



NY Rising Community Reconstruction Program

Recover from yesterday, plan for tomorrow

Conceptual Plan -
FIRE ISLAND



JANUARY 2014

This document was developed by the Fire Island Planning Committee as part of the NY Rising Community Reconstruction (NYRCR) Program within the Governor’s Office of Storm Recovery. The NYRCR Program is supported by NYS Homes and Community Renewal, NYS Department of State, and NYS Department of Transportation. Assistance was provided by the following consulting firms (NYRCR Consulting Team):

- *Jacobs*
- *Cameron Engineering & Associates, LLP*

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Co-Chair	Suzy Goldhirsch	President, Fire Island Association
Member	Scott Hirsch	Owner of Island Mermaid and The Pantry (Ocean Beach); Revive Fire Island
Member	Dominic Bertucci	Kismet Fire Department
Member	Patrick Macri	President of Millenium Communications; Revive FI
Member	Vern Hendrickson	Suffolk County Fire Coordinator for Fire Island; Saltaire Fire Department
Member	Tim Mooney	President, Fire Island Ferries
Member	John Lund	Fire Island Association Board Member
Member	Mary Parker	President of Davis Park Association
Member	John Adams	Cherry Grove
Member	Steve Norring	Fire Island Pines
Member	Marsha Hunter	President, Kismet Homeowners Association
Member	Forrest Clock	Lonelyville Tax Payers
Member	Jennifer Rider	Lonelyville Property Owners
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Member	Justin McCarthy	Point O’ Woods Community Manager
Member	Alan Altman	Summer Club/Corneille Estates/Robbins Rest
Member	Alan Goldberg	Water Island
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Municipal Representative	Tim Mazzei*	Councilman, Town of Brookhaven
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*Non-voting member



FOREWORD

The New York Rising Community Reconstruction (NYRCR) program was established by Governor Andrew M. Cuomo to provide additional rebuilding and revitalization assistance to communities damaged by Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. This program empowers communities to prepare locally-driven recovery plans to identify innovative reconstruction projects and other needed actions to allow each community not only to survive, but also to thrive in an era when natural risks will become increasingly common.

The NYRCR program is managed by the Governor's Office of Storm Recovery in conjunction with New York State Homes and Community Renewal and the New York Department of State (NYS DOS). The NYRCR program consists of both planning and implementation phases, to assist communities in making informed recovery decisions.

The development of this Conceptual Plan is the result of innumerable hours of effort from volunteer planning Committee members, members of the public, municipal employees, elected officials, state employees, and planning consultants. Across the state, over 102 communities are working together to build back better and stronger.

This Conceptual Plan is a snapshot of the current thoughts of the community and planning Committee. The plans will evolve as communities analyze the risk to their assets, their needs and opportunities, the potential costs and benefits of projects and actions, and their priorities. As projects are more fully defined, the potential impact on neighboring municipalities or the region as a whole may lead to further modifications.

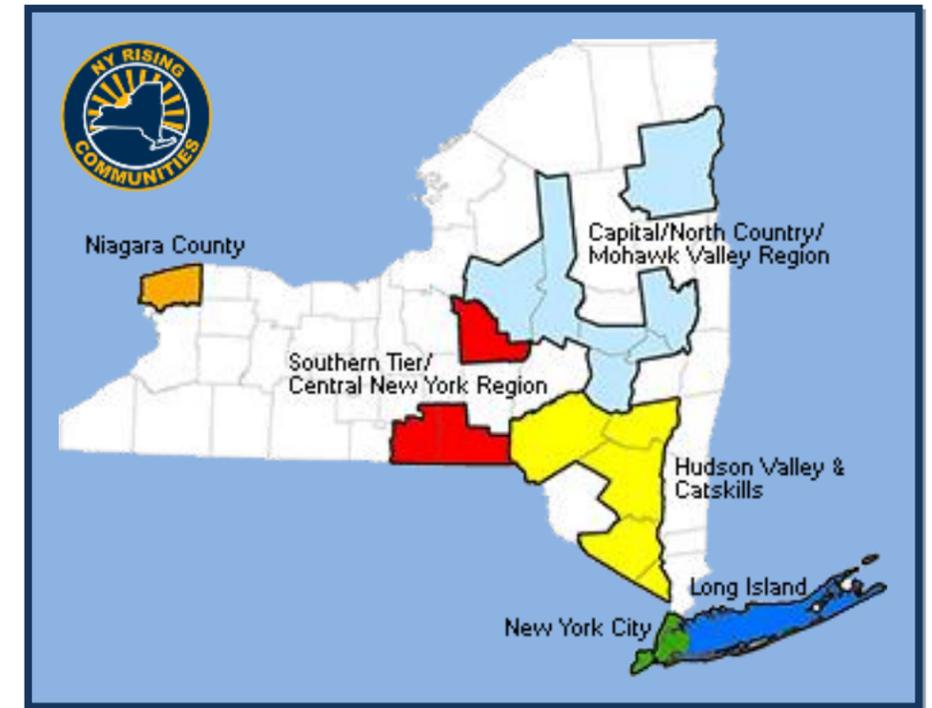
In the months ahead, communities will develop ways to implement additional strategies for economic revitalization, human services, housing, infrastructure, natural and cultural resources, and the community's capacity to implement changes.

Implementation of the proposed projects and actions found in this Conceptual Plan is subject to applicable federal, state, and local laws and regulations. Inclusion of a project or action in this Conceptual Plan does not guarantee that a particular project or action will be eligible for Community Development Block Grant – Disaster Recovery (CDBG-DR) funding. Proposed projects or actions may be eligible for other state or federal funding, or could be accomplished with municipal, nonprofit or private investment.

Each NYRCR Community will continue to engage the public as they develop a Final NYRCR Plan. Events will be held to receive feedback on the Conceptual Plan, to provide an understanding of risk to assets, and to gather additional ideas for strategies, projects and actions.

January 2014

New York Rising Communities



Find out more at:

www.stormrecovery.ny.gov/nyrcr



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1. Program Overview

Description of the Program

The New York Rising Community Reconstruction Program (NYRCR) has been established to provide additional rebuilding and revitalization assistance to communities that were severely damaged by Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. These recent natural disasters were illustrative of the severe effects that can result from changing weather patterns including loss of life, displacement, flooding, damage to property and infrastructure, loss of essential services, and the disruption of daily routines. The NYRCR Program, designed by New York State following these severe weather events, is intended to empower the communities most affected by these storms to develop and implement locally-created and state and federally funded strategies for rebuilding, strengthening, and making their respective communities more resilient against future weather events. This initiative is based upon a multi-faceted approach with the State leading broad investment strategies and critical infrastructure expenditures while providing affected communities with the resources they need to implement their community driven plans, thereby investing in their own future. The intent of the NYRCR Program is to assist communities to rebuild better and safer based on locally derived plans which consider current damage, future threats to community assets, as well as the economic future of the community.

NYRCR Plans, in accordance with the *National Disaster Recovery Framework*, will consider the needs, risks and opportunities related to assets in the following recovery support function categories.

- Community Planning and Capacity Building
- Economic Development
- Health and Social Services
- Housing
- Infrastructure Systems (Transportation and Utilities)
- Natural and Cultural Resources

Of the more than 102 localities across New York State originally designated for NYRCR Program assistance, ten are located in Suffolk County and comprise the following eight NYRCR Communities:



- Village of Amityville/Copiague
- Village of Lindenhurst
- Village of Babylon/West Babylon
- West Islip
- Oakdale/West Sayville
- Mastic Beach and Smith Point of Shirley
- West Gilgo to Captree
- Fire Island

The successful completion of a final NYRCR Plan will allow each participating community to be eligible to obtain funds to support the implementation of resilient and innovative reconstruction projects and other needed actions identified in their respective Plan.

Description of the Planning Process



As part of the NYRCR planning process, communities will assess their vulnerabilities to future natural disasters as well as their needs for economic development. The planning process will also help to identify where funds should be used to repair or reconstruct critical facilities and essential public assets damaged or destroyed by these storms. Lastly, the planning process will facilitate the identification of projects that will increase resilience while also protecting vulnerable populations and promoting sound economic development.

Elements of the planning process are as follows:

- *Public Engagement:* Providing opportunities for public involvement and input at key milestones in the planning process

- *Asset Inventory:* Compiling an inventory of the community's social, economic, and natural resource assets that have been or have the potential to be affected by coastal or riverine hazards
- *Risk Assessment:* Assessing risk to key community assets based on the following three contributing factors to risk: (1) Hazard, the likelihood and magnitude of anticipated hazard events; (2) Exposure, local landscape characteristics that typically increase or decrease storm effects; (3) Vulnerability, the capacity of an asset to return to service after an event.
- *Needs and Opportunities Assessment:* Determining needs and opportunities to improve local economic growth and enhance resilience to future weather events
- *Strategies for Investment:* Developing strategies and the projects and actions needed to implement the strategies; identifying potential costs and benefits of chosen projects and actions as well as potential funding sources
- *Implementation Schedule:* Preparing an implementation schedule of the actions needed to implement the strategies

Role of the Committee

Each participating community has established a NYRCR Planning Committee (the "Committee") that reflects the community's populations and represents both the needs of the community and its members' various talents. Committee co-chairs have been selected by the State in consultation with the participating communities. The composition of the remaining Committee members varies but typically includes Town or Village representatives, elected legislative representatives, the County, local residents as well as established business leaders and community organizations.

NYRCR Planning Committees meet frequently and are charged with building consensus among local residents and stakeholders for a locally-based reconstruction plan. Committee tasks range from the development of a Community Vision Statement to identifying critical assets and future projects. The Committee is also tasked with developing a public outreach plan to both inform and involve residents of the NYRCR Program. One of the most central aspects of the Committee is to establish short, medium, and long-term goals to be achieved through the implementation of the NYRCR Plan.

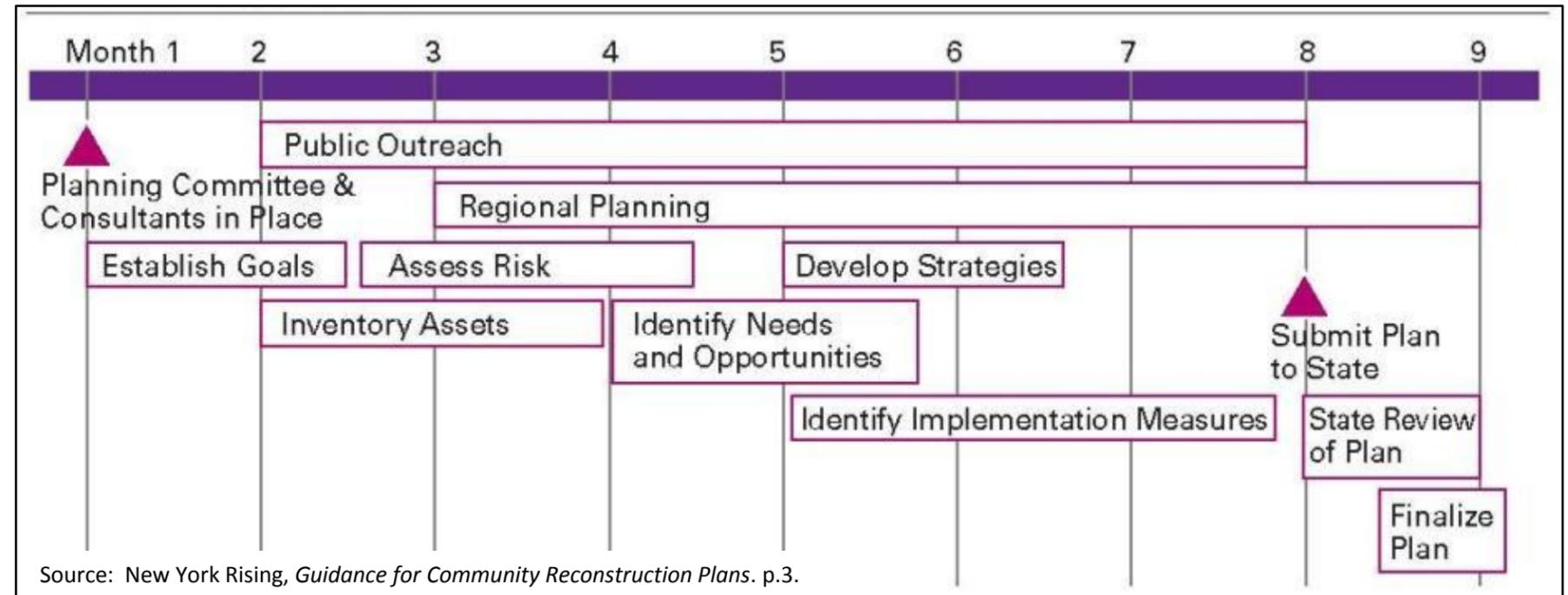
Planning Process Timeline

The NYRCR planning process is anticipated to last approximately eight months. Draft Conceptual Plans are expected to be developed mid-project with Final NYRCR Plan submittals to the State due in March 2014. Key study milestones in the planning horizon (e.g., public outreach, risk assessment, identification of needs and opportunities) are shown in the adjacent graphic.

Elements of a Successful Plan

A successful NYRCR Plan will describe projects and actions needed for the community to rebuild a more resilient and economically strong locality. An initial allocation of funding has been identified for planning in the most affected communities. Later funding allocations will be utilized to support the implementation of projects and activities identified in successfully completed community-based NYRCR Plans produced by the respective localities. A successful NYRCR Plan, which would qualify communities to receive funding and grants to implement projects and action identified in their plans, must contain the following components:

- **Assessment of risk to key assets and systems.** This inventory of vulnerable key assets and systems is required in order to prioritize projects and actions.
- **Projects and actions to restore and increase the resilience of key assets.** This plan element addresses the restoration of key assets as well as actions that will make local assets more resilient to future threats (e.g., creation and enhancement of existing wetlands, restoration of compromised wetlands, enactment of new or amendment of existing zoning regulations, improvements in community systems).
- **Protection of vulnerable populations.** This plan element recommends the development of new measures to protect vulnerable populations. These measures may include siting new support facilities (or enhancing capacity at existing facilities) in geographic areas with lower hazard risk, improving communications outreach during and after disasters and



strengthening power back-up systems to critical facilities that serve these populations.

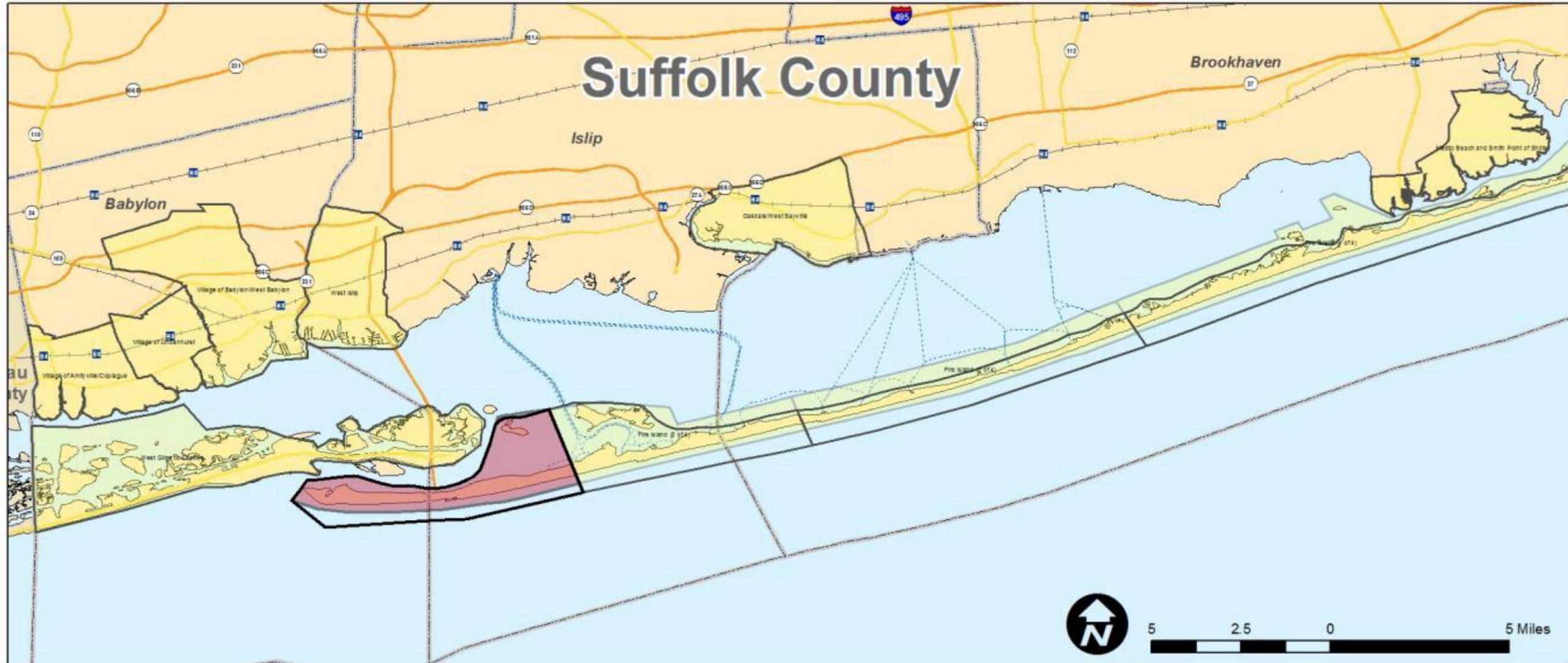
- **Projects with economic growth co-benefits.** This part of the Plan contains projects that will improve the local economy while also enhancing that economy's ability to withstand the impacts of a disaster. An illustrative example would be public transportation improvements that foster ancillary growth and strengthening of a downtown business corridor. Similarly, strategic open space acquisitions could result in increased recreational and waterfront access as well as enhanced shoreline protection.
- **Regional Coordination.** While designated NYRCR communities in Suffolk County have specific local needs, their reconstruction and resiliency efforts must also relate to regional issues that arise across Long Island.
- **Detailed implementation agendas.** Each NYRCR Plan will include a concise description of the tasks it will take to implement the plan, including assigning responsibility for specific actions to specific entities or individuals and establishing timelines for each action, as appropriate.

The Conceptual Plan

The purpose of the Conceptual Plan is to provide an overview of the Fire Island NYRCR Committee's planning efforts to date. This includes highlighting the Committee's initial findings with regards to the community's critical assets, the associated breakdowns that were discovered during and after Superstorm Sandy that need to be addressed, and the Committee's preliminary ideas for projects and actions to address those immediate needs while thinking strategically about how to build back stronger, smarter, and more resiliently for the long-term sustainability of the community.



