addition, wind driven waves combine with the storm tide. This rise in water level can cause severe inundation in coastal areas, particularly when the storm tide coincides with normal high tides.

Hurricanes and high winds pose a great threat to the Village. The impact upon the Village during a coastal storm is dependent on the phase of the moon at the time of the storm, wind direction and tidal stage. Hazard agents are as follows.

- High Winds - Impose significant loads on structures, both direct and wind pressure and drag, and tend to propel loose objects at high velocities.
- Flooding - A hurricane can cause many different types of flooding. Along the coast, flooding may occur from storm surge, wind-driven water in estuaries and rivers, or torrential rain. The flooding can be still water flooding or velocity flooding caused by wave action associated by wind driven along the coast. The rainfall associated with a hurricane is on the order of 6 to 12 inches, with higher levels common. The rain may precede landfall by hours and may persist for many hours after landfall, causing severe flooding.
- Heavy Waves - The storm may generate waves up to 25 feet high. These waves can batter the coastline, causing devastating damage to the shoreline itself and to structures near the shore. The velocity of the water moving back and forth undermines the foundations of buildings and piers by removing the soil from around them. Debris driven inland by waves can cause severe structural damage. Persons exposed to moving waters and debris are likely to be severely injured.
- Secondary Hazards - Hurricanes can also cause secondary hazards. Tornadoes and power outages are common. Contamination of water supplies, flooding of sewage treatment facilities, building collapse/destruction, and hazardous material release also occur.

3.1.2 Geographic Location/Extent

The risk of a hurricane or high wind event is planning area-wide. No geographic portion of the planning area is more or less prone to hurricane or high wind damage than any other. The exception is, of course, damages caused by flooding during a hurricane. The portions of the planning area most at risk to flooding damages are described in the flooding hazard profile.

The extent or severity of hurricanes is often measured using the Saffir-Simpson Scale. Planners rely on this scale to estimate the destructive forces associated with hurricanes. The following table describes hurricane damages in each of the Saffir-Simpson categories.

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph 64-82 knots 119-153 km/h	**Very dangerous winds will produce some damage:** Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large tree branches will snap and shallowly-rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph 83-95 knots 154-177 km/h	**Extremely dangerous winds will cause extensive damage:** Well-constructed frame homes could sustain major roof and siding damage. Many shallowly-rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (major)	111-129 mph 96-112 knots 178-208 km/h	**Devastating damage will occur:** Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130-156 mph 113-136 knots 209-251 km/h	**Catastrophic damage will occur:** Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	157 mph or higher 137 knotts or higher 252 km/h or higher	**Catastrophic damage will occur:** A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

NOTICE: The Saffir-Simpson Hurricane Wind Scale (SSHWS) has undergone a minor modification for 2012 in order to resolve awkwardness associated with conversions among the various units used for wind speed in advisory products. This change does not alter the category assignments of any storms in the historical record, nor will it change the category assignments for future storms.

The Beaufort Wind Scale is a system used to estimate and report wind speeds when no measuring apparatus is available. The National Weather Service provided the following Beaufort Wind Scale definitions for the various levels.

Level	Mph	Designation	Description
Force 0	1-3	light air	smoke drift indicates wind direction
Force 1	4-7	light breeze	weather vane moves, leaves rustle
Force 2	8-12	moderate breeze	leaves and twigs in constant motion
Force 3	13-18	breeze	dust and loose paper raised, small branches move
Force 4	19-24	fresh breeze	small trees sway
Force 5	25-31	strong breeze	large branches move, wind whistles
Force 6	32-38	moderate gale	whole trees move, walking affected

3.1.3 Previous Occurrences

The NCDC does not include a listing of hurricane events by county or by zone. However, the following list of hurricanes is from the Nassau County Web site, and all have impacted the planning area.

The Long Island Express Hurricane (1938): The Long Island Express hit Long Island on September 21, 1938 as a Category 3 hurricane with wind gusts of 125 miles per hour. It devastated the coast of Long Island with storm surges of 18 feet. The Long Island Express was responsible for 700 deaths, $308 million in damages, and 63,000 people homeless between Long Island and New England. Planning area-specific figures could not be found. However, the Long Island Express was so powerful that it created the Shinnecock Inlet and widened the Moriches Inlet in Suffolk County.

The Great Atlantic Hurricane (1944): A Category 3 Hurricane (winds 111-130 miles per hour), which, according to the NOAA, caused power outages, some lasting ten days, and downed trees throughout Long Island. Damages totaled $1 million (1944 USD) on the eastern half of the island alone. The beach eroded up to 20 feet in some places, causing houses to be taken by the sea.

Hurricane Hazel (1954): A Category 3 Hurricane with wind gusts of 113 miles per hour in Battery Park (highest winds ever recorded in NYC).

Hurricane Carol and Hurricane Edna (1954): Both were Category 3 Hurricanes. Hurricane Edna dropped 9.02 inches of rain on Long Island.

Hurricane Donna (1960): It started as a Category 4 hurricane and hit Nassau County as a Category 2 with sustained winds of 100 miles per hour. Donna caused a record tide, and rainfall topped five inches.

Hurricane Belle (1976): A Category 1 hurricane that produced 6 inches of rain and tides 7.2 feet above normal.

Hurricane Gloria (1985): It began as a Category 3 hurricane off Cape Hatteras, North Carolina, but was a Category 2 hurricane when it reached Nassau County. It had wind gusts of 100 miles per hour and produced 3.4 inches of rain in the planning area. Gloria devastated the U.S. and inflicted serious damage to Nassau County.

Hurricane Floyd on September 16, 1999: Floyd brought a deluge of more than five inches of rain to much of the New York metropolitan area. In northwestern New Jersey and southeastern New York totals in some places topped ten inches, resulting in severe flooding.

Hurricane Irene (2011): It made landfall as a Category 1 but immediately weakened to a Tropical Storm just after landing. Hurricane Irene's anticipated strength caused Nassau County and neighboring counties to order evacuations. The Long Island Power Authority

(LIPA) faced 400,000 power outages. The planning area experienced flooding, downed trees, power outages and damaged homes. According to Nassau County, the total cost for preparation, clean up and damage repair was approximately $12 million. The county submitted FEMA claims for $11.9 million, of which $10.5 million has been approved as of the date of this plan. Individual NFIP claims totaled $28,860,472. for the Village of Freeport.

Hurricane Sandy (2012): On October 29, 2012, Sandy turned toward the northwest on its path to New Jersey. Other weather systems began to interact with the storm, causing it to gain energy. High tide and 300 miles of open water caused the storm to intensify and the surge to build. At 8:00 p.m. Sandy's center came ashore near Atlantic City, New Jersey. The storm was at this point classified as a post-tropical nor'easter. However, the storm's unusual path from the southeast made its storm surge much worse for New Jersey and New York. The National Weather Service in New York reported that the storm surge of nearly 14 feet in New York Harbor was a new record, topping the previous high of 10 feet caused by Hurricane Donna in 1960. High tide from the full moon added an extra foot to the surge. The surge topped the seawall at The Battery in Lower Manhattan and flooded parts of the city's subway system. On November 3, 2012, the NOAA reported that 109 people died in the United States, with at least 40 deaths in New York City, half of those on Staten Island. Damages were expected to exceed $50 billion. In Freeport the storm surge reach 10.12 feet. Freeport suffered massive surge damage, power outages and utility and transportation disruptions.

Three commercial properties on the Village's Nautical Mile experienced significant damage and were closed for reconstruction. Two of the business reopened in the summer of 2013

Flooding from Hurricane Sandy exceeded the flood zone by 250 feet. Approximately 3,000 homes were affected by the storm surge in one way or another. $79,727,339. of individual claims for damage have been submitted. 135 homes were "red tagged" thereby declared unsafe for habitation. The remaining homes suffered minor to moderate damage. The majority of such residences were repaired or reconstructed. Currently about one hundred structures remain vacant or unsafe for habitation.

There were 12 working fires as a result of Hurricane Sandy, several of these fires were unfortunately in very high flood waters and could not be reached and were left to burn.

As Sandy pasted the 13kv and 4kv Electrical Distribution systems suffered extensive damage as follows:

> 13kv Tie Line #1 tripped and locked out, along with 13kv circuits 2P-114, 4F-304, and 4F-308.
>
> Flooding surrounding Substations A and D forced the system operator to trip breakers and safely power down substations to avoid any further damage.

Circuit 2P-115 and 4F-316 breakers "tripped open" (shut down) by System Operator to prevent damage to the electrical distribution system.

On October 30, 2012, approximately 73% of Freeport Electric's customers were without power.

On October 31, 2012, approximately 29% of Freeport Electric's customers were without power.

On November 1, 2012, approximately 25% of Freeport Electric's customers were without power.

On November 3, 2012, approximately 2% of Freeport Electric's customers were without power.

Leo. F. Giblyn Elementary School located at 450 South Ocean Avenue, is in a SFHA. The school suffered flood damage during Hurricane Sandy. The elementary school which houses grades 1-4, temporarily had to relocate their 564 students to neighboring schools within the district due to incurred water damage caused by Hurricane Sandy. After six weeks, the students returned to their home school on Monday December 10, 2012.

The Village of Freeport Public Housing Authority (PHA) manages and maintains 351 low-income and senior apartments in five locations throughout the Village. Three of its sites sustained significant damage including major flooding damage to all mechanical, electrical and specialty systems. Over $207,000 was expended by the housing authority just to address the immediate repair needs of the Moxey Rigby Complex, South Main and 100 North Main Street facilities. The PHA provided pre-engineering estimates of $342,000 to address needed repairs.

The Village's Department of Public Works and Recreational Center also experienced flooding due to the hurricane. The Public Works building could not be used for approximately two (2) months due to flood damage. The Village's Recreational Center and Department of Public Works are now currently fully operational.

The Village's water supply and distribution system received no damage.

All three (3) of Freeport's sewer lift stations. were damaged by the storm. Electrical panels, pumps and compressors were all submerged. Restoration work began immediately after flood waters were cleared with the relocation and replacing of the electric panels to an elevation above Sandy's water levels. However, the system remained fully operational. Damages to the three (3) pump stations were $143,018.

The Village incurred approximately $4.5 million in Hurricane Sandy related expenditures, of which $3,323,680 are attributable to the Village's General Fund and $1,176,320 attributable to the Village's Electric Fund. Approximately $2.0 million was expended due to debris removal, $575,000 for non-capital equipment and materials, $820,000 for Village

labor overtime costs and $1,105,000 in contractual costs. It is estimated that the quantity of debris removed was 13,347 tons.

Sandy caused a temporary shortage of gasoline and left many stations on Long Island without power for their pumps. The storm also prompted the shutdown of two of six east coast refineries in its path. At gas stations throughout New York and New Jersey, customers had to wait for hours for fuel. Most gas stations in Freeport never lost electrical power and therefore had the ability to pump gas, however, many wholesale gasoline suppliers didn't have electricity to pump fuel into the tanker trucks for distribution. The wholesalers who did have power had a difficult time keeping up with post-Sandy demand, since service stations had to be refueled so much faster.

The National Weather Service issues a Wind Advisory for sustained winds 30 to 39 miles per hour or gusts from 40 to 57 miles per hour. A High Wind Warning is issued for sustained winds over 40 miles per hour or gusts exceeding 60 miles per hour. A High Wind Watch means that high wind conditions are possible in the next 12 to 36 hours. The NCDC website has recorded the following 48 high wind events that have affected southern Nassau and Queens counties over the past 47 years.

Location	Date	Time	Type	Magnitude
Nassau	06/09/1973	1730	Thunderstorm Wind	52 kts.
Nassau	06/21/1974	1330	Thunderstorm Wind	50 kts.
Nassau	08/30/1974	1310	Thunderstorm Wind	55 kts.
Nassau	09/02/1974	0106	Thunderstorm Wind	50 kts.
Nassau	07/03/1984	1540	Thunderstorm Wind	60 kts.
Nassau	06/24/1985	1307	Thunderstomr Wind	50 kts.
Nassau	08/30/1985	1500	Thunderstorm Wind	50 kts.
Nassau	03/02/1994	2300	High Wind	53 kts.
Nassau	01/19/1996	1555	Thunderstorm Wind	52 kts.
Nassau	03/19/1996	1300	High Wind	69 kts.
Nassau	03/06/1997	0720	High Wind	64 kts.
Baldwin/Freeport	05/01/1997	1845	Thunderstorm Wind	50 kts.
Nassau	05/06/1997	1315	Thunderstorm Wind	50 kts.
Nassau	05/19/1997	2152	Thunderstorm Wind	50 kts.
Nassau	12/29/1997	1945	High Wind	59 kts.
Countywide	09/07/1998	1350	Thunderstorm Wind	65 kts.
Massapequa	09/07/1998	1425	Thunderstorm Wind	52 kts.
Long Beach	01/18/1999	1816	Thunderstorm Wind	54 kts.
Nassau	12/12/2000	0845	High Wind	56 kts.
Valley Stream	01/18/2006	0900	High Wind	43 kts.
Long Beach	02/17/2006	1151	High Wind	45 kts.
Long Beach	10/20/2006	1516	High Wind	42 kts.
JFK Airport	12/01/2006	1736	High Wind	44 kts.
Oceanside	12/08/2006	0948	High Wind	42 kts.
JFK Airport	01/20/2007	1451	High Wind	41 kts.
JFK Airport	01/08/2008	1047	High Wind	44 kts.
JFK Airport	01/30/2008	1029	High Wind	46 kts.
Oceanside	02/10/2008	1856	High Wind	42 kts.
Massapequa Park	02/18/2008	0134	High Wind	35 kts.
Floral Park	03/20/2008	1204	High Wind	34 kts.

Oceanside	05/12/2008	1259	High Wind	38 kts.
JFK Airport	12/07/2008	1951	High Wind	36 kts.
Massapequa	12/25/2008	0341	High Wind	33 kts.
Uniondale	12/30/2008	1713	High Wind	36 kts.
Jamaica Queens	01/08/2009	1054	High Wind	39 kts.
Merrick	02/12/2009	1330	High Wind	44 kts.
JFK Airport	04/04/2009	0743	High Wind	40 kts.
JFK Airport	10/07/2009	1218	High Wind	48 kts.
Jones Beach	04/29/2010	1705	High Wind	42 kts.
Jones Beach	05/08/2010	1915	High Wind	46 kts.
Jones Beach	11/17/2010	1620	High Wind	38 kts.
Nassau	12/01/2010	1200	High Wind	55 kts.
Nassau	01/31/2013	0100	High Wind	61 kts
Nassau	04/03/2016	0700	High Wind	50 kts
Nassau	02/03/2017	0900	High Wind	56 kts
Nassau	10/29/2017	2300	High Wind	50 kts
Nassau	03/02/2018	1200	High Wind	57 kts
Nassau	10/16/2019	1900	High Wind	43 kts

Information specific to Freeport is not available on the NCDC website. However, it is reasonable to assume that high winds impacting southern Nassau County also impact Freeport.

3.1.4 Probability of Future Occurrences

Since 1938 11 hurricanes have caused reported damages in Nassau County, or an average of one hurricane less than every seven (7) years. This results in a “low” probability using the definitions at the beginning of the Risk Analysis. However, recent incidents have been far more frequent, causing the Planning Committee to rate the probability as “medium.” There have been 48 high wind events recorded for Nassau County, which includes the planning area, in the previous 47 years. This results in one event annually, for a “high” probability for high wind events.

3.1.5 Vulnerability/Impact

The State of New York Office of Emergency Management (OEM) used a computer model called SLOSH (Sea, Lake, and Overland Surges from Hurricanes) to show vulnerability in the 2011 State Hazard Mitigation Plan. The calculations predict the effects of coastal storm surge. Calculated surge was based on storms moving in different directions and with varying strengths. For the state plan the SLOSH model analyzed storms moving northeast and northwest (the direction that will have the greatest impact).

The SLOSH calculations were based on the storm surge above the mean tide and the strongest potential winds for each category storm. The error was +/- three feet. Additionally, the SLOSH model calculated inundation levels for each location as if the hurricane hit that particular location head-on. The “worst-case” scenario for storm surge was calculated using the SLOSH model.

The NYS Plan was the original source for inundation maps developed by the Army Corps. The maps were based on surge height projections as calculated by the SLOSH Model. Surge heights were calculated for set locations throughout the region for a number of category 1-4 hurricanes,

varying in forward speed, landfall location, and track. The maximum values obtained for all hurricanes of a particular category were then transferred to a 1:24,000 base map (contour interval 10 feet) to delineate surge zones.

Using the SLOSH model, the Freeport Planning Committee was able to determine which roads and buildings could be inundated by a direct hit from a Category 1, 2, 3, or 4 hurricane. According to the SLOSH map, a Category 4 hurricane would produce storm surges as high as 29 feet.

The State Plan included impacted population figures for Nassau County. Though not limited to the planning area, the information is pertinent. The figures for the county were as follows:

Total Nassau County Population:	1,334,544
Impacted Population for Category 1 Storm:	108,139
Impacted Population for Category 2 Storm:	236,603
Impacted Population for Category 3 Storm:	334,397
Impacted Population for Category 4 Storm:	406,038
Maximum Impacted Population:	406,038
Percentage of Population Impacted:	30.43%

The percentage of the Freeport population impacted by a hurricane is probably far higher than the entire county, given that a much higher percentage of the planning area is located in defined Special Flood Hazard Areas. In addition, population density is twice as high in Freeport as in Nassau County (9,531 people per square mile in Freeport versus 4,655 people per square mile in the county).

The 2005 Freeport Hazard Mitigation Plan included a section describing the risks presented by houseboats in hurricanes and high winds. Although the numbers of houseboats in Freeport are declining due to village codes restricting them, some do remain in the planning area. Some of the vulnerability to storms arises because these dwellings are not self-propelled, making relocation in an emergency difficult. Special arrangements may be required to evacuate occupants. A database showing the location of all houseboats does not exist; therefore risks cannot fully be assessed. There is concern about lack of insurance and improper sewage disposal connected with using boats as residences.

3.2 FLOODING

Hazard Description	Location/Extent	Previous Events	Probability	Vulnerability/Impact
Condition of partial or complete inundation of normally dry land area.	The risk of damages from flooding is greatest in Special Flood Hazard Areas (SFHAs). According to BureauNet, Category 1 to Category 4 storms produce waves up to 29 ft Hurricane Sandy 2012	Some kind of flooding occurs at least annually in the planning area.	High	1/3 of the Village is comprised of SFHAs. $79,727,339. estimated damages for a flooding event. Additional sheltering + cost for emergency operations; damages/loss of business. Over 4,000 structures impacted according to BureauNet.

3.2.1 Hazard Description

Floods are a frequent and costly natural hazard to the Village of Freeport in terms of both human hardship and economic loss. A large part of the community is built in flood-prone areas or floodplains. The FEMA definition for flooding is "a general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties from the overflow of inland or tidal waters or the rapid accumulation of runoff of surface waters from any source." Flooding can be categorized by its source, such as "river flooding." However, in Freeport, the following types of flooding are the most common:

- Coastal flooding from storm surge or coastal storms
- Coastal erosion
- Unusual and rapid accumulation or runoff of surface waters from any source
- Local drainage or high groundwater levels
- Sea level rise
- Climate change

A floodplain is defined as the land adjoining a watercourse or body of water that becomes inundated with water during a flood. Floodplains often are referred to as "100-year floodplains." A 100-year floodplain is not the flood that will occur once every 100 years. It is the flood that has a one-percent chance of being equaled or exceeded each year. FEMA's National Flood Insurance Program (NFIP) has mapped the Special Flood Hazard Areas (SFHAs) on the Flood Insurance Rate Map (FIRM).

Coastal flooding is the most common type of flooding in Freeport. It is caused by sea water rising over and above the normal tide action, which can have many different causes, including storm surge, hurricanes, severe storms, and a phenomenon called "nor'easters." Nor'easters

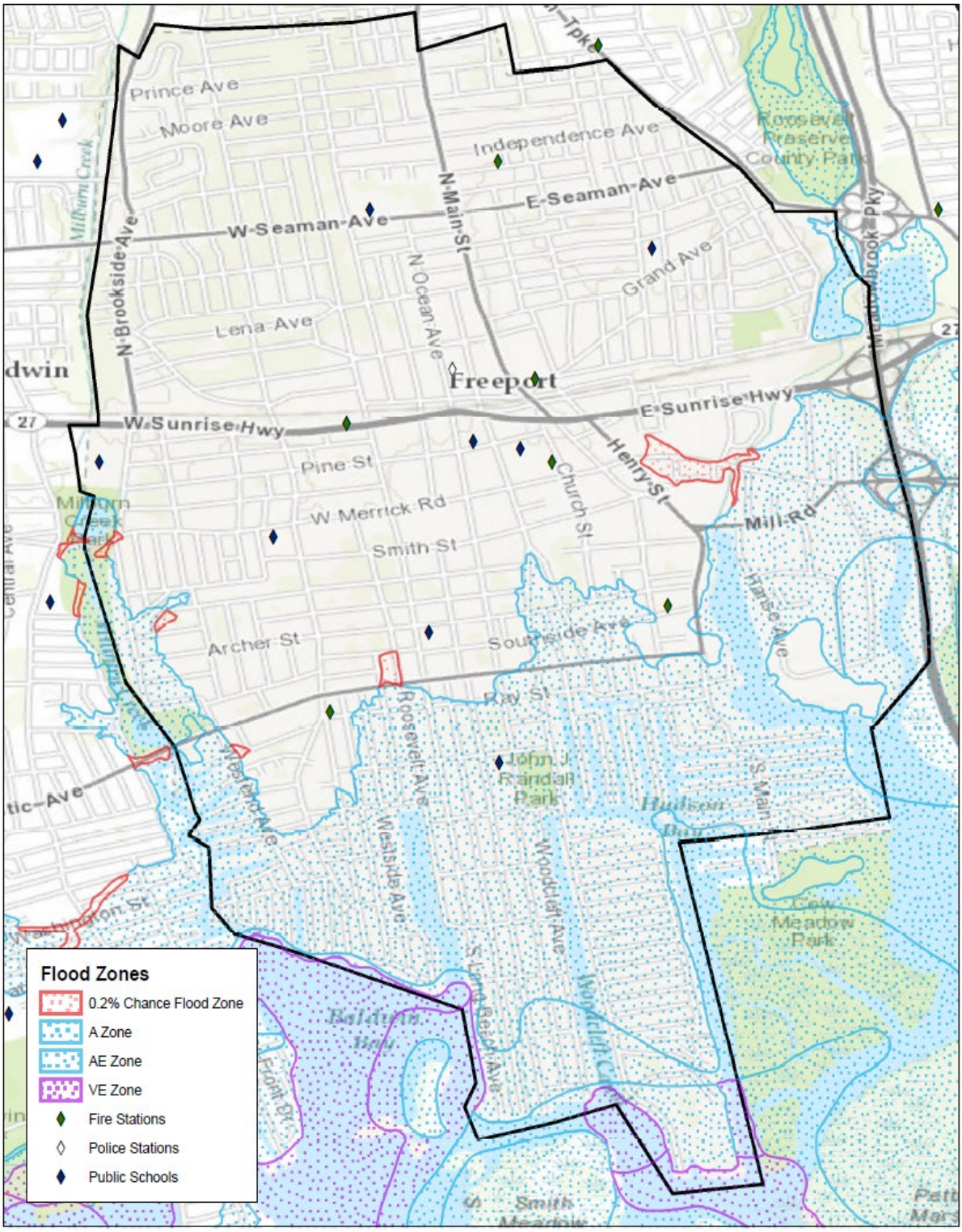
are severe storms that occur in the Atlantic basin and are extra-tropical in nature with winds out of the northeast. Hurricanes, severe storms, and nor'easter's are further discussed in separate sections of this Plan.

Other causes of flooding include Freeport's drainage system. Drainage outflow check valves are installed on storm drain outfalls to eliminate backflow issues through the existing drainage system. The drainage system requires additional maintenance to ensure that the check valves are operating properly. A portion of the system (Milburn Creek) comes under the jurisdiction of the County of Nassau and therefore is not covered by Village maintenance procedures.

Another source of flooding is the system of existing bulkheads that already are or are becoming nonfunctional. Bulkheads have a maximum lifespan, and many in Freeport have exceeded that point. Some older bulkheads are too low, allowing water to pass over them, causing significant flooding to adjoining properties. Many low-lying bulkheads are not being raised to current code requirements since they are not being replaced. This is causing significant erosion and property damage and increased flood levels in Long Creek, Swift Creek, and the surrounding marshes. New bulkheads can fail due to faulty materials or improper bore activity.

Freeport's history of floodplain management dates to February 14, 1976, when the Village joined the regular program of the NFIP. By joining the NFIP, property owners and residents of the community were able to obtain insurance for flooding which is not covered by their regular homeowners insurance. This was an important step since all federally-backed loans for properties in SFHAs are required to obtain insurance prior to loan approval. Since 1976 Freeport has been in compliance with the federal regulations. Freeport has successfully passed inspections by FEMA and the New York State Department of Environmental Conservation (DEC).

In early 1991, the Village reevaluated its local flood regulations. Meetings were held with FEMA, DEC, and the public to discuss the regulations. This process also included successfully challenging aspects of a new FIRM. In September 1993 a new Village Floodplain Management Code was adopted, along with a new flood rate map dated September 15, 1993. On August 24, 2009 Freeport adopted an updated FIRM, as shown on page 42. The Special Flood Hazard Areas consist of zone AE. There are no V zones located within the Village.



Special Flood Hazard Area Structure Impact
Freeport, NY

FEMA

0 0.2 0.4 0.8
Miles

DR-4085 MITIGATION GIS

Map Date: February 15, 2013

During this time period the Village became aware of a voluntary NFIP program called the Community Rating System (CRS). The purpose of the program is to assist each community to go beyond the minimum FEMA regulations and to gear activities toward specific goals. Each community that participates is given a rating based on the flood prevention activities in which it engages. Based on this rating the NFIP provides the participating community a discount on all flood insurance policies in increments of five (5) percent up to a maximum of 45 percent. Freeport is rated Class 7 under the program and is the only community on Long Island to successfully achieve a 15 percent discount.

As outlined elsewhere in the 2020 Update, the Village of Freeport has taken positive steps to reduce damages caused by flooding. Freeport has on staff a full-time emergency manager to run its mitigation programs. Mitigation initiatives undertaken by Freeport include elevation projects such as raising streets in hard-hit areas and using a $890,000 Flood Mitigation Assistance (FMA) Grant to help 25 homeowners affordably elevate their homes three feet above the Base Flood Elevation (BFEs). Sub-committees also are in place to address bulkhead problems, elevations in commercial areas, and public awareness. In addition, after Hurricane Sandy and through the Governor's Office of Storm Recovery and the NY Rising Program, an additional 188 homes have been elevated to 4' above the Base Flood Elevation.

3.2.2 Geographic Location/Extent

A significant flood event would likely cause severe damage to private and public property and the Village's infrastructure, given that one-third of the Village is located in Special Flood Hazard Areas. According to the 2009 FIRM, Freeport SFHAs encompass 991 acres. Approximately 3,756 structures and eight (8) public critical facilities are located in the floodplain. Approximately 12,000 residents reside in the flood hazard areas. The following is a partial list of waterways subjected to flooding in or near the Village:

Waterway	Length in feet	Ownership
Albert Canal	1,000	Private
Blue Hole Canal (portion)	4,100	Town of Hempstead
Crooked Creek	2,700	Town of Hempstead
Denton's Pond Creek	4,050	Town of Hempstead
East Channel	1,375	Private
Emories Basin	1,700	Freeport
Emory's Creek	3,375	Town of Hempstead
Freeport Creek	9,050	Town of Hempstead
Glover's Canal	900	Private
Gordon's Channel	1,650	Freeport
Hudson Canal	2,000	Freeport
Hudson Channel	1,900	Town of Hempstead
Freeport Little Swift Creek	1,900	Town of Hempstead
Long Creek	7,200	Town of Hempstead
Mallard Canal	1,000	Freeport
Miller Channel	2,025	Freeport
Nassau Channel	2,150	Freeport
Old Hempstead Narrows	900	Town of Hempstead
Plover Canal	1,000	Private

Randall Bay	3,000	Freeport
Sportsman Channel	1,800	Freeport
Waterway	**Length in feet**	**Ownership**
Stadium Park Canal	3,350	Town of Hempstead
Teal Canal	1,150	Private
Woodcleft Basin	1,450	Freeport
Woodcleft Canal	4,440	Town of Hempstead
Yacht Basin	2,500	Private

Freeport has determined its highest flood risk areas by evaluating several sources of information, including the Flood Insurance Rate Map, the New York State Evacuation Study and associated surge maps and local flooding patterns. To date most of the flooding in Freeport has been concentrated south of Atlantic Avenue. However, there are other upland sources that could flood northern areas of Freeport. In the past, torrential rains have caused street flooding and water in basements throughout the Village.

Flooding of roads prevents access to and evacuation from flood-prone areas. The following roads are susceptible to flooding due to the street grade:

- Richmond Avenue from Miller Avenue to Woodcleft Avenue
- Manhattan Avenue from Miller Avenue to Woodcleft Avenue
- Suffolk Street from South Long Beach Avenue to Woodcleft Avenue
- Hamilton Street from South Long Beach Avenue to Woodcleft Avenue
- Adams Street from South Long Beach Avenue to Woodcleft Avenue
- Hudson Avenue from Jefferson Street to Howard Avenue
- Sportsman Avenue from Ray Street to the canal on South Ocean Avenue
- All streets south of Cedar Street
- Guy Lombardo Avenue south of Atlantic Avenue
- Albany Avenue from Merrick Road to Doxsee Drive

3.2.3 Previous Occurrences

The Village of Freeport, located on the Long Island glacial outwash plain, is low-lying, with elevations at or less than 20 feet above sea level. The Village is susceptible to tidal flooding associated with hurricanes, high winds and nor'easters. Shoreline areas and low-lying interior areas are subject to frequent and significant damage from tidal inundation, wave run-up, and backwater flooding from low-lying storm drains. Generally speaking, the Planning Committee determined that flooding in the Village is most severe during nor'easters, which typically occur during the late fall, winter, and early spring. Hurricanes, which typically occur between June and October, also pose a significant threat to Freeport residents. Both types of storms can deposit significant amounts of precipitation in the watershed and produce strong and sustained onshore winds. When high onshore winds are sustained over several tide cycles, as in a nor'easter, the resultant storm surge can combine with water runoff to produce severe flooding along the shore and back bay areas. Due to its geographic location Freeport is unique in this regard. The Village is often deluged with tidal flooding when adjacent communities are not.

These events were characterized by torrential rains, strong winds, street flooding up to five feet, and flooding of crawl spaces beneath structures, basements, and first floors in low-lying buildings. Flooding patterns followed tide patterns except for the October 31 (Halloween) Storm of 1991, when flood waters did not recede for approximately three days. The Halloween storm was created by a collision between a low-pressure system, a cold high-pressure system, and the remnants of Hurricane Grace.

The National Climatic Data Center (NCDC), part of the National Oceanic and Atmospheric Administration (NOAA), lists several Freeport coastal floods in its database, which goes back to 2006. Note that although damages must have occurred during at least some of these events, no damages were reported to the NCDC. The NCDC-reported coastal flooding events are as follows:

October 7, 2006: A slow-moving coastal storm produced minor to moderate flooding across the beaches and back bays of Long Island. Street flooding was reported in Freeport during the morning high tide, and the USGS tide gage showed water levels at or above benchmark for moderate coastal flooding.

October 28, 2006: A strong storm produced winds of 40 to 50 mph, which caused minor to moderate coastal flooding along the Atlantic back bays of Nassau and southwest Suffolk counties. Moderate flooding was reported at the USGS tide gage for Hudson Bay at Freeport (5.31 feet stage level).

April 19, 2007: A strong late season nor'easter impacted the region with a prolonged period of moderate coastal flooding. The combination of a strong high-pressure weather system off the New England coast and a period of higher than normal spring tides resulted in several days of tidal piling across Atlantic-facing beaches and the Long Island Sound. The slow eastward movement of the low resulted in a prolonged period of long-fetch easterly flow. Tidal departures were highest on both the Atlantic back bays of western Long Island from Sunday evening through Monday morning, ranging from 2.5 to 3.5 feet. Isolated flooding episodes continued over the next few days. The storm caused over $26 million in damage in Suffolk County, including significant beach erosion, flooding, and harm to homes, businesses, and infrastructure. (Note that Freeport-specific information was not available for this flood event.)

April 7, 2008: Prolonged easterly flow over two to three days occurred in response to a strong high-pressure system to the north. This resulted in the piling up of water in the southern bays of Long Island, and produced moderate levels of flooding briefly in Freeport. The tide gauge on the Hudson Bay at Freeport rose above the moderate flood stage of 5 feet National Geodic Vertical Datum (NGVD), peaking at 5.03 feet.

July 23, 2009: A combination of high pressure to the northeast and a developing coastal low to the south produced strong northeast winds over the region. This caused piling water up in the back bays of Long Island. The USGS tidal gauge at Freeport measured a water level at or above the threshold for moderate flooding. There was an observed surge of 1.9 feet at Freeport.

October 16, 2009: Moderate tidal flooding was caused by a strong pressure gradient between high pressure to the north and a coastal storm passing south of Long Island. A prolonged period of strong east to northeast winds across coastal waters coupled with astronomically high tides caused water to build along the coast followed by tidal piling. Street flooding was reported in Freeport. The USGS gauge at Freeport exceeded its moderate flood stage, peaking at 6.11 feet..

October 18, 2009: Moderate tidal flooding was caused by a strong pressure gradient between high pressure to the north and a coastal storm passing south of Long Island. A prolonged period of strong northeast winds across coastal waters and astronomically high tides caused tidal piling. Roads near the intersection of Woodcleft Avenue and Front Street in Freeport were reported inundated and impassable. Water was reported up to the doors of commercial buildings in Freeport. A maximum water level of 6.32 feet MLLW (Mean Lower Low Water) was reported at the USGS gauge in Freeport. This is 1.32 feet above the benchmark for moderate tidal flooding. In Freeport, Hudson Street flooded and several streets along the Nautical Mile were under water and impassable.

November 13, 2009: A strong and persistent east-northeast wind gradient over the region was caused by strong low pressure off the Carolinas (remnants of Hurricane Ida) and a strong high pressure system located over Eastern Canada. Between November 11 and 14. the tidal piling over several tidal cycles caused widespread moderate coastal flooding along the Long Island south shore and back bays. High seas and long-period easterly swells also caused significant beach erosion along ocean-facing beaches. Water rose to 5.22 feet, or 0.22 feet above the moderate coastal flooding benchmark, at the USGS gauge in Hudson Bay at Freeport..

November 14, 2009: A strong and persistent east northeast wind gradient continued over the region. Water rose to 5.40 feet at 6:12 a.m. (EST) at the USGS gauge in Hudson Bay at Freeport. This is 0.40 feet above the moderate coastal flooding benchmark of 5.0 feet.

March 13, 2010: A combination of strong high pressure over Southeast Canada and intensifying low pressure tracking slowly northeast from the Mid-Atlantic States created a prolonged period of strong easterly winds across the region from March 12 through March 14. The highest winds and resultant tidal rises occurred on March 13, resulting in widespread moderate coastal flooding. Positive tidal departures of 3 to 5 feet were recorded, with many places seeing water levels at their highest in almost 20 years. In addition, the prolonged east winds generated high surf that battered the Atlantic-facing shoreline for several days and caused severe beach erosion. Water rose to 6.21 feet MLLW at the USGS gauge at Freeport, or 1.21 feet above the moderate flooding benchmark.

November 5, 2010: A short period of strong east to northeast winds developed between stubborn high pressure over the Canadian Maritimes and intensifying low pressure tracking up the coast and over the region. These winds combined with long- period sea swells and astronomically high tides to cause waters to pile up along the coast.

Widespread minor and localized moderate coastal flooding occurred along the south shore bays of Nassau County. The USGS gauge at Freeport exceeded its moderate flood stage of 5.0, peaking at 5.96 feet MLLW.

November 11, 2010: A two- to three-day period of strong northeasterly winds over a long fetch developed between strong high pressure building north of the region and a closed low-pressure system slowly drifting east of the region. The combined winds and long-period easterly swells piled water along the coast. It caused widespread minor and localized moderate coastal flooding along the south shore bays of Nassau County. The USGS gauge at Freeport exceeded its moderate flood stage of 5.0 feet MLLW, peaking at 5.94 feet.

August 8, 2011: Irene made landfall locally as a tropical storm, moving across southeast New York and western Connecticut before dissipating over New England near the Canadian border. Copious amounts of tropical moisture within the storm produced extended periods of heavy rainfall, resulting in widespread moderate to major flooding across the area. Buffalo Avenue at Merrick Road in Freeport was impassible due to flooding. The USGS gauge at Freeport exceeded its moderate flood stage of 5.0, peaking at 7.35 feet MLLW.

October 29, 2012: During the weekend of October 20-21, 2012, an area of disturbed weather just south of Hispaniola began to push to the west and strengthen. By Monday October 22, 2012, this area of convection eventually developed into Tropical Storm Sandy, becoming the 18th named storm of the Atlantic hurricane season. From this point, Tropical Storm Sandy turned and moved northward, making landfall in Jamaica as a category 1 hurricane on October 24th. Sandy then intensified into a Category 2 hurricane north of Jamaica and slammed into eastern Cuba. Sandy weakened to a Category 1 hurricane while tracking across the Bahamas. Sandy then took a slight northwestward motion near the northern Bahamas. It is during this time frame that the offshore Atlantic waters were heavily impacted by Sandy's passing. Its storm surge hit New York on October 29, 2012. The USGS gauge at Freeport exceeded its moderate flood stage of 5.0, peaking at 10.12 feet MLLW. Flooding exceeded the flood zone by 250 feet.