NYRCR: Fire Island (1 of 4) Planning Area Location



Legend

- Fire Island (1 of 4) Planning Area
- Other NYRCR Planning Areas
- R Long Island Railroad Station

Roads

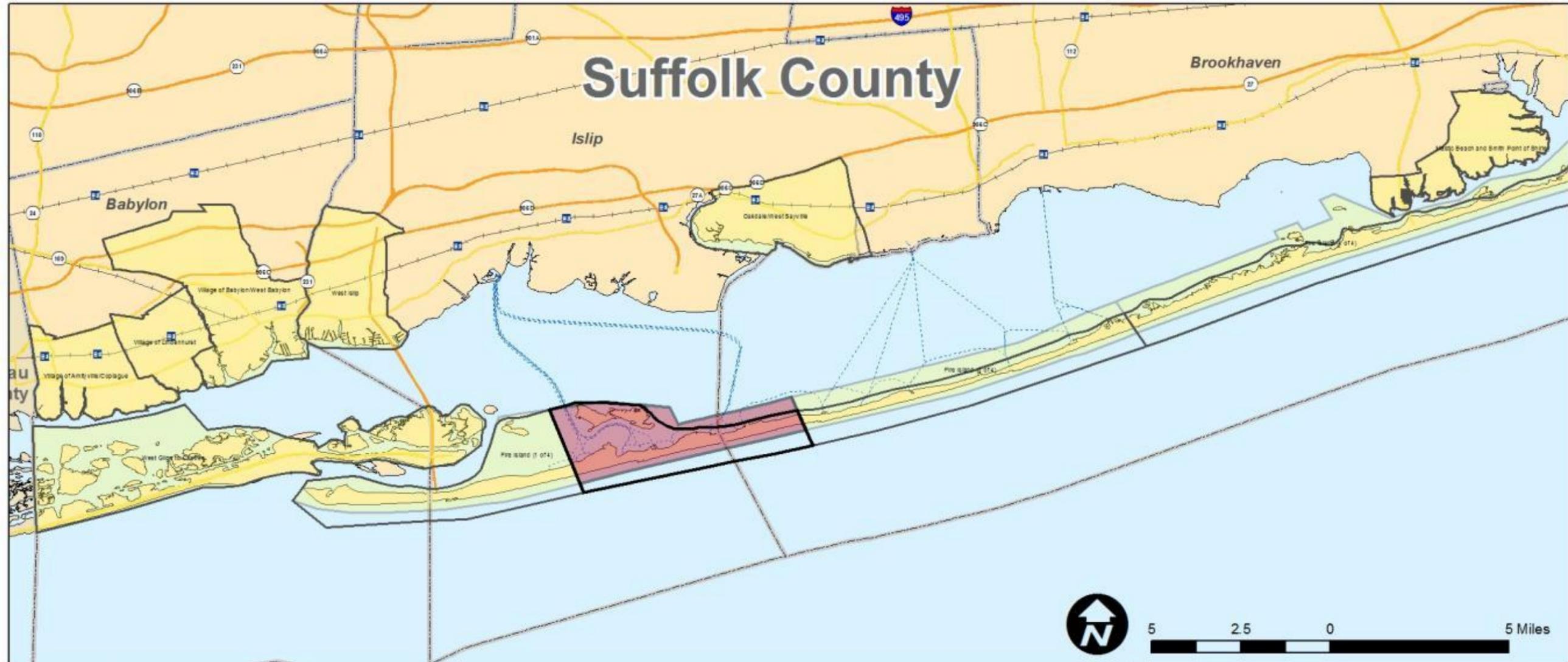
- Interstate
- Highways
- Ferry
- Long Island Railroad

Counties

- Nassau
- Suffolk
- Municipal Boundary



NYRCR: Fire Island (2 of 4) Planning Area Location



Legend

- Fire Island (2 of 4) Planning Area
- Other NYRCR Planning Areas
- + Long Island Railroad Station

Roads

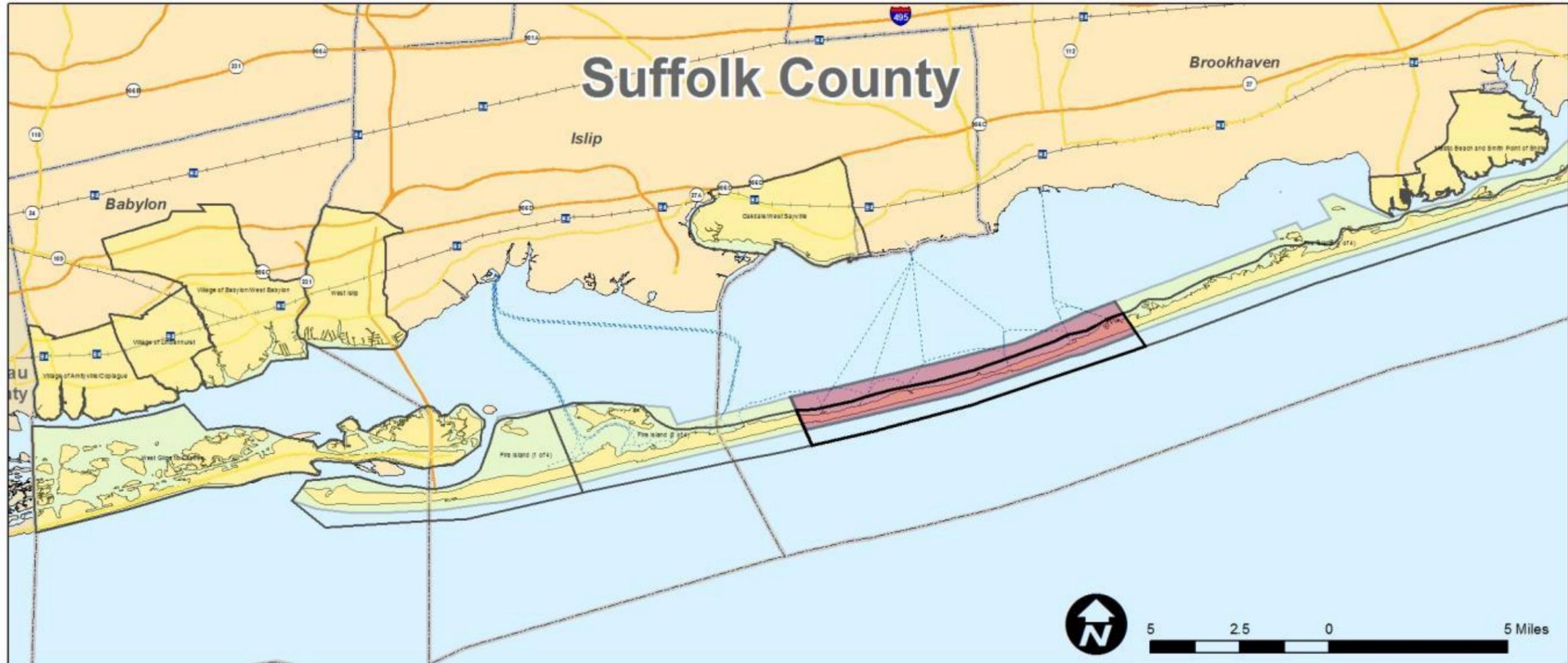
- Interstate
- Highways
- Ferry
- Long Island Railroad

Counties

- Nassau
- Suffolk
- Municipal Boundary



NYRCR: Fire Island (3 of 4) Planning Area Location



Legend

- Fire Island (3 of 4) Planning Area
- Other NYRCR Planning Areas
- NY Long Island Railroad Station

Roads

- Interstate
- Highways
- Ferry
- Long Island Railroad

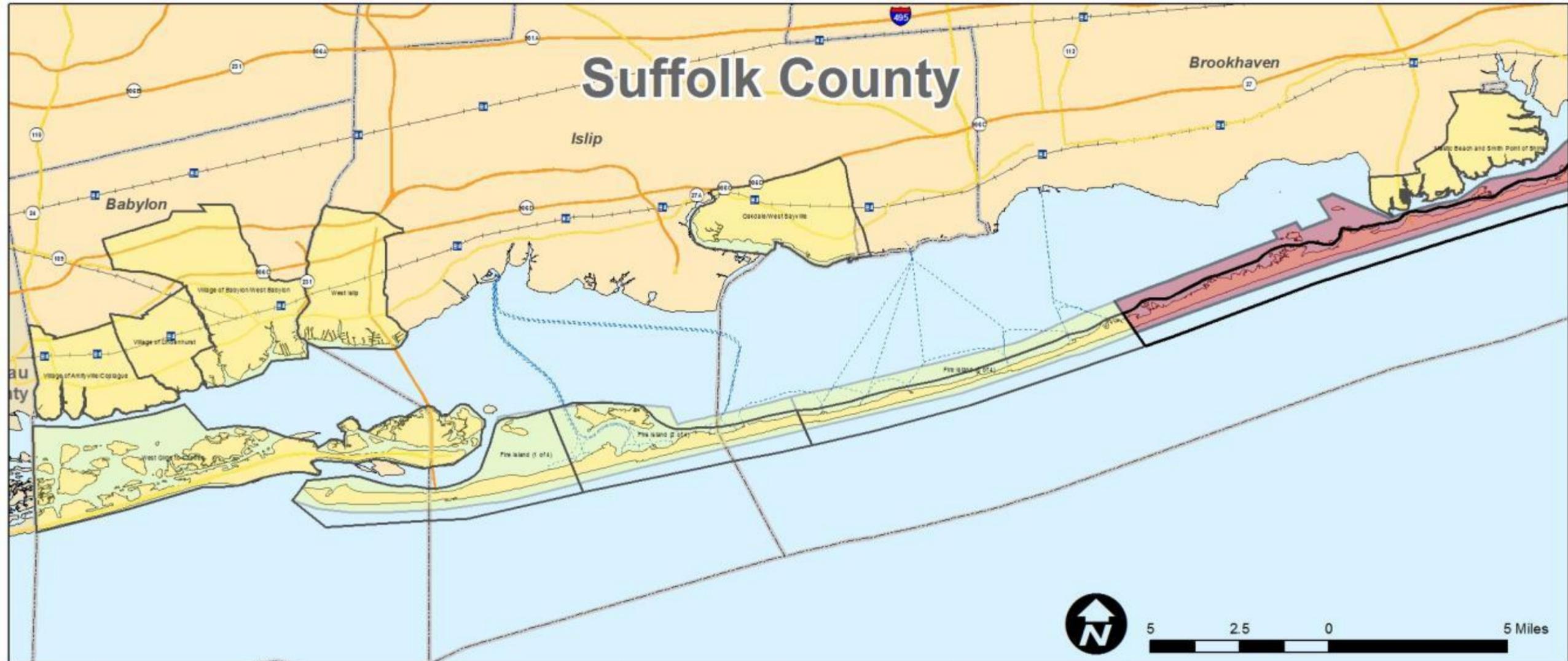
Counties

- Nassau
- Suffolk
- Municipal Boundary





NYRCR: Fire Island (4 of 4) Planning Area Location



Legend

- Fire Island (4 of 4) Planning Area
- Other NYRCR Planning Areas
- 43 Long Island Railroad Station

Roads

- Interstate
- Highways
- Ferry
- Long Island Railroad

Counties

- Nassau
- Suffolk
- Municipal Boundary



2. Community Overview

Narrative Description of Community

Fire Island is a 31-mile long barrier island, which varies in width from 500 to 1,300 feet, and encompasses 9.6 square miles of land. The Fire Island National Seashore (FINS), established in 1964 and governed by the U.S. National Park Service, stretches across 26 miles of the barrier island and includes 17 communities within its boundary. The FINS enabling legislation recognized the existence of these communities and preexisting commercial uses but stipulated that any future development should be consistent with specific zoning standards. These standards and building code regulations are administered by the incorporated Villages of Ocean Beach and Saltaire and by the Town of Islip, which has jurisdiction over the 8 unincorporated hamlets lying within the Towns of Islip, and by the Town of Brookhaven, which has jurisdiction over the seven unincorporated hamlets lying within that township. Jurisdiction is further complicated by additional regional oversight vested with state and federal agencies such as US Federal Emergency Management Administration (FEMA), Army Corps of Engineers (USACE), NYSDOS, and the New York State Department of Environmental Conservation (NYSDEC).

Fire Island's maritime history precedes colonization of Long Island. Native Americans hunted and fished in the vicinity long before Colonial settlements were established. Following Colonial settlement, salt hay harvesting, waterfowl hunting and shellfishing continued to expand as the primary industries in the area. The booming growth of New York Harbor after the Civil War also saw the growth and development of the U.S. Life Saving Service (USLSS), the pre-cursor of the US Coast Guard (USCG). Manned USLSS facilities scattered along the beach enabled emergency evacuation of vessels run aground on their way to New York Harbor.

Today, land use on Fire Island is restricted to residential uses with some institutional and community facilities and some small commercial operations. Other than bridges connecting to parking areas at the western end (Robert Moses Causeway to Robert Moses State Park) and the eastern

end (William Floyd parkway to Smith Point County Park), Fire Island is only accessible by boat. Several ferry routes serve Fire Island from Patchogue, Sayville, and Bay Shore on the mainland, as well as water taxis. Transportation on the island is generally by foot, bicycle or water taxi, as vehicles (other than permitted emergency and service vehicles) are prohibited on Fire Island during the summer. Year round residents can access the Island in the off-season with vehicle permits.



Fire Island offers all types of recreational activities including its beaches, boating, sailing, tennis, biking, clamming, swimming, surfing, fishing, hiking, and camping at Watch Hill and bird watching. Sunken Forest is a board-walked maritime forest with over 40 acres of unusual tree formations and wildlife and is popular with educational tours, hikers and bird watchers. Fire Island Lighthouse, owned by Fire Island National Seashore, and restored and managed by the Fire Island Light House Preservation Society, is open to the public, offering panoramic vistas and museums. Fire Island's commercial areas offer dining, entertainment and unique shops. Several of the communities have small groceries, delis and ice cream shops.

Community Profiles

These profiles are based upon a National Parks Service report entitled Ethnographic Overview and Assessment – Fire Island National Seashore, July 2006.

Kismet

Kismet is the westernmost of all Fire Island communities. The community began as three separate developments: Lighthouse Shores, Seabay Beach, and Kismet. The “Long Island Express” Hurricane of 1938 destroyed 90% of buildings. Subsequently, the three developments were combined and designated as a hamlet of the Town of Islip, which began to grow rapidly in the 60's and 70's. Since 2007, when new concrete sidewalks were constructed throughout the community, upscale new homes have been added. There are about 225 houses and two small condominiums. Many residents of the community enjoy naming their homes. At the bay front, there is a small commercial district that serves as the community center, including two restaurants, a pizzeria, a general store and Fire House located close to the ferry terminal. There are two tennis courts and a children's playground adjacent to the area.



Village of Saltaire

The Fire Island Beach Development Company purchased the land that would become Saltaire in 1910. In 1917, the residents grouped together to form the incorporated village. Although some structures were lost in the 1938 “Long Island Express” Hurricane, enough survived to give Saltaire a distinct uniform appearance. The community has a grid layout similar to most other Fire Island communities, with concrete walks running east and west and diagonally planked wooden walks running north and south. A 1965 zoning amendment by the village government doubled the number of lots needed to construct a new home limiting the maximum residential density. Saltaire has its own drinking water system.

Fair Harbor

Not much is known about the early history of Fair Harbor, other than that most of the buildings were destroyed in the 1938 Hurricane. Today, Fair Harbor has about 400 homes. The commercial area includes the Fair Harbor Yacht Club, a general store, and several restaurants and business. The Fair Harbor Fire Department and medical district serves the development as well as surrounding areas of Dunewood and Lonelyville.

Dunewood

Dunewood was the last community to be developed on Fire Island, beginning in 1958. The last section of Dunewood was built in 1980. Dunewood has wide, concrete walks that contribute to the open and quiet atmosphere of the community. The family oriented community has two tennis courts and runs a popular sailing and swimming program for children and adults. There are no restaurants or stores, with the closest stores and service in Fair Harbor.

Lonelyville

Most of the old structures in Lonelyville were destroyed in the 1938 Hurricane but the majority were replaced by very similar appearing structures. Like the adjoining community of Dunewood, Lonelyville lacks a commercial district near the bay. Its walks do not form a complete grid.



Atlantique

The area now known as Atlantique and Atlantique Beach saw little real estate development until 1965. It lacks a bayside commercial district. There are only 16 houses and they are relatively widely dispersed across a wide section of the island. The Islip town marina and recreational facility is situated on a town park that extends across the width of the barrier island, from the bay to the ocean.

Robbins Rest

Robbins Rest is separated from other communities by two large, undeveloped tracts of land owned by the Fire Island National Seashore. There are 37 structures that were all built by 1975 that remain in the community today. It is a residential community with mostly sand walks.

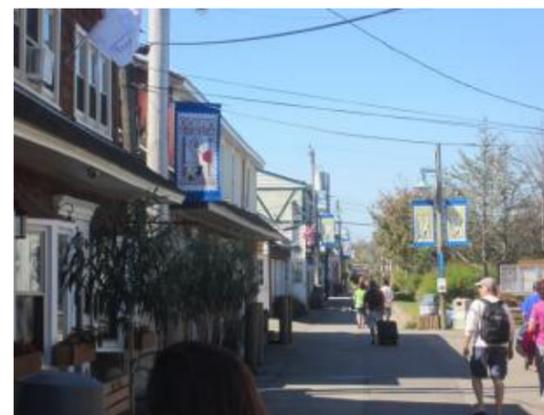
Corneille Estates

The community is two blocks wide and includes the Woodhull School. The community has one bay-to-ocean walk, known locally as Clipper Walk, which is unique to other walks across Fire Island in that it is elevated with elevation changes that follow the ground topography.



Village of Ocean Beach

In 1921, Ocean Beach and a neighboring community formerly known as Stay-a-While Estates merged to form the village that exists today. As an incorporated village, Ocean Beach has a ball field, court house, post office, police station, fire hall, ferry terminal and offices of the village. A wide variety of shops, restaurants, bars and service facilities are located in the central commercial district which is situated mainly adjoining the Village Green. During the summer, local groups sponsor parades, free concerts and art shows around the Village. The Village of Ocean Beach is the largest of the 17 communities on Fire Island. Located within easy walking distance of both the Great South Bay and the Atlantic Ocean, the village offers numerous water-related



recreational opportunities at its life guarded beaches. The Village is well equipped to serve both residents and visitors with full time police, volunteer emergency services and a village owned water system.

Seaview

Seaview’s first community supported a fish processing business area in the late 19th century. Today, there are approximately 360 houses in Seaview. The community has a small commercial district with just a market, a liquor store and a nursery. The Seaview Association owns and maintains the sidewalks, marina, beaches, water system, children’s playground and wading pool, tennis courts, ball field, and other common areas.

Ocean Bay Park

Ocean Bay Park has over 300 homes. The area attracts day-trippers to its restaurants, bars and beaches. The bayside has a ferry dock, a bay beach and the Fire Department. The community has tennis courts. The walks and ocean beach are owned by the Town of Brookhaven.



Point O' Woods

Point O' Woods is a membership community where homebuyers retain the title to the house, with all land owned by the Point O' Woods Association. The community is also unique as there is common ownership of the landward dune by the Point O' Woods Association, which makes it easier to coordinate and fund dune replenishment projects. The area is not laid out in a grid like the other communities on Fire Island.



Oakleyville

Oakleyville consists of 11 small houses on winding lanes in brushy woods within the Sunken Forest. There are no docks or ferry terminals and residents must arrive by private vessel, creating a very secluded atmosphere within a natural area.

Cherry Grove



Cherry Grove is supposedly the oldest inhabited resort area on Fire Island. By 1920 Cherry Grove had many small cottages along a single walk. In the late 1920's, the area attracted many theater people from Ocean Beach, who enjoyed the informal atmosphere of Cherry Grove, and began the community's association with the gay culture. There are 300 cottages, and a commercial area with stores, hotels, bars and restaurants.



Fire Island Pines

Fire Island Pines has approximately 620 homes, making it the second largest community on the island after Ocean Beach. While The Pines started as rustic campsites in the 1930's, it became a favorite destination of artists, writers, boaters and families in the 1950's, and today it boasts many notable modernist homes. In addition to a recently built beachside community house, the harbor area includes a ferry dock and marina, grocery and other stores, bars and restaurants. The Pines has consistently been a leader in the planning and financing of dune and beach renourishment projects.



Water Island/Blue Point Beach

Located east of the Talisman/Barrett Beach area, Water Island and Blue Point Beach are quiet, family-oriented communities without any public services. Water Island is a collection of 40 homes, while Blue Point Beach has 11 homes. The area rarely receives casual visitors from the mainland.

Davis Park

Davis Park began as two separate communities - Davis Park to the west and Ocean Ridge to the east. The area currently has about 250 homes, and is the easternmost ferry stop before the Otis Pike Wilderness Area, with service from Patchogue. The Town of Brookhaven-owned marina has about 200 slips. The commercial area includes the Casino bar/restaurant with ocean views and a commercial area by the marina.



Community Reconstruction Planning Area Demographic Overview

Geographic Area and Data

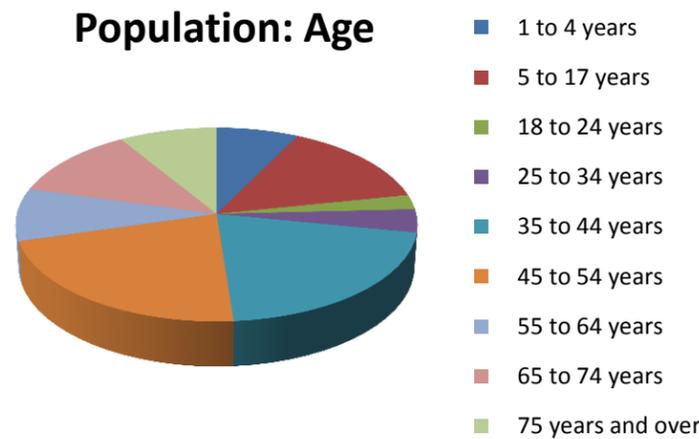
Demographic data depicted below is taken from the US Census Bureau’s American Factfinder at the Census Designated Place (CDP) level, and reflects data from the most recent American Community Survey (ACS) that provided complete coverage for the CDP. For most data sets, this was the 2005-2009 ACS data.

The CDP/Village level was selected because the availability and detail of current Census data varies by geographic location and level of analysis (CDP, Census Tract, Census Block, etc). The CDP/Village level provides a uniform level of data detail and reporting period. The Census data’s intended use in this report is to provide an overview of the composition and general habits of the community.

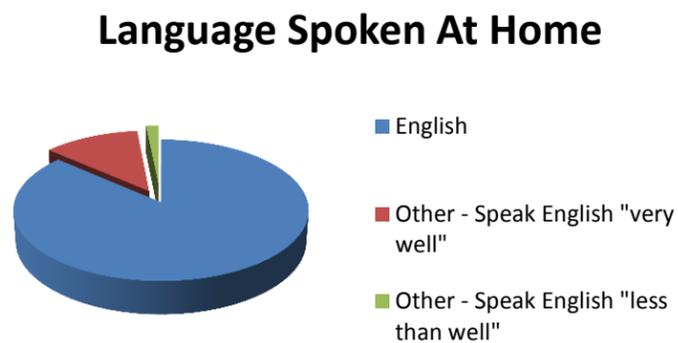
Fire Island General Demographics

Based on the 2010 U.S. Census, the Fire Island CDP had a population of 408 year round residents and 4,461 housing units, of which 4,262 are seasonal homes. The Village of Ocean Beach had a population of 79 year round residents and 607 housing units, which includes 562 seasonal homes. The Village of Saltaire had a population of 37 year round residents and 459 housing units, including 444 seasonal homes. For the year round residents, the median household income is \$113,889 in the Fire Island CDP, \$41,875 in the Village of Ocean Beach and \$112,917 in the Village of Saltaire. For the year round residents, the median value of owner-occupied housing units is \$469,200 in the Fire Island CDP, \$823,300 in the Village of Ocean Beach and over \$1,000,000 in the Village of Saltaire.

Almost half of the full-time population in the Fire Island NYRCR Planning Area is between 35 and 54 years old. About 30% are less than 35 years old, and 20% are more than 55 years old.



Ninety-four percent of the year round population of Fire Island is White, with 3% Black or African American, 2% classified as other and 1% classified as two or more races. Six percent of the population is Hispanic or Latino, and the residents report that the majority in the community either speak English as the only language at home or rate their English proficiency as “very good.” This data is important for the identification of needs and opportunities as the non-English speaking population represents a community of concern that may not have easy access to important life safety information.