The NCDC also reported several storm surge events that caused moderate flooding in Freeport. Damages were not reported for either event, which are described below:

June 21, 2009: The combination of high astronomical tides and water being piled up into the back bays and along the south shore of Long Island produced minor to moderate coastal flooding. Up to 1.5 feet of water inundated portions of Freeport. No property damage was reported, but bus routes were changed and resident's vehicles were moved out of the flooded area..

October 4, 2010: A two-day period of strong northeast winds developed between strong high pressure to the northwest of the area and weak low pressure tracking up the coast. The resultant tidal piling caused widespread minor and isolated moderate coastal flooding along the south shore bays of Nassau County. The USGS gauge at Freeport

exceeded its moderate flood stage of 5.0 feet MLLW, peaking at 6.14 feet. Significant street flooding was observed on Hudson Avenue in Freeport.

January 10, 2016: Strong high pressure over Southeast Canada and low pressure drifting off the Mid Atlantic coast resulted in 2 days of persistent northeast winds Jan 8th and 9th. This was followed by 12 to 18 hours of east to southeast winds of 15 to 20 mph with gusts to 30 to 35 mph leading into high tides on Jan 10th. The resultant surge combined with high astronomical tides, resulted in widespread minor to moderate coastal flooding along southern and western coastal areas of Long Island and New York City on the morning of January 10th. The USGS tidal gauge in Hudson Bay at Freeport recorded a peak water level of 6.4 ft. MLLW at 812 am EST. The moderate coastal flood threshold of 5.8 ft. MLLW was exceeded from 718 to 924 am EST.

January 24, 2016: Low pressure developed along the southern mid Atlantic coast on the evening of the 23rd and then rapidly intensified as it slowly tracked northeast, south of Long Island, through the night of the 24th. The resulting surge from 36 hours of gale to storm force north to northeast winds, combined with high astronomical tides, resulted in widespread minor to moderate coastal flooding for three consecutive tidal cycles the morning of the 23d into the morning of the 24th along the southern coastal areas of Long Island. Areas of minor to localized moderate coastal flooding occurred along Long Island Sound and East End portions of Long Island during this time period as well. In addition, widespread dune toe erosion and localized wash overs were reported along the Atlantic Ocean facing beaches of Long Island. Fire Island was especially hard hit. The USGS tidal gauge in Hudson Bay at Freeport recorded a peak water level of 6.3 ft. MLLW at 830 am EST. The moderate coastal flood threshold of 5.8 ft. MLLW was exceeded from 706 to 930 am EST.

February 9, 2016: Low pressure that developed off the Florida coast on early February 7th, intensified into a large intense offshore storm which slowly tracked northeast up the coast through the night of February 8th. The large fetch around the storm and slow movement resulted in 2 to 3 feet of surge on top of astronomically high tides. This resulted in widespread minor to moderate coastal flooding during the morning high tides of February 8th and 9th. Moderate coastal impacts were mainly along the south shore bays of New York City and Long Island. The USGS tidal gauge in Hudson Bay at Freeport recorded a peak water level of 6.6 ft. MLLW at 836 am EST. The moderate coastal flood threshold of 5.8 ft. MLLW was exceeded from 712 to 948 am EST.

May 6, 2016: Three days of widespread minor to localized moderate coastal flooding occurred in response to periods of northeast winds and the highest spring tides of the year. In fact, some places were touching NWS minor flooding thresholds just from the high astronomical tides. Water levels peaked with the evening tides of 5/5 and 5/6. The USGS tidal gauge in Hudson Bay at Freeport recorded a peak water level of 6.1 ft. MLLW at 748 pm EST.

January 24, 2017: A slow moving Nor'easter impacted successive high tide cycles with widespread minor to locally moderate coastal flooding on the evening of 1/23 and widespread moderate to locally major coastal flooding the morning of 1/24. Thirty six hours of east northeast gale to storm force winds helped build surge values to 3 to 4 feet above astronomical tides for the 1/24 morning high tide cycle. This caused widespread moderate to locally major coastal flooding along the southern and eastern bays and beachfront communities of Long Island. The USGS tidal gauge in Hudson Bay at Freeport recorded a peak water level of 6.4 ft. MLLW at 518 am EST. The moderate coastal flood threshold of 5.8 ft. MLLW was exceeded from 330 to 654 am EST.

March 2-4, 2018: A powerful coastal storm impacted the region Friday through Sunday with North to Northeast Gale to Storm force winds. This resulted in several tidal cycle of minor to moderate coastal flooding Friday morning through Sunday morning, with the most widespread moderate to locally major impacts occurring with the Saturday Night high tidal cycle. In addition, prolonged high surf from energetic easterly swells during this time period resulted in widespread areas of dune erosion and localized washovers along the Atlantic Ocean beachfront.. The USGS tidal gauge in Hudson Bay at Freeport recorded a peak water level of 6.5 ft. MLLW at 800 am EST on the March 2nd, 6.5 ft. MLLW at 930 am EST on March 3rd, 7.0 ft. MLLW at 954 pm EST on the March 3rd ,the moderate coastal flood threshold of 6.2 ft. MLLW was exceeded from 812 to 1106 pm EST, and the major coastal flood threshold of 6.9 ft MLLW was exceeded from 912 to 1012 pm EST. and 6.7 ft. MLLW at 1006 am EST on March 4th.

December 22, 2018: Intensifying low pressure moving up the spine of the Applachians on December 21st and into southern Quebec the morning of the 22nd produced strong southeast winds. These onshore winds in combination with high astronomical tides via the full moon of the 22nd, also produced widespread minor and localized moderate coastal flooding the mornings of the 21st and 22nd. A peak water level of 6.3 ft MLLW occurred at the USGS tidal gauge at Hudson Bay at Freeport from 2018-12-22 07:06 EST to 2018-12-22 07:18 EST.

January 20, 2019: Deepening low pressure tracked from the southeast United States on Saturday January 19, 2019 to the northeast on Sunday January 20, 2019. The low produced moderate coastal flooding along parts of the south shore of Long Island and New York City, and along western Long Island Sound, during the morning high tide cycle of the 20th. A peak water level of 6.5 ft MLLW occurred at the USGS tidal gauge at Hudson Bay at Freeport from 2019-01-20 06:48 EST

3.2.4 Probability of Future Occurrences

Based on the 25 recorded flood events in the past ten years, the Village of Freeport's probability of having an event in the next year is 100 percent. Past history shows an average of more than two events annually.

3.2.5 Vulnerability/Impact

The portions of the planning area most vulnerable to flooding are those in SFHAs. A number of critical facilities vital to the Village of Freeport are located in SFHAs. The Freeport Department of Public Works (DPW) is located within the AE Zone. The storm surge map indicates that this site is susceptible to significant flooding during Category 1 and Category 2 storms. Most of the buildings are located below the base flood elevation and have had numerous incidents of flooding. When flooding is predicted, equipment and personnel must be relocated off-site.

The Freeport Electric Power Plant II is located adjacent to the DPW in the AE flood zone. The storm surge map indicates that a Category 2 storm might bring flood levels to 15 feet. The road around the plant and its cooling water pumps, air compressors, and station transformers are located at elevation 9.6 feet. Flooding of Hanse Avenue and Buffalo Avenue would prevent personnel from entering and leaving the plant and could prevent fuel deliveries.

A major storm, especially a Category 3 or 4 hurricane, would damage all electrical equipment at the power plant, including generators, motors, station service transformers, cooling tower, oil tanks, diesel engines, and the buildings on-site. The combustion turbine and generator would experience significant saltwater intrusion, and, depending on the strength of the surge, the turbines could be moved off their foundation and the cooling tower rendered inoperable. A major surge could completely destroy the cooling tower.

Oil from the two active oil tanks at Power Plant II could possibly leak into the surrounding waterways, killing wildlife and polluting the water. The third tank, which has been decommissioned and is empty, could become a floating hazard. Station service transformers, if submerged, would be unfit to be put back into service. The switchgear station could be moved off its foundation, completely destroying switches, relays, and cables. Distribution facilities, such as poles and wires, could be subject to damage in the surge area, interrupting electrical service to affected areas. Falling trees and limbs might damage the distribution facilities.

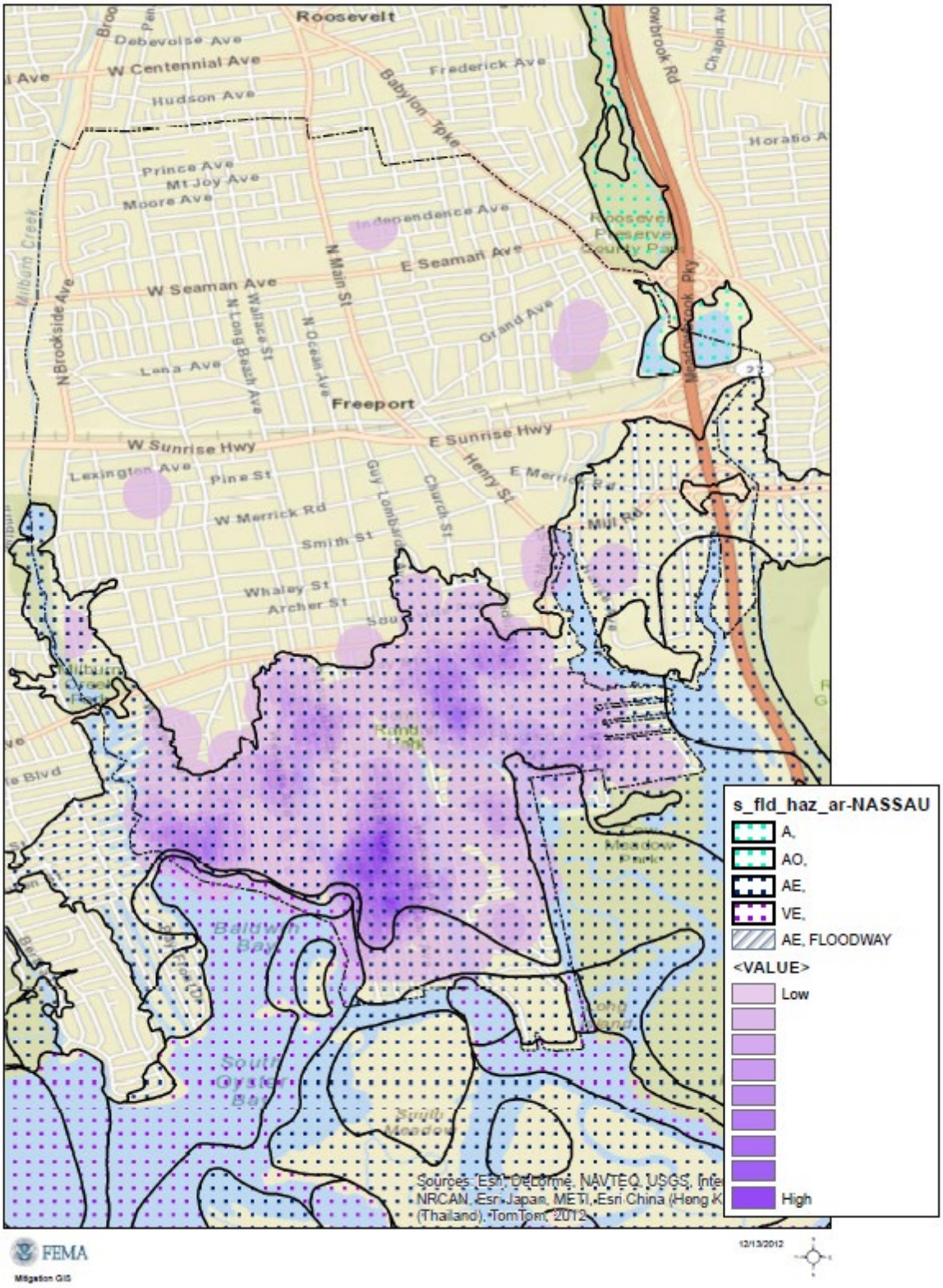
Potential damage to Power Plant II has been mitigated with recent improvements. The plant has been modernized with a state-of-the-art efficient and clean power technology. The project installed two (2) new combustion turbines that use as fuel natural gas with a back-up of low sulfur distillate oil. The top of foundations for major pieces of equipment or equipment with the potential to impact the environment was set at 13.0 feet National Geodic Vertical Datum (NGVD) or higher, or six feet higher than the base flood elevation. Setting the foundations for the turbines at 13 feet Mean Sea Level (MSL) enables Freeport to provide power during emergency situations. Other mitigation measures included the ballast for the oil water separator, which is pump-driven, which means that water cannot enter from external sources.

Electric substation A (intersection of South Bayview Ave. and Ray Street) and substation D (intersection of Front Street and South Ocean Ave.) have been eliminated. Both had been located in the flood zone. All electric transformers located on Woodcleft Ave. have been elevated by 3 feet to elevation 9.

Three sewer lift stations and one pump station are located in SFHAs. The pump stations are located on Howard Avenue, Suffolk Street, and South Bayview Avenue. The pump station is on Buffalo Avenue.

One Freeport elementary school, Leo. F. Giblyn located at 450 South Ocean Avenue, is in a SFHA. The school suffered flood damage during Hurricane Sandy. The elementary school which houses grades K-4 temporarily had to relocate their 555 students to neighboring schools within the district due to incurred water damage caused by Hurricane Sandy. After six weeks, the students returned to their home school on Monday December 10, 2012.

Freeport, NY Repetitive Loss Areas



In addition, privately-owned critical facilities, such as chemical storage facilities, are located in the industrial park, which is also in the AE zone.

The Planning Committee used two different methodologies to estimate flood damages for the planning area. The Committee noted that there are 3,756 structures located in Freeport's SFHAs, with a total estimated market value of $1,577,520,000. The 2020 Committee estimated that flood damages to a home would amount to 38 percent of its value. (This estimate is based on Planning Committee members' personal experiences). Thirty-eight percent of the value of the homes in SFHAs is $315,504,000. Claims paid by the NFIP for repetitive loss properties provide another indicator of possible flood damages. The map on page 53 shows repetitive loss areas in Freeport.

As of April 30. 2015 there were 3,150 flood insurance policies in effect, As of April 30, 2015 the Village had 1213 Repetitive Loss Properties. From 1978 to April 30, 2015 there were 3,511 NFIP repetitive loss claims filed for a total loss of $130,307,041.70. $114,285,773.41 represents building losses and $16,021,268.29 represents content losses. Total claims filed January 1, 1987 to April 30, 2015 was 6,025 for a total loss of $$239,945,556

Types of Repetitive Loss properties are as follows:

Non Residential - 27
Condo Association - 10
2 to 4 Family Residential - 24
Other Residential – 5
Single Family Residential – 1,147

Of the 1213 Repetitive Loss Properties, 268 have 4 or more NFIP losses. These properties are broken down as follows:

15 Losses = 1
14 Losses = 1
13 Losses = 1
12 Losses = 1
11 Losses = 1
10 Losses = 2
9 Losses = 2
8 Losses = 7
7 Losses = 15
6 Losses = 39
5 Losses = 70
4 Losses = 128
3 Losses = 220
2 Losses = 725

Non Residential – 7
Condo Association – 2
2 to 4 Family Residential – 6
Single Family Residential – 253

Yearly NFIP flood claims in Freeport are shown below

Year	Quantity of Claims	Total Paid
1977	2	$ 612.00
1978	40	$ 35,305.00
1979	48	$ 53,597.00
1980	27	$ 24,223.00
1981	2	$ -
1982	2	$ 588.00
1983	5	$ 1,784.00
1984	32	$ 16,564.00
1985	273	$ 1,006,676.00
1986	4	$ 1,535.00
1987	150	$ 348,576.00
1988	1	$ -
1989	9	$ 9,270.00
1990	28	$ 95,439.00
1991	291	$ 2,554,744.00
1992	624	$ 4,684,244.00
1993	151	$ 639,792.00
1994	5	$ 89,059.00
1995	6	$ 50,102.00
1996	34	$ 131,645.00
1997	3	$ 37,352.00
1998	29	$ 97,387.00
1999	15	$ 44,755.00
2000	11	$ 14,542.00
2001	8	$ 10,923.00
2002	7	$ 2,841.00
2003	15	$ 11,199.00
2004	6	$ 5,078.00
2005	115	$ 493,600.00
2006	6	$ 82,470.00
2007	36	$ 427,621.00
2008	2	$ 10,608.00
2009	6	$ 69,356.00
2010	46	$ 174,717.00

2011	1283	$ 29,207,330.00
2012	2631	$ 199,191,187.00
2013	14	$ 41,556.00
2014	25	$ 37,721.00
2015	4	$ -
2016	15	$ 96,198.00
2017	5	$ 28,582.00
2018	9	$ 116,778.00

Total Quantity of Claims from 1977 to 2018 = 6025

Total Paid on Claims from 1977 to 2018 = $239,945.556.00

Total Claims for Hurricane sandy = $199,191,187.00

An analysis of NFIP claims shows a trend of increasing flood damage in Freeport. These figures only give a partial overview, however, since they do not reflect the damage to uninsured properties, non- reported damage, and uninsurable damage.

3.3 NOR'EASTER/WINTER STORM/ICE STORM

Hazard Description	Location/ Extent	Previous Events	Probability	Vulnerability/Impact
Heavy snow, rain, sleet, ice, and tremendous ocean waves	The risk of damages from nor'easters and winter storms is planning area-wide.	Past snow storms have occurred at least annually	High	Nassau County is ranked 25th of 62 counties in the state for vulnerability to snow storms and nor'easters. According to BureauNet, there has been $640,000+ in SFHA public infrastructure damage claims, and over $37,000,000 in infrastructure damages. Result was $7.90 per capita in damages.

3.3.1 Hazard Description

A nor'easter is a strong low-pressure system that impacts locales in the Mid-Atlantic States, including Freeport. A nor'easter gets its name from the continuously strong northeasterly winds blowing in from the ocean and over coastal areas ahead of the storm. It can form over land or coastal waters. These typically winter events produce heavy snow, rain, and tremendous ocean waves, often causing beach erosion and structural damage. Wind gusts associated with these storms can exceed hurricane force in intensity.

Nor'easters may occur at any time of year but are most common from September through April. If a wintertime nor'easter moves up the coast, following a track west of New York City and the planning area, wintry precipitation will often change to rain. However, if the storm maintains a track just east of the City, snow or mixed precipitation is likely to occur given enough moisture and cold air.

Winters in the planning area often include heavy snow and ice. Heavy snow generally means snowfall accumulating up to four inches or more in depth in 12 hours or less, or snowfall accumulating up to six inches or more in depth in 24 hours or less. A blizzard is defined as a storm with winds of 35 miles per hour or more with snow and blowing snow, reducing visibility to less than 1/4 mile for at least three hours.

A winter storm may also include sleet or freezing rain. Sleet is defined as pellets of ice composed of frozen or mostly frozen raindrops or refrozen partially-melted snowflakes. These pellets of ice usually bounce after hitting the ground or other hard surfaces. Freezing rain is rain that falls as a liquid but freezes into glaze upon contact with the ground. Both types of precipitation, even in small accumulations, can cause significant hazards to a community (National Weather Service, 2005).

Ice storms occur when damaging accumulations of ice, usually 1/4 inch or greater, accompany freezing rain. Significant accumulations of ice pull down trees and utility lines, resulting in loss of power and communications. These accumulations of ice make walking and driving extremely dangerous. . The winter months can also bring frigid temperatures that pose a hazard to public health and safety, especially for people who work outdoors and at-risk populations, such as the homeless, seniors, and children.

3.3.2 Geographic Location/Extent

The entire planning area is vulnerable to winter storms, nor'easters, and ice storms. Unlike flooding, this hazard is not location-specific. The Planning Committee noted that nor'easters and winter storms result in moderate street flooding several times a year, based on members' personal experiences and newspaper references found on the Web at http://www.newpaperarchives.com.

Freeport experiences at least one winter storm/nor'easter/ice storm every year. Winter storms often include ice, snow, severe cold, sleet, and wind; each element has the potential to disrupt life in Freeport by making normal activity difficult and/or dangerous. They can disrupt electricity, telephone, and other critical infrastructures. Employees may be unable to get to work due to icy conditions, unplowed roadways, interruptions in transportation services, or facility damage. A longer stretch of severe winter weather may result in a shortage of supplies. A significant snowfall could result in roof collapse. Snowstorms do not generally impact the region for long periods of time but ice storms have shut down schools and businesses for extended periods. Ice is also the biggest threat to reliable power and phone service.

Snowstorms can cause isolated power outages, structural collapse, hazardous driving and walking conditions, closed roads, mass transit interruptions, and exposure to extremely cold temperatures. The severity of snowstorms is generally measured in the number of inches of snow. The Village does experience snowstorms during the winter months. The average snowfall

during January is 7.8 inches and 9.3 inches during February, according to National Climactic Data Center (NCDC) records. During the winter months (October – April), the average daytime temperature in the planning area is 40 degrees.

The NCDC compiles the Regional Snowfall Index (RSI) for significant snowstorms that impact the eastern two-thirds of the U.S. The RSI ranks snowstorm impacts on a scale from 1 to 5, similar to the Fujita scale for tornadoes or the Saffir-Simpson scale for hurricanes.

Regional Snowfall Index

Category	RSI Value	Description
1	1–3	Notable
2	3–6	Significant
3	6–10	Major
4	10–18	Crippling
5	18.0+	Extreme

3.3.3 Previous Occurrences

Note that several nor'easters are discussed in the flooding hazard profile, and reference should be made to that section. A factor contributing to data limitations for previous nor'easter events is that records do not always differentiate between winter storms and nor'easters.

Although the NCDC does not collect data on nor'easters as a category, an informal list appears on the Weather Underground website. Following is a list of "notable nor'easters" that impacted the planning area, followed by a short description of each event. Note that the casualty numbers are area-wide, and are not representative of casualties in the planning area. They do represent the severity of the event, however.

- The Great Blizzard of 1888: This has been called one of the worst blizzards in U.S. history. Forty to fifty inches of snow fell, resulting in the death of over 400 people, mostly in New York.

- The Storm of the Century (1993): A superstorm with cyclonic winds that affected the entire eastern U.S. in mid-March. It killed 310 people and caused $6.65 billion (2008 USD) in damage nationally.

- The Christmas 1994 Nor'easter: An intense storm which affected the east coast of the U.S., and exhibited traits of a tropical cyclone. Long Island was affected by high winds, coastal flooding, and beach erosion, and damage was extensive. Nationally, two people were killed, and damage amounted to at least $21 million.

- The North American blizzard of 1996: This severe snowstorm brought up to four feet of snow to areas of the mid-Atlantic and northeastern U.S., killing a total of 154 people.

- The North American blizzard of 2003: The storm dropped over two feet of snow in several major cities, including Boston and New York City, affected large areas of the Northeastern U.S., and killed a total of 27 people.

- The North American blizzard of 2006: A powerful storm that developed a hurricane-like eye when off the coast of New Jersey, it produced over 30 inches of snow in some areas and killed 3 people.

- The April 2007 nor'easter: An unusually late storm that dumped heavy snow in parts of Northern New England and Canada and heavy rains elsewhere, it caused 18 fatalities.

- Nor'Ida (2009): Formed from the remnants of Hurricane Ida, the storm produced moderate storm surge, strong winds, and very heavy rainfall throughout the mid-Atlantic region. It killed six people and caused $300 million (2009 USD) in damage.

- The December 2010 North American blizzard: This was a major blizzard which affected large metropolitan areas including New York City. In some areas, the storm brought up to two feet of snow.

- The November 2012 nor'easter (named by The Weather Channel "Winter Storm Athena"): This storm was notable for battering northeast areas such as New York City that only days earlier had been severely damaged by Hurricane Sandy.

- April 30, 2014: A nor'easter impacted the area with very heavy rainfall amounts. The 4.97" that fell was the ninth greatest daily rainfall on record. Besides the rain it was also a very raw day with temperatures only in the 40s.

- December 9, 2014: A strong nor'easter lashed the area, beginning a few hours before daybreak and continuing thru mid-afternoon. It produced 2.54" of rain, a record for the date; winds gusted between 45-55 mph on Long Island.

- October 29, 2017: On the five-year anniversary of superstorm Sandy flooding the metro area, an intense nor'easter lashed the area with gusty winds and an all-day rain that amounted to 3.03" (and an additional 0.25" fell after midnight). This was more rain than fell in the past 60 days, and the biggest rainstorm of the year, passing the rainstorm of 5/2 by 0.01".

- March 2, 2018: The day after March came in "like a lamb", a fierce nor'easter battered the area. Throughout the day the area was lashed by a wind-driven mix of rain and wet snow that amounted to 2.24", gusts of 50-70 mph were common

- On October 16, 2019 A nor'easter lashed the area from mid-afternoon until about 11:00 PM, dumping 1.83" of rain with howling winds gusting between 50-60 mph

Other notable nor'easters produced significant amounts of rain in the Freeport area. The storm occurring October 12 through 15, 2005, dumped 11.65 inches of water during the four-day event. The nor'easter on October 24-25, 2005 had a maximum wind speed of 43 miles per hour, produced 1.89 inches of rain, and exceeded the moderated flood stage at 5.38 feet. On April 15-16, 2007, there was a nor'easter with a maximum wind speed of 39 miles per hour and 3.04 inches of rain. On February 13, 2008 the storm produced snow and ice with 2.9 total accumulated inches. On April 28-29, 2008, the Village experienced a heavy rain event that resulted in rainfall totaling 1.96 inches. On January 23-24, 2017 A nor'easter brought winds that gusted between 33-47 mph throughout 1/23, but steady, wind-lashed rain didn't move in until late in the afternoon. By midnight 1.16" had fallen - and an additional 1.18" fell the next day. It was a cold rain, with temperatures in the mid-to-upper 30s;Other recent nor'easter events that impacted the community were obtained by cross-referencing flood stage crest events on http://www.weather.gov with the list of nor'easter events listed on the Weather Underground website. For the purposes of the listing below, note that moderate flood stage at the Freeport gauge is 5.0 feet.

- 12/01/2006 5.42 feet
- 12/12/2008 5.45 feet
- 10/17/2009 5.41 feet
- 03/07/2013 5.21 feet

Minor events occur one or more times per month. They are characterized by heavy rains, high winds, street flooding up to two feet in height, extreme high tides, and flooding of crawl areas, basements and the first floor of some low-lying buildings.

Major snowstorms that occurred between 1995 and 2019 are listed on the NCDC website:.

Date of Event	**Snow Accumulation**
December 19, 1995	12 inches
February 3, 1996	10 inches
February 16, 1996	12 inches
March 2, 1996	7 inches
March 14, 1999	7 inches
January 25, 2000	7 inches
December 30, 2000	15 inches
January 21, 2001	7 inches
December 5, 2002	8 inches
December 25, 2002	12 inches
February 7, 2003	7 inches
February 19, 2003	19 inches
April 7, 2003	7 inches

December 5-7, 2003	7 inches
January 14, 2004	7 inches
January 28, 2004	7 inches
January 22, 2005	15 inches
February 11-12, 2006	13 inches
February 22, 2008	7.5 inches
December 19-20 2009	15 inches
February 10, 2010	11 inches
February 25-27, 2010	20.9 inches
December 26-27, 2010	16 inches
January 26-27, 2011	19 inches
February 8-9, 2013	11.4 inches
January 21, 2014	11 inches
January 26-27, 2015	9.8 inches
March 5, 2015	7.5 inches
January 23, 2016	27.5 Inches
February 9, 2017	9 inches
March 14, 2017	7.5 inches
March 20-21, 2018	8.2 inches

The NCDC lists one ice storm of record in Nassau County on February 13 and 14, 2007. The storm moved across Long Island, producing sleet, freezing rain, rain, gusty winds, and minor tidal flooding across the region. By 6:00 a.m. the next day, sleet and freezing rain occurred across Long Island with temperatures ranging from the lower 30s. Six-hour precipitation totals between 7 a.m. and 1 p.m. equaled between 0.50 and 0.75 inches. Nearly half an inch of ice and one to two inches of sleet accumulated on tree limbs, power lines, and roadways, especially across the northern half of the county, resulting in major mass transit disruptions.

Hurricanes and nor'easters that have caused the highest number of flood claims in the Village: are as follows:

Event		Claims	Water Elevation	Annual Chance of Exceedance
Hurricane Gloria	09/26-09/28/1985	117	7.6 MSL	0.2%
Nor'easter	01/03/1987	62	6.9 MSL	1.0%
Unnamed hurricane	10/31/1991	204	7.0 MSL	1.0%
Nor'easter	12/11-12/13/1992	234	7.2 MSL	1.0%
Nor'easter	03/13-03/14/1993	87	7.1 MSL	1.0%
Hurricane Irene	08/28/2011	1,155	7.35 MSL	1.0%
Hurricane Sandy	10/29/2012	2,449 +	10.12 MSL	0.2%

3.3.4 Probability of Future Occurrence

Since 1995, there have been twelve snowstorms that produced a foot of snow or more. However, the Village experiences winter storms on an annual basis. There is a 100 percent change of future winter storms. Since 1993, fourteen major nor'easters have impacted Freeport, resulting in a 51 percent chance of occurrence on an annual basis.

3.3.5 Vulnerability/Impact

Winter storms are called “deceptive killers” by the National Weather Service (NWS). Many deaths from winter storms occur as a result of traffic accidents on icy roads, heart attacks while shoveling snow, and hypothermia from prolonged exposure to the cold.

Property can be at risk due to flooding resulting from heavy snowmelt. Ice, wind, and snow can affect the stability of trees, power and telephone lines, and television and radio towers. Saturated soils can become hazards for houses, cars, utilities, and other property. The ability to travel after a natural hazard event is a priority issue for county residents, organizations, and providers of essential services such as hospitals and utilities. Inclement winter weather can cause prolonged and extreme traffic disruptions. Snow and ice events resulting in dangerous road conditions can lead to major traffic accidents. Roads blocked by fallen trees during a windstorm may have tragic consequences for people who need access to emergency services. Icy streets are difficult for emergency personnel to travel and may pose a secondary threat to life if police, fire, and medical personnel cannot respond to calls.

Historically, falling trees have been the major cause of downed electric lines, resulting in power outages, interruptions in service, damaged property, and the possibility of lethal electric shock. Snow and ice can also damage utility lines and cause prolonged power outages. Population growth and new infrastructure in Freeport creates a higher probability that severe winter storms will damage life and property.

The most frequent effect of severe cold weather on water systems is the breaking of cast iron mainlines. Another common problem during severe freeze events is the failure of commercial and residential water lines. Inadequately-insulated potable water and fire sprinkler pipes can rupture and cause extensive damage to property.

The 2019 New York State Hazard Mitigation Plan includes statistics on winter storm events in each of the state’s 62 counties. The State Plan ranked Nassau County, including Freeport, 25th in vulnerability to damages from snow. The ranking was based on average annual snowfall, extreme snowfall potential, number of snowstorm-related disaster declarations, population density, and the number of structures in the county.

The last presidential disaster declaration for Nassau County for a snow storm was the storm on December 26-27, 2010, snowstorm may give some insight into the types and amounts of damages that could be expected on an area-wide basis. The information pertains to all counties, including Nassau and Suffolk, included in the February 8, 2011, presidential disaster declaration. Following is a summary of the information obtained from Preliminary Damage Assessments (PDAs) conducted jointly by the State and FEMA. The PDA process is a mechanism used to determine the impact and magnitude of damage and resulting needs of individuals, businesses, public sector, and the community as a whole.

- Total number of residences impacted: three (3) with some damage to the structure and contents, but still habitable.
- Total Public Assistance cost estimates for all counties: $37,706,554
- Statewide per capita impact: $1.99
- Statewide per capita impact indicator: $1.30

- Countywide per capita impact: Bronx County ($2.28), Kings County ($2.20), Nassau County ($7.99), Queens County ($2.74), Rensselaer County ($3.59), Richmond County ($5.01), Suffolk County ($6.83).

The New York State Plan indicates that from 1996 to 2017 there were 121 events that caused $644,000 in damage in Nassau County. Since the last update of this plan, there has been one major snow event. On January 23, 2016, a snow storm produced 27.5 inches of snow. One death in Nassau County has been attributed to the storm and its aftermath. A man died from a heart attack while using a snowblower.

3.4 TERRORISM

Hazard Description	Location/Extent	Previous Events	Probability	Vulnerability/Impact
Intentional, criminal, malicious acts	Anywhere in the planning area; Could range from low magnitude to high.	One in the past 150 years	Low	Private and public structures and infrastructure such as roads, culverts, etc; Possible damages cannot be calculated.

3.4.1 Hazard Description

The term “terrorism” refers to intentional, criminal, malicious acts. Terrorism is defined in the Code of Federal Regulations as “the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.” (28 CFR, Section 0.85). The Planning Committee decided to include this hazard in the 2005 Plan as a consequence of the events of September 11, 2001. After reviewing the then current conditions, the 2014 Planning Committee determined that the planning area continues to be at risk to this hazard, and therefore has included this hazard in the 2014 Plan Update.

The Village of Freeport, like any other place in the United States, is vulnerable to domestic or international terrorism. A publication entitled Thirty Years of Terrorism; a Special Retrospective Edition (1999), written jointly by the U.S. Department of Justice and Federal Bureau of Investigation, defines domestic terrorism as the unlawful use, or threatened use, of violence by those based and operating within the United States. It is an effort to intimidate or coerce, in furtherance of political or social objectives. International terrorism involves violent acts or acts dangerous to human life that are in violation of Criminal Law. These acts also are perpetrated to intimidate or coerce in furtherance of political or social objectives.

The most common terrorist act is bombing. Over 11,500 international terrorist attacks occurred in 72 countries in 2010, according to a U.S. State Department report called “Country Reports on Terrorism 2010." The acts resulted in approximately 50,000 victims, including almost 13,200 deaths.

While it is true that the federal government is increasing its efforts in the area of terrorism prevention and response, a large degree of responsibility for responding to threats of terrorism rests at the local level. The first responders to any future incidents will be local police, fire and rescue personnel. Therefore, local law enforcement officials have been strategically rethinking public security procedures and practices during the past decade.

Freeport has an Emergency Guide that addresses terrorism. It is located on its Web page at http://www.americantowns.com/ny/freeport-emergency-guide-terrorism.

3.4.2 Geographic Location/Extent

An act of terrorism is not predictable, could occur anywhere in the planning area, and could be a risk to any resident and any property. The extent of such an event is also not predictable. Unlike some natural disasters, estimates on how often a technological disaster will occur could not be obtained by the Planning Committee. Terrorist events could cause only minor damages, or could cause substantial numbers of deaths, bodily injury, economic loss, and damage to property and infrastructure. It may not be possible to prevent every deliberate act, but it is possible to reduce the risk of terrorism and the consequences of an incident.

3.4.3 Previous Occurrences

Research of public records revealed only one terrorism event in the planning area over the past 150 years. According to the Global Terrorism Database (http://www.start.umd.edu), an unknown assailant tried to firebomb the local draft board on June 25, 1971. There were no damages, injuries, or deaths. (GTD ID # 197106250001)

Though the Village of Freeport has not sustained any recorded damages from a direct attack, the Village Police Department has investigated incidents that could be linked to domestic or international terrorism. From November 1999 to the present, the Freeport Police Department investigated over 321 suspected terrorist incidents, including reports of anthrax, suspicious materials, and passport fraud.

3.4.4 Probability of Future Occurrences

Review of records of previous occurrences reveals that only one terrorist event has occurred in the past 150 years. This results in an average of less than a one percent chance of occurrence in any given year. However, the general perception, and the perception of the Planning Committee, is that the incidence of terrorist events in the United States is on the rise (http://www.nctc.gov/docs/2011_NCTC_Annual_Report_Final.pdf), so the risk may be underestimated. In addition, the random nature of man-made or technical hazards does not lend itself to precise probability estimates.

3.4.5 Vulnerability/Impact

The random and unpredictable nature of man-made hazards such as terrorism precludes an accurate vulnerability assessment. Another factor is the lack of prior events upon which to base predicted damages.

3.5 HAZARDOUS MATERIALS AT FIXED SITES AND IN TRANSIT

Hazard Description	Location/Extent	Previous Events	Probability	Vulnerability/Impact
Exposure of the public to toxic substances	Industrial area and areas along Sunrise Highway especially at risk, but the entire village could be impacted.	Only one reported event that caused damages, reportedly $15,000.	Low for incidents causing measurable damages, but moderate to high for reported responses to hazardous materials incidents.	All types of structures, including infrastructure, could be impacted. Humans could also be injured or even killed. Possible damages are not calculable, because of the random nature of the act.

3.5.1 Hazard Description

The term hazardous materials usually refers to hazardous substances, petroleum, natural gas, synthetic gas, acutely toxic chemicals and other toxic substances. A list and profiles of approximately 366 “extremely hazardous substances” (EHS) is maintained by the Environmental Protection Agency’s (EPA's) Chemical Emergency Preparedness and Prevention Office (CEPPO). Each chemical profile includes physical/chemical properties, health hazards, fire and explosion hazards, reactivity data, precautions for safe handling and use, and protective equipment for emergency situations. A first aid guide also provides signs and symptoms of poisoning and emergency treatment for first responders.

Exposure to hazardous materials may result in injury, illness, or death. The impacts of a hazardous materials exposure may be short-term with negative effects immediately or within a few seconds, minutes or hours, or long-term with negative effects within days, weeks, or in some cases years after exposure.

Hazardous chemicals are widely used in heavy industry, manufacturing, agriculture, mining, the oil and gas industry, high tech industries, forestry, and transportation as well as in medical facilities and commercial, public and residential buildings. There are literally hundreds of thousands of chemicals that may be hazardous to human health, at least to some extent.

A typical single family home may contain dozens of potentially hazardous materials, including fuels, paints, solvents, cleaning chemicals, pesticides, herbicides, medicines, and others. However, for mitigation planning purposes, the focus of interest is primarily on larger quantities of hazardous materials in industrial use and/or in transit, where the potential for accidental spills or releases is high.

3.5.2 Geographic Location/Extent

There are a number of sites in the Village that handle, use, or store hazardous materials, including gas stations, dry cleaners, water treatment plants, and industrial properties. Located within the Village is an industrial park of approximately 35 acres. Some building in the industrial

park have external storage. There are nine hundred and forty five (945) U.S. Environmental Protection Agency (EPA) registered sites in the Village. These sites are identified on the map on page 67. In addition, there are four hazardous waste sites in Freeport The hazardous waste sites are located in an AE zone on the Federal Insurance Rate Map (FIRM) with a base flood elevation (BFE) of eight (8) feet. A map of the hazardous waste sites is on page 66.

Hazardous materials, in addition to being located at fixed sites, may be transported once or many times during their "life cycle." The life cycle of hazardous materials begins with raw materials, then moves into manufacturing, incorporation into other products, wholesale and retail trade, use, waste disposal, and recycling. For Freeport, transportation accidents present the highest risk for hazardous material incidents. The community has few large industrial sites. There are no railroads carrying freight in the planning area. The structures most at risk are those close to major highways, such as Sunrise Highway is the largest major commercial transportation route in the Village. It runs east/west through the center of the Village. It provides access from Queens County to Suffolk County. As mentioned, segments of Sunrise Highway in Freeport have an Average Annual Daily Traffic (AADT) volume of 54,200.

The severity of any hazardous material spill or release incident for an affected community depends on several factors, including:

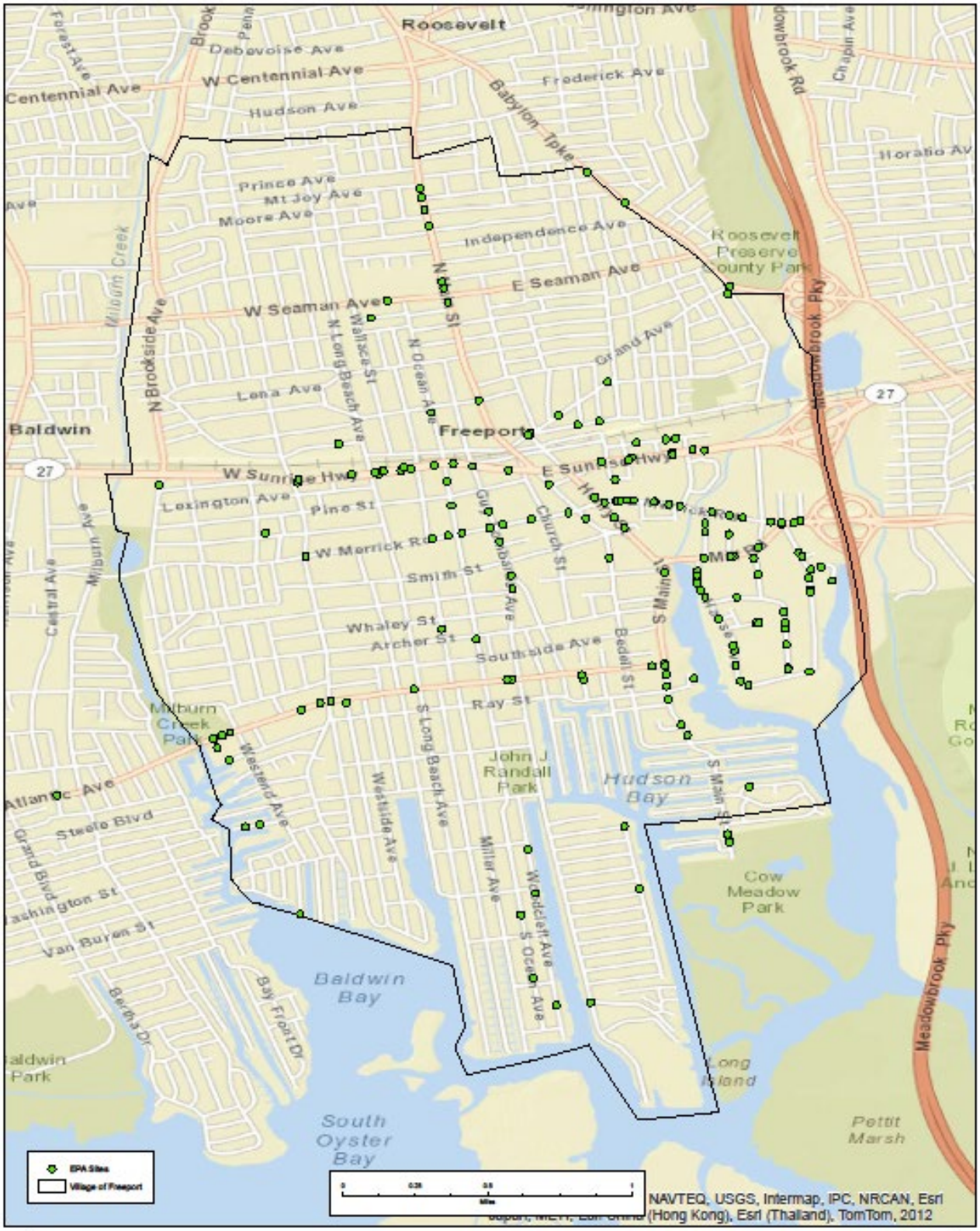
- toxicity of the hazardous material
- quantity of the hazardous material spilled or released
- dispersal characteristics of the hazardous material
- local conditions such as wind direction and topography
- location of the spill or release in proximity to sensitive environmental areas such as a watershed that provides a community's drinking water
- efficacy of response and recovery actions

The principal modes of human exposure to hazardous materials include:

- inhalation of gaseous or particulate materials via the respiratory (breathing) process
- ingestion of hazardous materials via contaminated food or water
- direct contact with skin or eyes

Flammable materials are substances where fire is the primary threat, although explosions and chemical effects listed below may also occur. Common examples include gasoline, diesel fuel, and propane.

Explosives are materials where explosion is the primary threat, although fires and chemical effects listed below may also occur. Common examples include dynamite and other explosives used in construction or demolition.

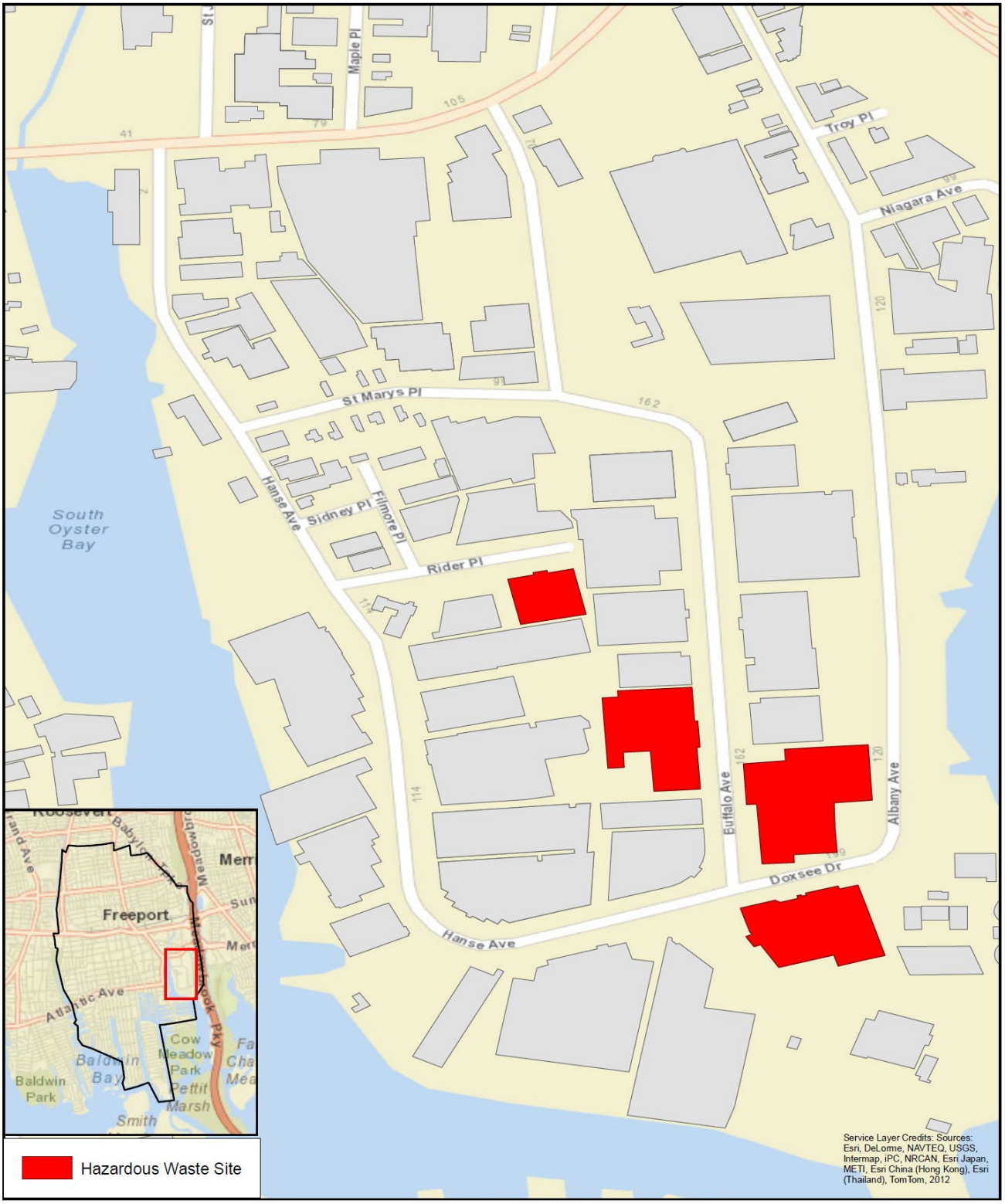


FEMA

DR-4085 MITIGATION GIS

Environmental Protection Agency Registered Sites
Village of Freeport, NY

Map Date: February 7, 2013



Environmental Protection Agency Hazardous Waste Sites
Village of Freeport, NY

FEMA

0 0.0425 0.085 0.17
Miles

DR-4085 MITIGATION GIS

Map Date: February 7, 2013

Irritants are substances that cause inflammation or chemical burns of the eyes, nose, throat, lungs, skin or other tissues of the body in which they come in contact. Examples of irritants are strong acids such as sulfuric or nitric acid.

Asphyxiants are substances that interfere with breathing. Simple asphyxiants cause injury or death by displacing the oxygen necessary for life. Nitrogen is a good example. Nitrogen is a normally harmless gas that constitutes about 78 percent of the atmosphere. However, nitrogen released in a confined space may result in asphyxiation by displacing oxygen. Chemical asphyxiants are substances that prevent the body from using oxygen or otherwise interfere with the breathing process. Common examples are carbon monoxide and cyanides.

Anesthetics and narcotics are substances which act on the body by depressing the central nervous system. Symptoms include drowsiness, weakness, fatigue, and incoordination, which may lead to unconsciousness, paralysis of the respiratory system and death. Examples include numerous hydrocarbon and organic compounds.

3.5.3 Previous Occurrences

In 2001, the Freeport Fire Department evacuated residents on two occasions due to the threat of explosion. In one event, a houseboat with large propane tanks aboard for cooking and heating caught fire and approximately eight homes had to be evacuated. In another, a leaking gas main caused the evacuation of six homes.

The Freeport Fire Department responds to approximately one hazardous materials spill (hazardous materials in transit) a year that requires assistance from the Nassau County Police and the Fire Marshall's Hazardous Material Response Team. However, Freeport has not had a major spill that required evacuation. The Freeport Fire Department responded to nine chemical releases in 2003, and to six chemical releases between 2006 and 2009. On October 21, 2008, the Department responded to a chemical release that resulted in a structural fire. Property loss was $15,000. Between 2010 and 2020 the Fire Department responded to 842 hazardous materials spills, or an average of over 84 calls per year. More than half the spills reported in 2012 (172 of 302) occurred in October and November, most resulting from Hurricane Sandy,

3.5.4 Probability of Future Occurrences

As previously stated, the random nature of man-made or technical hazards does not lend itself to precise probability estimates. However, based on recent reported occurrences of all types of reported hazardous materials incidents, there has been more than one reported incident annually. This results in a 100 percent chance of at least one event in any given year.

3.5.5 Vulnerability/Impact

The random and unpredictable nature of man-made or technical hazards and the lack of prior events upon which to base predicted damages precludes an accurate vulnerability assessment. During the next plan update, the Planning Committee will revisit this hazard to see if it is possible to develop an accurate vulnerability assessment.

The greatest threat from a spill is injury to persons. The 2016 Emergency Response Guide ([ERG], jointly developed by Transport Canada [TC], the U.S. Department of Transportation [DOT], and the Secretariat of Transport and Communications of Mexico [SCT]) recommends minimum distances necessary to safely protect people from spills of vapors that are toxic by

inhalation. The Table of Initial Isolation and Protective Action Distances ([www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/Hazmat/ERG2012.pdf] pages 290-342) "predicts the size of downwind areas which could be affected by a cloud of toxic gas" in the first 30 minutes after a chemical spill. Depending on the type, size, and time of day of the spill, the primary impact or isolation area can range from 100 feet to 3,000 feet; the evacuation distance to protect people downwind can range from 0.1 to 7.0+ miles. The Village is densely populated, with approximately 8,700 persons per square mile. Therefore, a spill has the potential to affect anywhere from 274 residents to almost the entire population of Freeport. A Level 1 Emergency Hazardous Materials Response Team, in operation 24 hours a day, seven days a week, is located in the Nassau County Fire Marshall's Office in Westbury, eight miles from Freeport. The evacuation of a large area surrounding a spill could overwhelm local emergency personnel.

The Village uses an emergency warning system of seven sirens. The sirens are sounded at the top of the hour to alert residents to possible emergencies; siren warnings every fifteen minutes signal that an evacuation is in progress for all or part of Freeport. Residents are advised to call the Emergency Hotline and/or to tune into Freeport's Emergency Management radio station [WPYB 1690 AM] for further information. Residents may sign up to be listed on the Village's emergency notification system called SwiftReach 911.

3.6 CYBER-TERRORISM

Hazard Description	Location/Extent	Previous Events	Probability	Vulnerability/Impact
Unlawful threats/attacks against computers	The risks from cyber-terrorism are planning area- wide, ranging from interruption of public E-infrastructure/digital information infrastructure to destruction of computer-based communication systems	January 2020 Nassau County Cyber Attack	Cannot be calculated	Utilities, infrastructure; all computer-dependent businesses. Loss of revenue due to loss of services undeterminable.

3.6.1 Hazard Description

Cyber-terrorism is generally understood to reference the unlawful attacks and threats of attack against computers, networks, and the information stored on them. The intention of an act of cyber-terrorism is to intimidate or coerce a government or its people in furtherance of political or social objectives. The boundaries between cyber-terrorism and cyber-crime are not always clear; however the resulting threat and damage are the same. It can take a variety of different

forms including internet worms or viruses used to shut down programs, or even entire systems; by accessing accounts and sensitive information; by changing or removing information; or by disrupting control systems for traffic signals, water or sanitary systems, electrical supply, and communication systems. Local governments face not only expenses related to notifying affected parties, making data recovery efforts, conducting forensic investigations, and defending themselves against possible legal claims when their systems and sensitive data have been compromised by cyber-attack, but also the loss of public trust.

Computerized control systems perform vital functions across the Freeport's critical infrastructures. They monitor and control the flow of water and electricity. These control systems can be vulnerable to a variety of attacks. Successful attacks on control systems could have devastating consequences endangering public health and safety.

3.6.2 Geographic Location/Extent

Cyber-terrorism could impact any portion or the entire planning area. As with most manmade or technical hazards, location and extent cannot be predicted. However, the impact of cyber-terrorism could be widespread. For example, the Freeport Electric Department controls power distribution to the planning area. Its control systems manage the generation, transmission, and distribution of electric power by opening and closing circuit breakers and setting thresholds for preventive shutdowns. An attack on their systems would have wide-spread impact.

Cyber-terrorism could impact the planning area's water system. The water department uses a Supervisory Control and Data Acquisition (SCADA) system. It remotely monitors well levels and controls the well pumps. The SCADA also monitors flows, tank levels, pressure in storage tanks, and water quality. The Village of Freeport water system provides water to a population of approximately 43,000 residents. All of residents and businesses in the planning area rely upon the Freeport Water System for drinking water. Disruption of service could impact the entire population of users.

The impact of an information breach for a municipality can be quite high. A study by the Ponemon Institute in 2011, as cited by the New York State Office of the State Controller (http://www.osc.state.ny.us/localgov/pubs/research/snapshot/cybersecurity0811.pdf), estimates an average breach cost of $81 per record for public sector entities. If that cost estimate is applied to the number of individuals (over age 18) who live in Freeport, the potential dollars at risk under a worst case scenario involving a data breach involving a single piece of sensitive information for every adult resident is almost $2,670,000.

3.6.3 Previous Occurrences

Research revealed no information on reported cases of cyber-terrorism in the planning area or in Nassau County. The New York State Technology Law Section 208(8) requires counties, cities, towns, villages, and other local agencies to adopt a breach notification policy. In December 2005, a law went into effect requiring municipalities to notify the Office of Cyber Security (OCS), The New York State Attorney General's Office and the State Consumer Protection Board when a breach occurs.

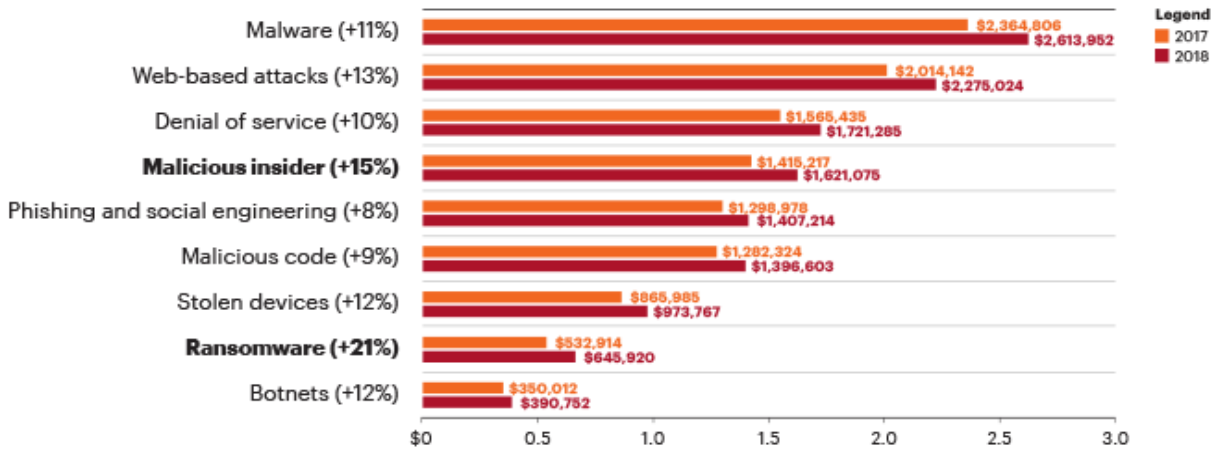
January 10, 2020 — Nassau County has recovered hundreds of thousands of dollars it had lost in a cyber attack. Nassau County Police Commissioner Patrick Ryder says it all began with an email that appeared to be from a vendor of the county that was seeking payment but claimed its bank account had changed. An initial investigation did not raise any red flags, so a payment was made for more than $700,000.However, it turned out it was all a scam." The email looked like it was from a vendor but it was from the crooks," Ryder said. "The money ended up in Seattle." Even though the money was then transferred into a number of different accounts, the county was able to get the money back. "We were able to identify those accounts, follow the money to the additional accounts where that money was then spread out, and then we were able to seize those accounts," Ryder said. Nassau County Comptroller Jack Schnirman said, "If there's language that creates a strong sense of urgency such as, 'You must act now,' there are spelling mistakes, and the reply mail is a personal address," that may indicate the email is a phishing scam.

3.6.4 Probability of Future Occurrence

Probability of future events of cyber-terrorism is difficult to calculate, as is often the case with man-made or technical hazards. Nationwide, there has been a 67 percent increase in breach incidents between 2014 and 2019. Records by Identity Theft Resource Center (ITRC) indicate that there were 1473 data breaches in 2019, 83 of which were classified as government or military breaches. ITRC also noted that breach incidents are underreported and often lack transparency, making estimates of probability difficult.

Evolving techniques: Cyber criminals are adapting their attack methods. They are targeting the human layer—the weakest link in cyber defense—through increased ransomware and phishing and social engineering attacks as a path to entry. Just about everyone with an email account in the U.S. has been a victim at least once of a phishing scam. An interesting development is when nation-states and their associated attack groups use these types of techniques to attack commercial businesses. Attempts are being made to categorize attacks from these sources as ‘acts of war’ in an attempt to limit cybersecurity insurance settlements.

People Based attacks have increased the most



The New York State Office of the State Comptroller notes that the level and type of risk to a local government may vary depending on its size. Large municipalities are more vulnerable because of the volume of information they maintain and collect on a daily basis and smaller municipalities are at risk because they might not have the proper IT system or because they lack access to IT professionals who can assist them in network management and security.

3.6.4 Vulnerability/Impact

Freeport's vulnerability to cyber-terrorism, like most man-made or technical hazards, could be difficult to calculate for many reasons. Not all sources of information are public. However, in general, it can be said that cyber-attacks against computer systems could potentially shut down radio, telephone, and computer networks used to control and manage planning area services.

Cyber-terrorism could potentially result in loss of those services, as well as the ability to properly dispatch public safety personnel to the scenes of crimes or physical terrorist attacks. Cyber-terrorism could involve computer security issues such as viruses, stolen passwords, insider assistance, infected software designed to penetrate computers, and organized electronic traffic used to overwhelm computers. Attacks could also involve stealing classified files, altering the content of Web pages, disseminating false information, sabotaging operations, erasing data, or threatening to divulge confidential information or system weaknesses.

3.7 URBAN/STRUCTURAL FIRE

Hazard Description	Location/ Extent	Previous Events	Probability	Vulnerability/Impact
An uncontrolled fire occurring in a developed area	The risk of damages from urban fires is planning area-wide.	1,182 fire alarms in 2019	1.3 structural fires per month means 100% annual chance of occurrence	$22,775,600 in damages between 2010-2019

3.7.1 Hazard Description

An urban/structural fire is an uncontrolled fire occurring in a developed area. Urban fire hazards are more significant in the hot, dry months, but can occur at any time of the year. Urban and structural fires typically involve a single structure, such as a house. Due to the high concentration of combustible building materials in the urban setting, urban fires have the potential to spread to other structures. As a fire increases in volume and energy, nearby surfaces become preheated and therefore burn more readily. Abnormally large fires may be able to jump from one structure to another across open areas. A fire storm, or conflagration, contains enough heat energy to create high winds as fresh air is drafted into the massive fire. A conflagration is difficult to stop, due to its massive size and rapid spread.

The leading causes of residential fires nationally include heat from improperly-operating electrical equipment, such as electric stoves, electric heaters, and other electrical appliances; matches or lighters; electrical short-circuit or arc; and heat from wood/paper-fueled equipment.

Cooking is the leading cause and home heating is the second-leading cause of residential fires, according to the United States Fire Administration/National Incident Reporting System.

The Freeport Fire Department is a volunteer organization with 323 members, six fire stations, six pumpers, one aerial ladder, one tower ladder, one rescue truck, one ambulance, one foam /hazardous materials unit, two disaster response trucks, one dive team response vehicle, one fire boat, and various other vehicles. The Village Fire Department is one of the busiest departments on Long Island in regards to response to structural fires.

3.7.2 Geographic Location/Extent

The risk of fire exists with every structure in the planning area. Aging housing stock adds to the risk of house fires. Most vulnerable are older wooden balloon framing structures. Review of 2010 census data reveals no geographic concentration of balloon framing structures or housing stock built prior to 1939 in the planning area. Therefore, the Planning Committee determined that no geographic area within Freeport would be more at danger to urban or structural fire. A fire may occur in any structure, so it is logical that fire hazard increases as the concentration of structures increases. Structural loss is proportional to population concentration.

3.7.3 Previous Occurrences

Between January 2015 and January 2020 the Village of Freeport Fire Department reported that structural, automobile, and boat fires resulted in property and content losses totaling almost $7 million. The Incident Loss Report shown below lists 30 fires that each resulted in losses of $100,000 or more. During Hurricane Sandy, seven structural fires occurred; two commercial buildings on the Nautical Mile (Woodcleft Avenue), including the Fiore Brothers Fish Market, burned down, resulting in property losses of $3.5 million. In early 2012 over 200 firefighters battled a three-alarm blaze at a marina on Hudson Avenue that resulted in the damage to or destruction of 20 boats valued at $6 million.

Incident Log with Damage Cost and Values

Freeport Fire Department

Date Range: From 01/01/2015 to 01/01/2020
Incident Type: Structure Fire
Company: All Companies
Sorted by: Not selected

Incident#	Date	####	Address	Occupant	Situation Found	Pre-Incident Value			Losses		
						Contents	Property	Total	Contents	Property	Total
2015-000001	01/01/2015		92 UNION ST		Building fire	0	0	0	0	20,000	20,000
2015-041933	04/12/2015	161	CHURCH ST		Building fire	0	0	0	0	30,000	30,000
2015-042013	04/13/2015	155	W MERRICK RD		Building fire	0	0	0	0	80,000	80,000
2015-044196	04/24/2015	482	S BAYVIEW AVE		Building fire	0	0	0	0	50,000	50,000
2015-052891	06/25/2015	164	JAY ST		Building fire	0	0	0	0	5,000	5,000
2015-053038	07/28/2015	61	PRINCE AVE		Building fire	0	0	0	0	5,000	5,000
2015-053104	08/17/2015	494	S OCEAN AVE		Building fire	0	0	0	0	15,000	15,000
2015-053139	08/28/2015	26	BROOKLYN AVE	LIRR FREEPORT	Building fire	0	0	0	0	15,000	15,000
2015-053142	08/30/2015	65	RAYNOR ST		Building fire	0	0	0	0	400,000	400,000
2015-053152	09/03/2015	9	E MERRICK RD		Building fire	0	0	0	0	2,000	2,000
2015-053172	09/08/2015	90	HILLSIDE AVE		Building fire	0	0	0	0	100,000	100,000
2015-053371	10/28/2015	40	HILLSIDE AVE		Building fire	0	0	0	0	500	500
2015-052765	05/25/2015	261	ST MARKS AVE		Building fire	0	0	0	0	4,000	4,000
2015-000363	03/31/2015		102 LIBERTY PARK DR		Building fire	0	0	0	0	50,000	50,000
2015-053531	12/14/2015	14	GILL AVE		Building fire	0	0	0	500	500	1,000
2015-053563	12/22/2015	23	W SEAMAN AVE		Building fire	0	0	0	0	100,000	100,000
2016-000003	01/01/2016	119	PEARSALL AVE		Building fire	0	0	0	0	30,000	30,000
2016-000100	01/28/2016	50	N BERGEN PL		Building fire	0	0	0	0	25,000	25,000
2016-000409	04/30/2016	172	ST MARKS AVE		Building fire	0	0	0	0	20,000	20,000
2016-000410	04/30/2016	172	ST MARKS AVE		Building fire	0	0	0	0	40,000	40,000
2016-000544	06/09/2016	266	S BROOKSIDE AVE		Building fire	0	0	0	0	100,000	100,000
2016-000619	07/01/2016	22	PEARSALL AVE		Building fire	0	0	0	0	10,000	10,000
2016-000664	07/16/2016	68	2ND ST E		Building fire	0	0	0	0	25,000	25,000
2016-000692	07/24/2016	18	FOREST AVE		Building fire	0	0	0	0	100,000	100,000
2016-000696	07/25/2016	18	FOREST AVE		Building fire	0	0	0	0	15,000	15,000
2016-000698	07/25/2016	125	SPORTSMANS AVE		Building fire	0	0	0	0	100,000	100,000
2016-000721	07/29/2016	216	MAIN ST N		Building fire	0	0	0	0	10,000	10,000
2016-000160	02/15/2016	30	LAURETTE LA		Building fire	0	0	0	0	2,000	2,000
2016-000761	08/08/2016	377	PENNSYLVANIA AVE		Building fire	0	0	0	0	30,000	30,000
2016-000793	08/16/2016	175	ARCHER ST		Building fire	0	0	0	0	30,000	30,000
2016-000893	09/12/2016	118	ROOSEVELT AVE		Building fire	0	0	0	0	150,000	150,000
2016-000928	09/24/2016	725	MILLER AVE	WHARFSIDE	Building fire	0	0	0	0	100,000	100,000
2016-000940	09/28/2016	307	PENNSYLVANIA AVE		Building fire	0	0	0	0	2,000	2,000

Incident#	Date	####	Address	Occupant	Situation Found	Pre-Incident Value			Losses		
						Contents	Property	Total	Contents	Property	Total
2016-000959	10/04/2016	109	JAY ST		Building fire	0	0	0	0	6,500	6,500
2016-001010	10/21/2016	61	EAST AVE		Building fire	0	0	0	0	100,000	100,000
2016-001090	11/17/2016	145	RANDALL AVE		Building fire	0	0	0	0	1,000	1,000
2016-001129	12/02/2016	24	ROBERT ST		Building fire	0	0	0	0	50,000	50,000
2016-001228	12/31/2016	662	MILLER AVE		Building fire	0	0	0	0	150,000	150,000
2016-001229	12/31/2016	211	SMITH ST		Building fire	0	0	0	0	10,000	10,000
2017-000006	01/03/2017	234	WOODCLEFT AVE		Building fire	0	0	0	0	35,000	35,000
2017-000070	01/23/2017	208	LENA AVE		Building fire	0	0	0	0	150,000	150,000
2017-000126	02/10/2017	13	SAGAMORE ST		Building fire	0	0	0	0	1,500	1,500
2017-000139	02/14/2017	74	FRANKEL AVE		Building fire	0	0	0	0	150,000	150,000
2017-000146	02/16/2017	202	RANDALL AVE		Building fire	0	0	0	0	10,000	10,000
2017-000207	03/13/2017	30	PENNSYLVANIA AVE		Building fire	0	0	0	0	150,000	150,000
2017-000256	03/26/2017	52	UNION ST		Building fire	0	0	0	0	150,000	150,000
2017-000278	03/31/2017	252	PINE ST		Building fire	0	0	0	0	70,000	70,000
2017-000302	04/06/2017	766	LONG BEACH AVE S	Mule	Building fire	0	0	0	0	300,000	300,000
2017-000303	04/06/2017	766	LONG BEACH AVE S		Building fire	0	0	0	0	2,500	2,500
2017-000313	04/12/2017	131	GRAND AVE		Building fire	0	0	0	0	75,000	75,000
2017-000326	04/16/2017	103	SHONNARD AVE		Building fire	0	0	0	0	2,000	2,000
2017-000416	05/19/2017	129	CENTRE ST		Building fire	0	0	0	0	30,000	30,000
2017-000430	05/24/2017	347	BEDELL ST		Building fire	0	0	0	0	30,000	30,000
2017-000431	05/24/2017	397	GUY LOMBARDO AVE		Building fire	0	0	0	0	50,000	50,000
2017-000577	07/02/2017	257	WEST END AVE		Building fire	0	0	0	0	80,000	80,000
2017-000580	07/02/2017	93	WOODSIDE AVE		Building fire	0	0	0	0	20,000	20,000
2017-000447	05/29/2017	75	VIRGINIA AVE		Building fire	0	0	0	0	100,000	100,000
2017-000736	08/11/2017	210	GUY LOMBARDO AVE		Building fire	0	0	0	0	100,000	100,000
2017-000929	10/11/2017	46	BEDELL ST		Building fire	0	0	0	0	180,000	180,000
2017-000962	10/18/2017	250	MERRICK RD		Building fire	0	0	0	0	50,000	50,000
2017-001013	10/31/2017	54	WASHBURN AVE		Building fire	0	0	0	0	50,000	50,000
2017-001050	11/09/2017	395	ATLANTIC AVE		Building fire	0	0	0	0	5,000	5,000
2017-001141	12/15/2017	60	DEHNHOFF AVE		Building fire	0	0	0	0	150,000	150,000
2017-001160	12/21/2017	248	PENNSYLVANIA AVE		Building fire	0	0	0	0	100,000	100,000
2017-001169	12/23/2017	290	PENNSYLVANIA AVE		Building fire	0	0	0	0	50,000	50,000
2017-001129	12/10/2017	28	ARCHER ST		Building fire	0	0	0	0	5,000	5,000
2018-000004	01/01/2018	187	RAY ST		Building fire	0	0	0	0	50,000	50,000
2018-000030	01/07/2018	56	GUY LOMBARDO AVE		Building fire	0	0	0	0	90,000	90,000
2018-000112	02/05/2018	51	FOREST AVE		Building fire	0	0	0	0	40,000	40,000
2018-000079	01/20/2018	219	LEXINGTON AVE		Building fire	0	0	0	0	10,000	10,000

Incident#	Date	####	Address	Occupant	Situation Found	Pre-Incident Value			Losses		
						Contents	Property	Total	Contents	Property	Total
2018-000234	03/18/2018	253	PARK AVE		Building fire	0	0	0	0	10,000	10,000
2018-000320	04/15/2018	13	LAFAYETTE PL		Building fire	0	0	0	0	85,000	85,000
2018-000435	05/20/2018	116	WEST END AVE		Building fire	0	0	0	0	5,000	5,000
2018-000506	06/11/2018	228	SEAMAN AVE E		Building fire	0	0	0	0	35,000	35,000
2018-000557	06/27/2018	548	BROOKSIDE AVE N		Building fire	0	0	0	0	200,000	200,000
2018-000622	07/11/2018	120	OCEAN AVE N		Building fire	0	0	0	0	5,000	5,000
2018-000707	07/31/2018	299	RUTLAND RD		Building fire	0	0	0	0	150,000	150,000
2019-000053	01/20/2019	115	BAYVIEW AVE N		Building fire	0	0	0	0	200,000	200,000
2019-000167	02/21/2019	268	MILLER AVE		Building fire	0	0	0	0	100,000	100,000
2019-000215	03/07/2019	48	BERGEN PL S		Building fire	0	0	0	0	35,000	35,000
2019-000234	03/14/2019	140	HUDSON AVE		Building fire	0	0	0	0	5,000	5,000
2019-000246	03/18/2019	314	MILLER AVE		Building fire	0	0	0	0	20,000	20,000
2019-000562	06/22/2019	172	SWEEZY AVE		Building fire	0	0	0	0	60,000	60,000
2019-000692	07/27/2019	1	MERRICK RD		Building fire	0	0	0	0	4,000	4,000
2019-000718	08/05/2019	55	BERGEN PL S		Building fire	0	0	0	0	100,000	100,000
2019-000433	05/18/2019	175	SEAMAN AVE E		Building fire	0	0	0	0	25,000	25,000
2019-000522	06/09/2019	192	CARMAN ST		Building fire	0	0	0	0	10,000	10,000
2019-000897	09/23/2019	447	MILLER AVE		Building fire	0	0	0	0	5,000	5,000
2019-000974	10/18/2019	50	HARDING PL		Building fire	0	0	0	0	100,000	100,000
2019-001026	10/30/2019	299	LOCUST AVE		Building fire	0	0	0	0	200,000	200,000
2019-001170	12/23/2019	178	PINE ST		Building fire	0	0	0	0	10,000	10,000
2019-001187	12/27/2019	68	FREDERICK AVE		Building fire	0	0	0	0	180,000	180,000
2015-050787	05/05/2015	190	W SUNRISE HWY		Fires in structure other	0	0	0	0	250,000	250,000
2015-053406	11/05/2015	30	WALLACE ST		Cooking fire, confined	0	0	0	0	5,000	5,000
2015-053473	11/26/2015	84	ROYAL DR		Cooking fire, confined	0	0	0	0	5,000	5,000
2016-001109	11/26/2016	11	LAKEVIEW AVE		Cooking fire, confined	0	0	0	0	500	500
2016-000191	02/23/2016	39	LAYTON ST		Cooking fire, confined	0	0	0	0	2,000	2,000
2016-000208	02/27/2016	200	MOORE AVE		Cooking fire, confined	0	0	0	0	2,000	2,000
2017-000354	04/26/2017	222	SMITH ST		Cooking fire, confined	0	0	0	0	3,000	3,000
2018-000393	05/09/2018	280	ROSE ST		Cooking fire, confined	0	0	0	0	500	500
2017-000295	04/04/2017	230	PARK AVE		Fuel burner/boiler	0	0	0	0	2,000	2,000
				Total Number of Incidents:	101	0	0	0	500	6,083,500	6,084,000

The tables below summarizes Freeport's reports to Nassau County and the breakdown of the Fire Department's responses. From January 1, 2015 to December 31, 2019, the Freeport Fire Department responded to 6099 fire alarms. There were 96 structural fires and 67 vehicle fires over the five-year period. The structural fire rate equaled 0.68 fires per 1,000 residents. In addition, Freeport's volunteer firefighters responded to 1470 ambulance and rescue calls. Nineteen firefighters were injured while on-duty.