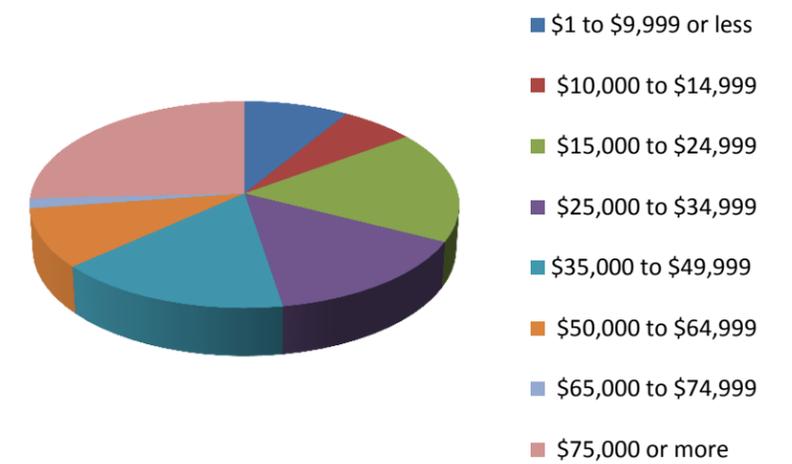


Income and Poverty

The community includes a range of individual wage earnings skewed toward the higher end. Almost half of the individuals earn less than \$35,000 but more than 25% earn \$75,000 or more. Less than 10% earn less than \$10,000; similarly less than 10% of the population is under 150%

of the poverty level. It is probable that the population reporting individual

Individual Median Income



income under \$10,000 is primarily composed of retirees and individuals in similar circumstances instead of individuals or families who represent an economically disadvantaged population.

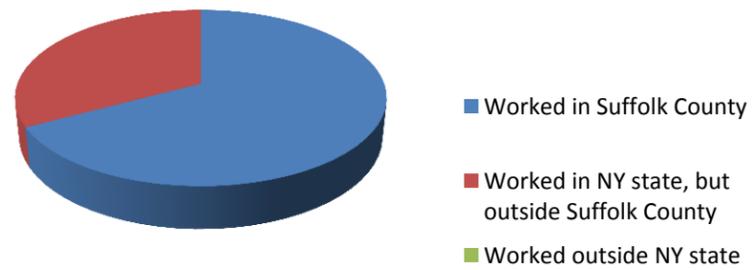


Employment and Journey to Work

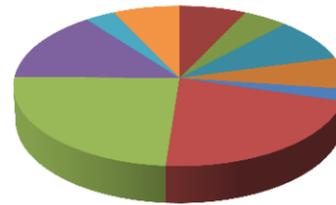
Understanding the general character of the communities' workforce helps identify needs and opportunities and prioritize projects to maintain, restore, and enhance the economic vitality of the community. Almost 70% of the residents in Fire Island work within Suffolk County, and all of the residents work somewhere within New York State.

While workers residing in the community support a diverse array of industries, educational services, professional services (scientific, management, and administrative services) compose nearly one half of all industries represented.

Place of Work



Industry



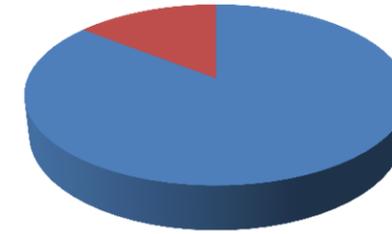
- Agriculture, forestry, fishing and hunting, and mining
- Construction
- Manufacturing
- Wholesale trade
- Retail trade
- Transportation and warehousing, and utilities
- Information and finance and insurance, and real estate and rental and leasing

Housing

The majority of housing in Fire Island is owner-occupied, but less than 5% of the units are occupied year-round. The majority of the homes are used by owners (or rented out) during the spring, summer and fall seasons.

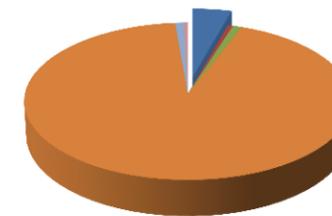


Housing Type



- Owner-occupied housing units
- Renter-occupied housing units

Housing Occupancy



- Occupied
- Vacant, for rent
- Vacant, rented, not occupied
- Vacant, for sale
- Vacant, sold, not occupied
- Vacant, for seasonal, recreational, or occasional use

Guidance and Insight from Demographic Analysis

The demographic analysis indicates a few important trends and characteristics that may help shape the identification of needs, opportunities, and projects for the Fire Island NYRCR Planning Area. One of the first observations is the seasonal nature of Fire Island. Housing type and occupancy rates show that the majority of the housing stock is used for vacation and seasonal rentals. This indicates that in the event of a catastrophic event, the majority of homes that may be affected are secondary residences.

These Census findings will be incorporated into the ongoing dialogue with the Fire Island NYRCR Planning Area and reflected in the work of the Committee as they go forward with the identification of projects to help ensure their community's resilience.

3. Overview of the Effects from Superstorm Sandy

Narrative Description of Major Issues

The impact of Superstorm Sandy was significant across the entire barrier island. Storm surge and high tides resulted in erosion of protective beaches and dunes, damage to waterfront infrastructure (e.g. docks and bulkheads), and numerous overwashes leaving walkways and travel ways impassable when overwash scoured and eroded the walkways and left debris. Low-lying infrastructure, especially electrical components of drinking water pump stations, sewage treatment plants, and communication facilities were damaged. Concentrations of commercial areas were severely damaged requiring emergency rebuilding in time for the next peak season. The USACE massive dune rebuilding effort, known as the Fire Island to Montauk Point Reformulation Study (FIMP), which includes beach nourishment, dune reconstruction, property/easement acquisition and potentially elevating thousands of homes, has been ongoing since 1960 and was recently revived with disaster funding appropriations and a far greater sense of urgency.

Since November of 2012, the effects to Fire Island from Superstorm Sandy have been well documented in news reports, video, still photography, social media, narrative, scientific study and civic debate. It is important to characterize the effects of the storm on the land, the people and the economy, for the purpose of understanding the context for strategies and



projects formulated in this Conceptual Plan.

The effects of Superstorm Sandy can be loosely categorized into three broad perspectives:

- 1. The line of defense** - As the first line of defense during severe weather, Fire Island functions naturally as a barrier to high energy ocean waves and strong winds to reduce the impact on the Great South Bay and the “mainland” coastal communities of Long Island.
- 2. The developed communities** - For well over a century, there have been seasonal and year-round settlements on Fire Island that have a long history of being battered by storms.
- 3. The visitor destination** - Fire Island’s proximity to the NY Metro area, coupled with its vibrant mix of public and private recreation and accommodations, make it important to Long Island’s economic/tourism base.

The Line of Defense

The effects of Superstorm Sandy have certainly highlighted at once both the fragility and resilience of the barrier island. The energy absorbing characteristics of both the natural and developed areas was put to the test with the storm, which exhibited wind and wave action and a sharp turn to the west, unlike the more common coastal hurricane pathways. Superstorm Sandy’s strong winds and waves impacted Fire Island from both the ocean and bay side forcing floodwaters to completely overwash several locations along the barrier island. Sandy created three new inlets on Fire Island; the Cupsoque County Park breach and Smith Point County Park breach were closed in November and December of 2013, respectively, and the third breach, which occurred in the Fire Island National Seashore’s Wilderness Area, remains open pending continuous monitoring by the National Park Service, SUNY Stony Brook University’s School of Atmospheric and Marine Sciences, and NY Sea Grant.

This awesome power and energy was mitigated in some areas by dunes, natural vegetation and occasionally man-made structures. The Committee’s perception is that generally the areas with healthy dunes fared the best in their ability to absorb the shock, the velocity and the energy of the wind and wave action. The dynamic nature of Fire Island’s shorelines (ocean and bayside), coupled with the desire of residents and visitors alike to use and enjoy these shorelines, presents unique challenges for sustainable rebuilding and recovery after Superstorm Sandy.



Many lessons have and are still being learned about building construction, water quality, storm drainage and the resiliency of nature to bounce back and heal itself. A greater appreciation has been gained of just how important Fire Island is to the mainland as a storm protection barrier between Long Island’s South Shore communities and the Atlantic Ocean.



The Developed Communities

Superstorm Sandy struck Fire Island and with relatively little to stop it, made no distinction between the undeveloped and developed areas. Once again, the destruction of homes, boardwalks, bulkheads, infrastructure, fences, decks, and whatever else was or was not tied down, highlighted the inherent contradiction of the term “dynamic real estate”. The “fixed” world of boundary lines, survey and property monuments, fences and borders was swept away and everyone was reminded of the challenges of living and working on a barrier island in the Atlantic Ocean.

The challenges posed by the geographical isolation of the island, its limited transportation infrastructure, its seasonal economy and its low year-round population were complicated by the fact that its land mass is regulated by three townships, two villages and the National Park Service. In spite of these unique logistical and geographic issues, the residents of Fire Island banded together to coordinate recovery activities. The National Park Service is part of this community dialogue.

Superstorm Sandy nonetheless showed the people of Fire Island’s communities that they could be resilient, that they could bounce back, and that they could put things back together by working together. They could be strong in their connections with each other. The storm and its aftermath have given the Fire Island communities an opportunity to rebuild with understanding, insight and intelligent forethought.



The Visitor Destination

Perhaps the devastation of Superstorm Sandy after the 2012 peak season on Fire Island kept the area out of the post-Superstorm Sandy spotlight as mainland communities raced to get their roads, power systems, transportation and temporarily homeless populations back on a firm footing and back into their homes. Yet Fire Island’s residents and the leadership of the Fire Island National Seashore worked hand-in-hand to join everyone to immediately find ways to communicate with each other, find ways to overcome obstacles to reconstruction and begin to find opportunities for change and improvement. All affected parties knew that the isolation of Fire Island would work to slow down reconstruction and present logistical difficulties along the path to preparation for the 2013 peak season. So many of the developed communities rely on visitors and renters as does the National Park Service in fulfilling its mission to highlight for park visitors the preservation and understanding of Fire Island as a natural resource. This is the bedrock of the Fire Island economy, and make it important to Long Island’s economy, particularly its tourism sector.



And so, the effects of Superstorm Sandy include recovery of the economic base from the storm and a successful 2013 peak season, but also a discussion of how to use the storm aftermath as an opportunity for change. These changes can range from large scale dune rebuilding projects to small bay side flood mitigation projects, from regional improvements in communication systems to elevation of local community centers above anticipated storm water levels.

Fire Island is a national treasure within which parks, open lands and people coexist. Superstorm Sandy and its effects have emphasized the urgent need for the National Park Service and the developed communities to cooperate for a common purpose to protect Fire Island's environmental quality, economic vitality and the health and well-being of its residents and visitors.



4. Review of Existing Plans and Studies

The barrier beach system of offshore islands stretching from Southampton, NY to New York Harbor was formed after the retreat of glaciers from Long Island 10,000 years ago. An eddy current of the Gulf Stream running from east to west began the process of erosion at Montauk Point - providing long shore transport (or littoral drift) and subsequent deposition to create a barrier island and back-bay system typical of glaciated outwash coastal areas seen from Cape Cod in Massachusetts to the Outer Banks of North Carolina.

As these coastal areas became important for commerce, tourism, recreation and development, the government roles of protecting public health, safety and welfare grew in importance. For Fire Island, its post-colonial role grew in prominence with the growth of trans-Atlantic shipping in and out of New York Harbor. Its importance for navigation began the development and settlement of places along the beach to house the U.S. Life Saving Service (USLSS) that became the US Coast Guard (USCG). From that mid-19th century era, development on Fire Island has continued to the present day and numerous studies have been conducted and programs developed addressing the management challenges of Fire Island. Following is an abbreviated timeline of activities/ milestones/ publications concerning Fire Island.

1960 – Congress authorizes the USACE to examine the coastline and find solutions to coastal erosion from Fire Island Inlet to Montauk Point.

1964 – Congress authorizes the creation of the Fire Island National Seashore (FINS) and shortly thereafter the National Park Service (NPS) begins to formulate plans for park management in both developed and undeveloped areas of FINS.

1977 – FINS publishes its first *General Management Plan (GMP)* which includes regulations as to how the NPS will interact with local municipalities who regulate zoning and building controls within the FINS.

1982 – The National Flood Insurance Program, begun in 1968 and amended in 1973 is amended again in 1982, deepening the connection between national floodplain property protection policy and locally conformed building ordinances.

1984 – *Hurricane Damage Mitigation Plan* published by the Long Island Regional Planning Board focuses on policies that let nature run its course.

1994 - Coastal Science and Engineering, Inc. publishes, *Report for New York Coastal Partnership* and the Governor’s Coastal Erosion Task Force also publishes their findings, both regarding Fire Island public policy and cost estimates associated with various engineering responses.

1998 – USACE publishes an *Alternative Screening Report Atlantic Coast of*



Long Island, Fire Island Inlet to Montauk Point with an overview of various storm protection alternatives.

2003 – The Budget Review Office of the Suffolk County Legislature produces a report titled *Impact of the Atlantic Ocean Beaches to the Economy of Suffolk County*. The report details the positive economic value of the Fire Island beaches to the Suffolk County Economy.

2007 – FINS begins a new GMP process and update.

2007 – Jay Tanski of the NY Sea Grant Extension Program produces *Long Island's Dynamic South Shore: A primer on the Forces and Trends Shaping our Coast*. The report explores the issues underlying decisions that balance

conservation of the natural environment with the significant demand to use a prime recreational and tourism resource.

2008 – SUNY Press publishes *The Fire Island National Seashore – A History*, containing an extensive look at public policy, publications bibliography, studies, and activities to date.

Post-Superstorm Sandy:

2013 – In response to Superstorm Sandy, USGS published #2013-1231 *Coastal Change from Hurricane Sandy and 2012-13 Winter Storms, Fire Island, NY*, which assesses the morphological impacts to the beach and dune system at Fire Island, New York.

2013 - The *Fire Island to Montauk Point Reformulation Study Update* was prepared to account for the impacts of Superstorm Sandy and to coordinate several ongoing interim projects. The overall purpose of the study is “to evaluate a range of possible alternatives to address storm damage risk, including the screening of various Storm Damage Reduction (SDR) alternatives and their designs, analysis of potential impacts associated with various designs, design optimization, and selection of a recommended plan for the Project area.” The issues and needs described in the study pertaining to long shore sediment transport, cross-shore sediment transport, dune growth and evolution, bayside shoreline processes, and circulation and water quality, are vital issues for Fire Island. The study treats the beaches, dunes, sediments and marshes as one system that must be managed in order to increase resiliency.

Likewise, the NYRCR Committee may approach their landscape as a similar system in which all components must be strengthened to truly reduce risk and achieve resiliency.



5. Geographic Scope of the Plan

The identification of a geographic scope for each NYRCR Plan is of paramount importance as it helps to develop parameters and inform the extent of the planning effort. As such, establishing a geographic scope is a crucial responsibility that is undertaken by the Committee. Properly scoping the NYRCR Planning Area includes meeting federal guidelines for the appropriate use of reconstruction funds. NYRCR Plans are intended to address the damage directly resulting from Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. As a result, communities seeking to implement projects indirectly impacted by those storms will need to demonstrate how such projects and/or policies would help to mitigate the risk of potential storm damage in the future. Guidance provided by New York State, and noted below, relative to establishing the geographic scope of a NYRCR Plan relates to asset location, risk assessment areas as well as floodplains.

- Community assets most likely to be at risk due to future weather events are typically located in extreme, high and moderate risk areas of the community. However, a review of current and historical storm damage may necessitate the inclusion of other areas in the geographic scope.

A community may choose to define the geographic scope of the NYRCR Plan to include areas: where assets are most at risk; where future construction or reconstruction of existing development should be encouraged; or where key investment to improve the local economy can be instituted. The identification of more resilient areas for future development can later be reinforced in municipal comprehensive plans as well as other local regulatory requirements.

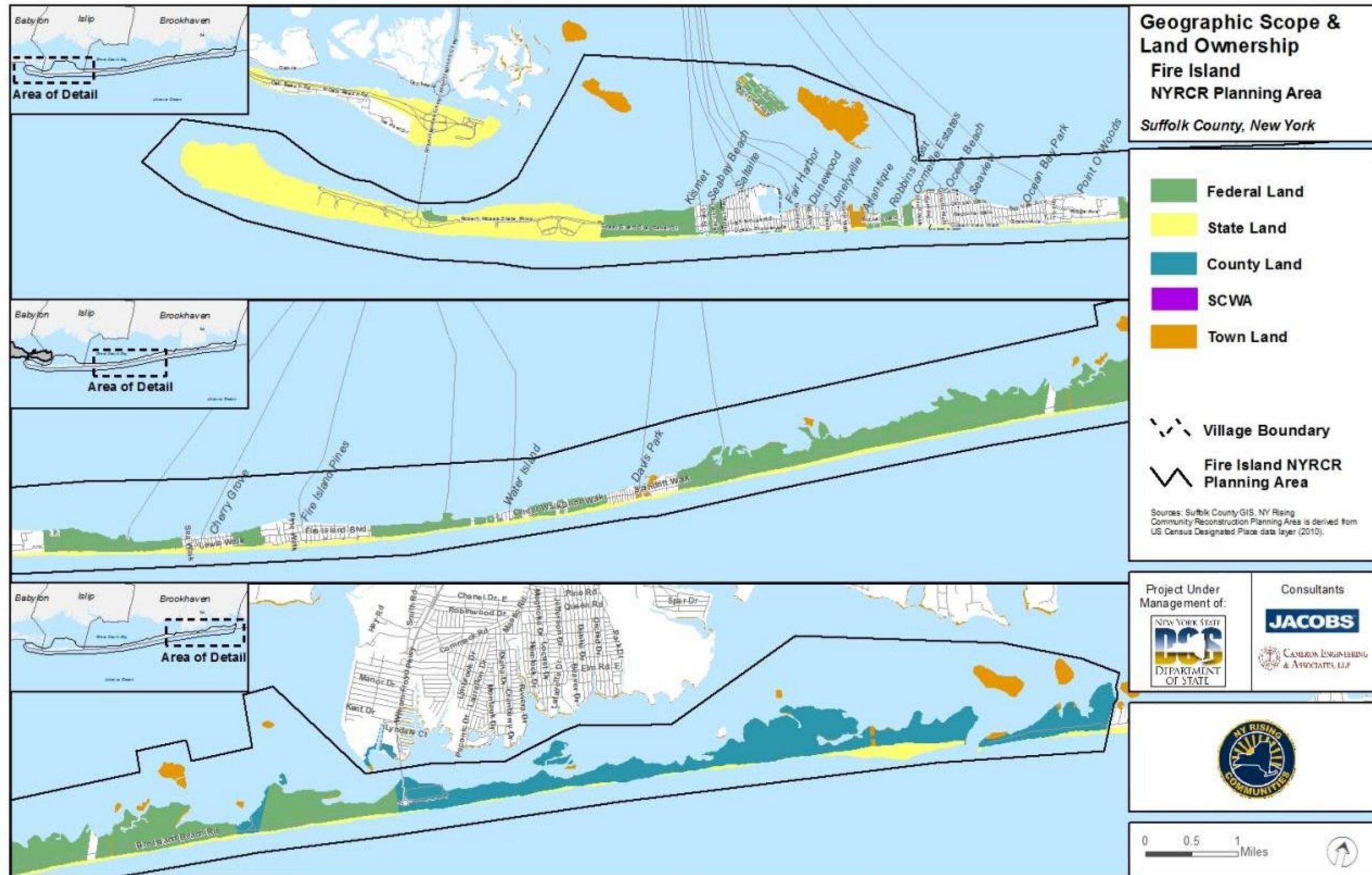
Many of localities within Suffolk County fall under various overlapping jurisdictions (i.e. city/town/village/hamlet) related to government, schools, emergency and life safety, and other municipal services. As a result, public amenities and community facilities including schools, emergency services, and DPWs fall under different government entities with some services under the jurisdiction of a Village and others under the Town umbrella. On Fire Island, the fact that the communities exist within a National Park adds another layer of jurisdiction.