Freeport Fire Department Fire Reporting 2015-2019

YTD FIRE LOSS REPORT FOR FREEPORT	2015	20165	2017	2018	2019
Estimated Dollar Loss	$1,253,500.00	$803,500.00	$2,270,000.00	$1,212,500.00	$1,422,500.00
Number of Strutual Fires	16	11	26	24	19
Heating unit Fires	5	9	13	12	13
Cooking Fires	14	19	14	13	4
Gas BarBQue	4	4	2	3	0
Number of Vehicle Fires	9	9	17	13	19
Number of Brush Fires, grass, outside rubbish and dumpsters	13	17	20	25	33
Number of hazardous materials spills	26	35	26	35	26
Number of Carbon Monoxide alarms	71	73	76	51	82
Number of Mutual Aids	40	22	22	22	24
Number of False Alarms	13	9	6	17	12
Number of Automatic Alarms with no damage	51	43	54	53	47
Number of Automatic Alarms no apparent cause	405	444	393	381	399
Number of all other fire responses not specified	207	236	258	286	294
Number of Ambulance and Rescue Calls	289	244	242	255	345
Number of Mutual Aid Ambulance /Rescue calls to other dept	19	15	16	26	19
TOTAL ALARMS	1182	1190	1175	1216	1336
Death or Injury to Fire Dept members					
Number of injuries to firefighters requiring treatment	3	1	8	5	2
Number of injuries to firefighters requiring admittance to hospital	0	0	0	0	0
Deaths as a result of fire related injuries to firefighters	0	0	0	0	0

3.7.4 Probability of Future Occurrence

The Village of Freeport had an average of 1.3 fires per month in the Village, meaning that there is a 100 percent annual chance of occurrence.

3.7.5 Vulnerability/Impact

There were a total of 14,589 housing units in the Village as of the 2010 Census, of which, 4,797 units were built prior to 1939 (32.9%) and pose the greatest risk of fire. Most structural fires are not widespread and usually affect only one or two structures. However, the potential does exist for a structural fire that could affect an entire business district, thereby causing significant economic damage and displacing businesses and families.

From 2005 to 2010, the Freeport Fire Department responded to 92 fires that caused some type of structural damage. This represents a Fire Rate of 0.35 fires per thousand persons. During 2005-2010 there were three (3) civilian casualties. The fire rate in the past five years equals 0.68 fires per 1,000 people.

The Freeport Fire Department in its Incident Loss Report for the period 2015-2019 showed total property losses of approximately $7 million. With property damages over the past five years equaling almost $7 million, Freeport's vulnerability to fire averages over $1.4 million per year . The Planning Committee will conduct research to obtain more planning area-specific damage information for the next plan update in five years.

3.8 EARTHQUAKE

Hazard Description	Location/Extent	Previous Events	Probability	Vulnerability/Impact
Motion of the earth caused by release of energy along tectonic plates	The risk of an earthquake event is planning area-wide	Although there have been no severe earthquakes in Freeport, there have been in areas of New York	Low	Losses for a 500-year. return period earthquake would be $85 million based on HAZUS.. All structures and infrastructure would be impacted.

3.8.1 Hazard Description

An earthquake is a sudden motion or trembling that is caused by a release of energy accumulated within or along the edge of earth's tectonic plates. Earthquakes occur primarily along fault zones. Fault zones are tears in the Earth's crust, along which stresses build until one side of the fault slips, generating compressive and shear energy that produces the damage. Heaviest earthquake damage generally occurs nearest the epicenter, which is a point on the Earth's surface directly above the point of fault movement. The composition of geologic materials between these points is a major factor in transmitting the energy to buildings and other structures on the Earth's surface.

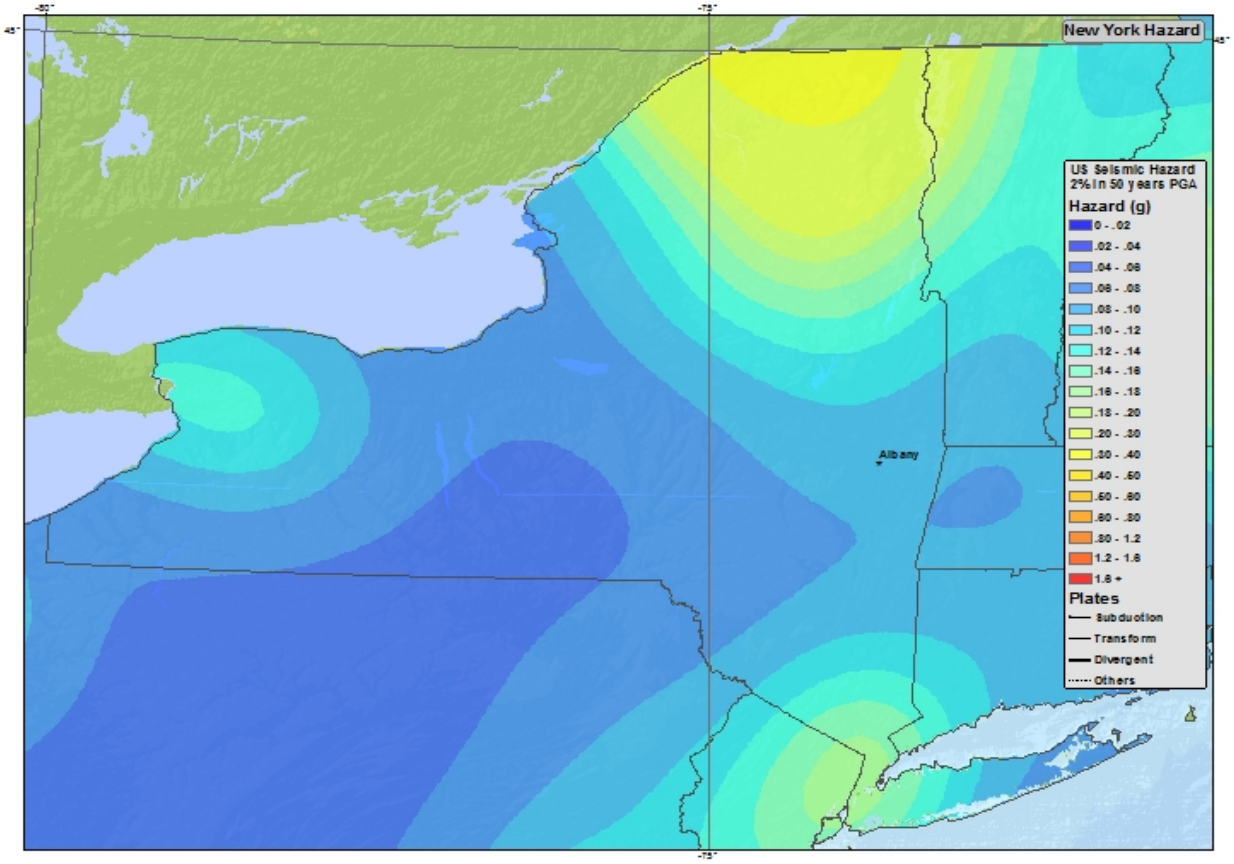
There are no major faults in the Long Island area. However, the New York State Geological Survey has stated that earthquakes of up to magnitude 6.0 to 6.5 on the Fujita scale are possible anywhere in the state. Minimization of the loss of life, property damage, and social and economic disruption due to earthquakes depends on reliable estimates of seismic hazard.

3.8.2 Geographic Location/Extent

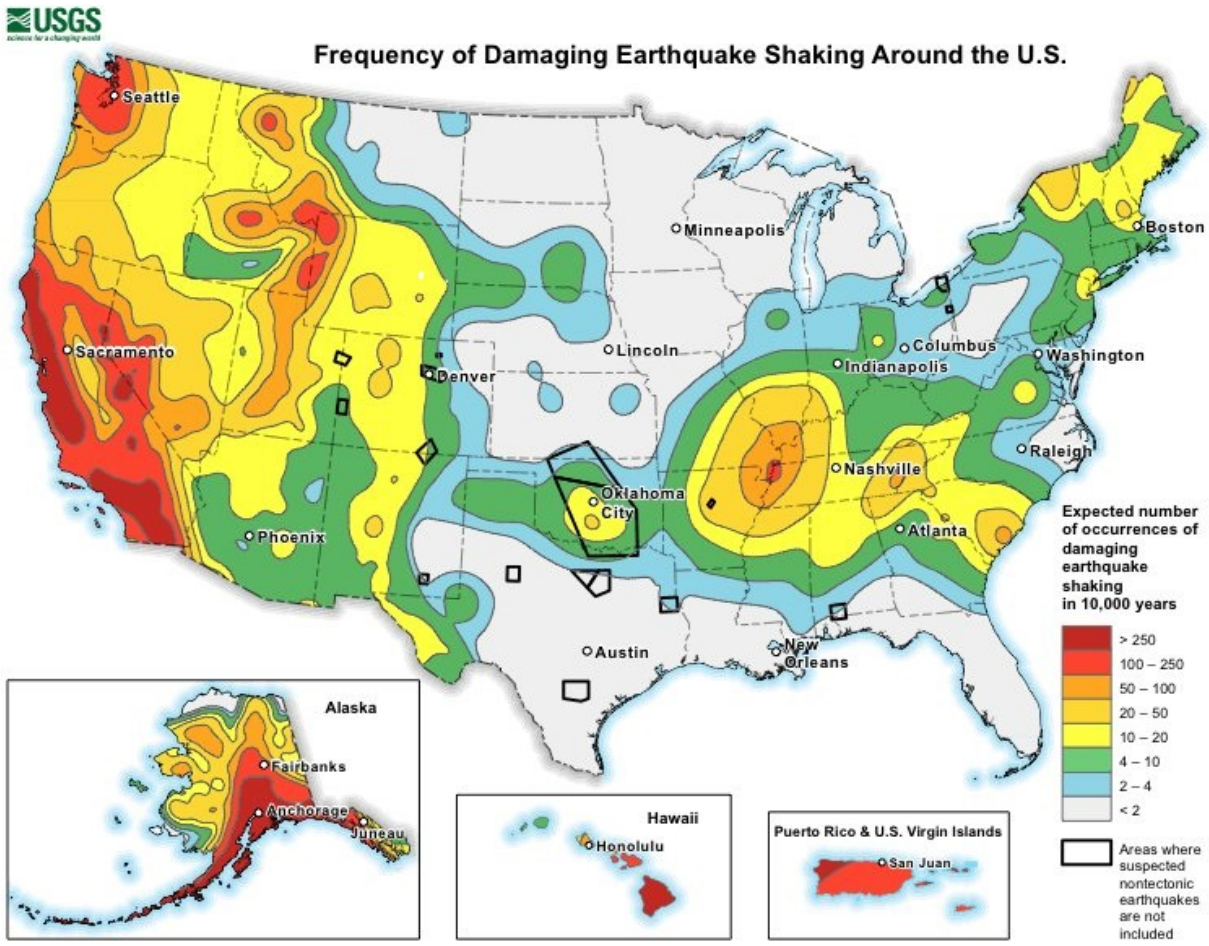
The risk of an earthquake event is planning area-wide. No particular portions of Freeport are more likely to experience an earthquake than others.

The 2008 map below is from the United States Geological Survey (USGS) and is included in the New York State Hazard Mitigation Plan. It incorporates new findings on earthquake ground shaking, faults, seismicity, and geodesy. The map shows the frequency of exceeding a given set of ground motions in various parts of the State as measured by %PGA (Percent Peak Ground Acceleration, a common earthquake measurement that shows the geographic area affected, the probability of an earthquake of each given level of severity, and the strength of ground movement expressed in terms of percent of the acceleration force of gravity). The State Plan notes that Freeport falls within one of three areas in New York State with a relatively high seismic risk. Freeport has a two percent chance of experiencing ground motions of between 0.14 g and 0.18 g in the next fifty years. This is not a high intensity quake, relatively speaking, but still would cause damage.

New York State -- Seismic Hazard Map 2008

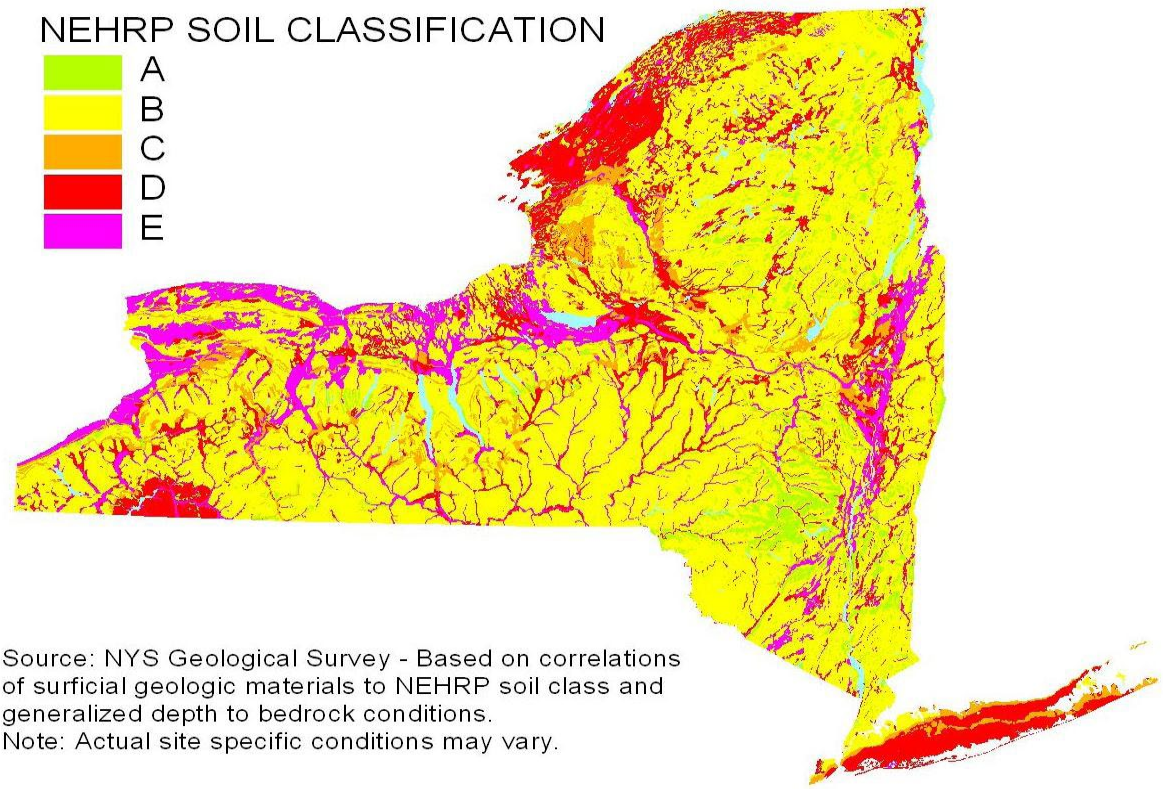


USGS National Seismic Hazard Maps



The plan also notes that the soil types in much of Nassau County would tend to cause an amplification of ground motion. An example of amplification is “liquefaction” of soils. This is a commonly-used term to describe how certain saturated soft soil ground can sometimes take on the characteristics of a fluid when shaken by an earthquake. Amplification of shaking occurs in areas of “soft soils,” including fill, loose sand, waterfront, and lake bed clays. Accordingly, the National Earthquake Hazard Reduction Program (NEHRP) developed a soil classification for New York State. The five NEHRP soil classes A through E show the types of soils that either tend to further amplify and magnify or reduce ground motions from an earthquake (low [green] to high [purple] in the map below):

- A - Very hard rock (e.g., granite, gneisses; most of the Adirondack Mountains)
- B - Rock (sedimentary) or firm ground
- C - Stiff Clay
- D - Soft to medium clays or sands
- E - Soft soil (including fill, loose sand, waterfront, lake bed clays)



Source: NYS Geological Survey - Based on correlations of surficial geologic materials to NEHRP soil class and generalized depth to bedrock conditions.
Note: Actual site specific conditions may vary.

The State Plan identified counties that would experience an amplification of ground motion during seismic activity based on the NEHRP soil classification map above. Western Nassau County, including Freeport, is comprised of "D" soil and would experience amplification.

Earthquake extent or severity depends on the amount of energy released at the epicenter, the distance from the epicenter, and the underlying soil type. An earthquake's magnitude is a measurement of the total amount of energy and is expressed in terms of the Richter scale. Intensity measures the effects of an earthquake at a particular place and is expressed in terms of the Modified Mercalli scale. The table below shows the approximate comparison between Richter scale magnitude and Modified Mercalli Intensity (MMI).

Intensity measures the effects of an earthquake at a particular place on humans, structures and (or) the land itself. The intensity depends not only upon the magnitude but also upon the distance from the earthquake to the point and the local geology at that point. The United States presently uses the Modified Mercalli (MM) Intensity Scale to evaluate the effects of an earthquake. The scale is composed of 12 levels of increasing intensity. It does not have a mathematical basis; instead it is an arbitrary ranking based on observed effects.

Magnitude and Intensity Comparison	
Richter Magnitude Scale	**Typical Maximum MMI**
1.0 to 3.0	I
3.0 to 3.9	II to III
4.0 to 4.9	IV to V
5.0 to 5.9	VI to VII
6.0 to 6.9	VII to IX
7.0 and Higher	VIII or Higher

The table below describes how each of the 12 MMI levels would impact the planning area.

12 levels of Modified Mercalli Intensity:

I Not generally felt

II Felt only by a few persons. Delicately suspended objects may swing.

III Felt quite noticeably by persons indoors. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration similar to the passing of a truck.

IV Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building

V Felt by most; many awakened. Some dishes, windows broken. Unstable objects overturned.

VI Felt by all. Heavy furniture moved; a few instances of fallen plaster. Damage slight.

VII Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.

VIII Damage slight in specially-designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Falling of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.

IX Damage considerable in specially-designed structures; well-designed frame structures thrown out of plumb. Damage great even in substantially built buildings, with partial collapse. Buildings shifted off foundations.

X Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations.

XI Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.

XII Damage would be total. Objects thrown into the air.

3.8.3 Previous Occurrences

The Village has never experienced a major earthquake. However, the Multidisciplinary Center for Earthquake Engineering Research lists the following earthquakes in areas within 50 miles of the planning area.

December 19, 1737: An earthquake in New York City area (estimated magnitude 5.0, intensity VII) knocked down several chimneys and rang church bells in New York City. It was felt in Boston, Philadelphia, and New Castle, Delaware.

February 5, 1878: A severe shock (magnitude unknown, intensity VI) broke windows and

crockery and shook houses in Flushing, Queens.

August 10, 1884: This earthquake near New York City (magnitude 5.5, intensity VII) affected the area along the Atlantic Coast from southern Maine to central Virginia and westward to Cleveland, Ohio. Chimneys fell and walls were cracked in several states, including New York. Many towns reported fallen bricks. Property damage was notable at Amityville and Jamaica, New York, where chimneys fell and walls cracked.

January 9, 1992: A 3.1 magnitude earthquake occurred 45 miles from Freeport.

January 17, 2001: A small magnitude (2.5) earthquake occurred in New York City and was felt in the Village. There was no damage.

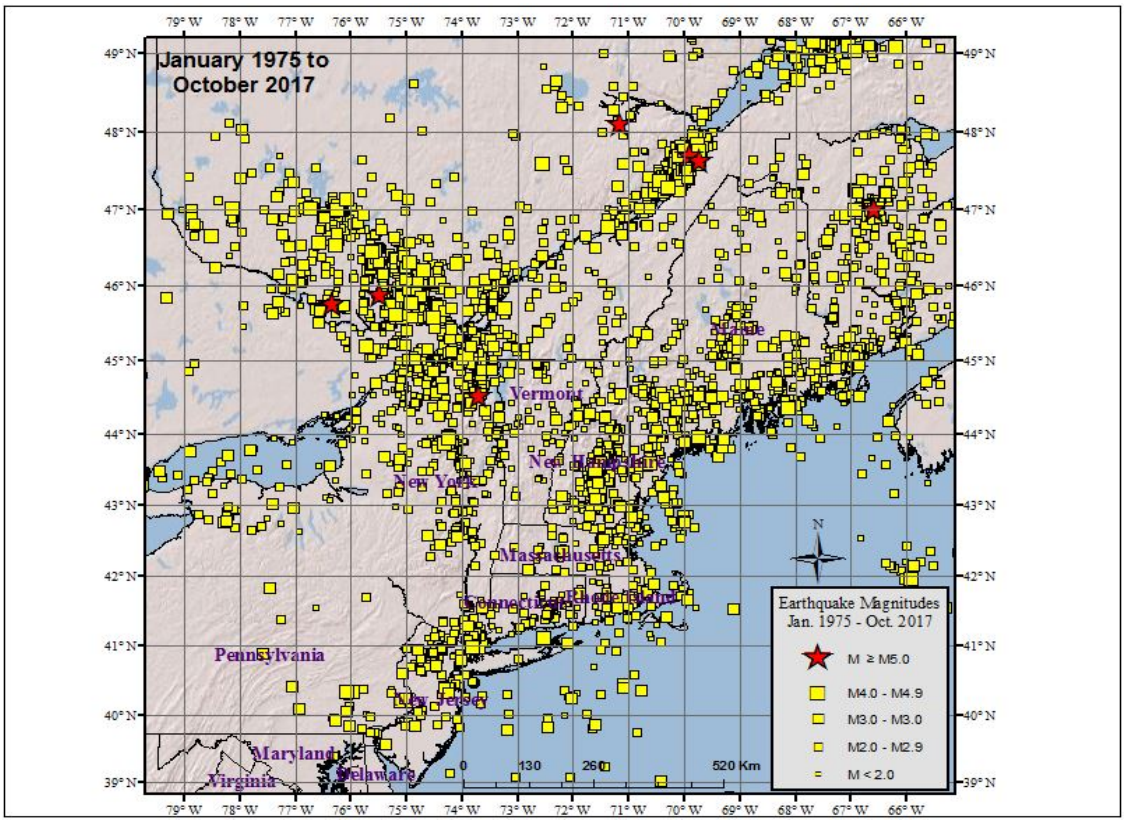
April 20, 2002: A 5.1 magnitude earthquake in upstate New York caused more than $2 million in damage in Essex and Clinton counties and was a federally-declared disaster.

February 10, 2010: A 2.2 magnitude earthquake occurred 46 miles from Freeport.

June 6, 2010: A 2.3 magnitude earthquake occurred 42 miles from Freeport.

December 25, 2010: A magnitude 2.1 earthquake occurred 34 miles from Freeport.

April 9, 2019: A magnitude 3.0 earthquake about 30 miles off the shore of Long Island.



3.8.4 Probability of Future Occurrence

While there is certainly a possibility of earthquakes being felt in the planning area, the Planning Committee concluded that the probability of an earthquake causing significant damage to Freeport is low. The Planning Committee noted that significant earthquakes would occur rarely in Freeport, but could cause moderate damage to private property and moderate structural damage to public facilities. The USGS Earthquake Hazard Program provides the probabilistic ground motion values, in percentages. For Freeport they are as follows:

	10%PE in 50 yr	5%PE in 50 yr	2%PE in 50 yr
PGA	5.431101	10.102410	20.591669
0.2 sec SA	11.585340	19.826429	38.949791
0.3 sec SA	8.404955	14.969210	27.763920
1.0 sec SA	2.722660	4.723418	8.929203

3.8.5 Vulnerability/Impact

Risk to buildings in Freeport are as follows:

- Structures built before 1940 are likely to perform poorly in earthquake shaking and are therefore most vulnerable. In Freeport 3,612 residences (26 percent of all residences) were built before 1940 and would be at high risk from an earthquake.

- Structures built after 1939 but prior to 1984 (when Freeport adopted the NYS Building Code) would most likely perform better, but these structures would still sustain damages because of their age. In Freeport, 9,904 residences (72.9 percent of all residences) were built during this time period. The Planning Committee determined that these structures are also at high risk

- Structures built after 1984 are likely to still be vulnerable to earthquake shaking but would perform better than those built prior to that date. Freeport has 263 residences, or just under 2 percent of all structures, that were built after 1984,

Though the probability of an earthquake is low, the damages caused would be great. The economic impact of a considerable earthquake in the Village would be losses of millions of dollars. Secondary hazards caused by an earthquake could include structural failure of buildings and storage tanks, disruption of utilities, disruption of transportation facilities, and fire. Information on which to base damages to Freeport structures is not available. However, the New York State Hazard Mitigation Plan includes county-level earthquake loss estimates (from 2004 and 2008 studies). They are based on a software program developed by FEMA called HAZUS. HAZUS ("Hazards US") is a nationally-applicable standardized methodology that contains models for estimating potential losses from earthquakes, floods, and hurricanes. It uses Geographic Information Systems (GIS) technology to estimate physical, economic, and social impacts of disasters. The methodology factors both the regional variation in hazards and the variation and extent in the built environment from county to county. For instance, the annualized loss enables the comparison of risk between a county having a high potential for earthquakes but a low population density with a county having a low probability for earthquakes but a high population density. The annualized loss methodology combines the estimated losses

associated with ground shaking for eight return periods: 100, 250, 500, 750, 1000, 1500, 2000, and 2500 years. These are based on values from the USGS seismic probabilistic curves. The aggregation of these losses and exceedance probabilities are then annualized, providing, in essence, the estimated cost of earthquakes to a county each year.

The Total Exposure represents the dollar value of all general building stock and calculated potential total losses (Capital Stock + Income Losses) for the four return periods of 2500, 1000, 500, and 250 years. Figures are unavailable for Freeport, but data for Nassau County is presented as indicative of what Freeport could expect in terms of exposure and loss.

Total Exposure:	$109,313,341,000
Total Losses:	$109,303,000
Losses for 2,500-year return period:	$5,723,355,000
Losses for 1,000-year return period:	$1,583,463,000
Losses for 500-year return period:	$84,883,000

The State Plan included annualized total earthquake loss per capita (normalized or divided by population) by county. Information on the Exposure Ratio Rank, or the rank of the Annualized Loss Ratio, is expressed in dollars per $1 million of exposure. The Exposure Rank is ordered by its Total Exposure, which is the expected repair and replacement dollar costs directly derived from all buildings, contents, and inventory, assuming an event causes complete damages. It does not include income-related loss, nor does it account for regional variability in earthquake hazard (i.e. differences across the state in percentage Peak Ground Acceleration, Spectral Acceleration, Liquefaction, etc.). The replacement costs supplied by HAZUS®M software/data are derived from the Mean Square Foot costs of a nationally-accepted reference on building construction (2002) for residential, commercial, industrial, and institutional buildings. The highest ranking counties are, understandably, the most densely built and populated counties. The figures below are for Nassau County.

Total Exposure	$109,313,341,000
Annualized Capital Stock Losses	$5,576
Annualized Income Losses	$681
Annualized Total Losses	$6,256,000
Annualized Loss Ratio [in Dollars per $1 Million of exposure]	57
Annualized Loss per Capita [in Dollars]	4.69
Exposure Rank	3
Exposure Ratio Rank	14
Annualized Loss Rank	4
Annualized Loss per Capita Rank	10

As seen in the figures above, Nassau County ranks third among New York State's 62 counties in possible earthquake damages. Nassau and Suffolk counties rank even higher -. they are tied for number one - in annualized earthquake losses when soil composition is factored into the equation.

3.9 TORNADOS

Hazard Description	Location/Extent	Previous Events	Probability	Vulnerability/Impact
A violent windstorm characterized by a twisting, funnel-shaped cloud.	The risk of a tornado event is planning area-wide	A tornado has not touched down in the planning area, but there have been 16 tornados within 50 miles of Freeport in the past 12 years.	Low; a tornado has never been recorded in the planning area.	Based on a 1989 F-4 tornado that touched down in Nassau County, it is presumed that an F4 tornado could cause up to $50 million in damages and injure up to 20 people

3.9.1 Hazard Description

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. A tornado can form when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. Tornados can be created by thunderstorms and sometimes by hurricanes. Tornados can be accompanied by lightning or hail. Tornado season is generally March through August, although tornadoes can occur at any time of year (FEMA, 2004). Tornados tend to strike in the afternoons and evenings, with over eighty percent striking between noon and midnight. The average forward speed of a tornado is 30 miles per hour, but they have a wide range of speeds. A tornado can be nearly stationary or it can move forward at up to 70 miles per hour. The National Oceanic and Atmospheric Administration (NOAA) Storm Prediction Center (SPC) indicates that a tornado can last between a few seconds to over one hour. The typical tornado lasts less than ten minutes.

Damages caused by tornados are typically from high winds and wind-blown debris. Destruction caused by tornados depends on the size, intensity, and duration of the storm. Tornados cause the greatest damage to lightweight structures, such as mobile homes, and tend to remain localized during impact.

3.9.2 Geographic Location/Extent

All portions of the planning area are equally at risk from a tornado event. A tornado is just as likely to touch down in one section of Freeport as another.

Dr. T. Theodore Fujita developed a scale used to measure tornado damages called the Fujita Tornado Damage Scale (F-Scale). It provides estimates of tornado strength based on damage surveys. Since it is not possible to make direct measurements of tornado winds, an estimate based on damage is a reasonable substitute. The new Enhanced Fujita Scale (EF-Scale) addresses some of the limitations identified by meteorologists and engineers since the introduction of the Fujita Scale in 1971. The new scale, adopted on February 1, 2007, identifies 28 different free-standing structures most affected by tornados, taking into account construction

quality and maintenance. The range of tornado intensities, zero to five, remains as before, with 'EF-0' being the weakest, associated with very little damage, and 'EF-5' representing complete destruction. The Storm Prediction Center has published a brief description of the Enhanced Fujita Scale compared to the Fujita Scale, as follows:

EF-Scale:	Old F-Scale:	Typical Damage:
EF-0 (65-85 mph)	F0 (65-73 mph)	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF-1 (86-110 mph)	F1 (73-112 mph)	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF-2(111-135 mph)	F2 (113-157 mph)	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF-3 (136-165 mph)	F3 (158-206 mph)	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF-4 (166-200 mph)	F4 (207-260 mph)	Devastating damage. Whole frame houses Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF-5 (>200 mph)	F5 (261-318 mph)	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (109 yard); high-rise buildings have significant structural deformation; incredible phenomena will occur.
EF No rating	F6-F12 (319 mph to speed of sound)	Inconceivable damage. Should a tornado with the maximum wind speed in excess of EF-5 occur, the extent and types of damage may not be conceived. A number of missiles such as iceboxes, water heaters, storage tanks, automobiles, etc. will create serious secondary damage on structures.

3.9.3 Previous Occurrences

Long Island gets far fewer tornados than the Midwest due to its geographic location. Since the jet stream is south of Long Island most of the year, planning area temperatures remain cool. The cooler air stabilizes the atmosphere, thus suppressing the threat of thunderstorms and tornados. During the summer months, the jet stream moves north, bringing warmer air and instability, thereby increasing the threat of thunderstorms and tornados. However, the cold water of the Atlantic Ocean lessens the intensity of thunderstorms.

Although a tornado has never touched down in Freeport, historical tornado activity in Nassau County is significantly above the New York state average and is one percent greater than the overall U.S. average. Eight tornados touched down in Nassau County in the 30 years between 1970 and 2000. On July 10, 1989, a category F4 tornado touched down 23.3 miles from the village center. It was part of an outbreak of 17 tornados in the northeastern United States that injured 150 people and caused $130 million in damages over a five-state area. The tornado was accompanied by 2.5-inch hail. In the town of East Moriches in adjacent Suffolk County, a man was thrown with his trailer across an airfield, but escaped the destroyed trailer with only minor injuries In 1998 an F2 tornado injured six people and caused $1 million damages in Lynbrook.

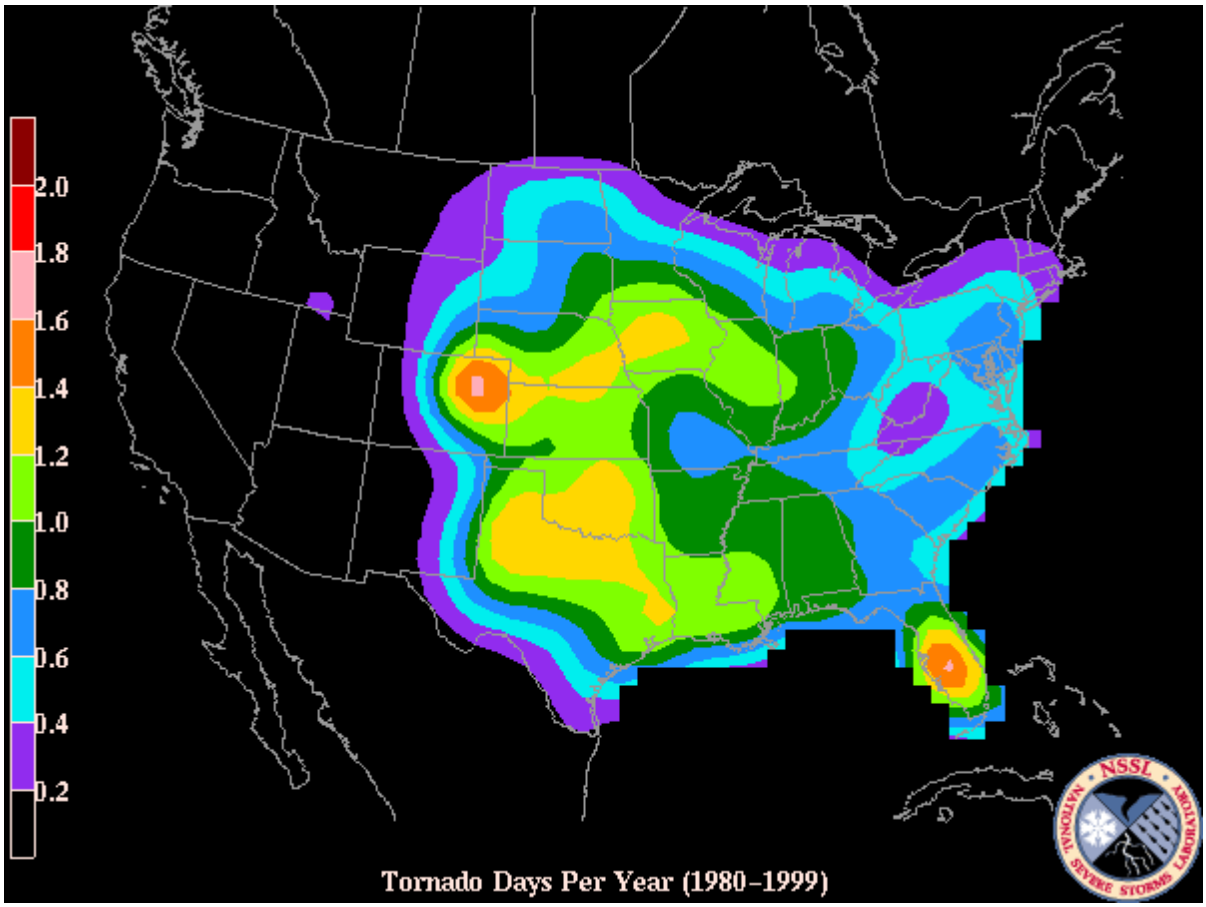
More recent tornado events are detailed in the NCDC weather archives, which shows that, 16 tornados were reported in New York City and Nassau and Suffolk counties between 2000 and 2012 as follows:

Date	Location	Time	Type	Magnitude	Injuries	Property Damage
09/15/2000	Southold	0520	Tornado	F1	0	$0
07/01/2001	Hampton Bays	0030	Tornado	F0	0	$0
07/01/2001	Shinnecock Hills	0035	Tornado	F0	0	$0
08/25/2006	Amityville	1105	Tornado	F0	0	$0
07/18/2007	Islip Terrace	0825	Tornado	EF1	0	$0
08/08/2007	Coney Island	0532	Tornado	EF2	0	$0
07/25/2010	Spuyten Duyvil	1355	Tornado	EF1	7	$150,000
08/16/2010	Flushing	1642	Tornado	EF1	2	$17,200,000
09/16/2010	Brooklyn	1633	Tornado	EF0	0	$8,5000,000
08/28/2011	Hollis	0300	Tornado	EF0	0	$0
08/28/2011	Babylon	0350	Tornado	EF0	0	$0
08/28/2012	Great River	1206	Tornado	EF0	0	$100,000
09/08/2012	Rockaway Beach	0958	Tornado	EF0	0	$20,000
09/08/2012	Homecrest	1001	Tornado	EF1	0	$250,000

3.9.4 Probability of Future Occurrence

NOAA maps of tornado frequency place Freeport in the lowest category in the United States. Freeport experiences less than one tornado per 3,700 square miles. As can be seen in the NOAA's National Severe Storms Laboratory map below, the planning area is likely to experience a tornado between 0.4 to 0.6 days per year.

As previously noted, a tornado has never touched down in Freeport. However, because there is a history of tornados in Nassau County, the Planning Committee determined that the possibility of a tornado in Freeport exists. They rated the possibility “low.”



3.9.5 Vulnerability/Impact

There are 24 mobile homes in Freeport, according to the 2010 census. These structures are most at risk to damage from a tornado.

A tornado event would probably impact a small geographic area in relationship to the total planning area. However, Freeport's high residential and commercial density means that a tornado could damage many structures and have village-wide impact economically. Since a tornado could occur in any location in the Village, critical facilities and infrastructure are also at risk. A tornado could cause power outages, disruptions to transportation, and loss of workplace access, all of which impact the local economy. Trees, branches, and other objects could fall on power lines, buildings, roads, and vehicles.

Sufficient information was not available on which to base a detailed estimate of planning area losses. A tornado has not been reported in the planning area. However, newspaper accounts of an August 8, 2007 tornado that hit Brooklyn could offer some insight. It had a path of approximately 9 miles from Staten Island across the Verrazano Narrows to Brooklyn. The National Weather Service estimated its strength in Brooklyn as EF2 on the Enhanced Fujita Scale. At least 40 buildings and 100 cars were damaged, with losses in the tens of millions of U.S. dollars. No serious injuries or fatalities were reported, but several people were treated at area hospitals for flying glass injuries. The storm system produced severe street flooding, and

disrupted all modes of transportation throughout the city. Similar damages could be expected in Freeport.

Another source of information for tornado vulnerability is the 2011 New York State Hazard Mitigation Plan. It presents the results of a vulnerability assessment identifying the New York counties most vulnerable to wind hazard. A final rating score was tabulated based on the value of each vulnerability indicator (the higher indicators for wind exposure result in more points assigned to the final score). The wind vulnerability assessment uses readily available data to give a gross indication of counties most threatened by and vulnerable to wind hazard.