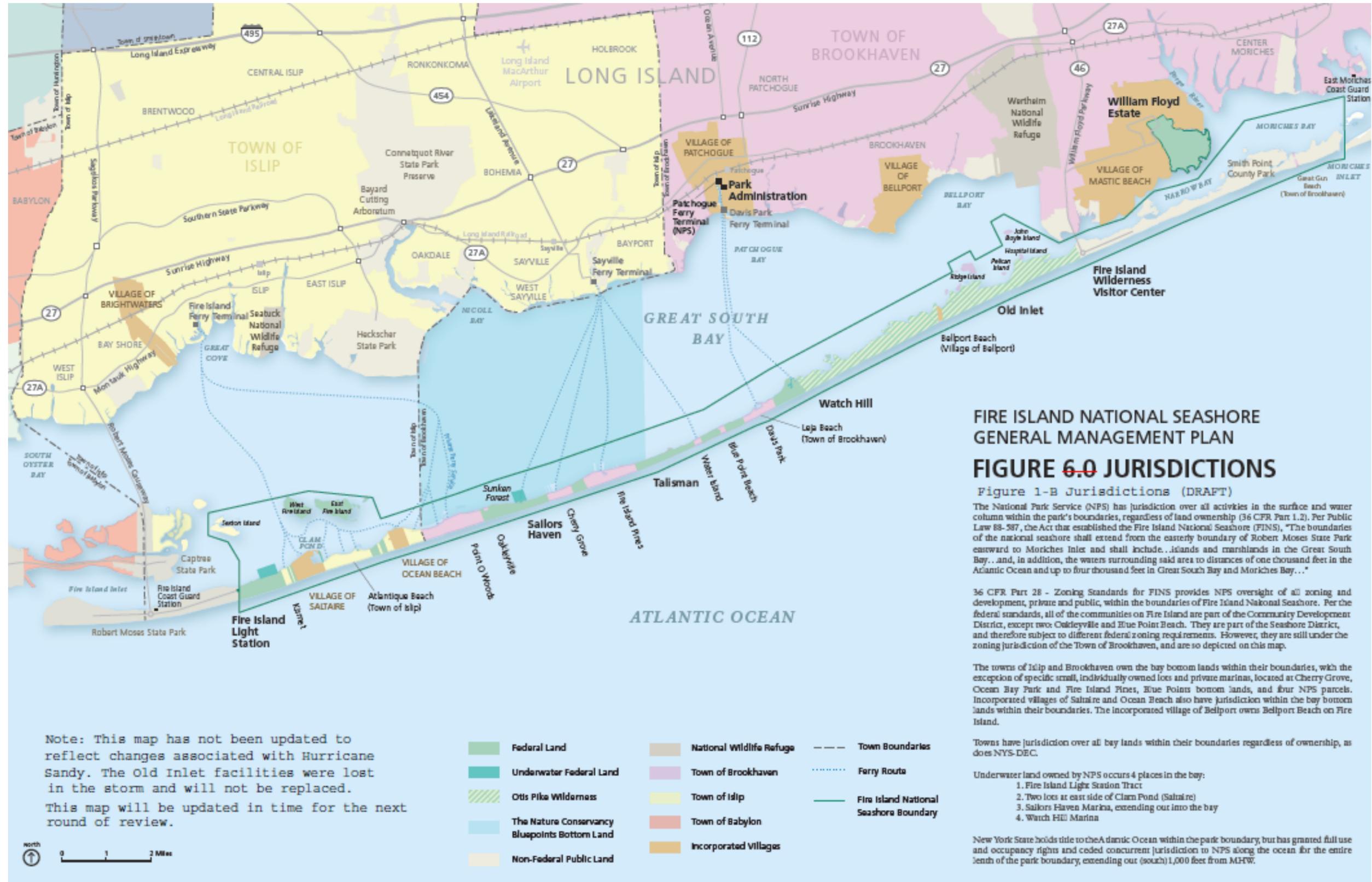
The Fire Island NYRCR Planning Area encompasses the western tip of Robert Moses State Park eastward approximately 30 miles to the municipal town boundary of Brookhaven and Southampton/Inc. Village of Westhampton Dunes including the Cupsogue Beach County Park on the east side of the Moriches Inlet.

This Fire Island NYRCR Planning Area closely coincides with the boundary of the FINS General Management Plan. With the exception of a number of bay islands within the towns of Islip and Brookhaven and the three large public parks (Robert Moses, Smith Point and Cupsogue) bracketing the beach, the bulk of the Fire Island NYRCR Planning Area lies within the boundary and jurisdiction of the Fire Island National Seashore. Within this area are all the “in-holdings” or privately-owned real estate within the outer beach portions of the Towns of Islip and Brookhaven.

For plan implementation purposes, the Fire Island NYRCR boundary will take into account, depending on the project, the building and zoning codes of two towns (Islip, Brookhaven) and two incorporated Villages (Ocean Beach and Saltaire), which are both within the Town of Islip. All zoning and building codes of these four municipalities have been somewhat standardized to the requirements of the Fire Island National Seashore. The NYRCR boundary reflects the natural and manmade geography: running from Moriches Inlet to Fire Island Inlet, which has common littoral drift (east to west sediment transport) and inlet stabilization or sediment bypass maintenance issues that can be addressed by the planning process. The maps on the following pages show the geographic scope and jurisdictional boundaries of the Fire Island NYRCR Planning Area.







6. Community Vision

Any vision for the future of Fire Island must take into account Fire Island's place on the world stage. Of the United Nations top ten urban areas of the world, New York ranks 6th. When looking at the vacation/resort/holiday areas within 90 minutes of these top ten world urban areas, a startling fact emerges: There is no place like Fire Island. No other place of quiet, splendid isolation, ocean-front beauty and peace without autos and trucks, without the cacophony of commerce and industry, within such a close distance to a world capital. To say Fire Island is a "special place" must be considered an understatement in light of this fact.

Fire Island is also egalitarian; it is not just a cloistered preserve for a limited few. It is accessible to all: some by car, some by train, by ferry, by boat, for a few hours, for a day, for a weekend, a week, a month, a season or all year round.

But the future of Fire Island is up for debate; any vision of the future must take into account that its special location makes it especially vulnerable to the unstoppable power of natural forces of wind and waves. Fire Islanders have been willing to pay their fair share of finance to maintain a protective stance against the forces of nature and surely they will continue to do so.

Development & Refinement of the Vision Statement

The development of a Community Vision Statement was one of the first activities of the Fire Island Committee because the Vision would serve as a guide throughout the remainder of the planning process. All strategies and projects identified would be checked against and adhere to the Community Vision to ensure that recommended actions do not detract from or eventually stand in the way of the community achieving its desired goals. The Community Vision should:

- Be specific enough to be meaningful, while broad enough to be inclusive,
- Highlight what is unique about the community, and
- Acknowledge an understanding of the community's vulnerability

to coastal natural hazards, with a focus on a resilient and safer future.

The vision statement was developed and refined by the Fire Island Planning Committee throughout the initial phase of the planning process. Additional input was collected at the first public meeting, held at Bay Shore-Brightwaters Library, (December 7, 2013) and the online public meeting (December 7, 2013 – December 17, 2013). Several attendees of the first public meeting provided written comments on the vision statement, with most focusing on the protective role of the barrier island and its relationship to the mainland of Long Island.

There was a strong response to Fire Island's online public meeting, which collected feedback on the Fire Island NYRCR planning process from 576 respondents. 117 respondents provided specific feedback on the vision statement. While their responses covered a wide range of issues, protection (bayfront and oceanfront) and transportation/ access were the major prevailing themes. Both of these issues encompass local and regional components, requiring action and coordination across a wide range of stakeholders. It is important to note that many respondents provided comments about their individual communities. These community-specific comments will be addressed later in the planning process, primarily through the development of needs and opportunities. The remaining 459 respondents either specifically endorsed the vision statement in its current form or provided no comment on the vision statement.

In addition, participants at both the first public meeting and the online public meeting were asked to share three words or phrases that best describe their feelings about Fire Island. These words and phrases were developed into a "word cloud" that provides a snapshot into the uniqueness of life on Fire

Island. The Fire Island NYRCR Planning Committee may use this word cloud in future promotional and informational marketing materials.

Vision Statement

To preserve and strengthen Fire Island as a resilient mosaic of vibrant and unique ocean and bay-front communities located within and working together with the Fire Island National Seashore to adapt to life on a dynamic barrier island with creativity, collaboration, consensus and determination. Fire Island is a barrier island that protects Long Island from storms while providing a sustainable community and infrastructure for residents and visitors alike, contributing to the economy of Long Island.



7. Community Assets

One critical element of the NYRCR Plan is to ensure that both reconstructed assets and new construction post-storm are more resilient against future storms. This begins with the preparation of a community asset inventory for Fire Island. The purpose of the inventory is to compile a comprehensive description of the assets located within the Fire Island NYRCR Planning Area whose loss or impairment due to weather events and/or flooding would put critical facilities and essential social, economic or environmental functions of the communities at risk.

Generally, community assets include places or entities where economic, environmental and social functions of the communities occur in addition to critical infrastructure required to support those functions. Identified assets can consist of public and privately-funded facilities and services such as schools, hospitals and medical facilities, as well as emergency services including fire and police protection. These critical community resources promote the health, safety, and general welfare of the Fire Island communities. Community assets can also include cultural, natural and recreational resources that play a critical role in a community's identity and that advance the health of the natural environment. These critical community resources promote the health, safety, and general welfare of the Fire Island communities. Aside from structures or services, another important community asset class relates to infrastructure and/or physical systems. These range from electric utilities to key transportation routes which provide access to and within a community (i.e., ferries, docks, walkways, etc). Concentrations of land uses such as those that would comprise a commercial district were also noted.

Numerous data sources were reviewed and local community and Committee feedback were used in order to identify assets within the Fire Island NYRCR Planning Area. These assets were characterized based on their location relative to risk area designations/flood hazard regions, classification as a critical or non-critical facility as well as asset class guidance provided by NYRCR documents.

Fire Island is a bit unusual because of the disparity between the exposed assets within the Fire Island NYRCR Planning Area and the exposed population. Because Fire Island is a world-class summer destination, a National park, a large State park, and two County Parks, there can be upwards of 800,000 visitors each year to the area. This requires a sizable infrastructure, but of seasonal use. Because of the nature of likely natural disasters in the NYRCR Planning Area such as wintertime nor'easters, late season hurricanes and spring/fall clashing weather systems, the small year round population measured in the hundreds is more reflective of the exposed population. In some sense, however, this year round population is even more vulnerable. The calculus of infrastructure preservation and shut-down in a time of impending disaster, and evacuation orders leaves these people without the usual infrastructure support assumed by a year round populace.

Initial Asset Inventory

The identification of known assets is an important step in developing strategies to improve the resiliency of New York Rising Communities. The mapping effort is intended to supplement the work of the local NYRCR Committees, identifying resources that may be inaccessible to the public but regulated by a public agency (such as undeveloped parklands and marshes), as well as those that may hide in plain sight—assets vital to the community's health and resilience that go unnoticed on a day-to-day basis because they only become obvious when they fail, such as boardwalks/walkways and more obscure government service offices. The assets identified through the mapping effort will be combined with the asset data provided by the Fire Island NYRCR Committee and community residents during Committee and public workshop sessions. The result will be a complete picture of not only the physical assets themselves but their value as perceived by the community.

The following thematic maps illustrate various assets located within the Fire Island NYRCR Planning Area. Map data is sourced primarily from geodatabase and shape-file resources provided by the NYSDOS and supplemented by data readily available to the public through the New York State Department of Environmental Conservation (NYS DEC). Some data sources were cross-referenced with FEMA, HAZUS data sets for New York to verify the accuracy of the federal data, although in most cases, NYSDOS data was presented.

Risk Assessment

Understanding which areas have been and will be affected by storms and other threats such as sea level rise is the first step toward understanding

what is at risk in the Fire Island NYRCR Planning Area. The three risk assessment areas – extreme, high, and moderate – depict geographic areas at risk from coastal hazards according to differences in the exposure of the landscape. Assets located in the extreme risk area are currently at risk of frequent inundation, vulnerable to erosion in the next 40 years, or likely to be inundated in the future due to sea level rise. Assets located in the high risk area are currently at infrequent risk of inundation or at future risk from sea level rise. Assets located in the moderate risk area are currently at moderate risk of inundation from infrequent events or at risk in the future from sea level rise.

Risk Assessment Area data is included to convey graphically the risk level to various government services and community resources and suggest issues for further consideration in the development of strategies and projects. Given Fire Island's level of exposure and overall vulnerability, the majority of community assets in the Fire Island NYRCR Planning Area fall (at least partially) within the extreme risk zone.

Cultural, Natural, and Recreational Resources

There are numerous regional recreational assets beginning with the parks facilities scattered along the beach, but concentrated at the ends and in the middle. The Robert Moses State Park and Smith Point County Park are accessible by vehicle unlike the rest of the Fire Island NYRCR Planning Area. Off-road vehicle use east of Robert Moses and both east and west from Smith Point County Park bring into conflict the recreational aspect of off-roading with the potential ruination of portions of the natural beachfront, fore-dune and middle-of-the-island areas and the fragile plants that hold the sand in place in these areas. However, the vehicle control points of the Fire Island National Seashore at Fire Island Lighthouse and the entrance to the Otis Pike Wilderness area near Smith Point are considered community assets for their ability to screen unauthorized vehicle traffic. Taken as a whole, Fire Island barrier beach and its ability to shield the mainland from extensive flooding and wave damage constitutes a regional asset for these mainland communities. An unusual asset for the western developed beach communities from Kismet to Point o' Woods would include the large hard-surface parking lot expanse of "Field Five" of Robert Moses state park, which has doubled as a natural disaster staging area for supplies, emergency electrical generation, construction equipment, etc.

Other important recreational assets for Fire Island include sheltered marinas and boat basins. These are present at various locations along the beach and are far less vulnerable to ice damage. Winter and early spring



ice melt after especially cold winter freezes, combined with northeast winds, can and does send floating ice chunks crashing into exposed marine facilities on the bayside of the beach in locations where no back bay wetlands or natural shoreline exist.

Parkland Resources

Asset/Resource	Risk Assessment Zone(s)
Robert Moses State Park	Moderate, High, and Extreme
Fire Island National Seashore	Moderate, High, and Extreme
Smith Point County Park	Moderate, High, and Extreme
Cupsoque County Park	High and Extreme

Regional natural/cultural/historic sites which are identified as assets in the Fire Island NYRCR Planning Area include the Fire Island Lighthouse, Sunken Forest, Flight 800 memorial, and the USCG station.

Natural Resources

Asset/Resource	Risk Assessment Zone(s)
Inland Freshwater Wetlands	Moderate, High, and Extreme
Great South Bay Underwater Lands (Bluepoints)	Extreme and NA
Webster Preserve	Extreme
Libutti Preserve	Extreme
Natural Heritage Communities: Maritime Beach (length of island) and Maritime Dunes (western end of island)	Extreme

One National Register-Listed resource is located in the Fire Island NYRCR Planning Area. The Fire Island Light Station lighthouse is located within the Fire Island National Seashore.

National Register Listed Historic Resources

Asset/Resource	Risk Assessment Zone(s)
Fire Island Light Station	High

Health and Social Services: Life Safety

Health and Social Services: Life Safety includes fire protection, police services, hospitals, and emergency operations facilities.

There are five Emergency Operations Facilities in Suffolk County. These facilities would coordinate emergency services during an emergency. Two of these facilities are along the South Shore of Long Island: the Babylon Town Civil Defense facility is located directly north of the Village of Lindenhurst NYRCR Planning Area and the Islip Public Safety facility is located between the West Islip and the Oakdale/West Sayville NYRCR Planning Areas.

The Fire Island NYRCR Planning Area has one police station, the Ocean Beach Police Department, within it. The building housing the police department is located in the extreme risk area.

The Fire Island NYRCR Planning Area has nine Fire Stations within it. Seven fire stations are located in the extreme Risk Assessment Zone. Davis Park HQ Fire Station and the Cherry Grove Fire Station are located in the high Risk Assessment Zone.

There are no hospitals located within the Fire Island NYRCR Planning Area. The closest hospital, Good Samaritan Hospital Medical Center, is located in West Islip.

Police Stations

Asset/Resource	Risk Assessment Zone(s)
Ocean Beach Police Department	Extreme

Fire Stations

Asset/Resource	Risk Assessment Zone(s)
Fair Harbor HQ Fire Station	Extreme
Ocean Beach HQ Fire Station	Extreme
Ocean Bay Park HQ Fire Station	Extreme
Kismet HQ Fire Station	Extreme
Point O Woods Fire Station	Extreme
Saltaire HQ Fire Station	Extreme
Davis Park HQ Fire Station	High
Cherry Grove Fire Station	High
Fire Island Pines Fire Station	Extreme

Health and Social Services: Administration and Education

Community assets reviewed in this category serve a variety of public functions, from health treatment facilities to general purpose shelters in public schools, and post offices to town halls. During a storm event, these facilities may potentially serve as critical disaster response and recovery centers, the identification of which is essential to future disaster management and preparedness.

One federal non-recreation area, the US Coast Guard Station, is located in the Fire Island NYRCR Planning Area in a non-risk zone.

Federal Non-Recreation Area

Asset/Resource	Risk Assessment Zone(s)
US Coast Guard Station	N/A

The Woodhull School is located at Surf Road and Midway Walk in a moderate to high risk zone of Ocean Beach.

Schools

Asset/Resource	Risk Assessment Zone(s)
Woodhull School	Moderate and High

One state-owned building is located within a moderate risk zone near the entrance of the Robert Moses State Park.

State-owned Buildings and Properties

Asset/Resource	Risk Assessment Zone(s)
Main Office Parks & Recreation	Moderate

The Fire island NYRCR Planning Area is served by two village halls, located in Saltaire and Ocean Beach. Both are located along the northern Fire Island shoreline inside moderate to extreme risk zones.

Town/Village/City Hall

Asset/Resource	Risk Assessment Zone(s)
Village of Ocean Beach	Moderate, High, and Extreme
Village of Saltaire	Moderate, High, and Extreme



Infrastructure: Transportation

Transportation infrastructure related to the Fire Island NYRCR Planning Area is focused on water-borne modes of transit including ferries and water taxis. Year round ferry service feeding Fire Island emanates from Bay Shore, Sayville and Patchogue. The walkable distance between the Bay Shore train station and the ferries going to most of the developed communities on the beach, make Fourth Avenue/Maple Avenue in Bay Shore seasonally one of the busiest pedestrian corridors in all of Suffolk County. In Sayville, part of the ferry infrastructure includes an extensive livery service from the train station to the ferry docks on Brown’s River, because the distance is not very walkable. In Patchogue, one train-ferry connection of a mere 100 yards distance from RR station to national park service terminal, makes this connection the most popular for visitors and campers heading for the Fire Island National Seashore Watch Hill facility. Ferry landing points are indicated below.

Ferry Terminals

Asset/Resource	Risk Assessment Zone(s)
Ocean Bay Park	Extreme
Ocean Beach	Extreme
Atlantique	Extreme
Fairharbor	Extreme
Dunewood	Extreme
Fire Island Pines	Extreme
Sunken Forest	Extreme

The state data review indicated that the following bridges were designated as in poor condition (<https://www.dot.ny.gov/main/bridgedata>).

Bridges in Poor Condition

Asset/Resource	Risk Assessment Zone(s)
William Floyd Parkway Ext. crossing Narrow Bay (BIN # 3300770)	Extreme
Robert Moses Causeway (908J) at Fire Island Inlet (BIN # 1058770)	Extreme



Infrastructure: Utilities

The utilities in the Fire Island NYRCR Planning Area comprise water supply facilities – for drinking water pumping and treatment – and communications towers. Almost all of these water supply facilities are situated in Extreme and High Risk Assessment Zones. Water and electrical power lines, though extant throughout the developed portions of the Fire Island NYRCR Planning Area, have not been mapped and quantified here.

Infrastructure Resources

Asset/Resource	Risk Assessment Zone(s)
14 utility properties (including 1 sewage treatment plant, 6 drinking water plants, 17 drinking water wells, 1 microwave tower)	Extreme
17 utility properties (including 8 drinking water plants, 17 drinking water wells)	High
1 utility property (including 1 drinking water plant, 2 drinking water wells)	Moderate

Housing

From the early 1970’s to the present day, the National Flood Insurance Program has been a major asset in bolstering real estate values of private property in the Fire Island NYRCR Planning Area. The past four decades have seen the construction of large and elegant homes as opposed to the simple beach shacks seen on the beach prior to that time. Many of these homes have been retro-fitted with HVAC, which has required a rather dramatic alteration of the electrical cabling going from the mainland to the beach.

There are approximately 3,963 single-family, 18 two-to-three-family and 165 multi-family structures that are at-risk in the Fire Island NYRCR Planning Area. The remaining structures which are not within a risk assessment zone, however, are typically directly adjacent to one. In addition, residential structures within the Fire Island NYRCR Planning Area are comprised mostly of single-family homes (or 96 percent of all residential structures). It is important to note that there are approximately 165 at-risk multi-family residential structures in the Fire Island NYRCR Planning Area.

Housing Resources

Asset/Resource	Risk Assessment Zone(s)
2,369 single-family, 9 two-three-family, 117 multi-family structures	Extreme

1,453 single-family, 7 two-three-family, 46 multi-family structures	High
141 single-family, 2 multi-family units	Moderate

Economic Centers

All of the commercial properties within the Fire Island NYRCR Planning Area are located within or adjacent to a risk assessment zone. Of the 126 at-risk commercial properties within the Fire Island NYRCR Planning Area, 94 and 31 are located in Extreme and High Risk Assessment Zones, respectively. One commercial property is located in a Moderate Risk Zone.

Economic Resources

Asset/Resource	Risk Assessment Zone(s)
94 commercial properties	Extreme
31 commercial properties	High
1 commercial property	Moderate

Initial Asset Inventory: NYRCR Committee and Public Outreach Contributions

The initial plan was to have the GIS data driven maps discussed previously serve as a base for the asset inventory work of the NYRCR Committees and community residents; however, the urgency of the New York Rising Community Reconstruction Project required that the NYRCR Committees begin assessing their community’s needs and opportunities before the GIS data was available. The results of this approach proved to be beneficial: without a basemap of pre-identified assets, the NYRCR Committee and community residents felt free to identify all manner of assets that were vital to the functioning and identity of their community. As a result, the NYRCR Committee and community input maps call out typical assets, such as police and fire stations, but also important community features, such as popular restaurants and meeting halls that serve as community centers. This latter category is vitally important as the services of these community centers have established themselves as resources during times of crisis, centers for normalizing and stabilizing community identity in the aftermath, and places of celebration during good times.

The Fire Island NYRCR Committee and community input maps of assets are shown on the following pages. This data will be reconciled with the GIS data to complete the whole picture of assets, needs, and opportunities in the Fire Island NYRCR Planning Area.