The methodology provides a reasonable assessment of vulnerability using key available indicators. However, it is noted that many vulnerability indicators for wind are not readily available, and are not comprehensive and standardized enough to be easily included in our analysis at this time. Gaps include building attributes and associated levels of vulnerability, local or site-specific conditions, and building positional accuracy. The analysis results may be best used as a guide to help target communities that would benefit from further wind hazard and vulnerability analysis. The analysis ranks Nassau County, where Freeport is located, second only to Suffolk County in wind damage susceptibility.

Jurisdictions Most Threatened by Extreme Wind and Vulnerable to Extreme Wind Loss

County	Rating Score	Wind Zone (h-hurricane susceptible)	# of Tornados	Population Density (per square mile)	Total # of Structures (HAZUS)
Suffolk	19	h	20	1,542.8	461,456
Nassau	18	h	8	4,642.1	395,748
Albany	17	h	7	552.8	83,117
Dutchess	18	h	11	339.8	79,721
Erie	17	3	17	906.3	277,470
Orange	17	h	8	407.5	92,068
Richmond (Staten Is)	17	h	3	7,633.8	111,561
Westchester	17	h	8	1,951.4	211,689
Bronx	16	h	1	31,412.5	89,896
Kings (Brooklyn)	16	h	1	34,951.2	258,603
Queens	16	h	1	20,442.3	343,289

The Planning Committee will conduct research before the next plan update to obtain more data that is specific to the planning area. Nassau County information is certainly relevant, but Freeport-specific information is needed for a more accurate assessment of the planning area's vulnerability. During the recent Tropical Storm Isaias on Tuesday August 4th, 2020, the NWS was reporting winds of only 65 mph in our area but the weather station on top of Freeport's Powerplant #2 recorded a wind speed on 94 mph.

3.10 EPIDEMIC/PANDEMIC

Hazard Description	Location/Extent	Previous Events	Probability	Vulnerability/Impact
Serious injury or death to extremely large numbers.	Worldwide	West Nile in 1999, 2003 and 2010 COVID 19 pandemic in 2020	High	Nassau County has over 38,000 confirmed cases of COVID 19 with over 1900 deaths. Freeport, has over 1400 active COVID 19 cases in 2020 (as of May 5, 2020)

3.10.1 Hazard Description

An epidemic is the rapid spread of disease to a large number of people in a given population within a short period of time. For example, in meningococcal infections, an attack rate in excess of 15 cases per 100,000 people for two consecutive weeks is considered an epidemic.

Epidemics of infectious disease are generally caused by several factors including a change in the ecology of the host population (e.g., increased stress or increase in the density of a vector species), a genetic change in the pathogen reservoir or the introduction of an emerging pathogen to a host population (by movement of pathogen or host). Generally, an epidemic occurs when host immunity to either an established pathogen or newly emerging novel pathogen is suddenly reduced below that found in the endemic equilibrium and the transmission threshold is exceeded.

An epidemic may be restricted to one location; however, if it spreads to other countries or continents and affects a substantial number of people, it may be termed a pandemic. The declaration of an epidemic usually requires a good understanding of a baseline rate of incidence; epidemics for certain diseases, such as influenza, are defined as reaching some defined increase in incidence above this baseline. A few cases of a very rare disease may be classified as an epidemic, while many cases of a common disease, such as the common cold, would not.

A pandemic is a global outbreak of disease. Pandemics happen when a new virus emerges to infect people and can spread between people sustainably. Because there is little to no pre-existing immunity against the new virus, it spreads worldwide.

The virus that causes COVID-19 is infecting people and spreading easily from person-to-person. On March 11, 2020 the COVID-19 outbreak was characterized as a pandemic by the WHO.

3.10.2 Geographic Location/Extent

All portions of the planning area are equally at risk from an epidemic event.

Pandemics are large-scale outbreaks of infectious disease that can greatly increase morbidity and mortality over a wide geographic area and cause significant economic, social, and political disruption. Evidence suggests that the likelihood of pandemics has increased over the past century because of increased global travel and integration, urbanization, changes in land use, and greater exploitation of the natural environment These trends likely will continue and will intensify. Significant policy attention has focused on the need to identify and limit emerging outbreaks that might lead to pandemics and to expand and sustain investment to build preparedness and health capacity.

The international community has made progress toward preparing for and mitigating the impacts of pandemics. The 2003 severe acute respiratory syndrome (SARS) pandemic and growing concerns about the threat posed by avian influenza led many countries to devise pandemic plans). Delayed reporting of early SARS cases also led the World Health Assembly to update the International Health Regulations (IHR) to compel all World Health Organization member states to meet specific standards for detecting, reporting on, and responding to outbreaks The framework put into place by the updated IHR contributed to a more coordinated global response during the 2009 influenza pandemic International donors also have begun to invest in improving preparedness through refined standards and funding for building health capacity.

Despite these improvements, significant gaps and challenges exist in global pandemic preparedness. Progress toward meeting the IHR has been uneven, and many countries have been unable to meet basic requirements for compliance. Multiple outbreaks, notably the 2014 West Africa Ebola epidemic, have exposed gaps related to the timely detection of disease, availability of basic care, tracing of contacts, quarantine and isolation procedures, and preparedness outside the health sector, including global coordination and response mobilization. These gaps are especially evident in resource-limited settings and have posed challenges during relatively localized epidemics, with dire implications for what may happen during a full-fledged global pandemic. There is growing concerns that China’s delay in reporting of the COVID 19 virus to the WHO increased the spread of the virus.

3.10.3 Previous Occurrences

There have not been many serious past occurrences of epidemic affecting the planning area until COVID 19 in 2020.

The most recent was the West Nile Virus. Encephalitis caused by a West Nile-like virus was found in New York during the summer of 1999. It is believed that mosquitoes carried the virus. The Village is a coastal community surrounded by salt marshes that are potential breeding areas for larvae. Nassau County was responsible for mosquito control.

The Nassau County Departments of Health and Public Works conducted mosquito control efforts by inspecting breeding sites and, when necessary, applying larvicide. Mosquito surveillance consists of 42 trap sites located throughout the county. Public Works receives many calls during the summer and fall months from residents concerning dead birds.

On July 23, 2003 a crow found in Nassau County (Levittown) tested positive for the West Nile Virus. On August 8, 2003, the Nassau County Health Dept. identified the first mosquito pool that tested positive for the virus in Bayville. In 2001, there were four confirmed cases of West Nile virus and two deaths in Nassau County; in 2000, there were no cases; and in the first year of the disease, 1999, there were six cases and one death. In the United States during 1999, there were a 4,156 recorded West Nile cases that included 284 deaths.

Nassau County reported 57 West Nile-cases and 3 deaths during 2010. All of New York State reported 129 cases with 5 deaths during 20010. During 2009 there were no cases reported in Nassau County and 7 within the entire state, with no deaths. In 2008, Nassau reported only 20 cases with 4 deaths and New York State reported 46, with 6 deaths. Two cases were reported in Nassau County during 2007, with no deaths. New York State reported 22 in 2007, with 2 deaths. In 2006, Nassau County reported 5 cases with 1 death and New York State reported 23 cases with 4 deaths.

Severe acute respiratory syndrome (SARS) may become another concern. However, in the spring of 2003, only two (2) known cases have been diagnosed in Nassau County and forty-eight (48) in New York State. There have been no deaths from SARS in New York State. Since 2004, there have not been any known cases of SARS reported anywhere in the world

In January 2020 the CDC responded to a pandemic of respiratory disease spreading from person to person caused by a novel (new) coronavirus. The disease has been named “coronavirus disease 2019” (abbreviated “COVID-19”). This situation poses a serious public health risk. The federal government is working closely with state, local, tribal, and territorial partners as well as public health partners, to respond to this situation. COVID-19 can cause mild to severe illness; most severe illness occurs in adults 65 years and older and people of any age with serious underlying medical problems..

3.10.4 Probability of Future Occurrence

With confirmed COVID-19 cases worldwide surpassing 4 million and continuing to grow, scientists are pushing forward with efforts to develop vaccines and treatments to slow the pandemic and lessen the disease’s damage.

The novel coronavirus is rapidly spreading globally and has already led to more than 275,000 deaths and 4 million positive cases. Even though the countries across the globe have closed their borders and continue to take stringent measures (including a complete lockdown) to contain the spread of this highly infectious virus, the flattening of the curve is yet to be seen.

In the United States, COVID-19 has caused more than 80,000 fatalities and the number of positive cases has touched almost 1.3 million. In Nassau County there are over 38,000 active cases with 1904 deaths.

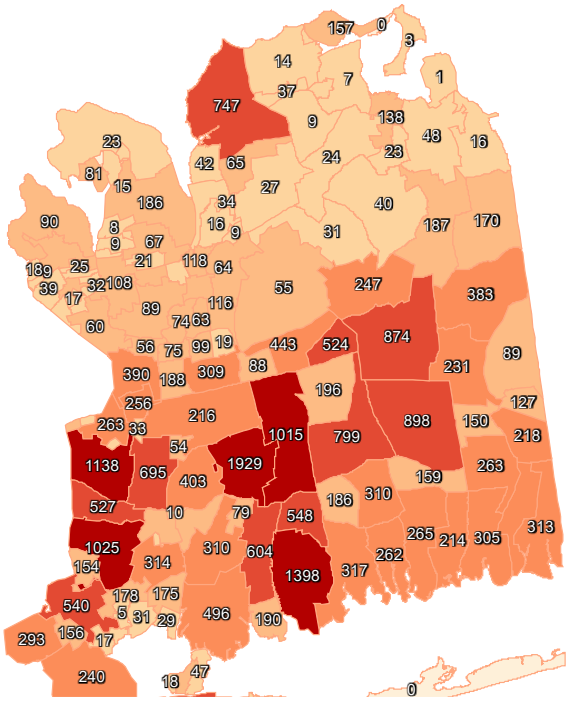
Health experts across the globe have been constantly reminding people to stay indoors so as not to overwhelm the health care system and give the medical experts and scientists more time to develop a vaccine for the novel coronavirus. Ultimately, social distancing and lockdown serve the same purpose--to prevent more people from getting infected and buying more time.

The world has joined hands to find a vaccine for the novel coronavirus and scientists and medical researchers across the globe are scrambling for the first breakthrough. Since the virus spreads easily and is already overwhelming the healthcare system of most countries, a vaccine is the most effective way of putting a pause on the spread of infectious disease. At present, almost 80 groups globally are working at break-neck speed for the same, even though a vaccine fit for humans normally takes years to develop.

Until a vaccine is found and made available to all residents in our planning area there will continue to be new cases and fatalities.

3.10.5 Vulnerability/Impact

With over 1400 residents of Freeport infected with COVID-19 (the second hardest hit community in Nassau County), and 38,000 in Nassau County, there is a very high probability of continued spread of the pandemic until a vaccine is found and distributed.



Different parts of the country are seeing different levels of COVID-19 activity. The United States nationally is in the acceleration PHASE of the pandemic. The duration and severity of each pandemic phase can vary depending on the characteristics of the virus and the public health response.

Situation in the United States and CDC Recommendations:

- CDC and state and local public health laboratories are testing for the virus that causes COVID-19. As of May 2020, there were over 8 million people in the U.S. tested for the virus.
- All 50 states have reported cases of COVID-19 to CDC.
- U.S. COVID-19 cases include:
    - People who were infected while travelling, before returning to the United States
    - People who were infected after having close contact with someone known to be infected with the virus
    - People in a community who were infected with the virus but don't know how or where they were infected
- All U.S. states are reporting community spread of COVID-19.
- CDC is recommending that everyone does their part to help respond to this emerging public health threat by following these CDC recommendations:
    - Wear a cloth face covering in public settings to avoid spreading COVID-19 to others in case you are infected but do not have symptoms.
    - The cloth face cover is meant to protect other people in case you are infected.
    - The cloth face coverings recommended are not surgical masks or N-95 respirators. Those are considered critical supplies that should be reserved for healthcare workers and other first responders, as recommended by CDC.
    - The cloth face covering is not a substitute for social distancing.
    - CDC continues to recommend that people try keep about 6 feet between themselves and others.

States/Territories	**Confirmed**	Deaths	**Recovered**
New York (state)	323,978	25,956	-
New Jersey	131,890	8,549	-
Massachusetts	72,025	4,420	-
Illinois	68,232	2,974	-
California	60,446	2,452	-
Pennsylvania	51,845	3,106	-
Michigan	45,054	4,250	-
Florida	38,002	1,539	-
Texas	34,422	948	16,090
Connecticut	30,995	2,718	-
Georgia	30,739	1,326	-
Louisiana	30,399	2,094	-

Maryland	28,163	1,338	1,903
Indiana	21,870	1,377	-
Ohio	21,576	1,225	-
Virginia	21,570	769	-
Colorado	17,830	921	-
Washington	15,905	870	-
Tennessee	13,938	239	6,564
North Carolina	12,758	477	-
Iowa	10,404	219	3,486
Rhode Island	10,205	370	-
Arizona	9,707	426	-
Missouri	9,102	396	-
Wisconsin	8,901	362	-
Alabama	8,699	347	-
Minnesota	8,579	485	4,212
Mississippi	8,424	374	-
South Carolina	6,936	305	-
Nebraska	6,771	86	-
Kentucky	5,934	283	-
Delaware	5,778	193	2,008
Kansas	5,734	144	-
Nevada	5,663	276	-
Washington, D.C.	5,654	285	825
Utah	5,595	58	2,342
New Mexico	4,291	169	1,073
Oklahoma	4,201	253	2,909
Arkansas	3,611	87	2,123
Oregon	2,887	115	-
South Dakota	2,779	29	1,977
New Hampshire	2,740	111	1,110
Idaho	2,158	66	1,399
Puerto Rico	1,924	99	-
North Dakota	1,323	31	582
West Virginia	1,287	51	630
Maine	1,174	62	766

Vermont	908	52	-
Hawaii	626	17	548
Wyoming	479	7	416
Montana	456	16	417
Alaska	372	10	284
Guam	149	5	124

State Data as of May 7, 2020

The complete clinical picture of COVID-19 is not fully known. Reported illnesses have ranged from very mild (including some people with no reported symptoms) to severe, including illness resulting in death. While information so far suggests that the majority of COVID-19 illnesses are mild, early reports found serious illness in 16% of people who were infected. A CDC Morbidity & Mortality weekly report that looked at severity of disease among COVID-19 patients in the United States by age group found that 80% of deaths were among adults 65 years and older, with the highest percentage of severe outcomes occurring in people 85 years and older. People with serious underlying medical conditions — like serious heart conditions, chronic lung disease, and diabetes, for example — also seem to be at higher risk of developing severe COVID-19 illness.

The risk posed by COVID-19 depends on characteristics of the virus, including how easily it spreads between people; the severity of resulting illness; and the medical or other measures available to control the impact of the virus (for example, vaccines or medications that can treat the illness) and the relative success of these. Because there are not yet vaccines or treatments for COVID-19, nonpharmaceutical interventions become the most important response strategy. These are community interventions that can help reduce the impact of disease, like social distancing and good hand hygiene.

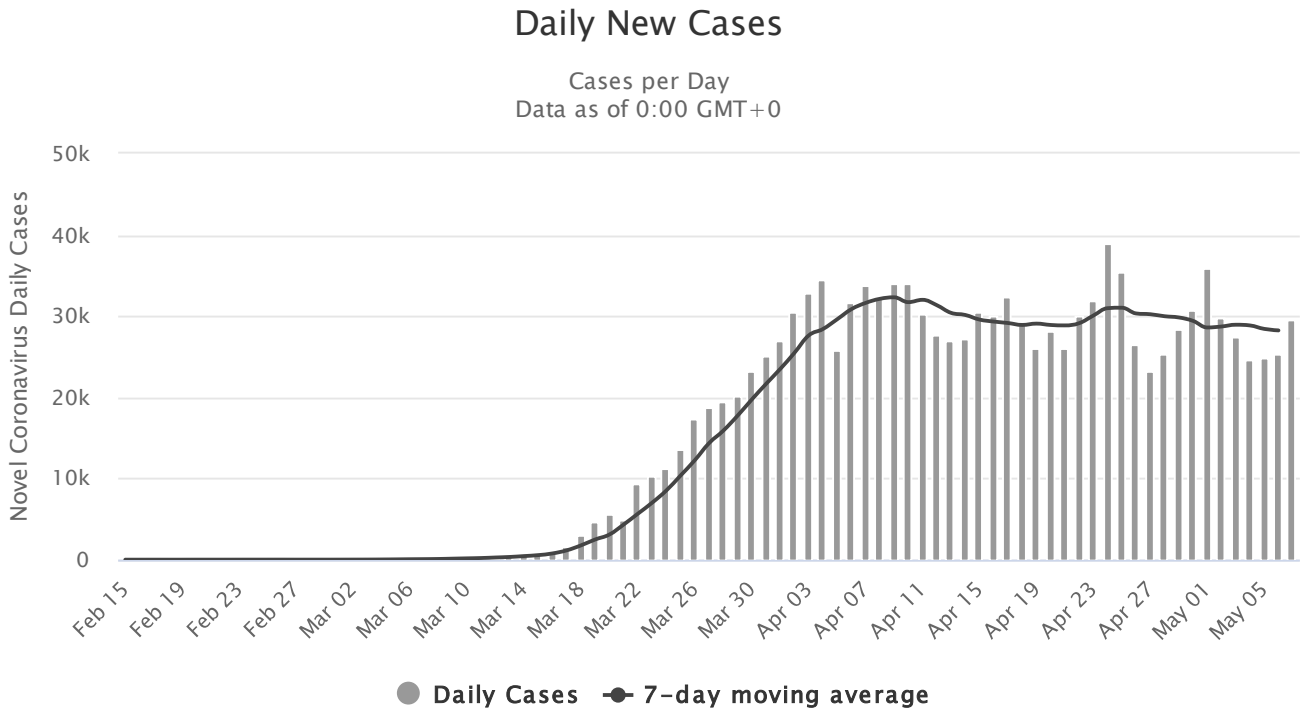
When considering the risk that COVID-19 poses to Americans, it's helpful to break down this risk into two types: risk of exposure and risk of serious illness and death.

RISK OF EXPOSURE

- Cases of COVID-19 and instances of community spread are being reported in all states.
- People in places where ongoing community spread of the virus that causes COVID-19 has been reported are at elevated risk of exposure, with the level of their risk depending on their location.
- Healthcare workers caring for patients with COVID-19 are at elevated risk of exposure.
- Close contacts of persons with COVID-19 also are at elevated risk of exposure.
- Travelers returning from affected international locations where community spread is occurring also are at elevated risk of exposure, with their level of risk depending on where they traveled.

RISK OF SEVERE ILLNESS:
Based on what we know now, persons at higher risk for severe illness from COVID-19 are:

- People 65 years and older
- People who live in a nursing home or long-term care facility
- People of all ages with serious underlying medical conditions



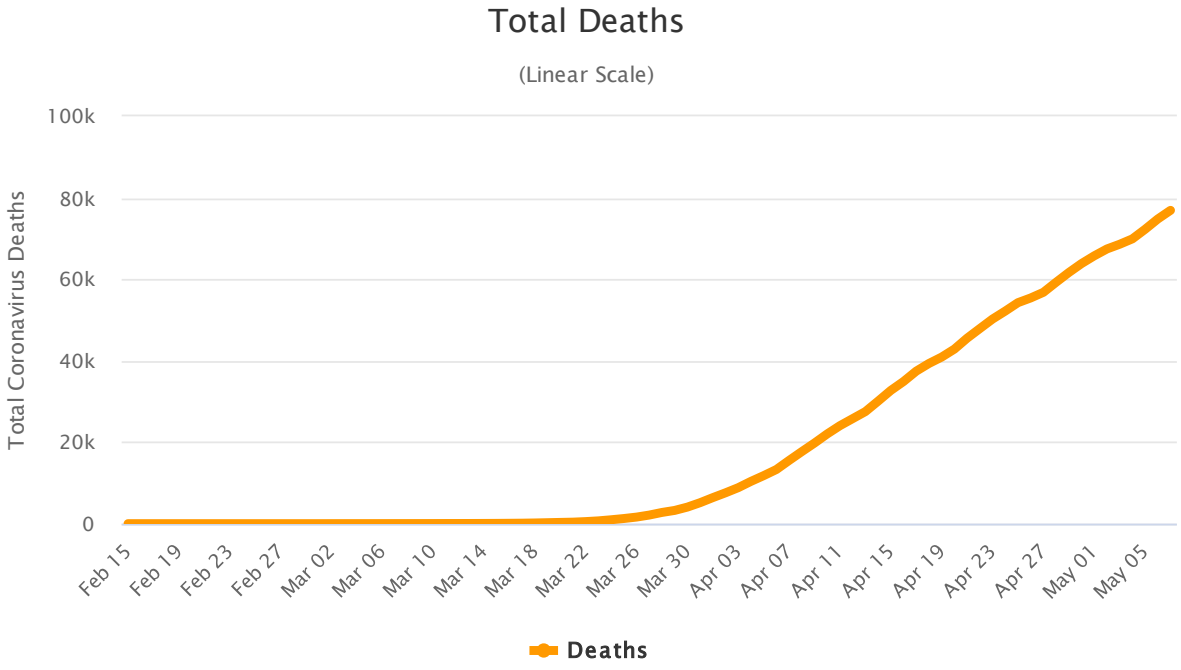
ECONOMIC IMPACT OF COVID-19

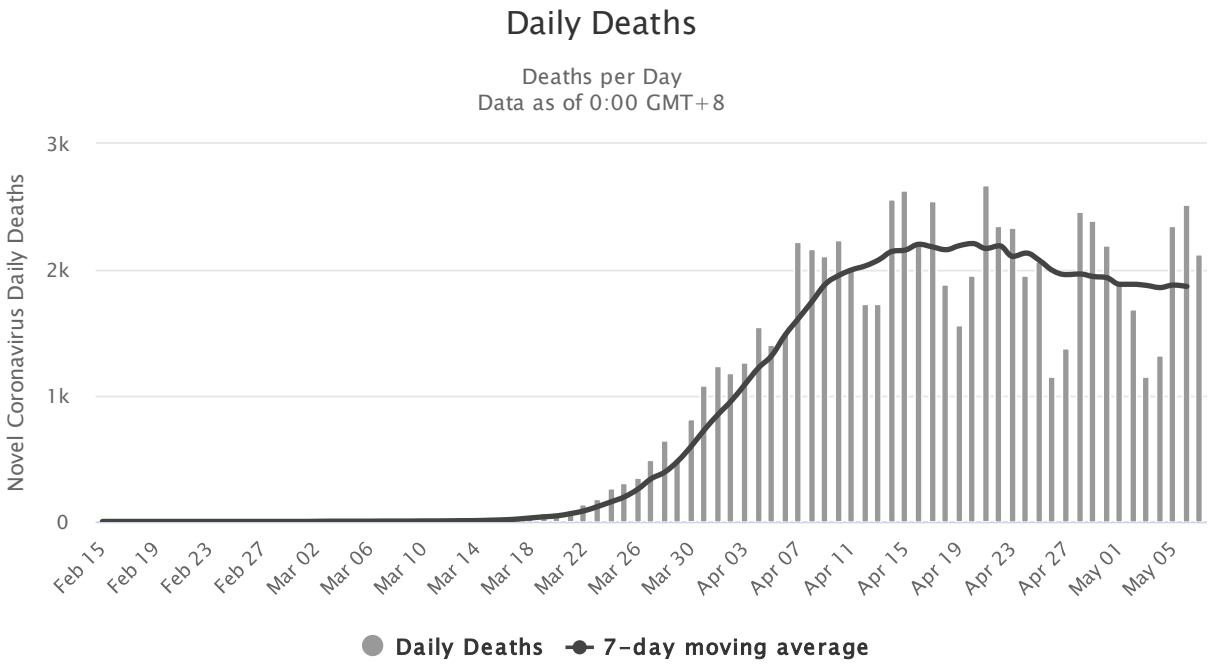
New York's economy is in a more precarious state than at any time since the 1970s fiscal and economic crisis. The current public health and economic crisis far surpasses the personal, psychological, and economic devastation wrought by 9/11, the 2008-09 Great Recession, or Superstorm Sandy.

Facing the rapid spread of the coronavirus disease 2019 (COVID-19) pandemic, state and local leaders, including Freeport, have taken unprecedented measures to protect their communities, such as closing schools and businesses, banning large gatherings, and placing residents under shelter-at-home orders.

The social distancing public health imperative at present has incapacitated a substantial portion of our economy. Job losses and new unemployment claims that have mounted since the beginning of the pandemic are unprecedented. Over a million New Yorkers have lost jobs in an environment where businesses have been ordered to close and non-essential personnel told to stay at home. Workers and industries are expected to experience the most profound displacement and economic losses as business closures and social distancing measures demanded by the health crisis continue.

As communities move toward recovery, policymakers face difficult questions about how and when to relax interventions and how to weigh the economic cost of prolonged mitigation measures against the risk of a second wave of the virus.





3.11 CATEGORIZATION OF HAZARDS

After reviewing the data gathered on the hazards impacting the planning area, the Planning Committee categorized the hazards as high, medium, and low risk. Low-risk hazards are those that can be addressed by projects to mitigate their impacts eventually, but not necessarily in the next five years. Moderate-risk hazards are those that can be addressed by mitigation projects implemented in the next three to five years. High-risk hazards are those that can be addressed by projects to be implemented within the next two years. The hazard profiling activity resulted in the following categorization of hazards.

High-Risk Hazards:	Hurricane/High Wind Flooding Nor'easter/Winter Storm/Ice Storm Epidemic
Moderate-Risk Hazards:	Tornado Hazardous Materials at Fixed Sites and in Transit Terrorism Cyber-Terrorism
Low-Risk Hazards:	Earthquake Urban/Structural Fire

4 SUMMARY OF EXISTING CAPABILITIES

This 2020 Freeport Hazard Mitigation Plan is an update of the 2014 Hazard Mitigation Plan that was approved by FEMA and adopted by the Board of Trustees. The 2014 Freeport Hazard Mitigation Plan is an update of the 2005 Hazard Mitigation Plan that was approved by FEMA and adopted by the Board of Trustees. In turn, the 2005 Plan was an update of the Village's 1997 Floodplain Management and Hazard Mitigation Plan. The Village of Freeport has made significant progress on the strategy set forth in the original 1997 plan. The following paragraphs represent a summary of accomplishments.

4.1 EMERGENCY WARNING SYSTEM

An Emergency Siren Warning System was installed in 2002. The warning system is activated in the event of a flood, storm, or any other type of hazard that threatens the community. In addition, an outreach program was developed. Informational material is mailed bi-yearly and an Emergency Information Phone Number (Emergency Management Hotline) was established. The Village also established a radio station that transmits in the event of an emergency. An operating license was received in July 2003 for WBYM, 1690 AM. The siren system is intended to notify residents to tune in to the radio station or call the Emergency Management Hotline for information.

In an effort to provide more reliable and effective communications with our residents, the Village installed an emergency notification system in June 2005. .The system is designed to easily

record and broadcast voice messages to all individuals within the community; it can make thousands of calls a minute to warn of an emergency or to share vital information These messages may include information on floods, fires, water emergencies, road closures, missing persons, evacuation orders, and weather emergencies. The system currently under contract to the Village is SwiftReach 911.

We found out by the resident survey done in 2020 that residents rely on the sirens and swiftreach system more then we thought.

4.2 ACCURATE FLOOD DATA

The Village of Freeport, in collaboration with Sea Grant and the Town of Hempstead, installed a tide-stage gage with telephone and satellite telemetry. The tide-stage gage was installed at the Town of Hempstead Marina in September 1999 and began operating on October 1, 1999. Near "real time" tide stage levels can be accessed by anyone by means of the Internet and/or telephone. This information is used to predict above-normal tides and determine activation of the early warning system described above. The data is also used when designing road improvement projects to determine the grade elevation required to mitigate street flooding.

4.3 FLOODING ON ROADS

In 1998 the Village identified all roads that are below the base flood elevation. In order to mitigate damages, the grade of the following streets has been elevated:

- Hampton Place from West End Avenue west to canal
- Buchanan Street from Meister Boulevard to South Meister Blvd
- Stirling Avenue
- Lester Avenue
- Woodcleft Avenue
- Garfield Avenue from President Street south to canal
- Casino Street from South Long Beach Avenue to St. Marks Avenue
- Cedar Street from South Long Beach Avenue to St. Marks Avenue
- St. Marks Avenue from Casino Street . to 500 feet n/o Cedar Street
- Westside Avenue from Casino Street to 500 feet n/o Cedar Street
- Roosevelt Avenue from Casino Street to 500 feet n/o Cedar Street

4.4 FLOOD DAMAGE FROM TIDAL WATERS BACKING UP THROUGH STORM DRAINS.

Since 1990, the Village has installed check valves for storm drains in the following sites:

- Roosevelt Avenue west of South Long Beach Avenue
- Florence Avenue at Jeanette Avenue
- Hampton Place at end of block
- Hudson Avenue between Hubbard Avenue. and Howard Avenue at Trudy B's bulkhead
- Hudson Avenue at Grant Street in boatyard in chamber
- Hudson Avenue between Overton Street and Polk Street in sidewalk

- Garfield Street at end of block
- Garfield Street middle of block
- Guy Lombardo Avenue at Cedar Street in sidewalk
- Guy Lombardo Avenue south of Front Street at bulkhead
- Woodcleft Avenue at Adams Street
- Woodcleft Avenue at Suffolk Street
- Woodcleft Avenue between Suffolk Street and Manhattan Street
- Miller Avenue and Suffolk Street
- West Fourth Street west of South Main Street
- Cedar Street and Casino Street
- 3 additional valves since 2014 on Guy Lombardo Ave
- 3 additional valves since 2014 on Hudson Ave

4.5 IMPACT OF FLOODING ON RESIDENTIAL AND COMMERCIAL PROPERTIES.

Residential properties at the greatest risk for flooding were identified in 1997. Repetitive Loss properties identified as such by the National Flood Insurance Program (NFIP) have been added to the GIS database. The data is updated on a regular basis to maintain currency. The Village of Freeport Building Department. has obtained 712 elevation certificates in the AE Flood Zone. They have also implemented an incentive program and an outreach program to encourage participation.

The Village has also obtained financial assistance from the Flood Mitigation Assistance Program and the Hazard Mitigation Grant Program for the elevation of residential properties. The program began in early 1996, when a notice was sent to all properties located in the AE floodplain (approximately 3,515 properties) advising of the programs and soliciting interest in the elevation of their structures. Another such notice was sent in December 2001. Between 1999 and 2007, twenty-five (25) homes were elevated to a minimum of 10 Mean Sea Level (MSL) under the programs. Property owners contributed 25 percent of the total cost of the projects. Twenty-three (23) of these homes weathered Hurricane Sandy with little or no damage.

After Hurricane Sandy and through the Governor's Office of Storm Recovery and the NY Rising Program an additional 309 Structures had permits issued for home elevations. 180 of the 309 have been completed and are compliant with all relevant codes.

As an incentive to mitigate the damages of flooding, the Village does not require filing fees for a flood mitigation project. Although this is a relatively minor cost savings in the construction process, it serves as motivation for those seeking to make their homes or businesses safer from flood damage.

All new construction and substantial renovation work in the Village of Freeport requires the installation of hurricane clips or straps. The clips prevent high winds from ripping the roof off a structure during a storm. The clips are made of galvanized steel and are used to connect rafters to the roof at the top, middle, and bottom part of the structure. This forms a continuous load path lessening damages to the structure.

4.6 OUTREACH PROGRAMS.

The Village of Freeport has implemented a hazard awareness program that began in 1993 and has evolved over the years. As previously mentioned, a bilingual Hazard Awareness Newsletter (which includes flooding) is sent bi-annually to all residents and business owners, and a Flood Mitigation Newsletter is sent annually to all residents and business owners located in NFIP-designated Special Flood Hazard Areas (SFHAs). The Village also maintains a public information website (www.Freeportny.com) that has links to information on flood/hurricane mitigation projects and hazard preparedness. In another outreach program, the Village broadcasts public service announcements on Cablevision channel 18 and Verizon Fios channel 44. The Freeport Emergency Management Office and the Village of Freeport also have Facebook pages to update residents through social media.

Increased public awareness is also the goal of the hazard mitigation exhibits located in the lower lobby of Freeport Village Hall. With the assistance of Simpson Strong-Tie, Inc., a disaster-resistant model building was constructed and is on display. During October of every year, the Freeport Fire Department, in conjunction with the Freeport Chamber of Commerce, holds an Annual Fire Expo. The Fire Expo in 2019 was the 31st such event.

In 2007 the Village also purchased a “Fire Safety House” which provides a hands-on learning tool to prepare the community for the experience of unexpected structural fires. The “Fire Safety House” is a mobile classroom featuring child-size rooms and real-life hazards, such as smoke and heat. This creates an environment that provides children with the knowledge and experience to prevent fires. Demonstrations show the steps to follow in the event of a fire. The “Safety House” is used in educational sessions at all Freeport public schools and local private schools/day care centers. In addition, sessions are held at most public events such as carnivals, festivals etc. It is also loaned to other communities for similar events.

4.7 BULKHEADS MAINTENANCE PROGRAM

The status of and condition of bulkheads located in the Village of Freeport is monitored through inspections by the Freeport Building Department. Information on condition and year of installation is maintained in the Village’s GIS System. In response to the need for bulkhead maintenance, the Village of Freeport commenced an innovative pilot program in 2003 that is ongoing. The program assists property owners with the replacement of deteriorated bulkheads using the latest technology and materials. The replacement is in compliance with the Village Code requirement that the measurement of the top whaler of the bulkhead be at 5.9 utilizing the NAVD88 datum. The bulkhead replacement program provides financial assistance to property owners in the form of low-interest loans. Repayment of the loan is accomplished by annual assessments to the property over a 20-year period. The Village’s Engineering Department provides technical assistance with plans and specifications for each project. The Engineering Department also obtains required permits from the Army Corp of Engineers, the NYS Department of Environmental Conservation, the Town of Hempstead Department of Conservation of Waterways, and the Village of Freeport. Finally, the Engineering Department requests bids for the work, awards the project to the lowest bidders, and provides construction

management. In addition, Village permit fees are waived. Eight (8) homeowners participated in the program in 2007.

4.8 THE PROTECTION OF UTILITIES

As part of a mitigation program, 4,500 linear feet of electric, telephone and cable lines were relocated underground in the Village's commercial waterfront area in 1999. This program was undertaken in order to prevent losses due to wind at a cost of $1,188,000.

In 2006, all electric street lighting lines were relocated underground during the reconstruction of Guy Lombardo Avenue.

4.9 EMERGENCY OPERATIONS CENTER

In 2002, the Village established an Emergency Operations Center (EOC), which is managed by an Emergency Management Coordinator. It is staffed as each situation requires. The EOC acts as the center of communications and operations during an emergency

4.10 REDUCE WIND DAMAGES

Window film has been installed on the windows and doors the Village of Freeport's Emergency Operation Center in order to make it wind and wind/blast resistant.. Some windows in Village Hall also have been treated with the film.

4.11 COMMUNITY EMERGENCY RESPONSE TEAM (CERT) TRAINING PROGRAM

CERT is a community-based program that provides basic training to community volunteers for response in emergency situations. CERT members give critical support to first-line responders and provide immediate assistance to their communities and neighbors. CERT members also help with non-emergency preparedness projects that improve the overall safety of the Village. FEMA sponsored the training courses. The NYS Emergency Management Office, Nassau County Emergency Management Office, and the Village of Freeport provided training to twenty (20) Freeport residents. The volunteers completed the training course in January 2004. CERT training is open to all community members on an annual basis.

4.12 MANAGEMENT POLICY

The Freeport Police Department has established procedures under which it responds to incidents requiring immediate decision-making to control the incident. This policy of "Incident Command" has been used since 2005 for civil unrest, and for all incidents where the department assumes command of a situation. An incident is any situation that involves the response of Police Department personnel and requires a coordination of activities. A critical incident is any incident of an unusual or severe nature that:

- Causes the loss of human life, threatens the safety of citizens, or causes severe property damage

- Requires extensive or extraordinary measures to stabilize or control

For large scale incidents requiring outside resources from multiple agencies the Village adopted in 1997 the Village Incident Management System which follows NIMS.

4.13 MOBILIZATION PLAN

The duty of the Freeport Police Department to protect life and property requires an ability to properly respond to any variety of incidents. Some of these incidents, due to their nature, location, or duration, may require personnel and resources beyond the capabilities of the Freeport Police Department. A mobilization plan has been established for these instances. Should an emergency arise, this plan will ensure a continued and orderly response of on-duty and off-duty personnel to the incident.

4.14 POLICIES FOR CIVIL UNREST AND TERRORISM

The Freeport Police Department in 2002 enacted a departmental Strategy for Homeland Security. The strategy provides administrative and supervisory guidance to enable a coordinated departmental response to each threat-level advisory. In this way, appropriate security and protective measures are taken. In order to ensure public safety as well as the safety of department members, all department members are trained in the strategy so that they understand their role and responsibilities.

4.15 FLOODPLAIN MANAGEMENT CODE

In 1991 the Village began evaluating local codes for the implementation of flood regulations, and by 1993 a new floodplain management code was adopted. The code guides development in the Special Flood Hazard Area (SFHA). A new FEMA flood insurance rate map (FIRM) was adopted based on village-recommended changes to the old map. The new code increased wind resistance standards, provided bulkhead construction parameters, increased lowest floor elevations three (3) feet above FEMA base flood elevation (BFE) standards, and required hurricane clips on structures.