NYRCR: Fire Island (1 of 4) National Register Historic Resources, Natural Resources, and Recreational Areas



NYRCR: Fire Island (2 of 4) National Register Historic Resources, Natural Resources, and Recreational Areas



NYRCR: Fire Island (4 of 4) National Register Historic Resources, Natural Resources, and Recreational Areas



Legend

- Rivers
- Federal Recreation Areas
- State Parks
- Tidal Marshes
- Long Island Railroad Station
- Nature Preserves
- Natural Heritage Communities
- County Recreation Areas
- Freshwater Wetlands
- Historic Resources
- Fire Island (4 of 4) Planning Area
- Other NYRCR Planning Areas
- Long Island Railroad

Risk Assessment Area

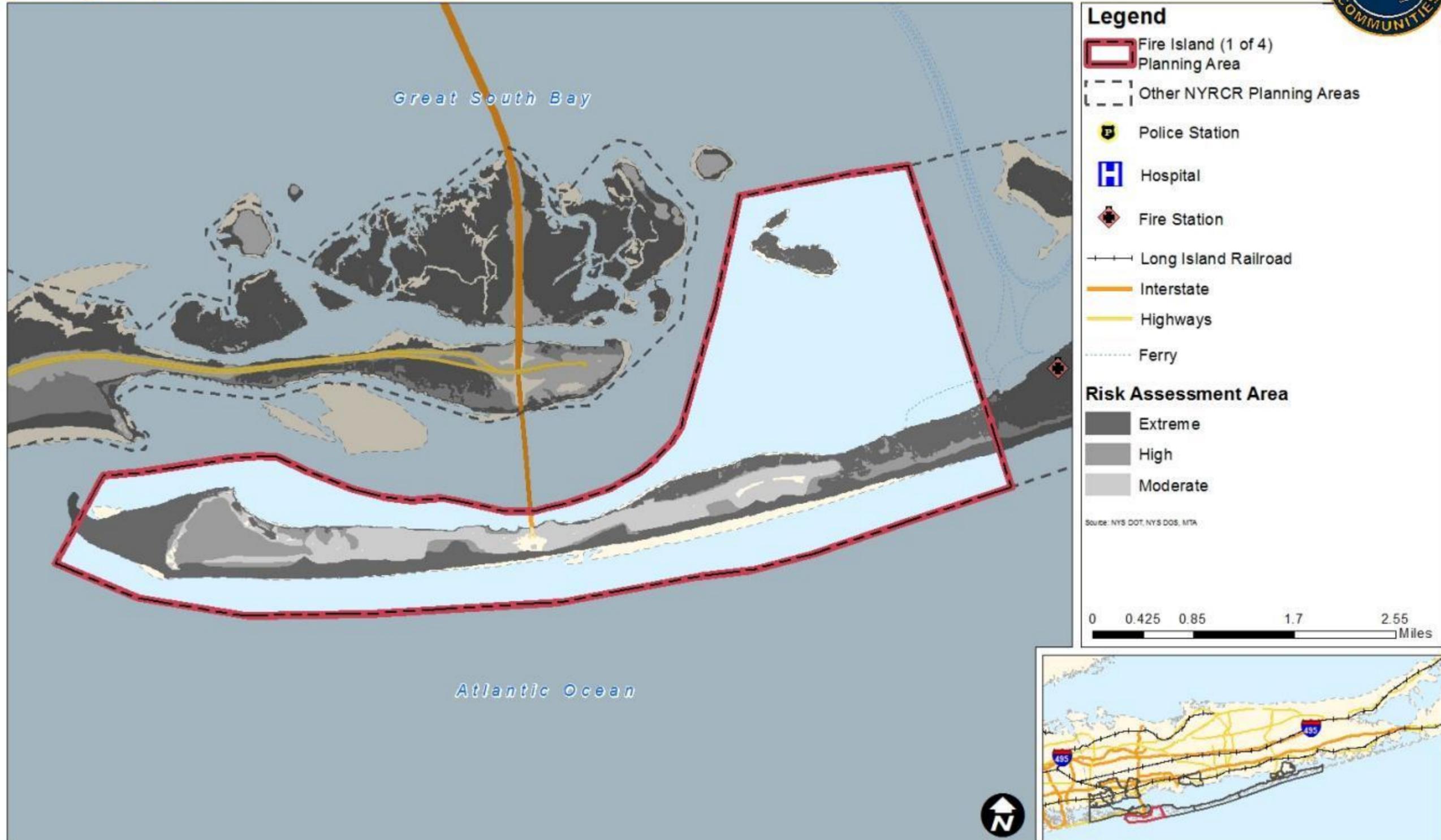
- Extreme
- High
- Moderate

Source: NYS DOT, NYS DOS, MTA

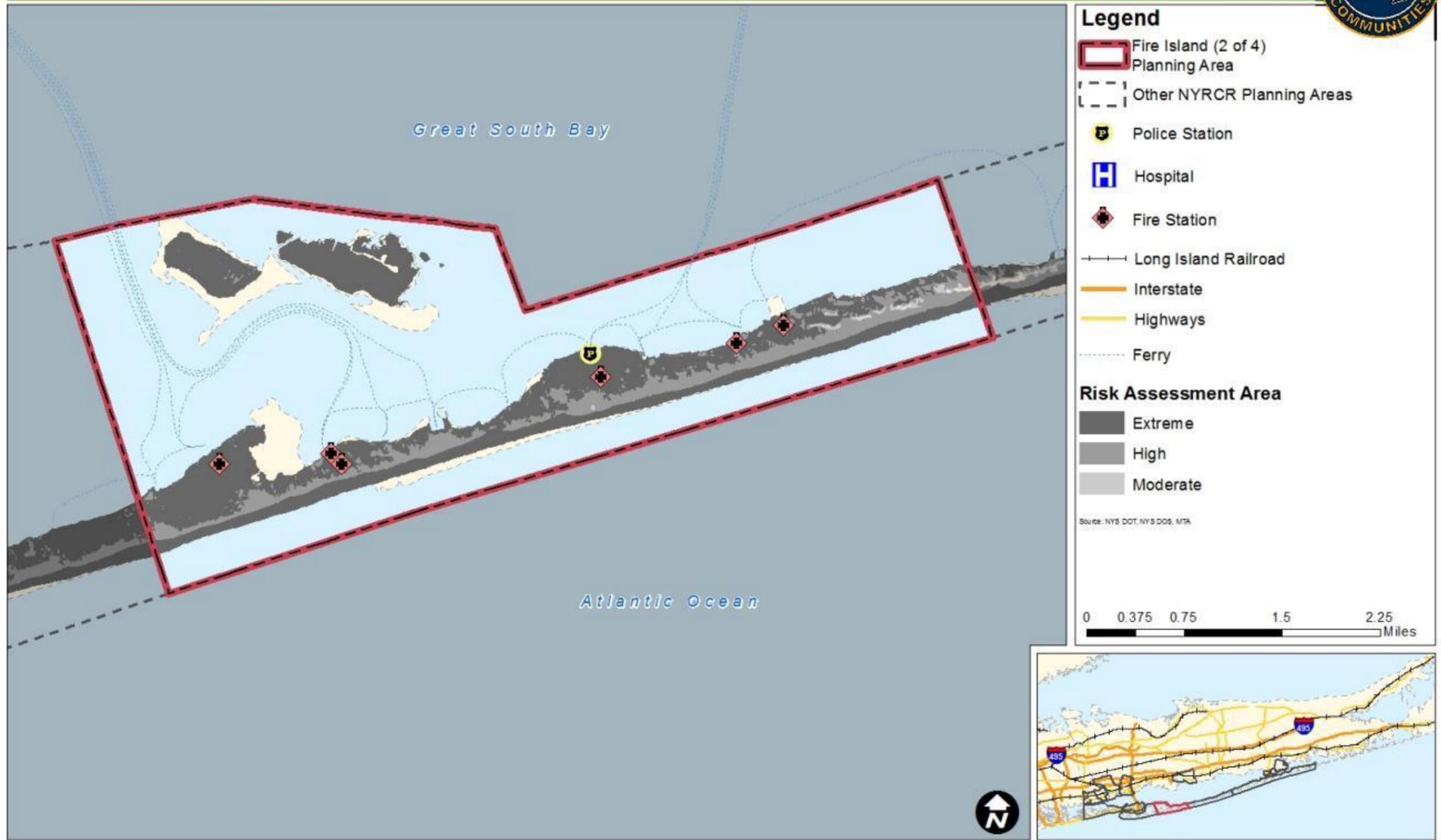
0 1.25 2.5 5 Miles



NYRCR: Fire Island (1 of 4) Emergency Services

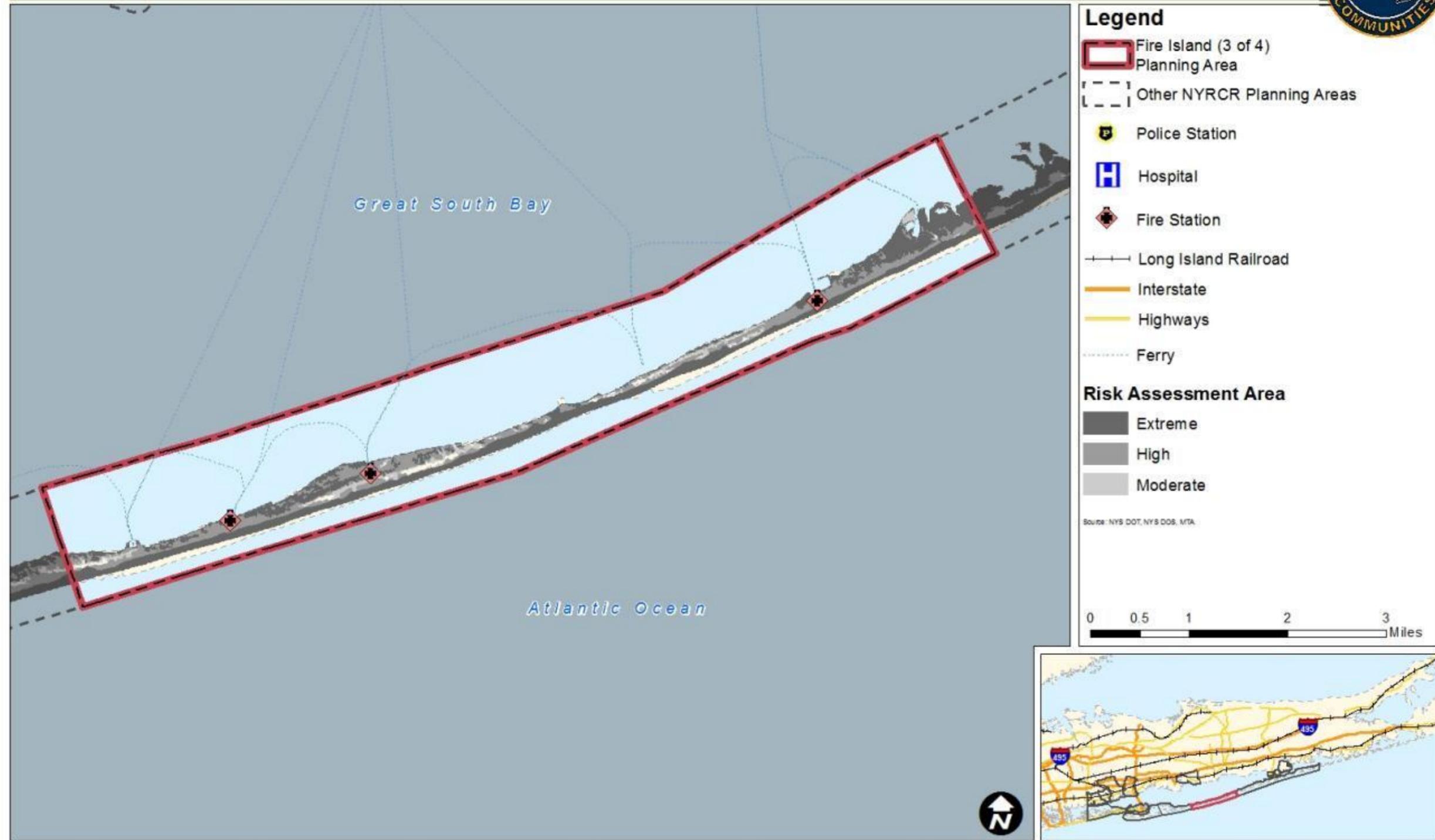


NYRCR: Fire Island (2 of 4) Emergency Services



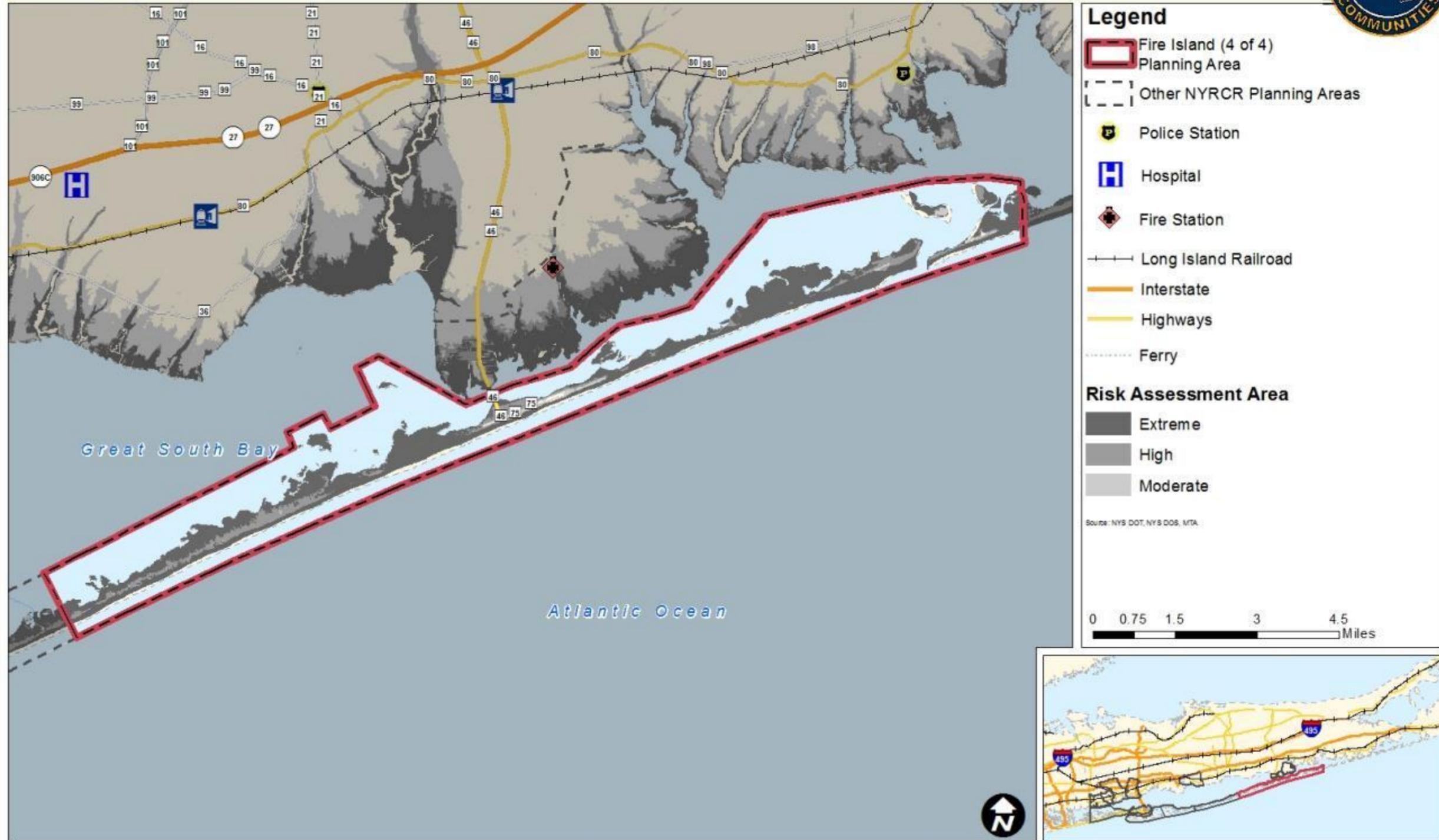


NYRCR: Fire Island (3 of 4) Emergency Services





NYRCR: Fire Island (4 of 4) Emergency Services





NYRCR: Fire Island (1 of 4)

Health and Social Services: Administration and Education



NYRCR: Fire Island (2 of 4)

Health and Social Services: Administration and Education



Legend

- ★ Chemical Dependence Treatment Sites
- ▭ Extension Clinics
- ▭ NYS Facilities & Offices
- * NYS OPWDD Locations
- ◇ Post Offices
- ✝ Religious Institutions
- ▲ Schools
- ▭ Shelters
- ▭ State-owned Properties
- ▭ Town/Village/City Halls
- ▭ Veteran's Affairs Facilities
- ▭ Federal Non-Recreation Area
- 🚆 Long Island Railroad Station
- ▭ Fire Island (2 of 4) Planning Area
- ▭ Other NYRCR Planning Areas
- +— Long Island Railroad

Risk Assessment Area

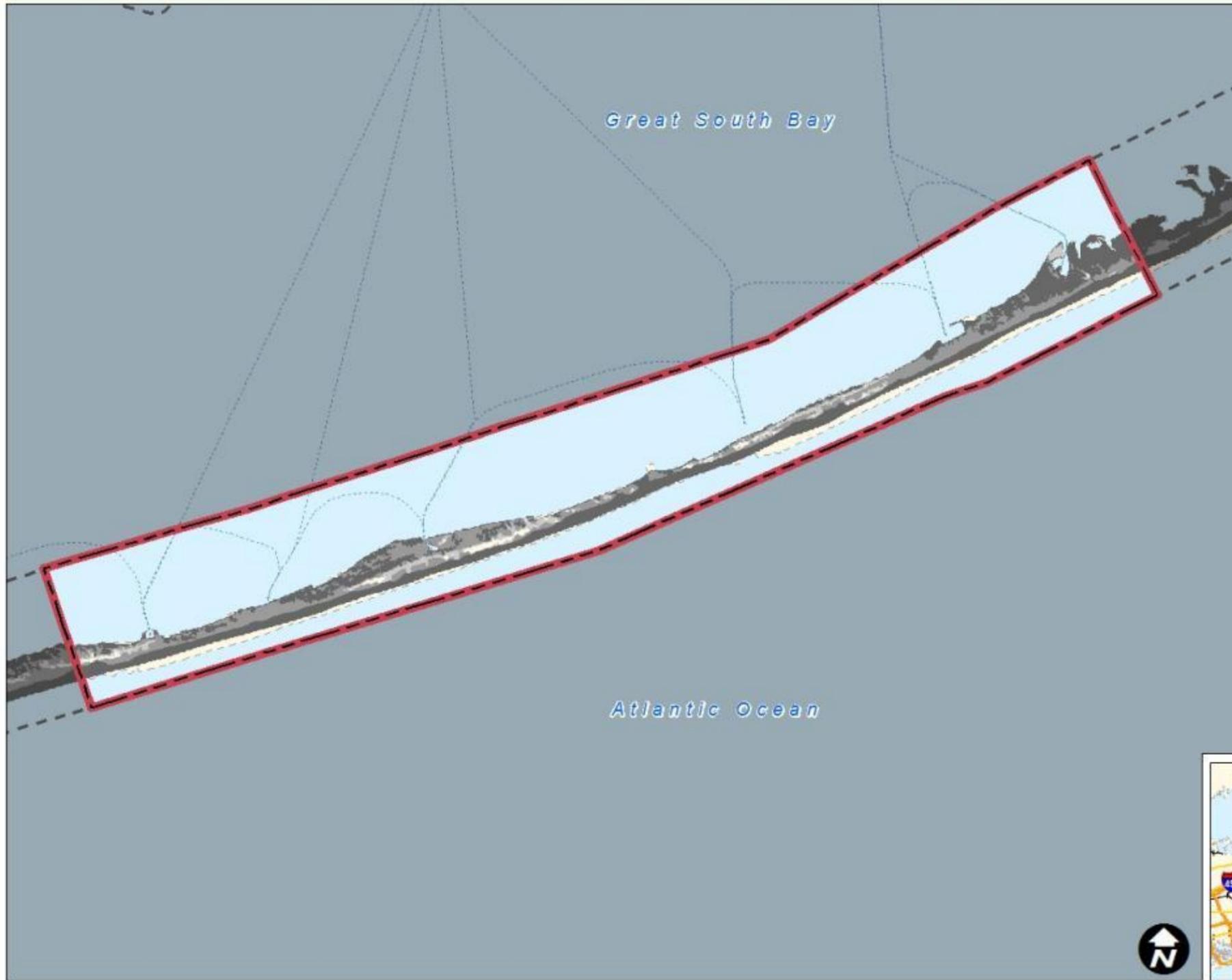
- ▭ Extreme
- ▭ High
- ▭ Moderate

Source: NYS DOT, NYS DOS, MTA

0 0.375 0.75 1.5 2.25 Miles



NYRCR: Fire Island (3 of 4) Health and Social Services: Administration and Education



Legend

- ★ Chemical Dependence Treatment Sites
- 🏠 Extension Clinics
- 🏢 NYS Facilities & Offices
- ✳️ NYS OPWDD Locations
- 📮 Post Offices
- 🏪 Religious Institutions
- 🎓 Schools
- 🏠 Shelters
- 🏠 State-owned Properties
- 🏛️ Town/Village/City Halls
- 🏠 Veteran's Affairs Facilities
- 🏠 Federal Non-Recreation Area
- 🚉 Long Island Railroad Station
- 📐 Fire Island (3 of 4) Planning Area
- 📐 Other NYRCR Planning Areas
- 🚉 Long Island Railroad

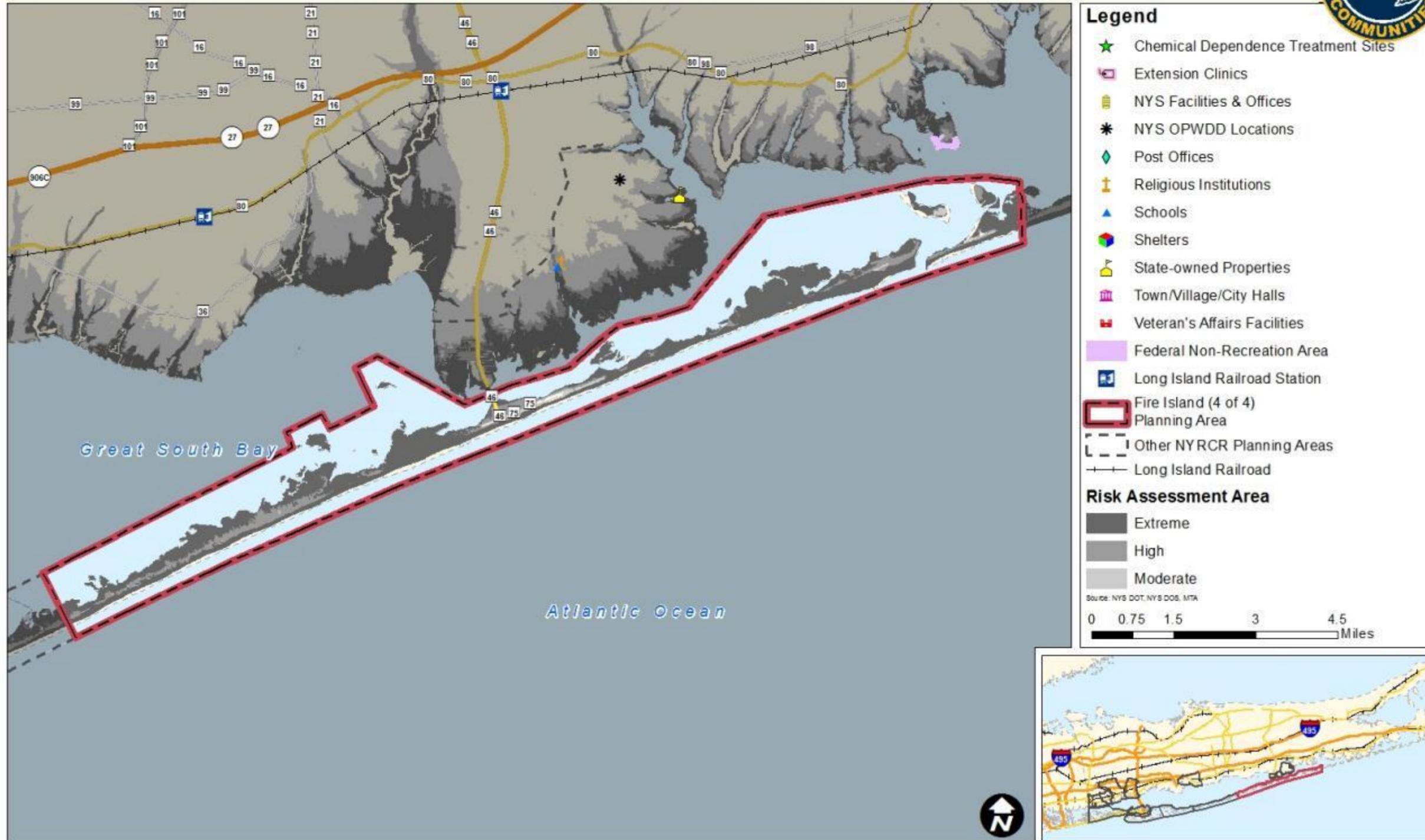
Risk Assessment Area

- 🟤 Extreme
- 🟡 High
- 🟠 Moderate

Source: NYS DOT, NYS DOS, MTA



NYRCR: Fire Island (4 of 4) Health and Social Services: Administration and Education



NYRCR: Fire Island (1 of 4) Transportation Assets



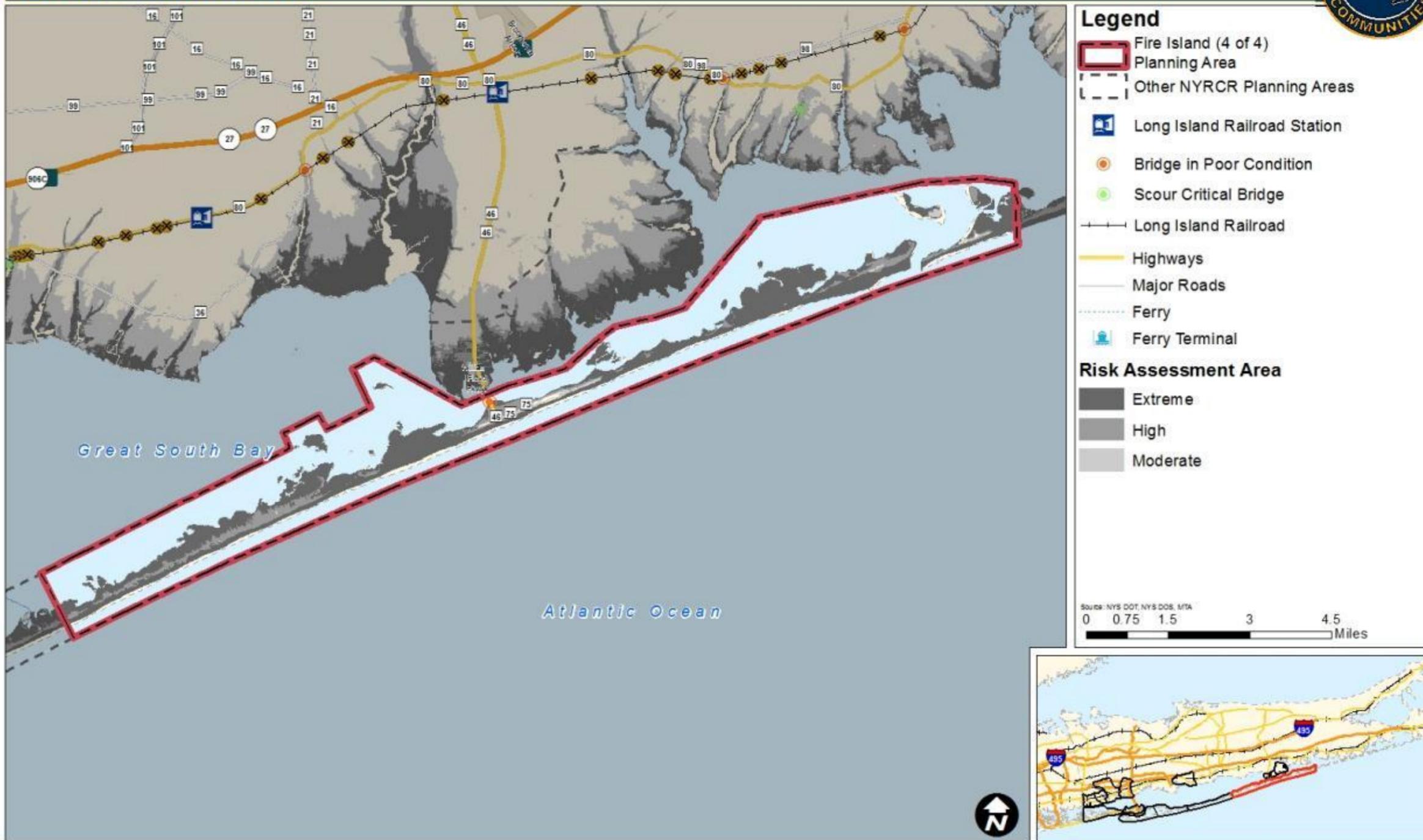
NYRCR: Fire Island (2 of 4) Transportation Assets



NYRCR: Fire Island (3 of 4) Transportation Assets



NYRCR: Fire Island (4 of 4) Transportation Assets

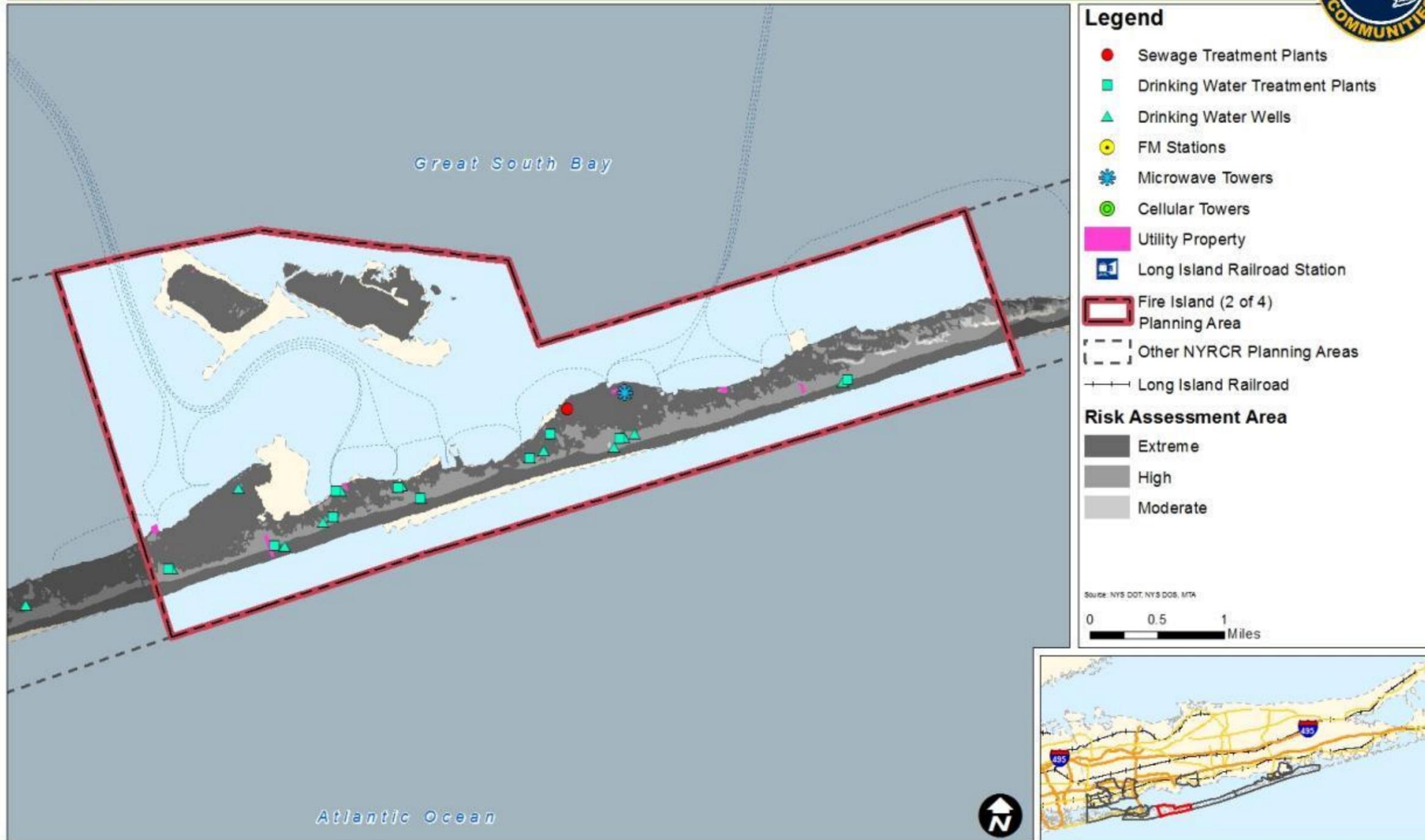


NYRCR: Fire Island (1 of 4) Utilities

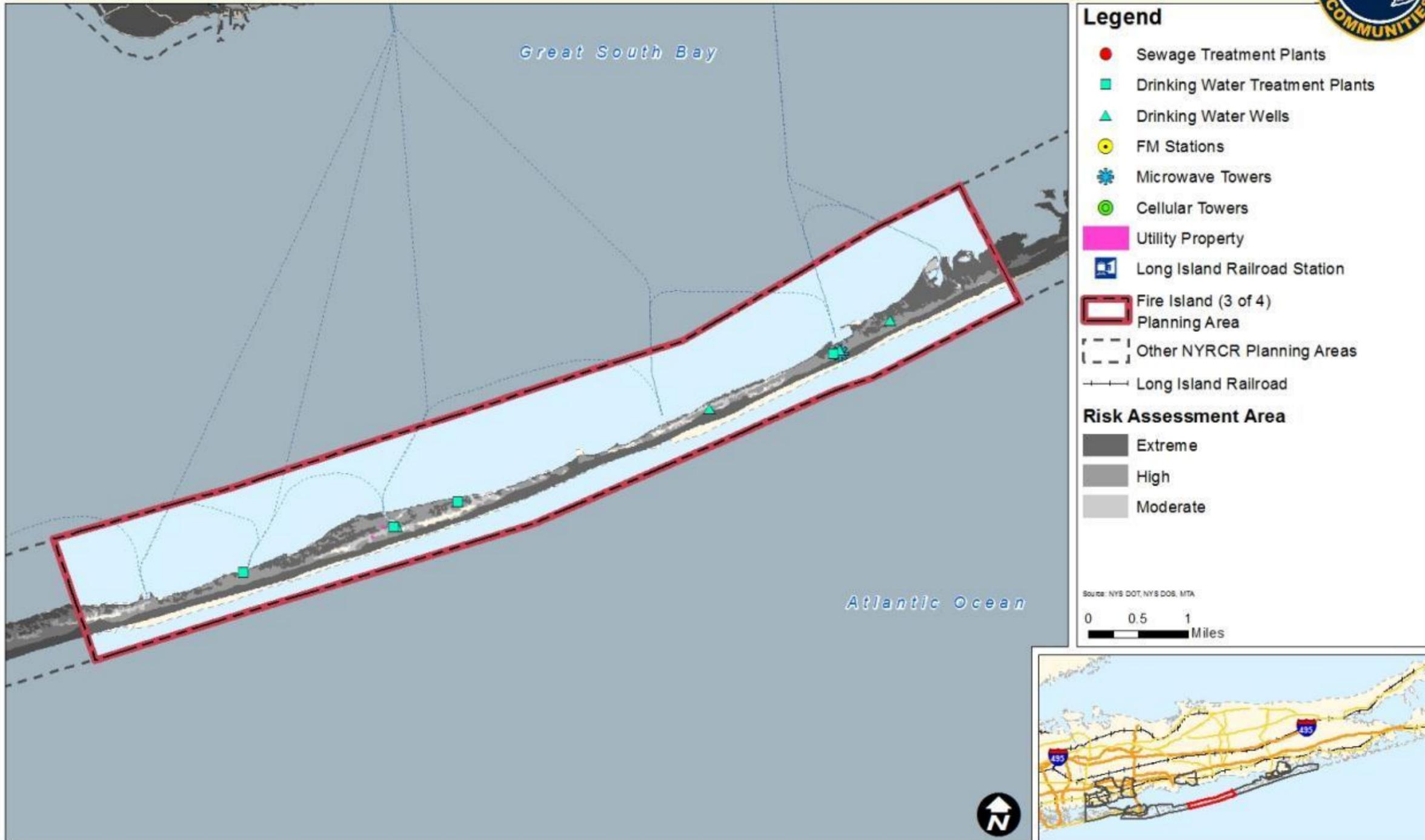




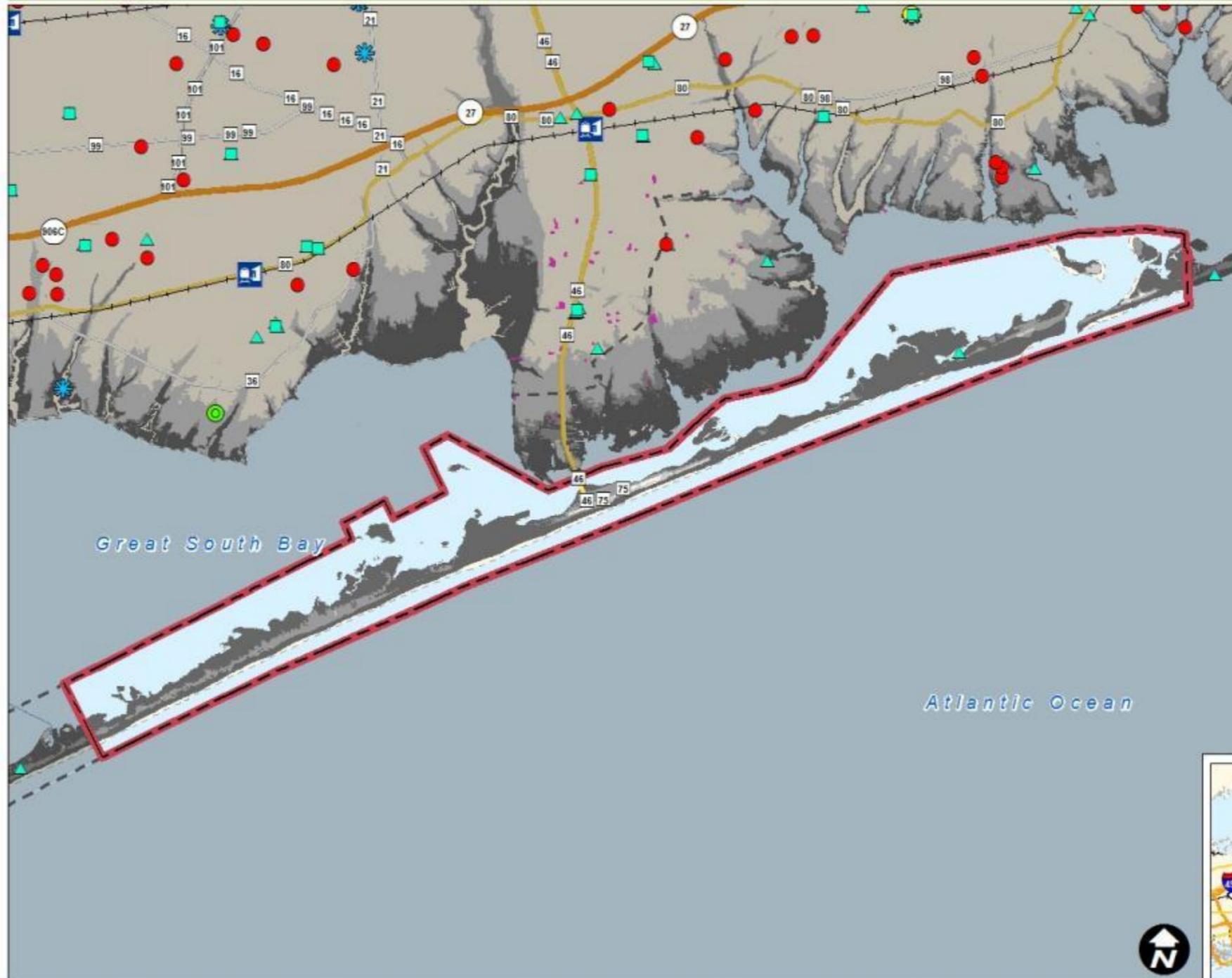
NYRCR: Fire Island (2 of 4) Utilities



NYRCR: Fire Island (3 of 4) Utilities



NYRCR: Fire Island (4 of 4) Utilities



Legend

- Sewage Treatment Plants
- Drinking Water Treatment Plants
- ▲ Drinking Water Wells
- FM Stations
- ★ Microwave Towers
- Cellular Towers
- Utility Property
- Long Island Railroad Station
- ▭ Fire Island (4 of 4) Planning Area
- ▭ Other NYRCR Planning Areas
- Long Island Railroad