A new Flood Insurance Study for Nassau County was conducted in 2009. In August 2009, the Village of Freeport updated its Flood Damage Prevention Code. A local law to amend Chapter 87 of the Village Code, entitled “Flood Damage Prevention,” was passed by repealing Chapter 87, §87-1 through §87-21, and adopting a new Chapter 87 on August 24, 2009 after a public hearing that same day.. In 2009 the Village of Freeport received and adopted a new Flood Insurance Rate Map (FIRM), effective September 11, 2009.

On 02-27-14, the Village of Freeport did once again amend Chapter 87 of the Flood Damage Prevention ordinance to include that for all substantially damaged, substantially improved or new construction in the Flood Zone, that the measurement of the lowest floor of the structure to be 4’ above the Base Flood Elevation and to include that all utilities must also be located at a minimum of 4’ above the Base Flood Elevation. The Village of Freeport also requires that for these elevated properties, that a Non-Conversion Agreement be signed and notarized by the owner of the property prior to permit issuance. This helps to ensure that the unfinished lower

level areas below the lowest habitable floor, remains non-habitable space used specifically for parking, storage, or building access only.

4.16 MUTUAL AID AGREEMENT

In November 2002, the Village of Freeport entered into a Mutual Aid Agreement with four (4) local communities - the Villages of East Rockaway, Lynbrook, Malverne, and Valley Stream - in the event of an emergency; the agreement remains in effect today. The purpose of the agreement is to protect the health, safety, and welfare of these villages by providing mutual aid when a village declares a local emergency. The aid requested may be manpower, supplies, and/or equipment. In 2011, Freeport entered into an agreement with the Town of Hempstead to provide mutual aid in obtaining fuel for Village vehicles and equipment in the case of shortages caused by damaged tanks.

4.17 EMERGENCY MANAGEMENT PLAN

The Village of Freeport in 1997 adopted a comprehensive Emergency Management Plan that addresses the community's planned response to various levels of man-made or natural emergency situations. The plan remains in force and follows NIMS.

4.18 PUBLIC SAFETY COMMITTEE

The Village of Freeport has formed a Public Safety Committee to review all aspects of maintaining the safety of our residents, including terrorism. The Village has prepared risk assessments of its utilities. The Federal Bureau of Investigation has also conducted a vulnerability assessment of the Village. Since these vulnerability and risk assessments provide sensitive information, they are and will be assigned "For Official Use Only" status.

4.19 ZONING REGULATIONS TO INCLUDE FLOODPLAIN MANAGEMENT

The Village's Zoning Regulations establish zoning districts and set forth the regulations governing land use and development. The Zoning Code and the Floodplain Management Code guide land use and development in the Special Flood Hazard Area (SFHA).

4.20 WATER REGULATIONS AND PREVENTIVE MEASURES

To prevent contamination from backflow, the water utility regulates cross-connections and back-flow prevention devices in the Village. Freeport employs a licensed full-time inspector to ensure compliance with the state sanitary code. Each cross-connection and back-flow check valve is inspected annually, with results reported to the Village. If an illegal connection is found, the owner is required to install a reduced pressure zone device or a double check valve. If this is not done or an annual inspection report is not filed, the owner's water service is disconnected from the water main.

An annual mailing to all users includes a section describing the dangers of illegal cross-connections. It also advises regular maintenance and inspection of pipes, as well as regular cleaning and flushing of the system, to help reduce the buildup and growth of biofilms that contribute to corrosion conditions that can cause leaks and breaks.

The Water Department also has a water main replacement program. Older pipes are replaced prior to the end of their lifespan in order to eliminate potential water main breaks. For further corrosion control, the Water Department annually samples the water of thirty (30) homes throughout the village for copper and lead. In the event of contamination, the Water Department. would use the early warning siren system, the radio station notification system, and the emergency hotline to notify residents. Immediate public notification will minimize contact with contaminated water.

Water can be contaminated by the overfeeding of sodium hypochlorite or caustic soda, which is added to raise the PH level of the water and thus reduce its corrosiveness. To mitigate this type of contamination, the treatment systems are equipped with safety back-ups to prevent overfeeding of chemicals. Wells and pumping stations are inspected several times a day. Each inspection records the amount of chemicals being added to the system. Water samples are also collected daily in various sections of the village and sent to an approved lab for analysis. Each well and pumping station is monitored by a SCADA (Supervisory Control and Data Acquisition) system, a computer-controlled system that monitors and controls industrial processes. The Village system automatically contacts officials and the Police Department in the event of an emergency.

5 MITIGATION STRATEGY

The 2020 Plan Update process began with the Hazard Mitigation Planning Committee meeting roughly every other week from January 22 to March 18, 2020. The Committee reviewed the goals and actions in the previously approved 2014 Plan and determined that most were still valid, The Committee also reviewed the progress made on proposed projects since the prior plan's approval in 2014. The 2014 mitigation projects considered included prevention; protection of private property; protection of infrastructure, critical facilities, and utilities; public awareness; emergency services; training; and the ability to share information.

An analysis of development between 2014 and 2020 was performed during the update of this plan to determine if any new development had occurred in any flood hazard areas. In May of 2017, a permit was issued to the Freeport Housing Authority for the construction of a new 101 Unit Affordable Housing building to be constructed. This structure was constructed to replace an existing building that was significantly damaged due to flood waters during Hurricane Sandy. The new structure was constructed to comply with all existing Flood Damage Ordinances.

Since 2014, there have been a total of 59 Single family homes constructed in the flood zone, 10 of which were modular homes. 38 of these structures were determined to be 3 story homes which required for them to have residential fire sprinkler systems installed throughout the entire structure and all the structures were constructed to the Village's current floodplain

management standards. The Village is essentially "built-out" and has little or no vacant land remaining for development. Most of the development that had occurred in the Village has been redevelopment. Future development is likely to continue the pattern of in-fill construction of single-family homes, reuse or replacement of existing structures. Any new construction of structures in the flood hazard zone, which includes the placement of manufactured homes and the substantial improvement of existing structures, must comply with the floodplain management regulations and be elevated so that the lowest floor, including basement, is a minimum of 4 feet above the BFE shown on the FEMA flood map.

A summary explanation of the Committee review of the 2014 actions is included after each of the listed actions beginning on page 116. The Committee concluded that while most of the actions proposed in the 2014 strategy remained valid, the rearrangement of the presented information into a format more compatible with current FEMA guidelines was warranted. In 2014 the Committee determined that some of the 2005 actions should be consolidated, and some should be eliminated. A list of the eliminated actions, and the reason for their elimination, is as follows:

- Goal 1 Action 1c: "The development of a plan for tornado notification" was eliminated since this action was accomplished by the existing siren system.

- Goal 1 Action 1e: "Working with the NOAA and other agencies to improve early notification of thunderstorms and tornados" was eliminated since this action was accomplished by the existing siren system.

- Goal 3 Action 1a: "Obtain existing data or participate in a study to evaluate whether there has been in increase in water flow through Jones Inlet that might be causing the erosion of the surrounding marshes" was eliminated as an action because it does not mitigate any hazards included in the 2014 Plan Update.

- Goal 3 Action 1b: "Seek Town, County, and interagency cooperation to increase code enforcement against speeding water craft" was eliminated since this action does not mitigate any hazards.

- Goal 3 Action 1c: "Seek funding under the 1996 Environmental Quality Bond Act to protect wetlands, identify sources of erosion, and develop an erosion control program" was eliminated because the action does not mitigate any hazards included in the 2014 Plan Update.

- Goal 3 Action 1e: "Funding to clean and maintain the Freeport Reservoir and waterways" was eliminated since this action does not mitigate any hazards in the 2014 Update.

- Goal 5 and all Actions: "Create an emergency relocation/evacuation site" was eliminated since this goal and the strategies to address that goal are emergency response and not mitigation measures.

- Goal 8 and all Actions: "Provide a better assessment of the vulnerability of critical

facilities, loss of utilities, and estimated damages" was eliminated since this goal and the strategies to address that goal duplicate Goal 3, Action 3.2.2.

As in the 2014 Plan, the Committee was most interested in those mitigation actions/projects that address high-priority hazards and achieve the agreed-upon goals. Progress on the 2014 mitigation projects was evaluated. As in the 2014 Plan, the selection and prioritization of the 2020 projects and activities was based on the following criteria:

- **Community/Planning**: The proposed activity must be accepted and supported by the community and consistent with community goals and plans.
- **Feasibility**: The activity must be feasible and provide a long-term solution to the hazard as defined by the community.
- **Authority**: The Village must have the legal authority to implement the activity.
- **Economic**: The activity must be cost-effective and benefit the community. The Village Board of Trustees must have the authority to secure funding for the activity.
- **Implementation**: The Village must have the capability to implement the activity and to maintain it.
- **Political**: The activity must be supported by the Mayor, the Board of Trustees, and other local political leaders.
- **Legal**: The activity must comply with all laws, rules, and regulations, acts, and executive orders.
- **Environmental**: The activity must be consistent with environmental goals and must not negatively impact the environment.

Application of the above criteria to each proposed action resulted in their ranking as low, medium, or high priority. High-priority actions are those with a timetable of up to two years for starting implementation. Medium-priority actions are those that would be implemented in two to five years. Low-priority actions are those where implementation would not begin in the first five years. These priorities are detailed on the following pages.

Projects and activities that met the above-listed criteria are set forth in this section as recommended actions. Many of the actions in this plan require little additional funding. Costs can be absorbed into the operating budget, resulting in projects that can be implemented easily. At the same time, some projects that require additional funding will be incorporated into the Capital Improvement Budget based on the project's priority. Those projects that meet FEMA-approved cost-benefit analysis could be submitted to the New York State Division of Homeland

Security and Emergency Services (NYS DHSES) under the appropriate assistance program. Other measures may be eligible for state or federal assistance.

As part of the process of analyzing the actions in the previously approved plan, the Planning Committee summarized the updated vulnerability assessment. The summary resulted in a list of problem statements, which are as follows.

1. Freeport has a substantial amount of waterfront development comprised of both residential and commercial structures. They were built before the development of coastal floodplain restrictions and were constructed on concrete foundations and protected by bulkheads. Few are elevated high enough to meet today's standards. This area is highly vulnerable to storms such as hurricanes and nor'easters.
2. The remainder of Freeport is vulnerable to damages to public utilities and infrastructure, such as water pollution and electrical outages.
3. Much of Freeport's public works buildings and other community structures are located in coastal floodplains, impacting public services in the event of future flooding hazard events.
4. Rising sea elevations exacerbate the situation for all Long Island communities, including Freeport.
5. Elevation of existing structures will be costly, and in many cases impractical.
6. Buy-outs have not been a popular solution with many residents and business owners in the past.
7. The tax base in the community will not support alone large-scale solutions to Freeport's vulnerability.

The Planning Committee used the above problem statements in their review of 2014 plan strategy. The results of that review are included in the analysis of each of the proposed 2020 actions, on the following pages.

In the 2014, the Committee determined that one major change in the 2014 Hazard Mitigation Plan was warranted. This is the deletion of a section of the 2005 plan's strategy. The 2005 Plan specifically eliminated further consideration of two actions - the relocation and government buy-out of structures from the SFHAs – because they were found to be politically infeasible. In 2005 the Committee concluded that these activities would not be cost-effective and would not be supported by the citizens of Freeport.

The extensive damage in the Village of Freeport caused by Hurricane Sandy led the Planning Committee to re-evaluate its position on relocation and buyouts in SFHAs in the 2014 Plan. Residents of Freeport should have the opportunity to participate in such programs should they choose to do so. For this reason, the Planning Committee has decided to include these two programs in its mitigation strategy. However, the Planning Committee also feels that the Village should be very careful that a buy-out program does not create a situation where large portions of the community are returned to open space and scattered homes remain. Quality of life for all residents must be considered.

An addition in the 2020 Hazard Mitigation Plan was the re-evaluation of how to protect Village residents from Epidemics/Pandemics as a result of COVOD-19. Nation wide shortages of PPE and testing was looked at.

The following pages list the goals and actions/projects proposed by the 2020 Planning Committee. The actions/projects are listed under the goals they support. As previously stated, these actions/projects are the same as those in the 2014 plan but have been reprioritized. Each action/project recommended for implementation has been analyzed in terms of priority, financial feasibility, cost and source of funds, responsible party.

Village of Freeport All Hazard Mitigation Plan Matrix of Action Items

Action #	Action Type	Priority	Agency	Cost	Funding Source	Feasibility	Progress since 2014
1.1.1	Additional siren for warning system	High	Emergency Management	$20,000.	NYS DOS	High	Seven-siren warning system in place; all sirens repaired in 2012, need an additional siren
1.1.2	Secondary siren control at OEC	Moderate	EM	$10,000.	NYS DOS	Moderate	Project has been completed
1.1.3	Publicize emergency response	High	EM, Buildings, Public Relations	Administrative	Village operating budget	High	Completed and on-going
1.1.4	Hazard newsletter	High	EM, PR	Administrative	Village operating budget	High	Completed and on-going
1.1.5	Establish redundant communication system	High	Nassau County	$180,000.	Unknown	High	In Progress
1.2.1	Get more accurate flood data	High	Public Works	Administrative	Village operating budget	High	Installed gage. Completed and on-going
1.2.2	Relocate DPW buildings from SFHA	Moderate	Public Works; Trustees	$12,000,000.	FEMA; EPA; NYS DEC	Low [cost]	Seeking Funding
1.2.3	Seek funding to relocate DPW buildings	Moderate	Public Works	Administrative	Village operating budget	High	No progress
1.2.4	Seek funding for generators	Moderate	Public Works; Trustees	$15,000.	Village capital budget	High	One generator purchased for Water Operations building
1.2.5	Identify mitigation for school in SFHA	Moderate	Freeport School District	Administrative	Unknown	Moderate	Completed
1.2.6	SAVE program	High	Freeport SD; Police	Administrative	Village operating	High	Completed; on-going

Action #	Action Type	Priority	Agency	Cost	Funding Source	Feasibility	Progress since 2014
1.2.7	Seek funding to relocate power plant control room	High	Freeport Municipal Utility	$10,000,000.	Freeport Municipal Utility	Low [cost]	This project is pending do to Covid 19 but will continue
1.2.8	Seek funds for tree removal	High	Public Works, Utility	$100,000.	Community Development Block Grants	High	Seeking to restore funding
1.2.9	More security for critical facilities	High	Village purchasing agent, utility	$200,000.	Village capital budget	High	Completed; on-going
1.2.10	Bury utility lines underground	High	Utility	$20,000,000.	Utility capital budget	High	On-going; moved street light utility lines underground on Guy Lombardo Avenue during street reconstruction
1.2.11	Raise pad mount electric transformers located in the SFHA	High	Utility	$1,000,000.	Utility capital budget	High	On-going Project that is 90% Complete.
1.3.1	Raise grade of selected streets to mitigate flooding	High	Public Works, Trustees	$14,500,000	Roadway capital budget	High	On-going, Raising portions of Nassau Ave in 2020
1.3.2	Document reduced flooding due to street reconstruction	Moderate	Public Works	Administrative	Village operating budget	High	On-going
1.3.3	Reduce flooding from storm drain backup	High	Public Works	Administrative	Village operating budget	High	Completed; on-going; funding secured

Action #	Action Type	Priority	Agency	Cost	Funding Source	Feasibility	Progress since 2014
1.3.4	Replace valves on streets	High	Public Works, Trustees	$1,000,000.	Village capital budget	High	Replaced some valves; funding secured from NYSDOT, project On-going
1.3.5	Revise drain maintenance procedures	High	Public Works, Police	$0.	Village operating budget-	High	Completed and on-going
1.3.6	Phase II Storm Water Management	High	Public Works	$0.	Village operating budget-	High	Complying; on-going
1.3.7	Test new bulkhead materials	Moderate	Public Works	$2,000.	Village capital budget	High	On-going
1.4.1	Install SCADA Integrated Outage Management System	High	Utility	$120,000.	Utility capital budget	High	The OMS project was GOSR funded and was 100% Completed in 2018.
1.4.2	Install 4000 smart meters in flood zones	Moderate	Utility	$500,000.	Utility capital budget	High	On-going Project still Pending
1.4.3	Raise 4,000 electric meter pans and service	High	Utility	$12,000,000.	Utility capital budget	High	Complying; on-going
1.5.1	Coordinate interagency cooperation	Moderate	EM, Buildings	Administrative	Village operating budget	High	Completed; new mutual aid agreements in place
1.6.1	Provide HAZMAT training for village employees	High	EM, Fire	$200,000.	Federal & State grants	Low	None; DPW/FD trained

Action #	Action Type	Priority	Agency	Cost	Funding Source	Feasibility	Progress since 2014
1.6.2	Train EM responders in hazard events	Low	EM, Fire	$50,000.	Village operating budget	High	None; Fire Department training annual and on-going
1.6.3	Set up POD	Moderate	EM	$0.	Village operating budget-	High	In progress; working with Nassau County
1.6.4	Install household smoke alarms	Low	Fire, Village attorney	Administrative	Village operating budget	High	Completed; required by 2007 NYS Building Code
1.6.5	Terrorism response plan	Low	Fire, EM, Police	Administrative	Village operating budget	Low	None
1.6.6	Link law enforcement data	Moderate	Police, EM	$75,000.	US Dept. of Justice	High	On-going
1.6.7	Hire crime analyst	Moderate	Police	$100,000.	Village operating budget	Low	PD is seeking a replacement. Project On-going
1.6.8	Pandemic PPE	High	EMO	$10,000	Village Operating budget	High	NEW
1.6.9	Pandemic PPE	High	Fire	$37,000	Fire Act Grant	High	NEW
2.1.1	Encourage purchase of flood insurance	Moderate	Buildings	Administrative	Village operating budget	High	Completed and on-going
2.1.2	Educate public about flood insurance	Moderate	Buildings	Administrative	Village operating budget	High	Completed and on-going
2.1.3	Publicize differences in flood insurance	Moderate	Buildings	Administrative	Village operating budget	High	None
2.1.4	Provide public with flood zone information	Moderate	Buildings	Administrative	Village operating budget	High	Completed and on-going

Action #	Action Type	Priority	Agency	Cost	Funding Source	Feasibility	Progress since 2014
2.1.5	Update Floodplain Management Code	High	Buildings, attorney	Administrative	Village operating budget	High	Completed 2009 and again in 2014
2.1.6	Consider buy-outs and acquisitions in SFHA	High	Buildings, Trustees, attorney	Unknown but very costly	FEMA HMA, CDBG	Low [without funding]	None
2.17	Obtain a Class 6 rating	High	Buildings	Administrative	Operating budget	High	Improved rating from 8 to 7
2.2.1	Staff training FEMA programs	High	Buildings	$2,500.	Village operating budget	Moderate	Completed; on-going annually
2.2.2	Staff training in seismic + wind design	Moderate	Buildings	$500.	Village operating budget	High	Completed; on-going annually, Village now has 2 on staff certified floodplain managers certified.
2.2.3	Staff training non-FEMA programs	High	Buildings	$1,500.	Village operating budget	Moderate	None
2.2.4	Training in mutual aid assistance	Low	EM	$2,000.	Village operating budget	Moderate	None
2.2.5	Outreach to building professionals to increase compliance	High	Buildings, Trustees	$250.	Village operating budget	Moderate	Ad-hoc
2.3.1	Enforce all codes	Moderate	Buildings, Trustees	$0.	Village operating budget-	High	Completed and on-going
2.3.2	Investigate regulations re: houseboats	Moderate	Trustees, attorney	Administrative	Village operating budget	Unknown	None

Action #	Action Type	Priority	Agency	Cost	Funding Source	Feasibility	Progress since 2014
2.3.3	Investigate new regulations for mitigation	Moderate	Trustees, attorney	Administrative	Village operating budget	Unknown	New Floodplain Management Code; new Building Code
3.1.1	Network GIS computers	High	IT	$50,000.	Federal & State grants	Moderate	None; grants submitted, funding not secured
3.1.2	Expand property database, use GIS	High	Village Assessor	Administrative	Village operating budget	Moderate	None
3.1.3	Use GIS to track flooding	High	Buildings, EM	Administrative	Village operating budget	Moderate	None
3.1.4	Input GIS information on critical facilities	High	Buildings, EM. Fire	Administrative	Village operating budget	High	Partially completed
3.2.1	Provide laptops to first responders	High	Fire	$20,000.	Village capital budget	High	Completed; each Fire Department vehicle has laptop with GIS
3.2.2	Obtain HAZUS software	Low	Buildings, EM	$0	Village operating budget	Low	None
3.2.3	Expand technological resources	High	Police, Fire, EM	Unknown	Federal and State grants	Low	None
3.2.4	Additions to LPS System	High	Police	$352,780	Federal and State grants	High	NEW

5.1 GOALS, OBJECTIVES, AND ACTIONS

Goal 1: Minimize Future Damage from Hazards

Objective 1.1: Improve the Village of Freeport's emergency warning system.

Action 1.1.1: Install an additional siren on the southern end of Guy Lombardo Avenue.

Priority/timetable: High
Responsible Party: Emergency Management
Estimated Cost: $20,000
Source of Funds: NYS DOS Community Grant program
Financial and Political Feasibility: Installing an additional siren can be accomplished easily with relatively minimum funding.
Hazards Addressed: Tornados, Severe Storms, Flooding
Progress Since 2014: The Village has an Emergency Siren Warning System which is activated when flood, storm, or any other type of warning to the public is required. The system consists of seven (7) sirens. The village received funding to repair and replace all seven and they were repaired in 2012. An outreach program publicizing the siren system is also in place and informational materials are mailed bi-yearly. An additional siren is needed and Village is seeking funding.

Action 1.1.2: Establish a secondary control for the siren system in the Emergency Operations Center (EOC).

Priority/timetable: Moderate
Responsible Party: Emergency Management
Estimated Cost: $10,000
Source of Funds: NYY DOS
Financial and Political Feasibility: Installing a secondary control can be accomplished easily with minimum funding, and would be popular with the public.
Hazards Addressed: Tornados, Severe Storms, Flooding
Progress Since 2014 Plan: Project has been completed

Action 1.1.3: Publicize the Village's existing emergency response systems, such as the radio station. This information is and will continue to be included in the Village's annual Community Outreach programs.

Priority/timetable: High
Responsible Party: Emergency Management, Building and Public Relations departments
Estimated Cost: No additional costs
Source of Funds: No funding needed
Financial and Political Feasibility: The emergency radio station can be publicized through the existing community outreach program without additional funding. Incorporating information on extreme cold/heat, epidemic, ice storms, fire, and terrorism can be easily accomplished with minimum funding.
Hazards Addressed: All
Progress Since 2014 Plan: The existing siren system is designed to notify residents to tune in to the radio station for information. An established Emergency Management Hotline is also available. The Village also maintains a public information website

(www.Freeportny.com) that has links to flood/hurricane mitigation and hazard preparedness. Although this action has been accomplished, the Planning Committee wants to ensure that publicizing the radio station will continue, and so has retained this action in the 2020 Plan Update.

Action 1.1.4: Newsletters could provide information on how to minimize the impact of all hazard events, such as extreme weather, carbon monoxide poisoning, fire prevention, mosquito control, disease transmission, ice storms, strapping down water heaters, etc..

Priority/timetable: High
Responsible Party: Public Relations Department, Emergency Management
Estimated Cost : $3,000
Source of Funds: General Fund
Financial and Political Feasibility: can be accomplished easily with minimum funding and would be popular with the public
Hazards Addressed: All
Progress Since 2014 Plan: The Village has a hazard awareness program. A bilingual Hazard Awareness Newsletter, which includes flooding, is sent out bi-annually to all residents and business owners. Although the action has already been accomplished, the Planning Committee determined that the program is important enough that its continuation needs to be assured by including it as a strategy in this 2020 Plan Update. Possible improvements to newsletter would be to digitize annual mailing for social media posting.

Action 1.1.5: Establish a redundant communications system for use by all public safety officials during hazard events and replace the current 800 radio system.

Priority/Timetable: High
Responsible Party: Nassau County
Estimated Costs: $180,000
Source of Funds: Unknown
Financial and Political Feasibility: Nassau County Purchased radios but has not distributed them.
Hazards Addressed: All
Progress Since 2014 Plan: This action was new to the 2014 Plan. On-going project.

Objective 1.2: Mitigation of damages to public buildings, infrastructure, utilities, and other critical facilities.

Action 1.2.1: Obtain more accurate flood data by monitoring the tidal gage and entering flood level data into the GIS system to use in improved road design.

Priority/timetable: High
Responsible Party: Department of Public Works
Estimated Cost: Administrative costs only
Source of Funds: Village operating budget
Financial and Political Feasibility: Can be easily accomplished with no additional funding and would be supported by the Board of Trustees and the public.
Hazards Addressed: Flooding
Progress Since 2005 Plan: The Department of Public Works monitors the tidal gage during times of flooding and records the levels for the roads that flood. The information

has been and will be used for the design of future road improvement projects.

Action 1.2.2: Relocate and consolidate the Department of Public Works structures out of the Special Flood Hazard Area (SFHA). The new site must be accessible 24 hours a day and must not have a negative impact on residential neighborhoods. Building and site needs include the:

Service garage	80' x 100'	8,000 sf
Parks office/sign shop	75' x 30'	2,500 sf
Parks garage	100' x 75'	7,500 sf
Administration/Engineering	35' x 85'	2,975 sf
Salt storage facility	100' x 50'	5,000 sf
Gasoline pumps	90' x 50'	4,500 sf
Parking area and access	200' x 300'	60,000 sf
Material storage	200' x 200'	40,000 sf
Highway garage	300’ x 100’	30,000 sf
Total area required:		160,225 sf

Priority/timetable: Moderate
Responsible Party: Department of Public Works and Board of Trustees
Estimated Cost: $12,000,000
Source of Funds: Federal and State grant funds
Financial and Political Feasibility: Very expensive and, depending on the site, may have public support.
Hazards Addressed: Flooding
Progress Since 2014 Plan: The Village has explored all available sites and will continue to do so. The Village also is actively exploring a passive flood defense system. Project in On-going

Action 1.2.3: Seek funding to relocate the Public Works Department structures out of the SFHA.

Priority/timetable: Moderate
Responsible Party: Department of Public Works
Estimated Cost: Administrative costs only
Source of Funds: Village operating budget
Financial and Political Feasibility: Can be easily accomplished with no additional funding and would be supported by the Board of Trustees and the public.
Hazards Addressed: Flooding
Progress Since 2014 Plan: No progress has been made. Funding cannot be sought until an appropriate site is found.

Action 1.2.4: Seek funding to purchase stationary generators to provide emergency energy needs for the Public Works Buildings, all other Village governmental facilities, and the following firehouses and water system wells and buildings:

Headquarters	15 Broadway
Hose 5	47 Leonard Avene

Hose 1 22 Southside Avenue
Hose 4, 221 West Sunrise Highway
Wells number 1A, 3, 4A, 5, 6, and 9
Water Operations Building
Two (2) Chemical Treatment Buildings

Priority/timetable: Moderate
Responsible Party: Department of Public Works and Board of Trustees
Estimated Cost: $15,000
Source of Funds: Village Capital Budget
Financial and Political Feasibility: Can be easily accomplished with minimum funding and would be supported by the public
Hazards Addressed: Flooding, Hurricanes
Progress Since 2014 Plan: The water operations building was equipped with a stationary generator. No progress has been made since 2014.

Action 1.2.5: Work with Freeport Union Free School District to identify mitigation strategies for the elementary school building (Giblyn) located in the SFHA.

Priority/timetable: Moderate
Responsible Party: Freeport Union Free School District
Estimated Cost: Identification of strategy would incur only administrative costs
Source of Funds: Cost depends on the strategy chosen.
Financial and Political Feasibility: Depends on the project chosen. However, the benefit would be high; urgency may be greater due to flooding from Hurricane Sandy.
Hazards Addressed: Flooding
Progress Since 2014 Plan: Project has been completed.

Action 1.2.6: Continue to work with the school district on the state-mandated SAVE program to prevent violence in the schools.

Priority/timetable: High
Responsible Party: Freeport Union Free School District, the Village Police Department
Estimated Cost: Administrative costs only
Source of Funds: Village operating budget
Financial and Political Feasibility: Supported by the public and inexpensive to run
Hazards Addressed: Civil unrest, Terrorism
Progress Since 2014 Plan: This ongoing program was in place at the time of the 2005 plan and continues today. The Planning Committee determined that this important program needs to be part of the 2020 mitigation strategy to ensure its continuation.

Action 1.2.7: Seek funding to relocate the electric power plant control room out of the SFHA. The control room should be relocated from Power Plant II to Power Plant I, which is not in a SFHA.

Priority/timetable: High
Responsible Party: Village of Freeport Municipal Electric Utility
Estimated Cost: $10,000.000
Source of Funds: Utility Capital Budget

Financial and Political Feasibility: Very expensive, but also very high rewards. Politically feasible but only if funded through external sources.
Hazards Addressed: Flooding, Hurricanes
Progress Since 2014 Plan: This project is pending do to COVID 19 but will continue as soon as possible.

Action 1.2.8: Continue to seek funding for the removal of trees that contribute to damages from hazard events.

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Priority/timetable: High
Responsible Party: Department of Public Works, Freeport Municipal Electric Utility
Estimated Cost: $100,000
Source of Funds: Community Development Block Grants
Financial and Political Feasibility: Supported by the Board of Trustees and the public
Hazards Addressed: Winter Storm, Nor'easter, Tornadoes, Hurricanes
Progress Since 2014 Plan: Between 2006 to 2009 the Freeport Community Development Agency awarded the Village $100,000 each year which paid for the removal of one hundred (100) trees annually. Freeport is working to restore the funding. Since 2014 The village has shifted the responsibility for tree removal to the property owners.

Action 1.2.9: Upgrade security for critical facilities, such as water wells and power plants, to insure protection from human-caused hazards. Install window film on all public facilities.

Priority/timetable: High
Responsible Party: Purchasing Agent, Village of Freeport Water and Electric Utilities
Estimated Cost: $200,000
Source of Funds: Village and Utility Capital Budgets
Financial and Political Feasibility: Supported by the Board of Trustees and the public
Hazards Addressed: Terrorism, Civil Unrest
Progress Since 2014 Plan: Security systems have been upgraded at the Water Operations building, Power Plants I and II, Public Works Department, and Village Hall. Project completed.

Action 1.2.10: Seek funding annually to continue to move electrical utility lines underground.

Priority/timetable: High
Responsible Party: Village of Freeport Municipal Electric Utility
Estimated Cost: $20,000,000
Source of Funds: Utility Capital Budget
Financial and Political Feasibility: Would be supported by the Board of Trustees and the public however, very expensive.
Hazards Addressed: Hurricanes, Winter Storms, Nor'easters, Tornados, Hurricanes
Progress Since 2014 Plan: Street lighting was moved underground on Guy Lombardo Avenue from Atlantic Avenue to Sunrise Highway during the reconstruction of the road in 2007.

Action 1.2.11: Seek funding to raise by three (3) feet one hundred (100) single- and three-phase pad mount electric transformers located in the SFHA to mitigate damages from flooding.

Priority/timetable: High
Responsible Party: Village of Freeport Municipal Electric Utility
Estimated Cost: $1,000,000
Source of Funds: Utility Capital Budget
Financial and Political Feasibility: Supported by the Board of Trustees and the public but very expensive.
Hazards Addressed: Flooding
Progress Since 2014 Plan: This action was new to the 2014 Plan and is an ongoing project that is 90% completed.

Objective 1.3: Mitigate flood damages to streets and roads

Action 1.3.1: Raise selected streets that are below the base flood elevation. Seek approximately $14,500,000 in funding to raise the following streets:

Richmond Avenue from Miller Avenue to Woodcleft Avenue
Manhattan Avenue from Miller Avenue to Woodcleft Avenue
Suffolk Street from South Long Beach Avenue to Woodcleft Avenue
Hamilton Street from South Long Beach Avenue to Woodcleft Avenue
Adams Street from South Long Beach Avenue to Woodcleft Avenue
Hudson Avenue from Jefferson Street to Howard Avenue
Sportsman Avenue from Ray Street to canal
Albany Avenue from Stadium Drive
South Ocean Avenue, south of Cedar Street
Guy Lombardo Avenue south of Ray Street
South Long Beach Avenue, south of Suffolk Street

Priority/timetable: High
Responsible Party: Public Works Department and Board of Trustees
Estimated Cost: $14.5 million
Source of Funds: When the Village of Freeport prepares capital budgets for road improvements, design and budgeting of the projects include mitigation measures such as grade raises in roads located in the floodplain.
Financial and Political Feasibility: High,
Hazards Addressed: Flooding
Progress Since 2014 Plan: This action is on-going; road improvements, including grade raises, are added to the Capital Budget annually. We anticipate raising a portion of Nassau Avenue in 2020.

Action 1.3.2: Continue to document the significant decreases in street flooding after a road elevation project.

Priority/timetable: Moderate
Responsible Party: Department of Public Works
Estimated Cost: Administrative costs only
Source of Funds: Village operating budget
Financial and Political Feasibility: Supported by the public, and inexpensive.
Hazards Addressed: Flooding

Progress Since 2014 Plan: On-going

Action 1.3.3. Reduce flooding and flood damage from tidal waters backing up through storm drains.

- Enter the location of all check valves into the GIS system
- Revise maintenance procedures to increase the functioning of the check valves and provide early identification of problem sites
- Seek funding to replace obsolete or nonfunctioning valves

Priority/timetable: High
Responsible Party: Public Works Department
Estimated Cost; Administrative costs only
Source of Funds: Village operating budget
Financial and Political Feasibility: Supported by the public, and inexpensive.
Hazards Addressed: Flooding
Progress since 2014 Plan: Completed and on-going: Locations of all check valves have been input into the GIS system. Maintenance procedures have been revised. Funding for the replacement of 22 check valves has been secured.

Action 1.3.4: Seek approximately $1,000,000 in funding for replacement of valves at the following sites:

Guy Lombardo Avenue south of Norton Street
Guy Lombardo Avenue at Grant Street.
Guy Lombardo Avenue at Tyler Street
Roosevelt Avenue at Adams Street
Roosevelt Avenue at Front Street
Branch Avenue at south of Bryant Street
Cary Place at end of block
Dock Drive at end of block
Sportsman Avenue at end of block
Arthur Street south of Cornelius Street
Arthur Street in middle of block
Arthur Street at end of block
President Street between Garfield Street and Gordon Place
Bedell Street east of South Main Street
Cedar Street east of Roosevelt Avenue
Cedar Street at Guy Lombardo Avenue
South Ocean Avenue north of Front Street
Florence Avenue dead end
Meister Boulevard east of Buchanan Street
Lester Avenue dead end
Irving Avenue dead end
Sterling Avenue south of Meister Boulevard
Clinton Street at Prospect Street
Westside Avenue south of Lewis Street
Adams Street west of South Long Beach Avenue

South Long Beach Avenue south of Suffolk Street
South Long Beach Avenue north of Waterfront Park
Waterfront Park at bulkhead
Hudson Avenue south of Howard Street
Woodcleft Avenue at Adams Street
Woodcleft Avenue at Hamilton Street
Woodcleft Avenue at Suffolk Street
Woodcleft Avenue at Manhattan Street
Woodcleft Avenue at Richmond Street
West 4th Street west of South Main Street

Priority/timetable: High
Responsible Party: Department of Public Works and Board of Trustees
Estimated Cost; $1,000,000
Source of Funds: Village Capital Budget, NYS DOT
Financial and Political Feasibility: Supported by the Board of Trustees and the public but very expensive.
Hazards Addressed: Flooding
Progress Since 2014 Plan: Completed and on-going: The check valves have been replaced on Irving Avenue, Front Street, Roosevelt Avenue, Nassau Avenue, Suffolk Street, and Long Beach Ave south of Suffolk Street.

Action 1.3.5: Improve drainage system throughout the Village by revising drainage maintenance procedures. Coordinate drainage maintenance activities with Nassau County and enforce regulations prohibiting dumping into creeks and catch basins.

Priority/timetable: High
Responsible Party: Village Public Works Department and Freeport Police Department
Estimated Cost: No additional costs
Source of Funds: Village operating budget
Financial and Political Feasibility: Supported by the public, and inexpensive
Hazards Addressed: Flooding
Progress since 2014 Plan: Completed and on-going: Drainage maintenance procedures have been changed. A vacuum truck has been purchased. Coordination with the county and the Freeport Police Department continues.

Action 1.3.6: Continue to update and comply with Phase II Storm Water Management requirements.

Priority/timetable: High
Responsible Party: Department of Public Works
Estimated Cost:: Compliance does not cost the Village any additional funds
Source of Funds: Village operating budget
Financial and Political Feasibility: Supported by Board of Trustees and the public. Virtually no costs to the Village; continuing compliance has high rewards.
Hazards Addressed: Flooding

Progress Since 2014 Plan: Completed and on-going; the Village has been successfully complying for some years.

Action 1.3.7: Investigate the use of new materials for Village bulkheads, and test the use of alternative materials for durability.

Priority/timetable: Moderate
Responsible Party: Public Works Department
Estimated Cost: $2,000 for materials, test site,, staff time
Source of Funds: Village capital/operating budget
Financial and Political Feasibility: Low-cost project that would be supported by the public as well as elected officials
Hazards Addressed: Flooding, Hurricanes
Progress Since 2014 Plan: This action was new to the 2014 Plan. There were no alternatives found however we have replaced the bulkheads at Waterfront Park and the dead end of Hampton Place.

Objective 1.4: Seek electrical system improvements to enhance the robustness of the distribution network and provide significant advancements in safety, reliability, and reduced outage time during storm restoration efforts

Action 1.4.1: Install New SCADA Integrated Outage Management System to alleviate the information bottleneck and provide a timely solution for the restoration of electric services.

Priority/timetable: High
Responsible Party: Village of Freeport Municipal Electric Utility
Estimated Cost: $120,000
Source of Funds: Utility Capital Budget
Financial and Political Feasibility: Supported by the public as well as elected officials
Hazards Addressed: Flooding, Hurricanes
Progress Since 2014 Plan: This action was new to the 2014 Plan. The OMS project was GOSR funded and was 100% Completed in 2018.