Risk Assessment Area

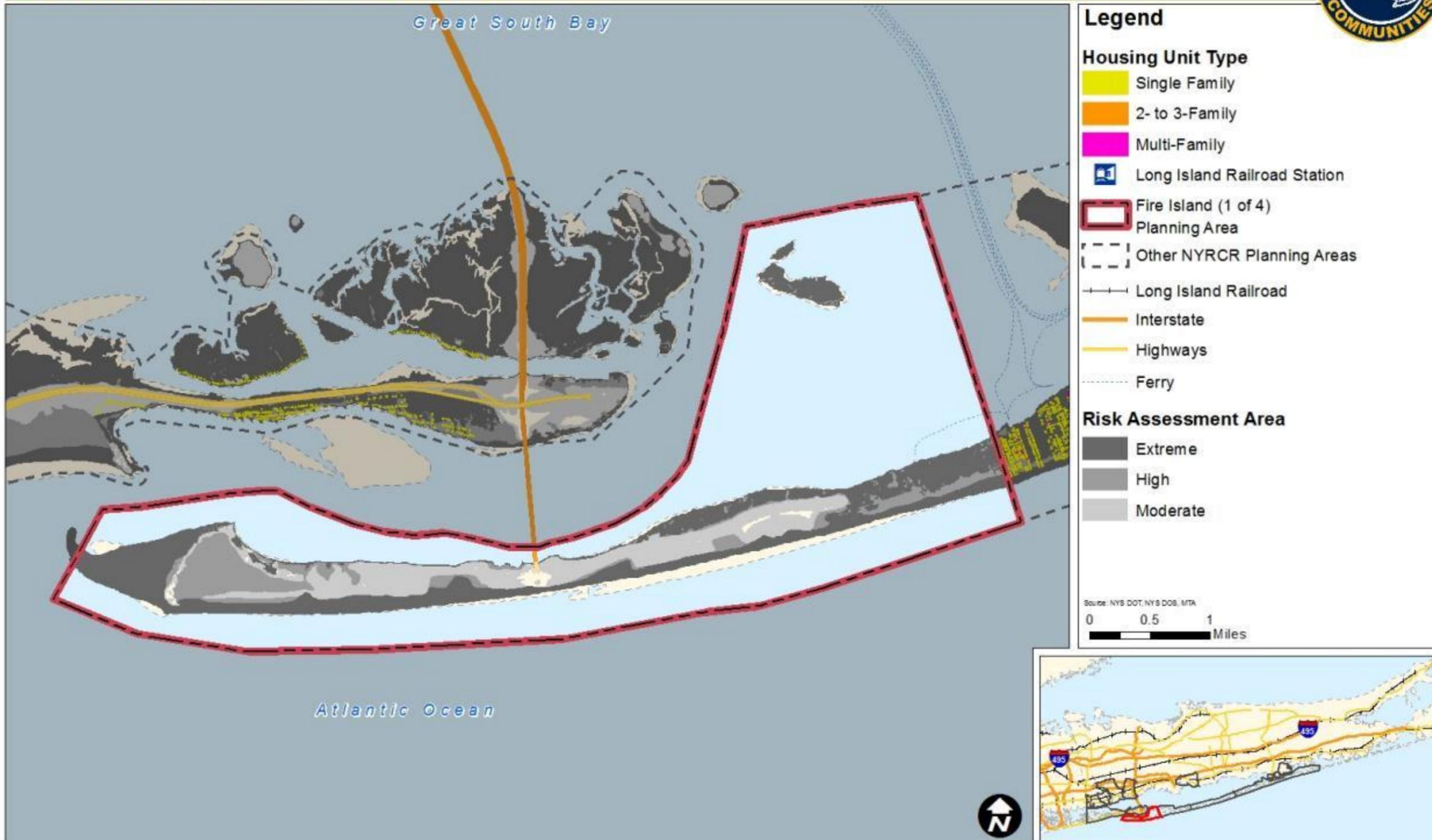
- Extreme
- High
- Moderate

Source: NYS DOT, NYS DOS, MTA

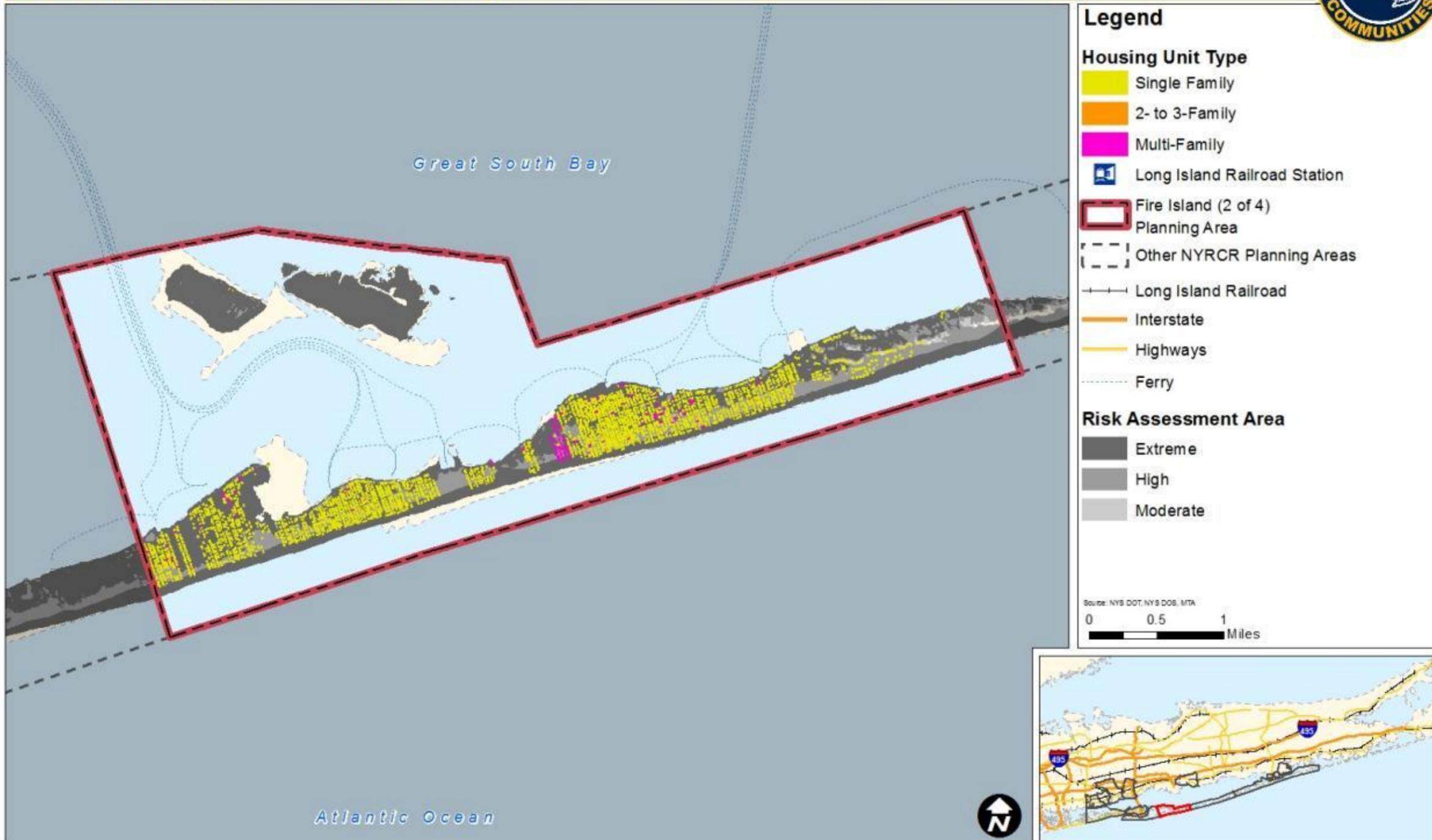
0 0.5 1 Miles



NYRCR: Fire Island (1 of 4) Housing: Single- and Multi-Family



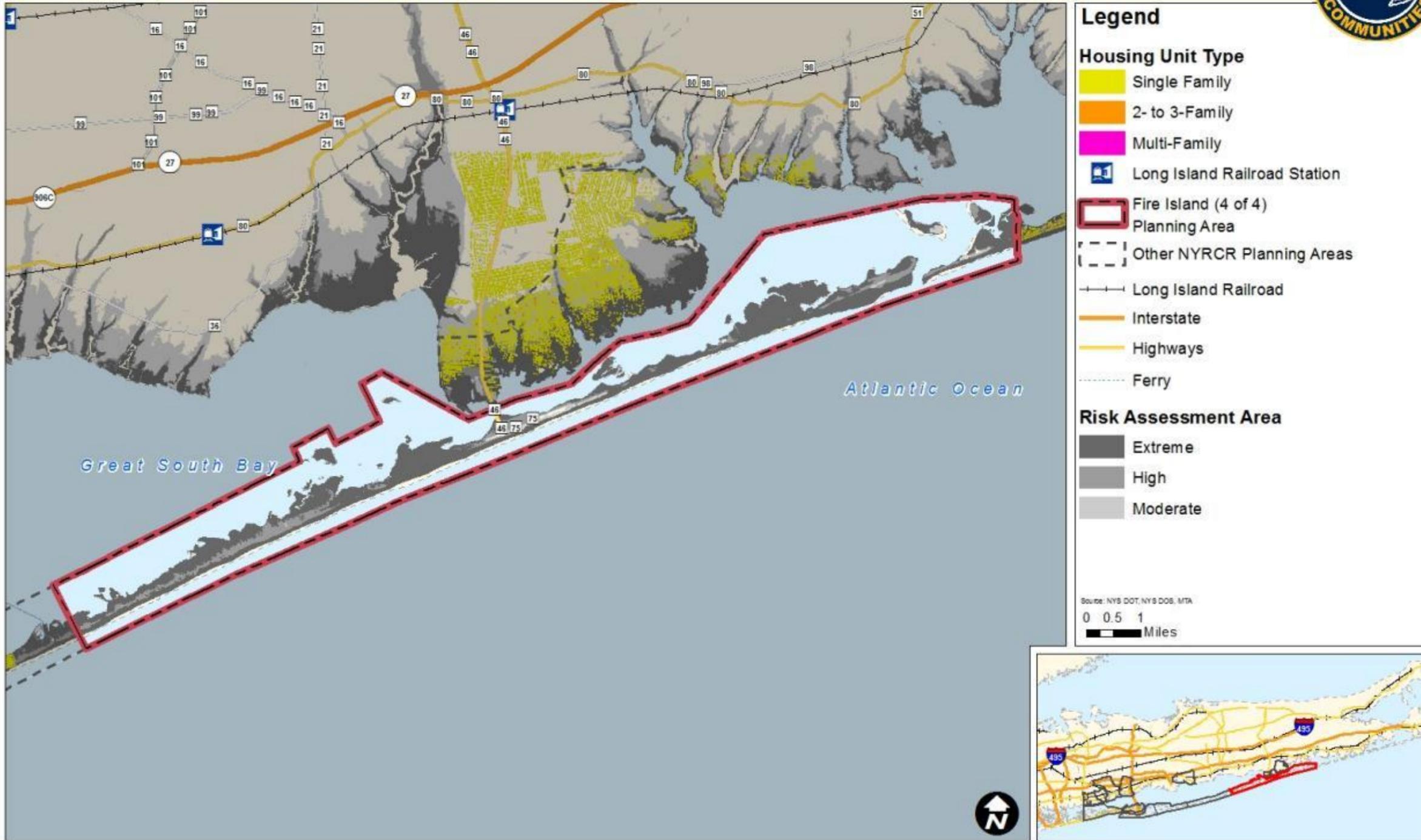
NYRCR: Fire Island (2 of 4) Housing: Single- and Multi-Family



NYRCR: Fire Island (3 of 4) Housing: Single- and Multi-Family



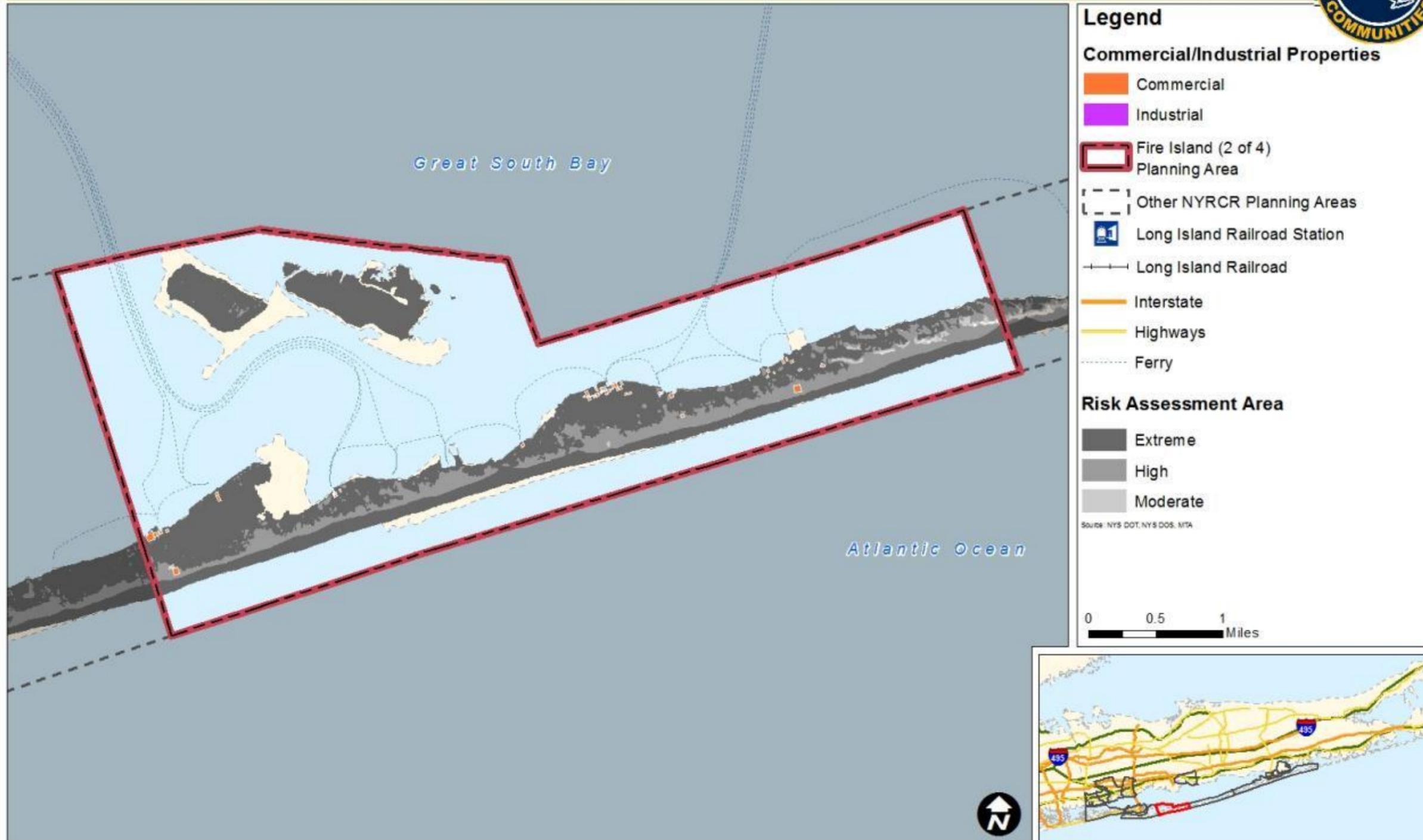
NYRCR: Fire Island (4 of 4) Housing: Single- and Multi-Family



NYRCR: Fire Island (1 of 4) Economic Assets: Commercial and Industrial Properties

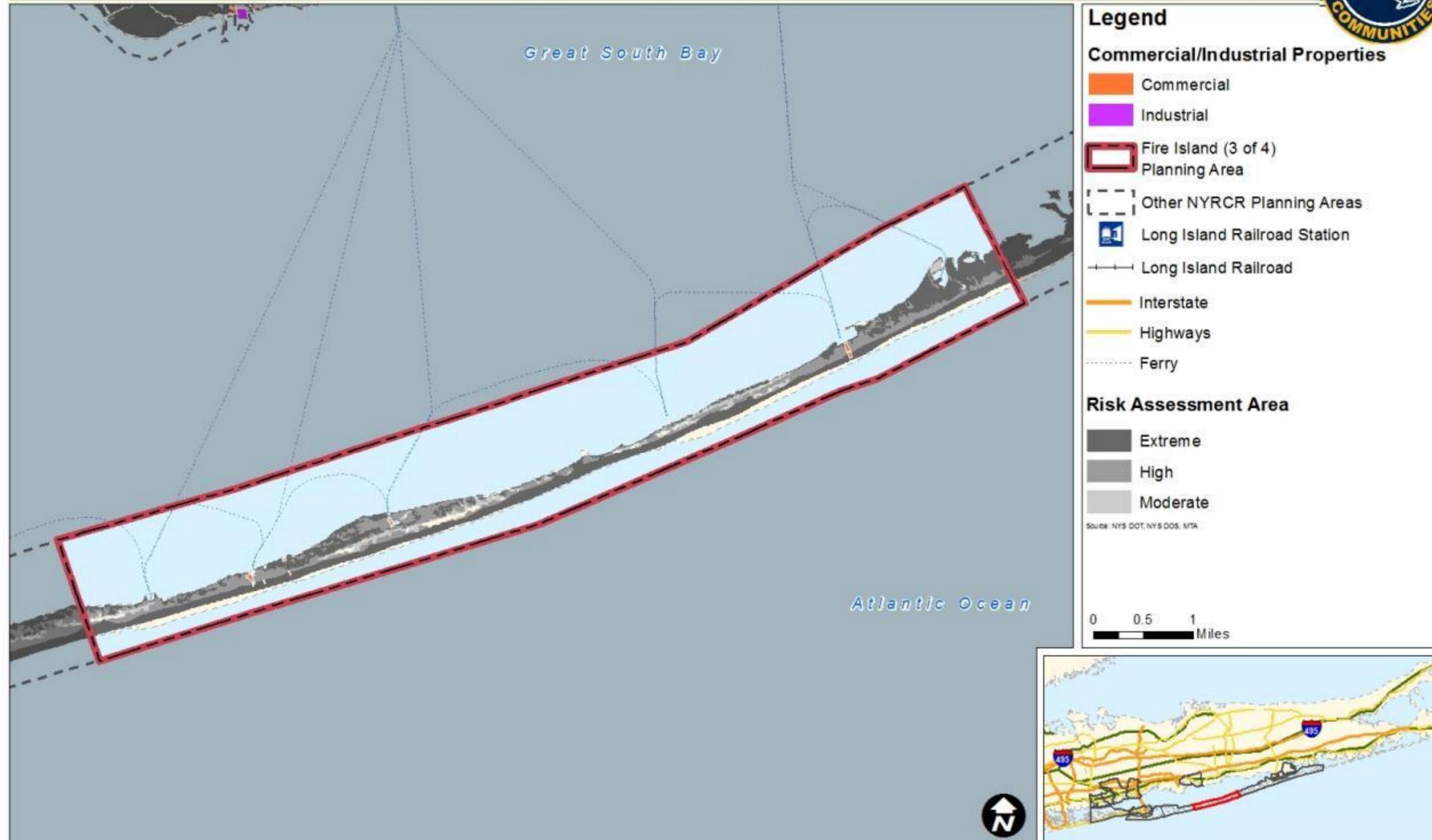


NYRCR: Fire Island (2 of 4) Economic Assets: Commercial and Industrial Properties

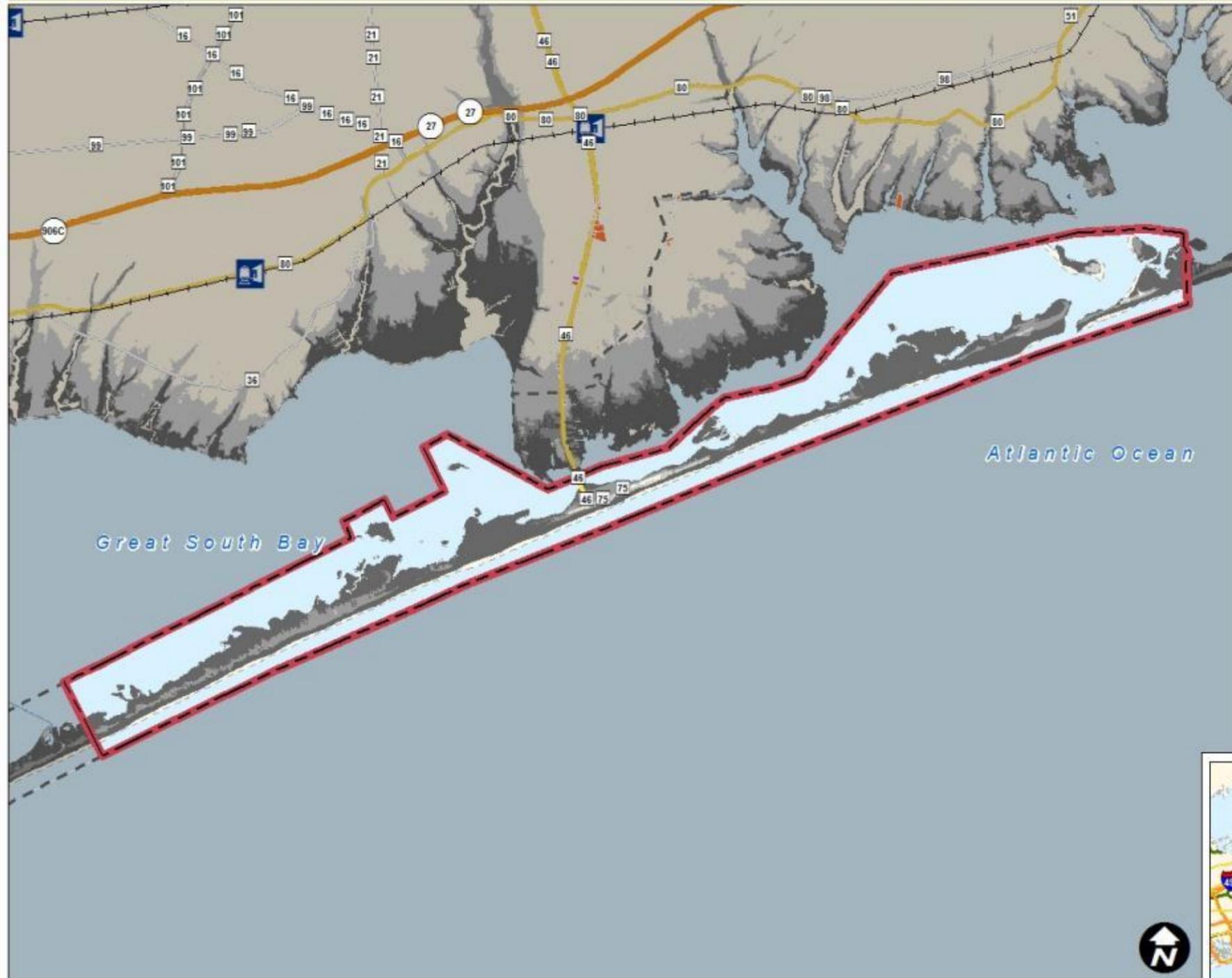




NYRCR: Fire Island (3 of 4) Economic Assets: Commercial and Industrial Properties



NYRCR: Fire Island (4 of 4) Economic Assets: Commercial and Industrial Properties



Legend

Commercial/Industrial Properties

- Commercial
- Industrial
- Fire Island (4 of 4) Planning Area
- Other NYRCR Planning Areas
- Long Island Railroad Station
- Long Island Railroad
- Interstate
- Highways
- Ferry