Action 1.4.2: Install 4,000 electric smart meters in the flood zone in order to provide the customer and the utility real-time metering information

Priority/timetable: Moderate
Responsible Party: Village of Freeport Municipal Electric Utility
Estimated Cost: $500,000
Source of Funds: Utility Capital Budget
Financial and Political Feasibility: Supported by the public as well as elected officials. but very expensive.
Hazards Addressed: Flooding, Hurricanes
Progress Since 2014 Plan: This action was new to the 2014 Plan and is an ongoing project that is still pending.

Action 1.4.3: Raise electric meter pans and service entrances five (5) feet above the base flood elevation for 4,000 customers residing in an area south of Sunrise Highway.

Priority/timetable: High
Responsible Party: Village of Freeport Municipal Electric Utility
Estimated Cost: $12,000,000
Source of Funds: Utility Capital Budget
Financial and Political Feasibility: Supported by the public as well as elected officials but very expensive
Hazards Addressed: Flooding, Hurricanes
Progress Since 2014 Plan: This action was new to the 2014 Plan. The raising of Meter Pans for all New construction or damaged properties with new Electrical installs in the flood areas requiring them to be raised to a height of 10ft as per our Electrical Code. Project is ongoing.

Objective 1.5: Seek cooperation between the Village of Freeport and other governments and agencies

Action 1.5.1: Coordinate activities with interested agencies or other jurisdictions, including the New York State Department of State, Nassau County Emergency Management Office, and the U.S. Army Corp. of Engineers. Expand mutual aid agreements.

Priority/timetable: Moderate
Responsible Party: Building Department and Department of Emergency Management
Estimated Cost:: Administrative costs only
Source of Funds: Village operating budget
Financial and Political·Feasibility: High: Expanding agreements with additional municipalities and Nassau County can be easily accomplished with no additional funding
Hazards Addressed: All
Progress Since 2014 Plan: Completed and on-going: In 2011, Freeport entered into a Mutual Aid Agreement with the Town of Hempstead that provides for mutual aid in obtaining fuel for Village vehicles and equipment due to shortages caused by damaged fuel tanks.

Objective 1.6: Mitigate damages caused by technical and man-made hazards.

Action 1.6.1: Provide HAZMAT training to public sector (Village) employees

Priority/timetable: High
Responsible Party: Village of Freeport Emergency Management, Fire Department
Estimated Cost:: $200,000
Source of Funds: Federal or state grant programs
Financial and Political Feasibility: Low without additional funding; with funding, would be supported by the public as well as elected officials
Hazards Addressed: Hazardous Materials in Fixed Sites and in Transit
Progress Since 2014 Plan: Completed and on-going: The Village of Freeport provides HAZMAT training to employees of the Public Works and Water departments. Members of the Fire Department also receive training from the Nassau County Fire Service Academy.

Action 1.6.2: Train emergency personnel, such as tactical rescue teams, for hazardous events such as structural collapses.

Priority/timetable: Low
Responsible Party: Village of Freeport Emergency Management, Fire Department
Estimated Cost: $50,000
Source of Funds: Village operating budget, fundraisers
Financial and Political Feasibility: Supported by the public as well as elected officials.
Hazards Addressed: Earthquakes, Structural collapse
Progress Since 2014 Plan: Completed and on-going annually: Village of Freeport Fire Department members receive training from the Nassau County Fire Service Academy

Action 1.6.3: Establish a point of distribution if events makes it necessary to dispense vaccines

Priority/timetable: Moderate
Responsible Party: Village of Freeport Emergency Management
Estimated Cost: No additional funds
Source of Funds: Village operating budget
Financial and Political Feasibility: Supported by the public and elected officials.
Hazards Addressed: Hazards named in the 2020 Plan Update, such as earthquakes, can cause epidemics.
Progress Since 2014 Plan: In progress; the Village of Freeport has been working with Nassau County to find a site.

Action 1.6.4: Develop and implement a Village ordinance mandating that all houses have functioning smoke alarms

Priority/timetable: Low
Responsible Party: Chief of the Village Fire Department, Village Attorney
Estimated Cost: Administrative costs only
Source of Funds: Village operating budget
Financial and Political Feasibility: Supported by Board of Trustees; low-cost project.
Hazards Addressed: Fire
Progress Since 2014 Plan: Completed; the updated 2007 New York State Building Code requires that all structures designed for habitation, including hotels, motels, apartments, and residential homes, must be equipped with functioning smoke detectors. The Village of Freeport is mandated to enforce the NYS Building Code.

Action 1.6.5: Develop a terrorism prevention and response plan

Priority/timetable: Low
Responsible Party: Chief of the Village Fire Department, Police Department, Emergency Management
Estimated Cost: Administrative costs only
Source of Funds: Village operating budget
Financial and Political Feasibility: Political feasibility is low despite low cost.
Hazards Addressed: Terrorism
Progress Since 2014 Plan: None: This action requires a local champion who has not been identified,

Action 1.6.6: Improve data-sharing by systematically linking large amounts of data between neighboring law enforcement jurisdictions. Linking should also occur between different levels of law enforcement (local, state and federal) and between institutions (schools, hospitals, other village departments, motor vehicle division).

Priority/timetable: Moderate
Responsible Party: Village Police Department and Emergency Management
Estimated Cost: $75,000
Source of Funds: U.S. Department of Justice, local funding
Financial and Political Feasibility: Supported by the Board of Trustees and the public and gives good value for the money spent.
Hazards Addressed: All
Progress Since 2014 Plan: In progress; funding required

Action 1.6.7: Create the position of Crime Analyst within the Village government.

Priority/timetable: Moderate priority
Responsible Party: Village Police Department
Estimated Cost: $100,000
Source of Funds: Local funding
Financial and Political Feasibility: Support by Board of Trustees or public is unlikely.
Hazards Addressed: Terrorism, Cyber-Terrorism
Progress Since 2014 Plan: This action was new to the 2014 Plan. The position was filled in 2014. However, in December 2019 the current Crime Analyst resigned. The Freeport Police is actively seeking to fill the position.

Action 1.6.8: Establish a point of distribution if events makes it necessary to dispense PPE Facemasks and hand sanitizers.

Priority/timetable: High
Responsible Party: Village of Freeport Emergency Management
Estimated Cost: $10,000
Source of Funds: Village operating budget
Financial and Political Feasibility: Supported by the public and elected officials.
Hazards Addressed: Epidemics and Pandemics
New to the 2020 Plan: In progress; the Village of Freeport has been purchasing/soliciting donations of facemasks and hand sanitizers for distribution to Freeport residents in need during the COVID-19 crisis. EMO is seeking to stockpile supplies for future pandemics.

Action 1.6.9: Purchase 100 Individual Scott AV3000 face pieces and 200 face piece carry bags.

Priority/timetable: High
Responsible Party: Freeport Fire Department
Estimated Cost: $$37,000.000
Source of Funds: Fire Act Grant
Financial and Political Feasibility: Supported by the public and elected officials.
Hazards Addressed: Epidemics and Pandemics

New to the 2020 Plan: The purchase of individual face-pieces for each Class "A" Firefighter will allow the individual Firefighters to maintain and sanitize their own equipment. It will also unequivocally reduce the possibility of the transfer of germs between our Firefighters through the shared use of the current face-pieces. This will have a profound impact on our Firefighters health and safety. In particular, in stemming the spread of Covid 19.

Goal 2: Use existing programs and internal governmental systems to enhance mitigation opportunities for the Village of Freeport

Objective 2.1: Continue to participate in and promote the National Flood Insurance Program (NFIP**)**

Action 2.1.:1 Encourage the public to obtain flood insurance in order to reduce the economic impacts caused by flooding

Priority/timetable: Moderate
Responsible Party: Building Department
Estimated Cost: Administrative costs, perhaps costs of publicity,
Source of Funds: Village operating budget.
Financial and Political Feasibility: Reasonable financial and political feasibility, low cost, high benefits, though may be hard to measure.
Hazards Addressed: Flooding
Progress Since 2014 Plan: In progress; this action has been at least partially achieved, as numerous publicizing efforts, such as news releases, have been made. The Planning Committee is committed to NFIP activities and wants to reinforce the importance of this action by including it in the 2020plan.

Action 2.1.2: Continue to educate the public on the importance of flood insurance and how property owners benefit.

Priority/timetable: Moderate
Responsible Party: Building Department and Public Relations
Estimated Cost: Administrative costs, perhaps costs of publicity, Printing and mailing costs are already part of the annual budget.
Source of Funds: Village operating budget
Financial and Political Feasibility: High
Hazards Addressed: Flooding
Progress Since 2014: Completed and on-going; Freeport developed a Flood Mitigation Newsletter that is sent out annually to all residents and business owners located in the SFHAs. The Planning Committee includes the strategy in the 2020 Plan Update in order to ensure its continuation. In addition looking into digitizing the annual newsletter for Social Media outlets.

Action 2.1.3: Distribute information to the public detailing the difference between standard property/rental insurance and flood insurance

Priority/timetable: Moderate
Responsible Party: Building Department
Estimated Cost: Administrative costs, including printing
Source of Funds: Village operating budget.
Financial and Political Feasibility: Can be done without additional outside funding.
Hazards Addressed: Flooding
Progress Since 2014 Plan: This activity can be easily implemented as part of the Hazard Awareness Program and by posting public information on the Village's website..

Action 2.1.4: Continue providing the public with flood zone information.

Priority/timetable: Moderate
Responsible Party: Building Department
Estimated Cost: No additional funding required
Source of Funds: Village operating budget
Financial and Political Feasibility: High; supported by the public and elected officials
Hazards Addressed: Flooding
Progress Since 2014 Plan: Completed and on-going.

Action 2.1.5: Continue to update the Village of Freeport Floodplain Management Code to keep it current.

Priority/timetable: High
Responsible Party: Building Department and Village Attorney
Estimated Cost: Administrative funds only.
Source of Funds: Village operating budget
Financial and Political Feasibility: Supported by Board of Trustees and the public.
Hazards Addressed: Flooding
Progress Since 2014 Plan: Completed and on-going; the Floodplain Management Code was updated in 2009 and then again in 2014.

Action 2.1.6: Consider at the option of the property owner buy-outs and relocations for structures located in SFHAs.

Priority/timetable: High
Responsible Party: Board of Trustees, Building Department, and Village Attorney
Estimated Cost: Cost unknown
Source of Funds: FEMA and CDBG grants
Financial and Political Feasibility: Infeasible without additional external funding
Hazards Addressed: Flooding, Hurricanes
Progress Since 2014 Plan: This was a new action in the 2014 plan. No Progress

Action 2.1.7: Continue to maintain and enhance the Class 7 Community Rating System.

Priority/timetable: High
Responsible Party: Building Department
Estimated Cost: Administrative costs

Source of Funds: Village operating budget.
Financial and Political Feasibility: Supported by Board of Trustees and the public
Hazards Addressed: Flooding
Progress Since 2014 Plan: Completed and on-going: In 2011 the Village improved its CRS rating from Class 08 to Class 07, thereby saving homeowners an additional five percent on flood insurance premiums. The Village reviews CRS requirements annually; addresses new more stringent requirements; maintains all required documentation; and reviews and determines requirements to obtain the next CRS Class. We are presently seeking additional credit in an effort to attain a Class 06 rating.

Objective 2.2: Ensure that Village staff is trained in a wide range of public assistance programs, enabling dissemination of all information.

Action 2.2.1: Continue to send staff to FEMA-sponsored retrofitting classes, and educate building professionals on hazard mitigation activities for new construction and retrofitting

Priority/timetable: High
Responsible Party: Building Department
Estimated Cost: $2,500
Source of Funds: Village operating budget
Financial and Political Feasibility: Low cost and moderate benefit, supported by the public and the Board of Trustees.
Hazards Addressed: Hurricanes, Winter Storms/Nor'easters, Severe Storms, Earthquakes, Tornados
Progress Since 2014 Plan: Completed and on-going. Building Department staff attend annual training classes at the National Emergency Training Center (NETC) in Emmitsburg, Maryland. Staff members also take advantage of FEMA's online Independent Study Program (ISP).

Action 2.2.2: Seek additional Building Department staff training in seismic and high wind design

Priority/timetable: Moderate
Responsible Party: Building Department
Estimated Cost: $500 and staff time
Source of Funds: Village operating budget
Financial and Political Feasibility: Low cost and moderate benefit, supported by the public and by Board of Trustees
Hazards Addressed: Earthquakes, Hurricanes, Winter Storms/Nor'easters
Progress Since 2014 Plan: Completed and on-going; Building Department staff receive training on high wind design at the annual Hurricane Conference

Action 2.2.3: Continue to encourage staff to participate in hazard mitigation training programs sponsored by agencies other than FEMA and SEMO.

Priority/timetable: High
Responsible Party: Building Department
Estimated Cost: $1,500

Source of Funds: Village operating budget
Financial and Political Feasibility: Low cost, moderate benefit, moderate support from the public.
Hazards Addressed: All
Progress Since 2014 Plan: The Building Department has sought outside hazard mitigation training, however has not been successful in locating training programs other than FEMA programs. The Village of Freeport does now presently have 2 on staff Certified FloodPlain Managers certified through the Association of State Floodplain Managers.

Action 2.2.4: Seek additional training for mutual aid assistance.

Priority/timetable: Low
Responsible Party: Department of Emergency Management
Estimated Cost: $2,000
Source of Funds: Village operating budget
Financial and Political Feasibility: Low cost, moderate benefit, supported by public and Board of Trustees
Hazards Addressed: All
Progress Since 2014 Plan: In-progress

Action 2.2:5: Conduct outreach programs to local architects, engineers, and building contractors to gain better compliance with flood codes, decrease the time dedicated to plan reviews, decrease compliance problems in the field, and provide a platform for disseminating information.

Priority/timetable: High
Responsible Party: Building Department, Board of Trustees
Estimated Cost: $250
Source of Funds: Village operating budget
Financial and Political Feasibility: Low cost, moderate benefit, support unknown
Hazards Addressed: Flooding
Progress Since 2014 Plan: Building Department staff meet with building professionals on an individual ad-hoc basis and discuss compliance with flood plain codes; a formal program has not been adopted, but it is office policy to have pre-construction meetings with all parties involved for elevation and new construction projects to ensure full compliance with all respective codes and ordinances.

Objective 2.3: Incorporate mitigation principles into building codes, land use regulations, and construction practices.

Action 2.3.1: Continue to strictly enforce building codes, occupancy requirements, sprinkler system installations, and fire codes.

Priority/timetable: Moderate.
Responsible Party: Building Department, Board of Trustees
Estimated Cost: No additional costs

Source of Funds: Village operating budget
Financial and Political Feasibility: This goal can be easily achieved by the continued strict enforcement of building, zoning, and construction codes. Support from the public may not be universal given resentment of government intrusion.
Hazards Addressed: All
Progress Since 2014 Plan: Completed and on-going; In 2009 the Village adopted a new Floodplain Management Code. The Building Department strictly enforces all building, zoning and construction codes.

Action 2.3.2: Review hazard event issues associated with houseboats to determine if regulatory amendments could mitigate future damages.

Priority/timetable: Moderate
Responsible Party: Board of Trustees, Village Attorney
Estimated Cost: Administrative funds only
Source of Funds: Village budget only
Financial and Political Feasibility: Support by public and Trustees is unknown
Hazards Addressed: Flooding, Hurricanes, Winter Storms/Nor'easters
Progress Since 2014 Plan: No progress

Action 2.3.3: Analyze whether enacting new laws, codes, or regulations could enhance mitigation opportunities

Priority/timetable: Moderate
Responsible Party: Board of Trustees, Village Attorney
Estimated Cost: Administrative funds only
Source of Funds: Village budget only
Financial and Political Feasibility: No cost; however, enactment of more regulations is not universally supported by the public.
Hazards Addressed: Flooding, Hurricanes, Winter Storms/Nor'easters
Progress Since 2014 Plan: Completed and on-going; A new Floodplain Management Code was adopted in 2009; the NYS Building Code was updated in 2007.

Goal 3: Enhance mitigation opportunities through the use of Geospatial Information Systems (GIS) and computers

Objective 3.1: Maintain and expand upon the various Village GIS Systems

Action 3.1.1: Seek funding to network existing stand-alone GIS computers to enable providing accurate and up-to-date information to all departments.

Priority/timetable: High
Responsible Party: Village's Information Technology and Electric departments
Estimated Cost: $50,000
Source of Funds: Future grants
Financial and Political Feasibility: This action requires additional financial resources currently not available. Politically palatable if additional funding can be found.
Hazards Addressed: All
Progress Since 2014 plan: The Village has a GIS system that is presently underutilized for hazard mitigation planning. The present system should be networked in order to

maximize capabilities for mitigation and disaster planning. Grant applications have been submitted under various programs, but funding has not been secured.

Action 3.1.2: Expand the property information database and connect it to the Village GIS system to assist in monitoring/identifying hazard mitigation problems.

Priority/timetable: High
Responsible Party: Village Assessor's Office
Estimated Cost: Only administrative costs are needed to update property data,
Source of Funds: A funding source for up grading the system is unknown
Financial and Political Feasibility: Politically palatable if additional funding is found.
Hazards Addressed: All
Progress Since 2014 Plan: The existing GIS system is a valuable resource in collecting and storing data, predicting risks, mapping potential evacuation routes and building a neighborhood notification system. However, the present system would need to be networked and upgraded with the use of additional resources and funding. No progress has been made.

Action 3.1.3: Use the GIS system to track flooding patterns and assist in emergency management.

Priority/timetable: High
Responsible Party: Emergency Management, Building Department
Estimated Cost: Administrative costs only
Source of Funds: See Action 3.1.2.
Financial and Political Feasibility: Politically palatable if additional funding is found.
Hazards Addressed: Flooding
Progress Since 2014 Plan: No progress; flooding patterns are tracked, but not with GIS.

Action 3.1.4: Gather additional information on critical facilities and input data to the GIS system. Information should contain current building plans, such as mechanical, electrical, plumbing, and structural information. Information on any chemical inventory and material safety data sheets should be included.

Priority/timetable: High
Responsible Party: Emergency Management, Building and Fire departments
Estimated Cost: Administrative costs only
Source of Funds: See Action 3.1.2.
Financial and Political Feasibility: Supported by public and Board of Trustees
Hazards Addressed: All
Progress Since 2014 Plan: Completed and on-going; the Freeport Fire Department maintains information on chemical inventory and the material safety data sheets in the departments Red Alert system.

Objective 3.2: Expand the computer capabilities of the Village of Freeport

Action 3.2.1: Provide laptop computers to each first responder for hazardous materials at fixed site

Priority/timetable: High

Responsible Party: Freeport Fire Department
Estimated Cost: $20,000
Source of Funds: Fire Department budget
Financial and Political Feasibility: Supported by the public and Board of Trustees
Hazards Addressed: Hazardous materials at fixed sites
Progress Since 2014 Plan: Completed and on-going, Each Fire Department vehicle is supplied with an iPad for dispatching and basic building information however the four Chiefs vehicles need ruggedized laptops to access the complete Red Alert database info, floorplans and hazardous material data, including any chemical inventory.

Action 3.2.2: Obtain a computer software package called HAZUS, a federally-sponsored loss estimation software package utilizing GIS systems such as ArcView. The program produces detailed maps and analytical reports describing a community's potential losses. The Village could create vulnerability assessments to determine potential damage to critical facilities, loss of utilities and damages from flooding, hurricanes, coastal surge and earthquakes.

Priority/timetable: Low
Responsible Party: Emergency Management, Building Department.
Estimated Cost: No additional funding required
Source of Funds: NA
Financial and Political Feasibility: Supported by the Board of Trustees and the public
Hazards Addressed: Earthquake, Flooding, Hurricanes/coastal surge
Progress Since 2014 Plan: In-progress; HAZUS is freely distributed by FEMA. The Village will use the program to estimate hurricane winds and coastal flooding and potential damage and losses to residential, commercial, and industrial buildings, critical facilities, transportation infrastructure, and utilities.

Action 3.2.3: Expand the Village's technological capabilities to deal effectively with the threat of domestic terrorism by managing and coordinating different sources of data and intelligence. Technologies could include in-field laptops, automated computer-aided dispatch systems (CAD), and enhanced records management systems (Impact).

Priority/timetable: High
Responsible Party: Police Department, Emergency Management, Fire Department
Estimated Cost: Unknown
Source of Funds: External grants or other sources
Financial and Political Feasibility: Coordination with other levels of governments may not be politically feasible and, the costs of acquisition could be high
Hazards Addressed: Terrorism, Civil unrest, Cyber-terrorism, Water Supply Contamination, Fire, Transportation accident
Progress Since 2014 Plan: In-progress; researching topic and working with state and other local governments to enhance capabilities. The current records management system is not capable of data sharing. During 2020 the department will be upgrading the existing system and it will then be capable of data sharing with other agencies in Nassau County.

Action 3.2.4: Expand the Village's License Plate Readers to deal effectively with the threat of domestic terrorism, civil unrest, and crime. The Freeport Police Department has installed a License Plate Readers system in 2015. This system consists of eleven sites that monitor and record the license plates of all vehicles that enter the Village of Freeport. The system is able to

alert police officers of vehicles that are wanted or have suspended registrations. An improvement to this system would be the addition of license plate reader cameras at the current sites that record traffic exiting the Village of Freeport. This would assist in investigations when searching for vehicles that were involved in incidents that occurred inside the Village of Freeport boundaries and then fled outside of the jurisdiction.

Priority/timetable: High
Responsible Party: Police Department
Estimated Cost: $352,780.00
Source of Funds: External grants or other sources
Financial and Political Feasibility: Supported by public and Board of Trustees
Hazards Addressed: Terrorism, Civil unrest, Criminal activity and Transportation accident
Progress Since 2014 Plan: New to the 2020 plan

6 MONITORING, EVALUATING, AND UPDATING THE PLAN

This chapter provides an overview of the overall strategy for plan maintenance and outlines the method and schedule for monitoring, evaluating, and updating the plan. The chapter also discusses incorporating the plan into existing planning mechanisms and how to address continued public involvement. The maintenance strategy is essentially the same as that which was proposed in the 2014 Plan. The 2020 maintenance strategy places responsibility for calling Planning Committee meetings on the position of Emergency Management Coordinator.

6.1 INCORPORATING MITIGATION INTO EXISTING PLANNING

The Hazard Mitigation Planning Committee is intended to be a standing committee with .a regular meeting schedule. The Committee and participating departments will incorporate mitigation planning principles as set forth in the 2020 Plan into daily government operations. The Committee will work with Village officials to incorporate the new and updated hazard mitigation goals and actions into the general operations of the Village government. By doing so, the Mitigation Committee anticipates that:

- The Hazard Mitigation Plan will become a formal management tool for the Village of Freeport
- The Plan will become a mutually supportive document that will dovetail with all other plans to meet the goals and needs of Village residents
- The information provided in this Plan will be invaluable in making decisions in other planning programs

Hazard mitigation principles will be considered and incorporated into all amendments to existing planning and land development documents, as well as the development of new and updated local planning documents. Laws and regulations in the Village will be consistent with and support the goals of the Hazard Mitigation Plan and will not contribute to increased risks from hazards.

Examples of the types of regulations and documents that can incorporate mitigation principles include the following.

- Master plans
- Ordinances regulating the development of land
- Building codes
- Emergency operations or response plans
- Capital improvement plans and budgets
- Other community plans such as water conservation plans, stormwater management plans, and parks and recreation plans

With adoption of this plan, the Hazard Mitigation Planning Committee will be tasked with plan monitoring, evaluation, and maintenance of the Plan. The Committee members, led by the Freeport Emergency Management Coordinator, agree to:

- Meet annually, and after a disaster event, to monitor and evaluate the plan's implementation
- Act as a forum for hazard mitigation issues
- Disseminate hazard mitigation ideas and activities to all participants as they become available
- Pursue the implementation of high-priority, low- or no-cost recommended actions where feasible
- Maintain vigilant monitoring of multi-objective, cost-share, and other funding opportunities to help the community implement the plan's recommended actions for which no current funding exists
- Monitor and assist in implementing and updating this plan
- Keep the concept of mitigation in the forefront of community decision-making by identifying plan recommendations when other community goals, plans, and activities overlap, influence, or directly affect increased community vulnerability to disasters
- Report on plan progress and recommended changes to the Freeport Board of Trustees
- Inform and solicit input from the public

The Committee is an advisory body and can only make recommendations to elected officials. Its primary duty is to see the plan successfully carried out and to report to the Board of Trustees and the public on the status of plan implementation. Other duties include reviewing and promoting mitigation proposals, hearing stakeholder concerns about hazard mitigation, passing those concerns on to the appropriate entities, and requesting that relevant information be posted on the Village website.

6.2 PLAN ADOPTION

The Village of Freeport Board of Trustees has the authority to adopt this Hazard Mitigation Plan. This plan was adopted by the Board of Trustees on _____ and was approved by the Federal Emergency Management Agency and the New York State Emergency Management

Office on _____. Copies of the adopted plan are maintained by the Village Clerk and are available to the public.

6.3 UPDATING OF PLAN

The Village of Freeport establishes this Plan as a living document. It will be updated as needed. At the least the Hazard Mitigation Planning Committee will meet formally on an annual basis to determine the effectiveness of the strategies provided herein. The first formal meeting will be held within one year of FEMA's approval of this plan and annually thereafter. Other meetings may be convened after a hazard event as appropriate to monitor progress and update the mitigation strategy. The Village of Freeport Emergency Management Coordinator is responsible for initiating these annual meetings. Each party or agency named in the strategy will report to the Planning Committee on their progress and difficulties in the implementation of this plan. Strategies will be modified based on those reports. The Committee will also review the plan's goals and strategies to determine their significance in light of changing conditions. New mitigation measures will be identified through this annual review and the Plan will be adjusted as appropriate. The review will include evaluating the risk assessment of this plan to determine if it should be updated with new data. Each revision of the plan will be presented to the Board of Trustees.

The Plan is a public document and will be available to Village residents in Village Hall. The following public forums will provide opportunities for the public to express concerns and opinions on the plan and the strategies contained therein:

- The Board of Trustees holds two (2) "open meetings" a month. At these meetings, residents are encouraged to provide input to the Board on all matters
- The annual public awareness mailings update the public on mitigation goals reached. In addition, comments on these measures are requested in the mailing
- Formal public meetings will be held when deemed necessary by the Hazard Mitigation Committee

A full, formal review, evaluation and update of the plan will be initiated at a minimum of one year prior to the 2020 Plan expiration date. However, a formal review will be initiated earlier if a disaster event affects the Village prior to that date. In that event, the full update of this plan will commence within one (1) year after the disaster event. The full review and update of the plan will consist of:

- Public involvement, including opportunities for the public to participate and provide input through village-wide mailings, open public meetings, invitations to neighboring communities and other local stakeholders
- A review of the list of potential hazard events for the community (including natural, technological, and human-caused)
- A profile of hazards events and a risk reassessment utilizing information developed in this plan and new information to determine the likelihood of a hazard occurring in the Village
- A review of structural information in order to update the inventory of assets and

critical facilities.

Upon completion of the updated risk assessment and review of information gathered to date, the Planning Committee will update the mitigation strategy. Progress on previously proposed strategies will be recorded and new strategies will be proposed. Existing policies, authorities, and programs will be reviewed. The action plan will be revisited to determine which mitigation measures are most effective. The plan will then be presented to the Village Board of Trustees, submitted to the New York State Emergency Management Office, and to the Federal Emergency Management Agency.

The following represents the schedule for the monitoring and maintenance of this plan:

- Make the plan available to the public on an on-going basis
- Send the community biannual mailings on mitigation measures
- Conduct annual progress reviews by the Hazard Mitigation Committee and make reports to the Board of Trustees
- Conduct a full review of the plan after a disaster as necessary
- Conduct a full plan update and submit the plan to authorities for approval every five years.

7 REFERENCES

The Severity of an Earthquake, a U. S. Geological Survey General Interest Publication. U.S. Government Printing Office: 1989-288-913

U.S. Army Corps of Engineers, (1993). New York State Hurricane Evacuation Study, Hurricane Inundation Maps. Prepared in cooperation with the Federal Emergency Management Agency

Thirty Years of Terrorism; a Special Retrospective Edition, (1999) US Department of Justice and Federal Bureau of Investigation

Probabilistic Seismic Hazard Maps of Conterminous USA by Robert L. Wesson, Arthur D. Frankel, Charles S. Mueller, and Stephen C. Harmsen, U.S. Geological Survey Open-File Report 99-36, 43 p. http://geohazards.cr.usgs.gov/eq/html/graphics.html

The Extreme Weather Source 2001

Pielke, R.A. Jr., and C.W. Landsea. 1998. Normalized hurricane damages in the United States: 1925-95. Journal of the Meteorological Society of America 13:621-631

FEMA, National Flood Insurance Program, NFIP Statistics by State. http://fema.gov

IIPLR/IRC 1995. Coastal exposure and community protection: Hurricane Andrew's legacy. Insurance Institute for Property Loss/Insurance Resource Council Boston, MA 48 pp

Land Use Report of the South Shore (1984) prepared by the Long Island Regional Planning Board

FA-142/February 1994, Report of the Joint Fire/Police Task Force on Civil Unrest, published by Federal Emergency Management Agency, United States Fire Administration

2012 Emergency Response Guidebook, jointly developed by Transport Canada (TC), U.S. Department of Transportation (DOT) and the Secretariat of Transport and Communications of Mexico (SCT)

The American Lung Association State of the Air: 2003, The American Lung Association®

The National Weather Service, National Climactic Data Center, 2012

Worldmeters 2020 COVID-19 Coronavirus Pandemic statistics

Nassau County Fire Service Daily Fire Service Situational Awareness Reports 2020 providing statistics on COVID-19

Conversion of Wind Speed from Knots to Miles per Hour

Knots		to	Miles per Hour	
5	Knots		5.8	MPH
10	Knots		11.5	MPH
15	Knots		17.3	MPH
20	Knots		23.0	MPH
25	Knots		28.8	MPH
30	Knots		34.6	MPH
35	Knots		40.3	MPH
40	Knots		46.1	MPH
45	Knots		51.8	MPH
50	Knots		57.6	MPH
55	Knots		63.4	MPH
60	Knots		69.1	MPH
65	Knots		74.9	MPH
70	Knots		80.6	MPH
75	Knots		86.4	MPH
80	Knots		92.2	MPH
85	Knots		97.9	MPH
90	Knots		103.7	MPH
95	Knots		109.4	MPH
100	Knots		115.2	MPH
105	Knots		121.0	MPH
110	Knots		126.7	MPH
115	Knots		132.5	MPH
120	Knots		138.2	MPH
125	Knots		144.0	MPH
130	Knots		149.8	MPH
135	Knots		155.5	MPH
140	Knots		161.3	MPH
145	Knots		167.0	MPH
150	Knots		172.8	MPH

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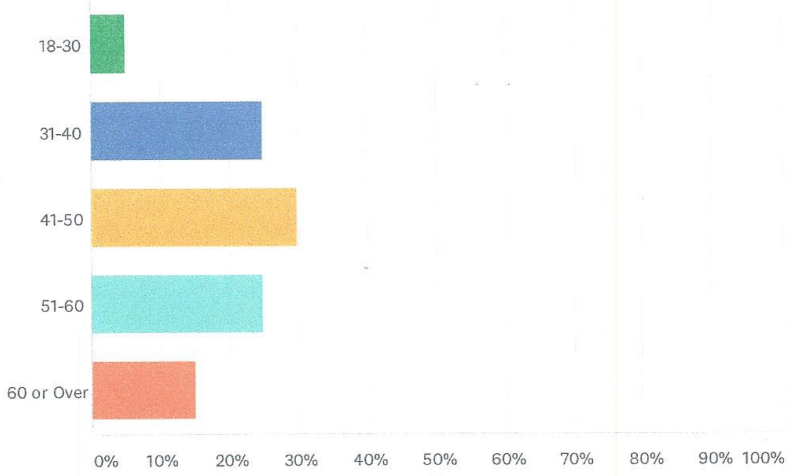
Q1 Please indicate your age range:

Answered: 20 Skipped: 0



ANSWER CHOICES	RESPONSES	
18-30	5.00%	1
31-40	25.00%	5
41-50	30.00%	6
51-60	25.00%	5
60 or Over	15.00%	3
TOTAL		20

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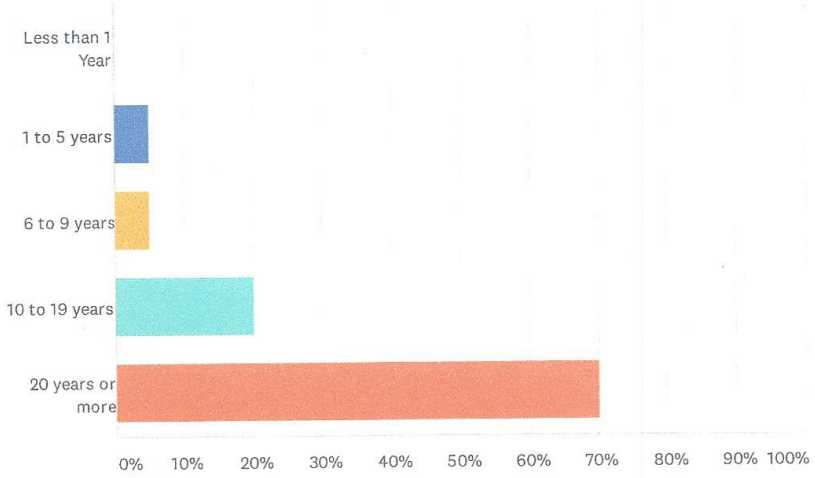
Q2 How long have you lived in Freeport?

Answered: 20 Skipped: 0



ANSWER CHOICES	RESPONSES	
Less than 1 Year	0.00%	0
1 to 5 years	5.00%	1
6 to 9 years	5.00%	1
10 to 19 years	20.00%	4
20 years or more	70.00%	14
TOTAL		20

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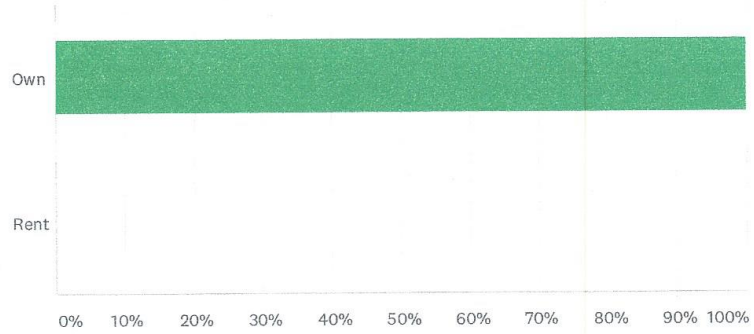
Q3 Do you own or rent your place of residence?

Answered: 19 Skipped: 1



ANSWER CHOICES	RESPONSES	
Own	100.00%	19
Rent	0.00%	0
TOTAL		19

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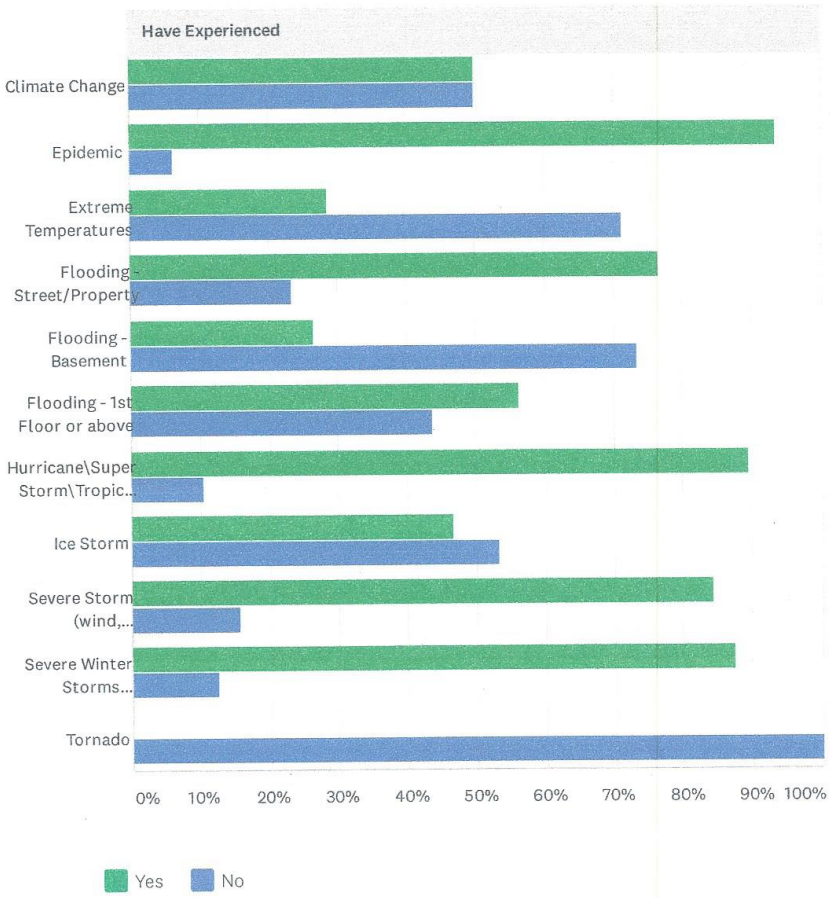
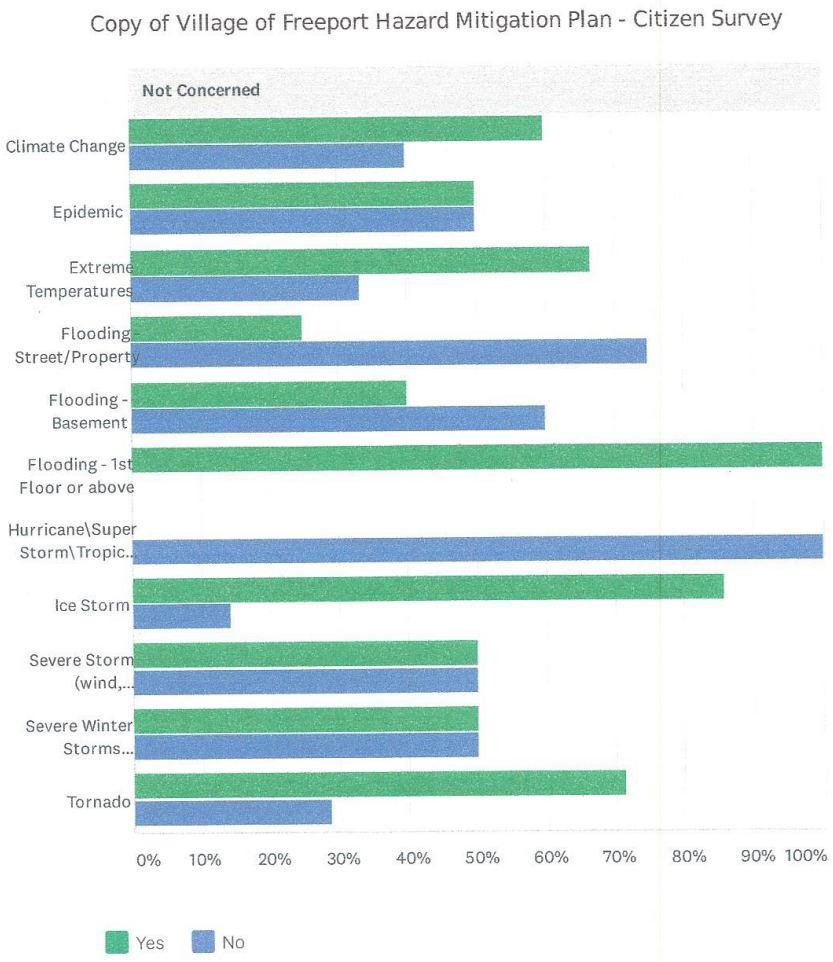
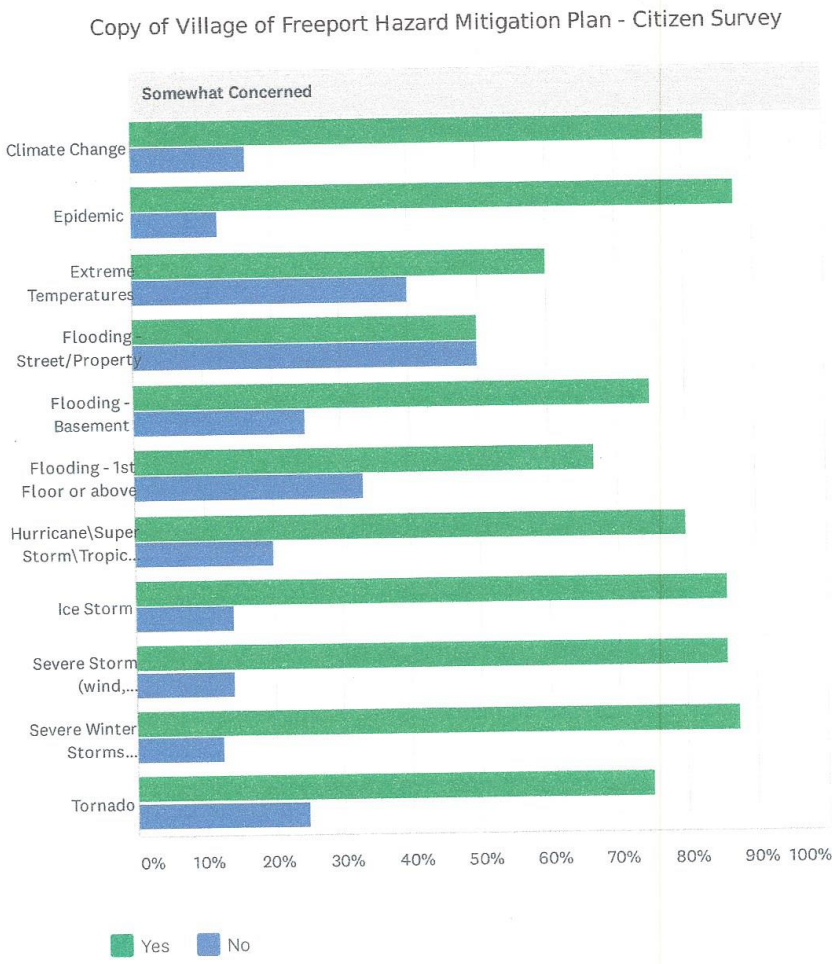
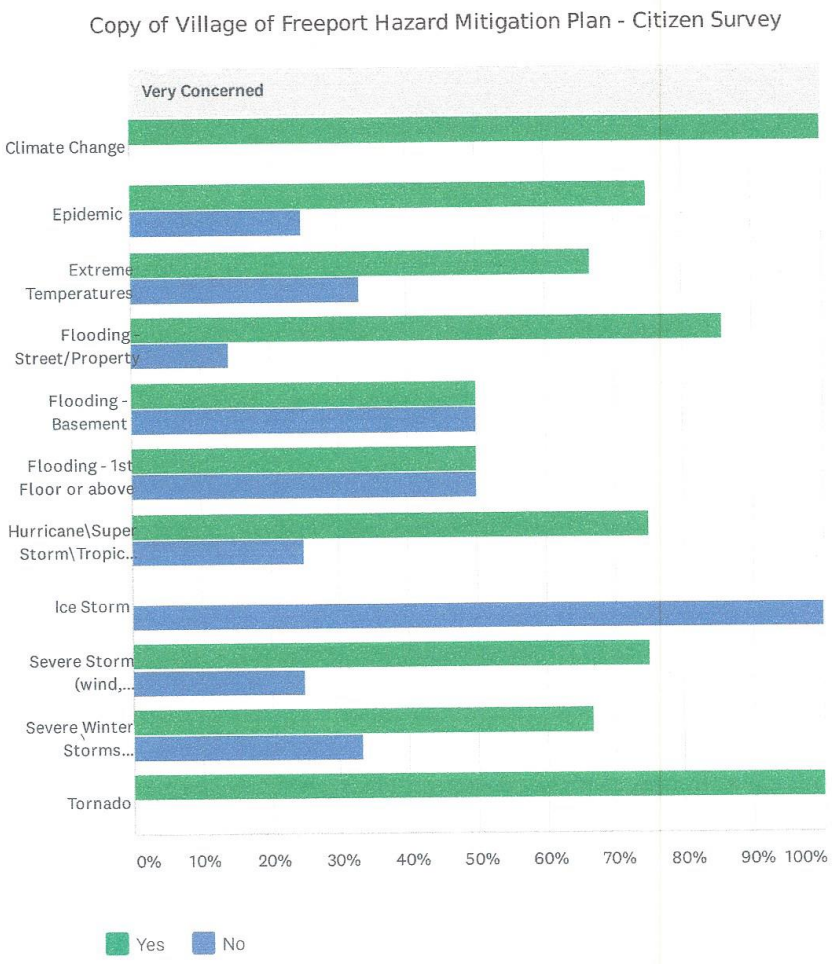
Q5 In the past 10 years, which of the following types of hazards/natural disasters have you or someone in your household experienced within the Village of Freeport, or sustained damage as a result of, and how concerned are you about the following natural hazards impacting the Village? (In the first column indicate if you have experienced the hazard, then indicate your level of concern).

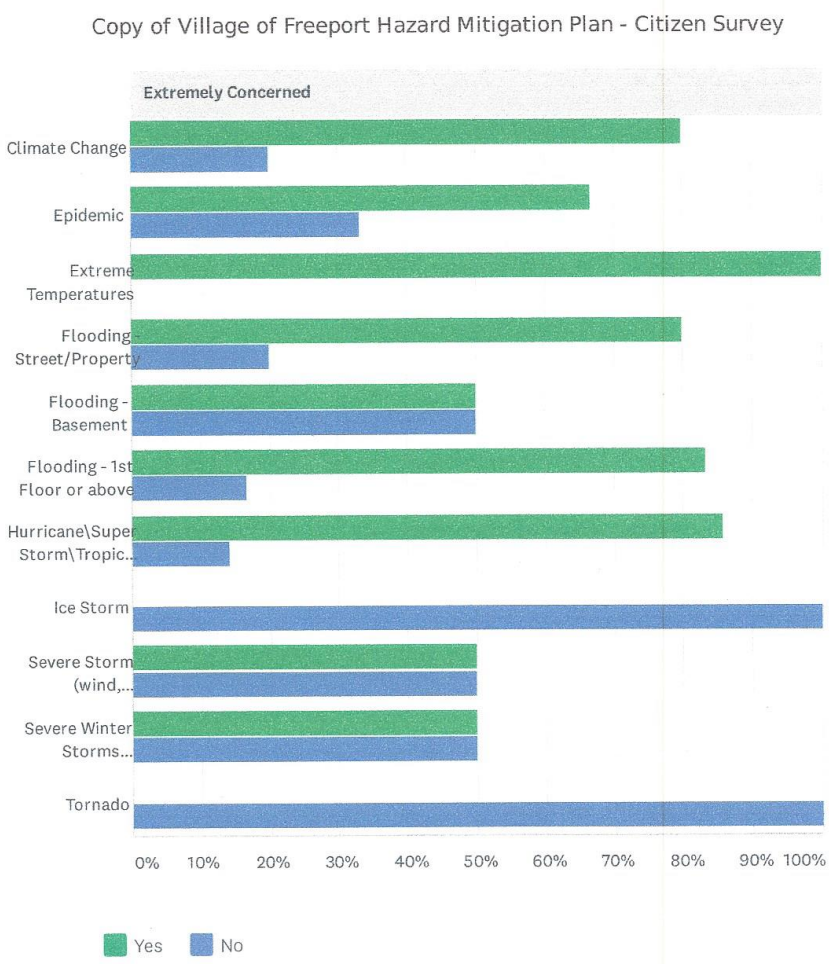
Answered: 20 Skipped: 0




Copy of Village of Freeport Hazard Mitigation Plan - Citizen Survey
Not Concerned
Climate Change
Epidemic
Extreme Temperatures
Flooding - Street/Property
Flooding - Basement
Flooding - 1st Floor or above
Hurricane\Super Storm\Tropic...
Ice Storm
Severe Storm (wind,...
Severe Winter Storms...
Tornado
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Yes
No


Copy of Village of Freeport Hazard Mitigation Plan - Citizen Survey
Somewhat Concerned
Climate Change
Epidemic
Extreme Temperatures
Flooding Street/Property
Flooding - Basement
Flooding - 1st Floor or above
Hurricane\Super Storm\Tropic...
Ice Storm
Severe Storm (wind,...
Severe Winter Storms...
Tornado
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Yes
No


Copy of Village of Freeport Hazard Mitigation Plan - Citizen Survey
Very Concerned
Climate Change
Epidemic
Extreme Temperatures
Flooding - Street/Property
Flooding - Basement
Flooding - 1st Floor or above
Hurricane\Super Storm\Tropic...
Ice Storm
Severe Storm (wind,...
Severe Winter Storms...
Tornado
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Yes
No


Copy of Village of Freeport Hazard Mitigation Plan - Citizen Survey
Extremely Concerned
Climate Change
Epidemic
Extreme Temperatures
Flooding - Street/Property
Flooding - Basement
Flooding - 1st Floor or above
Hurricane\Super Storm\Tropic...
Ice Storm
Severe Storm (wind,...
Severe Winter Storms...
Tornado
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Yes
No

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Have Experienced	YES	NO	TOTAL
Climate Change	50.00% 8	50.00% 8	16
Epidemic	93.75% 15	6.25% 1	16
Extreme Temperatures	28.57% 4	71.43% 10	14
Flooding - Street/Property	76.47% 13	23.53% 4	17
Flooding - Basement	26.67% 4	73.33% 11	15
Flooding - 1st Floor or above	56.25% 9	43.75% 7	16
Hurricane\Super Storm\Tropical Storm	89.47% 17	10.53% 2	19
Ice Storm	46.67% 7	53.33% 8	15
Severe Storm (wind, lightning, hail)	84.21% 16	15.79% 3	19
Severe Winter Storms (Blizzard, Heavy Snow, Ice)	87.50% 14	12.50% 2	16
Tornado	0.00% 0	100.00% 13	13

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Not Concerned	YES	NO	TOTAL
Climate Change	60.00% 3	40.00% 2	5
Epidemic	50.00% 1	50.00% 1	2
Extreme Temperatures	66.67% 4	33.33% 2	6
Flooding - Street/Property	25.00% 1	75.00% 3	4
Flooding - Basement	40.00% 2	60.00% 3	5
Flooding - 1st Floor or above	100.00% 5	0.00% 0	5
Hurricane\Super Storm\Tropical Storm	0.00% 0	100.00% 1	1
Ice Storm	85.71% 6	14.29% 1	7
Severe Storm (wind, lightning, hail)	50.00% 1	50.00% 1	2
Severe Winter Storms (Blizzard, Heavy Snow, Ice)	50.00% 1	50.00% 1	2
Tornado	71.43% 5	28.57% 2	7

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Somewhat Concerned

	YES	NO	TOTAL
Climate Change	83.33% 5	16.67% 1	6
Epidemic	87.50% 7	12.50% 1	8
Extreme Temperatures	60.00% 3	40.00% 2	5
Flooding - Street/Property	50.00% 1	50.00% 1	2
Flooding - Basement	75.00% 3	25.00% 1	4
Flooding - 1st Floor or above	66.67% 2	33.33% 1	3
Hurricane\Super Storm\Tropical Storm	80.00% 4	20.00% 1	5
Ice Storm	85.71% 6	14.29% 1	7
Severe Storm (wind, lightning, hail)	85.71% 6	14.29% 1	7
Severe Winter Storms (Blizzard, Heavy Snow, Ice)	87.50% 7	12.50% 1	8
Tornado	75.00% 3	25.00% 1	4

Copy of Village of Freeport Hazard Mitigation Plan - Citizen Survey

Very Concerned	YES	NO	TOTAL
Climate Change	100.00% 4	0.00% 0	4
Epidemic	75.00% 3	25.00% 1	4
Extreme Temperatures	66.67% 2	33.33% 1	3
Flooding - Street/Property	85.71% 6	14.29% 1	7
Flooding - Basement	50.00% 1	50.00% 1	2
Flooding - 1st Floor or above	50.00% 1	50.00% 1	2
Hurricane\Super Storm\Tropical Storm	75.00% 3	25.00% 1	4
Ice Storm	0.00% 0	100.00% 1	1
Severe Storm (wind, lightning, hail)	75.00% 3	25.00% 1	4
Severe Winter Storms (Blizzard, Heavy Snow, Ice)	66.67% 2	33.33% 1	3
Tornado	100.00% 2	0.00% 0	2

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Extremely Concerned

	YES	NO	TOTAL
Climate Change	80.00% 4	20.00% 1	5
Epidemic	66.67% 2	33.33% 1	3
Extreme Temperatures	100.00% 1	0.00% 0	1
Flooding - Street/Property	80.00% 4	20.00% 1	5
Flooding - Basement	50.00% 1	50.00% 1	2
Flooding - 1st Floor or above	83.33% 5	16.67% 1	6
Hurricane\Super Storm\Tropical Storm	85.71% 6	14.29% 1	7
Ice Storm	0.00% 0	100.00% 1	1
Severe Storm (wind, lightning, hail)	50.00% 1	50.00% 1	2
Severe Winter Storms (Blizzard, Heavy Snow, Ice)	50.00% 1	50.00% 1	2
Tornado	0.00% 0	100.00% 1	1

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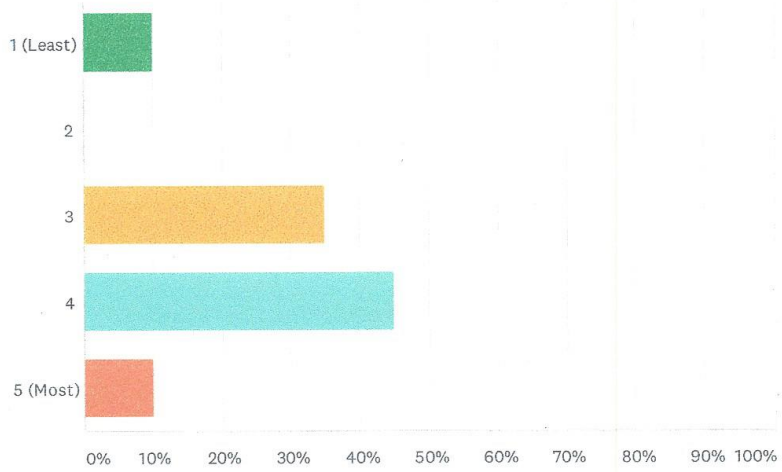
Q6 Please rank how prepared you feel you and your household are for natural disaster events likely to occur within your municipality. Rank on a scale of 1 to 5, with 5 representing the most prepared.

Answered: 20 Skipped: 0



ANSWER CHOICES	RESPONSES	
1 (Least)	10.00%	2
2	0.00%	0
3	35.00%	7
4	45.00%	9
5 (Most)	10.00%	2
TOTAL		20

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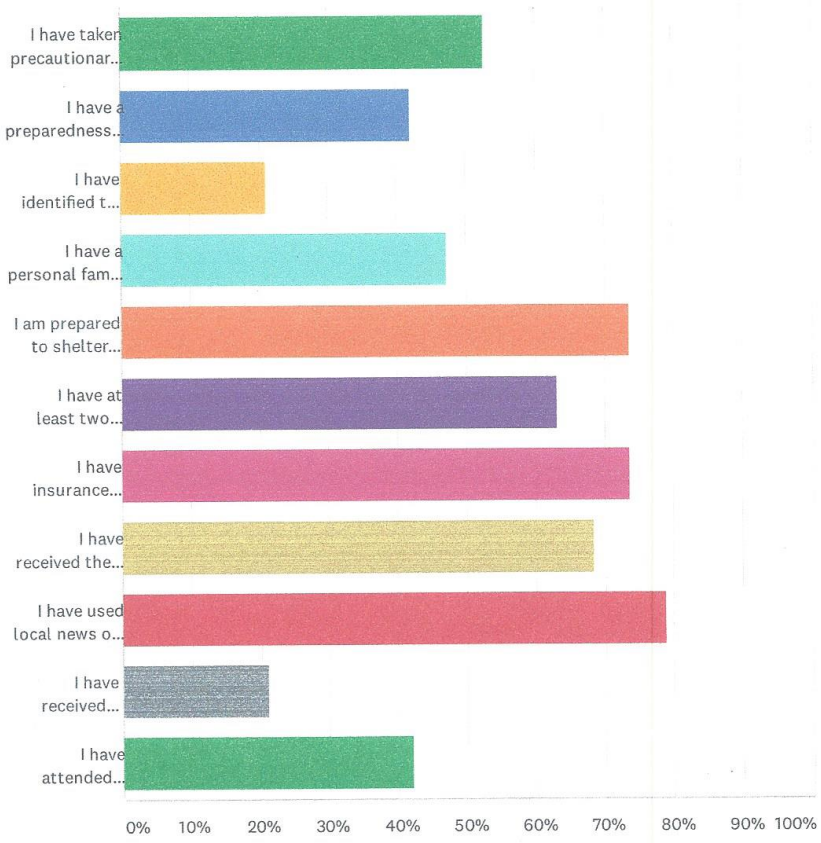
Q7 In what ways do you believe you are prepared for a natural disaster that may occur within Freeport? (Please check all that apply)

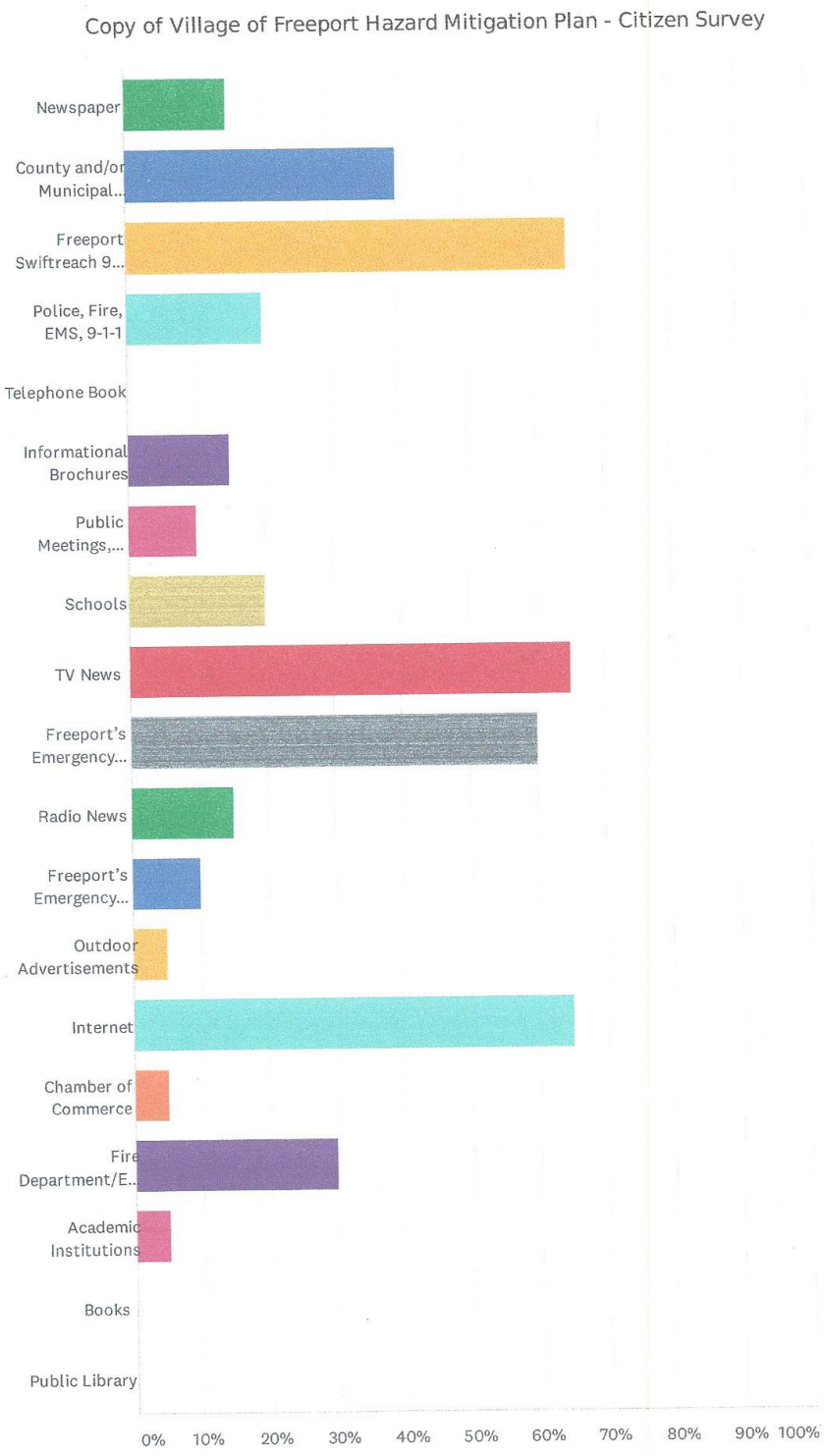
Answered: 19 Skipped: 1



Copy of Village of Freeport Hazard Mitigation Plan - Citizen Survey

ANSWER CHOICES	RESPONSES	
I have taken precautionary measures to protect my property though retrofits or when constructed	52.63%	10
I have a preparedness kit consisting of basic supplies and materials for my family and myself	42.11%	8
I have identified the location of the nearest severe weather shelter	21.05%	4
I have a personal family emergency preparedness plan, and have discussed it with my family and others for whom I have responsibility	47.37%	9
I am prepared to shelter in-place if that is the best available option	73.68%	14
I have at least two methods for receiving emergency notifications and for information during severe weather or other potential emergency situations	63.16%	12
I have insurance policies to cover losses from specific risks (e.g. flood insurance)	73.68%	14
I have received the annual Freeport Emergency Management Newsletter providing emergency preparedness information	68.42%	13
I have used local news or other media to obtain information	78.95%	15
I have received information from schools and other academic institutions	21.05%	4
I have attended meetings that have dealt with disaster preparedness	42.11%	8

Total Respondents: 19


Copy of Village of Freeport Hazard Mitigation Plan - Citizen Survey
Newspaper
County and/or Municipal...
Freeport Swiftreach 9...
Police, Fire, EMS, 9-1-1
Telephone Book
Informational Brochures
Public Meetings,...
Schools
TV News
Freeport's Emergency...
Radio News
Freeport's Emergency...
Outdoor Advertisements
Internet
Chamber of Commerce
Fire Department/E...
Academic Institutions
Books
Public Library
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

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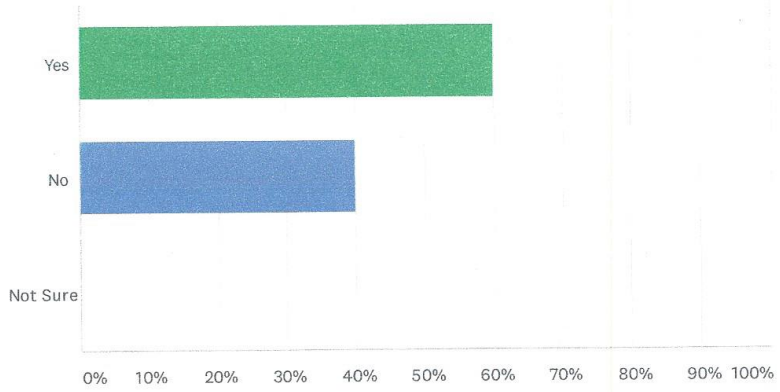
ANSWER CHOICES	RESPONSES	
Newspaper	15.00%	3
County and/or Municipal Websites	40.00%	8
Freeport Swiftreach 911 Robo calls	65.00%	13
Police, Fire, EMS, 9-1-1	20.00%	4
Telephone Book	0.00%	0
Informational Brochures	15.00%	3
Public Meetings, Workshops, or Public Awareness Events	10.00%	2
Schools	20.00%	4
TV News	65.00%	13
Freeport's Emergency Sirens	60.00%	12
Radio News	15.00%	3
Freeport's Emergency Notification Radio Station 1690 AM	10.00%	2
Outdoor Advertisements	5.00%	1
Internet	65.00%	13
Chamber of Commerce	5.00%	1
Fire Department/EMS Agency	30.00%	6
Academic Institutions	5.00%	1
Books	0.00%	0
Public Library	0.00%	0

Total Respondents: 20

Copy of Village of Freeport Hazard Mitigation Plan - Citizen Survey

Q9 To the best of your knowledge is your property located in a designated floodplain? If you do not know, or are not sure, please check the following website: https:\\www.floodsmart.gov. Google Earth users can install the FEMA NFIP flood delineations by going to: https://hazards.fema.gov/femaportal/wps/portal/NFHLWMSkmzdownload.

Answered: 20 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	60.00%	12
No	40.00%	8
Not Sure	0.00%	0
TOTAL		20

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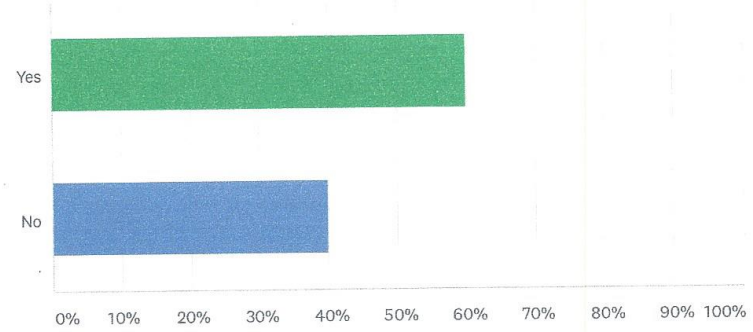
Q10 Do you have flood insurance?

Answered: 20 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	60.00%	12
No	40.00%	8
TOTAL		20

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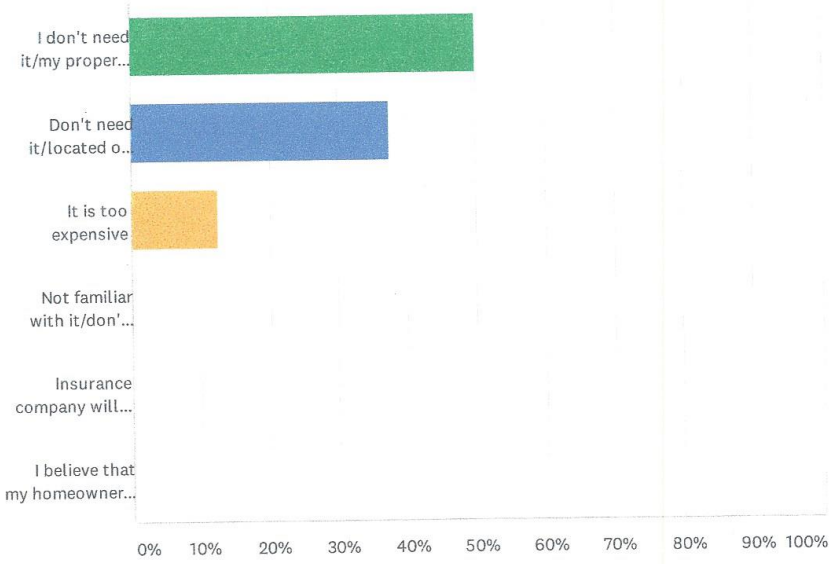
Q11 If you do NOT have flood insurance, what is the primary reason?

Answered: 8 Skipped: 12



ANSWER CHOICES	RESPONSES	
I don't need it/my property has never flooded	50.00%	4
Don't need it/located on high ground	37.50%	3
It is too expensive	12.50%	1
Not familiar with it/don't know about it	0.00%	0
Insurance company will not provide	0.00%	0
I believe that my homeowners insurance will cover me	0.00%	0
TOTAL		8

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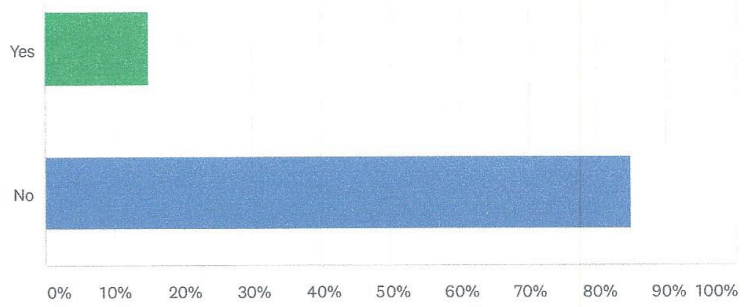
Q12 Do you or did you have problems getting homeowners/renters insurance due to risks from natural hazards?

Answered: 20 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	15.00%	3
No	85.00%	17
TOTAL		20

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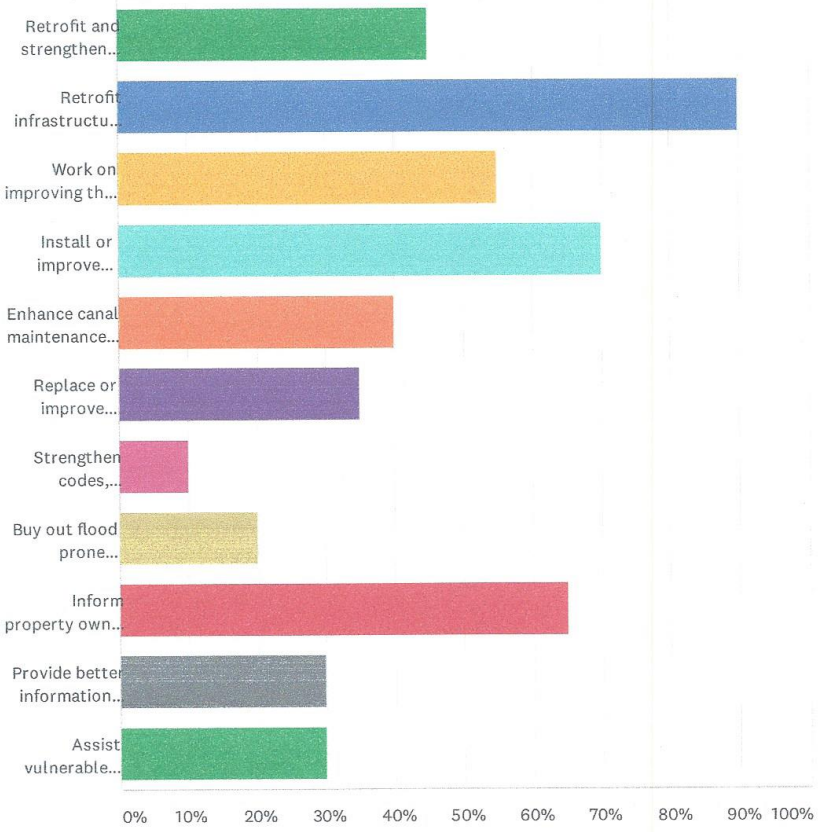
Q14 What types of projects do you believe the Village , county, state or federal government agencies could be doing in order to reduce the damage and disruption of natural disasters in the Village of Freeport? Select your top three choices

Answered: 20 Skipped: 0



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ANSWER CHOICES	RESPONSES	
Retrofit and strengthen essential facilities such as police, schools, hospitals	45.00%	9
Retrofit infrastructure, such as elevating roadways and improving drainage systems	90.00%	18
Work on improving the damage resistance of utilities (electricity, communications, water/wastewater facilities etc.)	55.00%	11
Install or improve protective structures, such as floodwalls, levees, bulkheads, firebreaks	70.00%	14
Enhance canal maintenance programs/projects	40.00%	8
Replace or improve inadequate or vulnerable bridges and drainage systems	35.00%	7
Strengthen codes, ordinances and plans to require higher hazard risk management standards and/or provide greater control over development in high hazard areas	10.00%	2
Buy out flood prone properties and maintain as open-space	20.00%	4
Inform property owners of ways they can mitigate damage to their properties	65.00%	13
Provide better information about hazard risks and high-hazard areas	30.00%	6
Assist vulnerable property owners with securing funding to mitigate their properties	30.00%	6
Total Respondents: 20		

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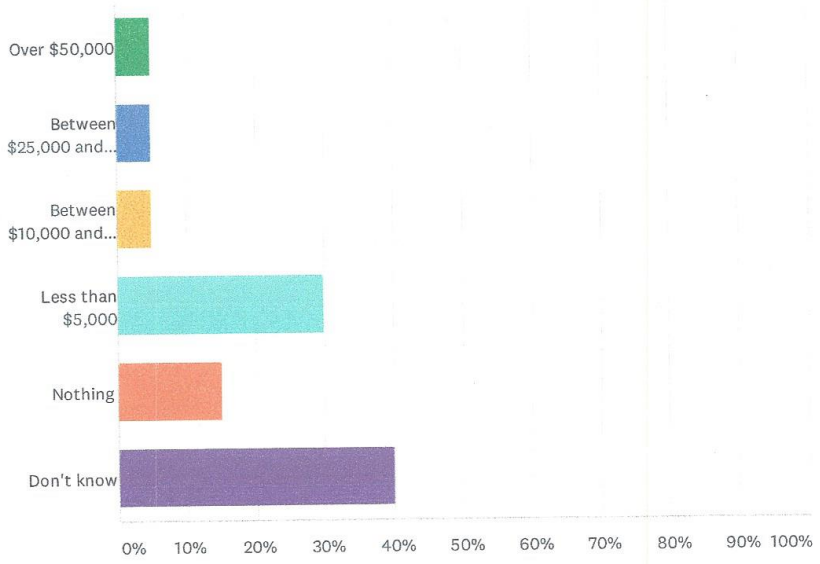
Q15 How much money would you be willing to spend on your current home to help protect it from the impacts of potential future natural disasters within our community? Examples are: elevating a flood-prone home; elevating utilities in flood-prone basements; strengthening your roof, siding, doors or windows to withstand high winds; removing threatening trees or branches.

Answered: 20 Skipped: 0



ANSWER CHOICES	RESPONSES	
Over $50,000	5.00%	1
Between $25,000 and $50,000	5.00%	1
Between $10,000 and $24,999	5.00%	1
Less than $5,000	30.00%	6
Nothing	15.00%	3
Don't know	40.00%	8
TOTAL		20

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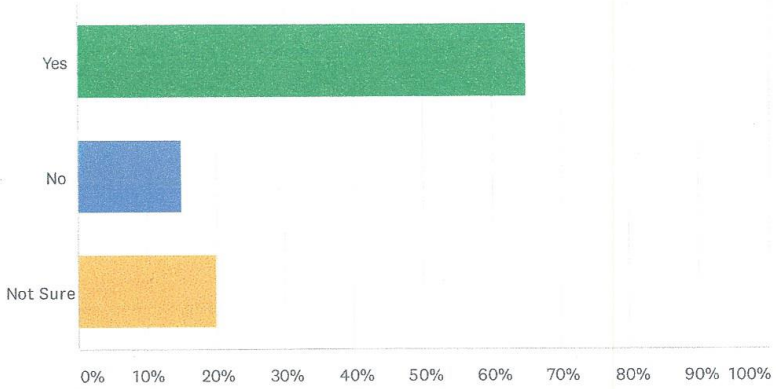
Q18 If your property were located in a designated high hazard area (e.g. NFIP flood zone), or had received repeated damages from a natural disaster event, would you consider a "buyout", "elevation" of the structure, or "relocation"?

Answered: 20 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	65.00%	13
No	15.00%	3
Not Sure	20.00%	4
TOTAL		20