Risk Assessment Area

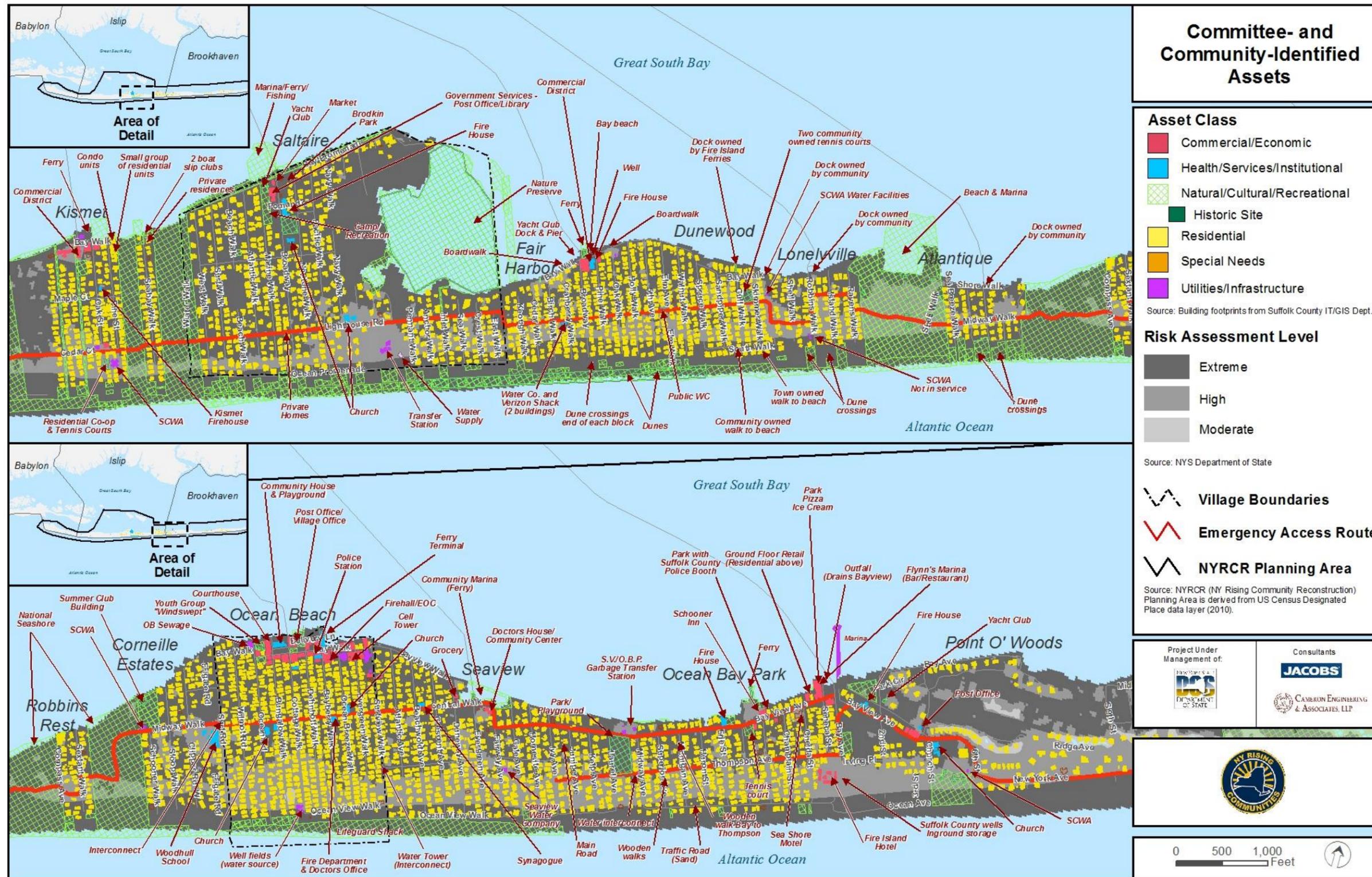
- Extreme
- High
- Moderate

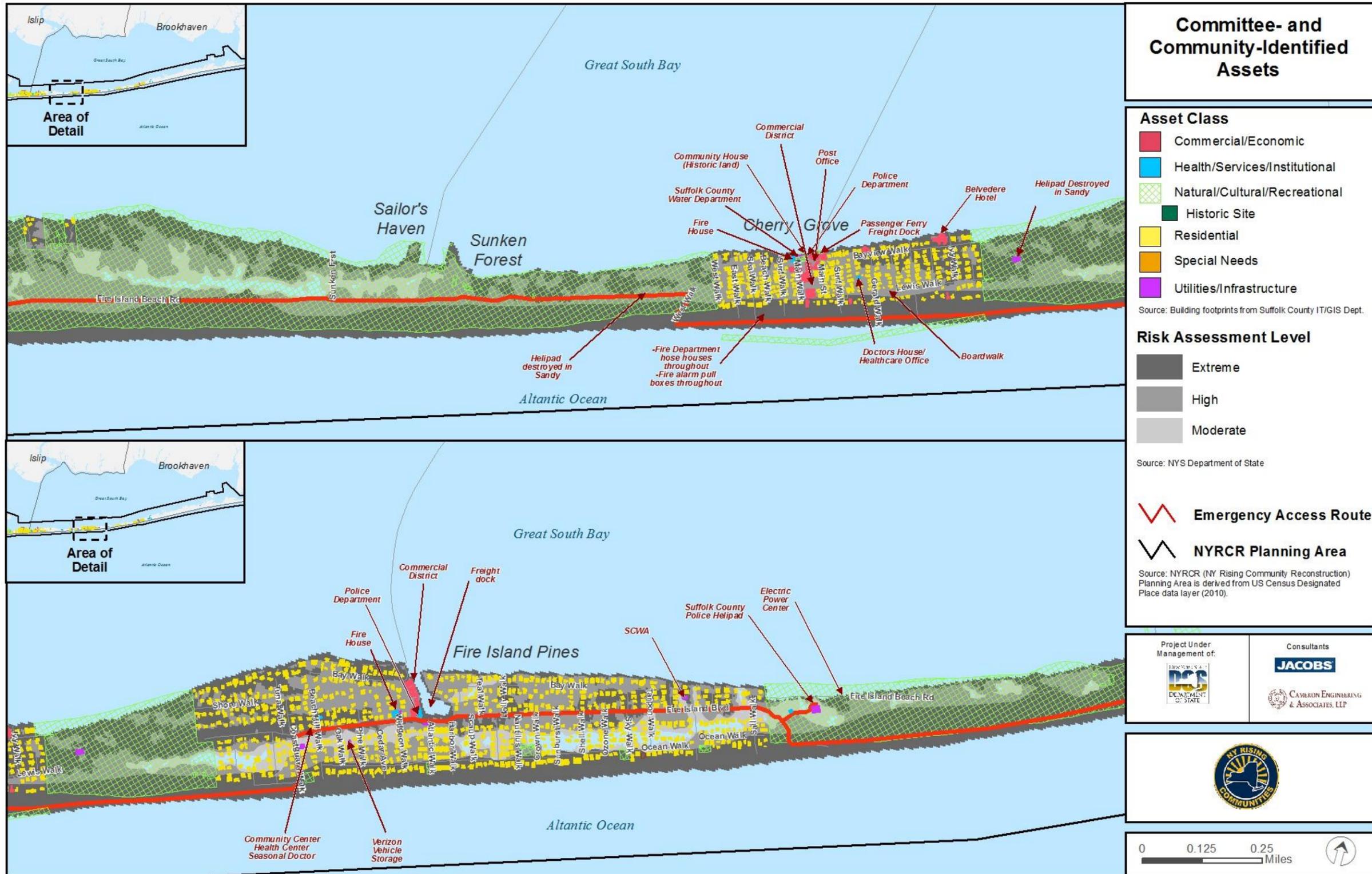
Source: NYS DOT, NYS DOS, MTA

0 0.5 1 Miles

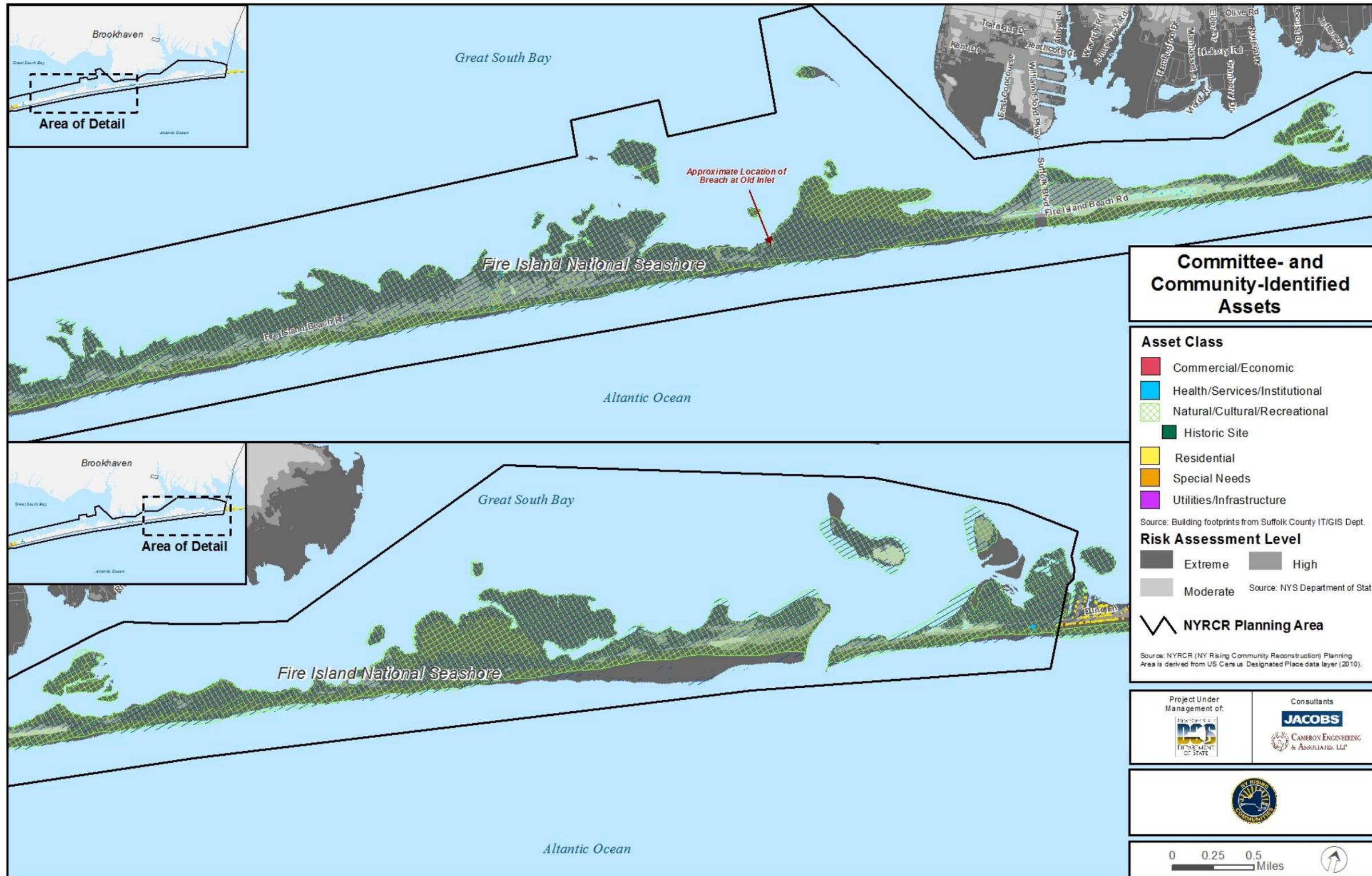












8. Needs/Opportunities and Strategies

Determine Needs and Opportunities

The NYRCR Program aims to develop a community-based plan that achieves the following three goals: define the rebuilding strategy, achieve resilience and spur economic development. The NYRCR Plan is guided by the community vision and developed based on the needs and opportunities identified by the community. Once these needs and opportunities were identified, strategies were developed to implement the community's reconstruction and economic growth goals. The development of implementation strategies is guided by at least the following factors:

- Risk assessment
- Combined benefits
- Critical facilities
- Value to the community
- Coordination with other improvements
- Life-cycle costs
- Availability of funds

Several strategies will be considered priority strategies as they have the potential to both reduce risk to critical assets that serve the greatest number of vulnerable residents. Actions that simultaneously protect the built environment while preserving natural and cultural resources are preferred.

While many residents and businesses need to rebuild quickly to get back into their homes and reopen their businesses, there are long-term needs and opportunities that can be addressed as part of the recovery process. This is a vital part of the NYRCR Program, as many impacted businesses were already suffering from the economic downturn before the storm.

The NYRCR Plan is built around six asset categories, which include: housing, community planning and capacity building, infrastructure, natural and cultural resources, economic development, and health and social



services. The Committee identified key needs and opportunities within the six asset categories. The Committee's efforts were performed in smaller group "break-out" sessions over the course of two Committee meetings. The following represents a summary of the needs, opportunities and strategies formulated during the proceedings, followed by a table that summarizes this information. Where the Committee or the public have brought forward ideas for projects for identified strategies, these have been noted as well in the projects column. The list will continue to evolve and be refined as the best strategies and projects are identified. A handful of identified projects are described in *Section 9. Potential Projects*.

Community Planning and Capacity Building

Improve working relationships among Fire Island communities and the mainland

Fire Island includes Federal, State, County, Town and Village interests, along with various community groups and organizations. Given all of these entities, along with Fire Island's relative isolation, communication and coordination are major challenges in planning for the future. As such, NYRCR strategies must take into account this complex jurisdictional framework.

Both the public and Committee agreed that ongoing communication among the various jurisdictional entities is a critical requirement for improving island-wide resiliency and disaster preparedness. Communication between key agencies on the mainland and Fire Island communities on a regular basis would allow for a coordinated and efficient rescue and response effort in the event of an emergency. It would also allow first responders and emergency personnel an opportunity to communicate with and direct supplemental services into the community.

Potential strategies to enhance both local and regional communications include:

- Creating a mechanism for enhanced communication, collaboration and regional planning among the many Fire Island interests and the Long Island mainland.

Public education on barrier island issues for resiliency and preparedness

Barrier islands are highly vulnerable during storm events – both in terms of exposure to hazards (storm surge/flooding, wind) and their geographic isolation. On Fire Island, it is particularly important to provide information about barrier island issues - the large influx of seasonal renters and visitors are often unaware of these risks and unfamiliar with local emergency procedures.

Potential barrier island educational outreach strategies include:

- Developing a committee to create and distribute educational booklets and resources and provide better information to the public prior to emergencies about the risk and evacuation information.

Support Fire Island's aging population

The community should prioritize special needs populations on Fire Island so that they may continue to thrive and enjoy all available amenities on Fire Island. Improving transportation and access are key strategies in supporting Fire Island's aging population.



The Fire Island NYRCR Committee discussed the limitations of the current transportation system and has begun to develop strategies aimed to support vulnerable segments of the population, such as:

- Providing alternatives to minimize reliance on individual motorized vehicles.

Increase resiliency of homes, businesses and public and private facilities

Existing homes and structures, as well as NYRCR projects and new residential construction should be rebuilt according to clearly defined requirements that promote resiliency during future storm events. Local codes and regulations should be updated to protect new and rebuilt homes and reduce flood insurance premiums. Building plan review should ensure minimum flood plain development requirements, including elevations, anchoring and utility protection. Inspections should be strengthened and new and existing regulations should be adequately enforced.



The NYRCR Committee formulated the following strategies to reduce community rebuilding and retrofitting costs, including:

- Investigating funding mechanisms to raise buildings and homes or fortify pilings on existing raised homes in extreme and high risk areas.
- Increasing resilience of public facilities.



Economic Development

Sustain commercial, recreational and tourism assets and functions

Economic development is perhaps the most critical element of a successful recovery. Regardless of the size of the community, economic opportunity is a vital part of a community’s resiliency and ability to withstand catastrophic events. Communities rely on area businesses for employment, for goods and services, and for the tax revenue they bring to support municipalities and other public services.



Several communities across Long Island have launched successful advertising campaigns highlighting the progress made since Superstorm Sandy. The City of Long Beach in Nassau County has developed a well-publicized series of internet, television and print advertisements. Fire Island’s communities might benefit from a similar campaign to bolster its tourism economy.

Transportation improvements could also help to bolster Fire Island tourism and increase economic activity. Ferry service improvements, including freight services, would allow for easier transport of both people and goods – helping to sustain local businesses and attractions. On a smaller scale, local pedestrian and bicycle infrastructure improvements could greatly improve mobility within the relatively compact commercial districts.

Committee members recommended the following strategy to bolster Fire Island’s economic resiliency:

- Supporting businesses both before and after an event.

Protect and maintain taxable assets

Given Fire Island’s rather limited tax base, it is vital to maintain, protect and where possible, strengthen taxable assets. Updating codes and regulations and following stricter floodplain development standards will not only help to protect homes and business but also help to reduce local flood insurance premiums. Potential actions could include the elevation of entire homes and/or elevating/hardening critical equipment, such as boilers and electrical panels.

- The Committee has identified the protection of community assets as a key economic development strategy and seeks to preserve local home values by minimizing the risk of storm damage and flood insurance rates.

Health and Social Services

Utilize management strategies to reduce exposure to potentially harmful species such as mosquitoes and ticks

The threat of vector-borne diseases, such as West Nile virus and Lyme disease, were identified as a public health issue on Fire Island, particularly for young children and the elderly. To protect public health and help prevent infectious diseases, the Committee has identified the following strategies to reduce disease-vector exposure:

- Address mosquito control and abatement strategies.
- Prevent Lyme disease by controlling current deer population.



Housing

Encourage resilient housing construction

Following Superstorm Sandy, homeowners in affected communities across Long Island were confronted with a wide-range of complex, and often conflicting regulations and policies related to both rebuilding and new construction. To make matters worse, some of these regulations were being amended and updated as homeowners attempted to navigate through the process.

The NYRCR Committee provided important local knowledge about the rebuilding process on Fire Island and helped to highlight issues that continue to affect homeowners today. Key local issues include: increasing the resiliency of seasonal residences, coordinating with Federal agencies and activities, and preserving the natural and historical features of Fire Island. To provide support for homeowners, the Committee recommended a comprehensive strategy for more resilient homes, including:

- Develop a program that assists individual property owners and small businesses in navigating the complexities of insurance requirements, public programs, permitting and issues related to raising their homes.



Infrastructure

Improve bayside shoreline management

The bayfront of Fire Island is best described as a patchwork of public and private land, with a combination of bulkheading, rip-rap and natural shoreline features. The complex and discontinuous nature of the bayside requires a far more comprehensive management approach than exists today. Like most barrier islands, the bayside is at a lower elevation than the oceanfront, which leaves the many facilities and structures in this area highly vulnerable to storm surge, erosion and flooding. Committee members reported that the greatest flooding issues in the Villages and hamlets are caused by bayside shoreline erosion and the lack or loss of protective features.



The Committee strongly recommends:

- Developing a comprehensive island-wide shoreline management strategy that includes bay front communities.

Strengthen public water supply infrastructure and systems

The Suffolk County Water Authority (SCWA) provides the majority of public water service on Fire Island, with the exception of Water Island, Blue Point Beach, Ocean Beach, and Saltaire. Water Island and Blue Point Beach still rely on private wells to draw water, while Ocean Beach and Saltaire are incorporated villages with independent water systems. Increasingly, rising water tables have infiltrated private wells on the Island, posing a serious threat to the safety of drinking water and creating a public health hazard. While SCWA has investigated expanding its service to Water Island and Blue Point Beach, the Committee recommends:

- Evaluating all existing public water supply infrastructure and identifying areas for improvement or replacement.

Maintain safe access to all communities

The geographic isolation of Fire Island combined with its collection of individual communities, present significant difficulties in terms of both inter and intra-island access. The Committee also discussed the importance of conducting public education efforts to help disseminate information about access and transportation, as well as information on impact on life-safety, property and preparedness measures. The primary emergency access route along Fire Island sustained considerable damage during Superstorm Sandy which makes providing timely and efficient emergency services very difficult. Maintaining access routes and walkways is not only important for emergency service providers during storm events – it is also vital for daily activities within Fire Island’s communities. The Committee recommends focusing on the following strategies:

- Keeping the emergency access route passable for emergency vehicles.
- Providing for safe walkways.



Ensure that municipalities and first responders, including fire departments, have the necessary resources to prepare for and protect the public, property and the natural environment during and after disasters

The services provided by municipalities and first responders during the Storm were nothing short of heroic. Emergency responders should be well prepared to safely and effectively assist the needs of the communities that they serve. Materials and equipment for emergency responders and municipal personnel for rescue operations and addressing other hazards (hazardous materials, fires, restricted access, etc.) should be provided and maintained. It is important to note that Superstorm Sandy occurred after the peak season and that a similar storm occurring mid-season could create significantly greater challenges for emergency responders.



With the assistance of first responders and municipal representatives, the Committee developed the following strategies:

- Enhance communications to improve the ability to communicate vital information not only on the beach but to the off-island agencies that may be assisting.



- Ensure Fire Department personnel have proper access, rescue and fire suppression equipment for rescue operations and addressing other hazards (hazardous materials, restricted access, etc.).
- Provide better access to EMS and lessen response time of EMS.
- Limit need to travel to mainland for supplies.
- Pursue grants and other funding sources to enhance emergency services.
- Identify bayside assets and redundancy for resource and emergency access.
- Enable municipalities to track structures, damage to structures, permits, etc.

Hardening of infrastructure to reduce future vulnerability and mitigate repetitive flooding

As an area that is susceptible to both bayfront and oceanfront flooding, it is critical that infrastructure is regularly updated and maintained.

Fire Island has existing infrastructure devoted to shoreline hardening including bulkheads, piers, and docks. Some of these structures worked well to protect and preserve shore-side facilities, while others may have accelerated erosion and sand loss and led to the loss of tidal wetlands. A comprehensive analysis of the existing bayfront shoreline is recommended to determine the most effective way to preserve both existing communities and the natural environment.

The Fire Island community should also identify potential stormwater storage locations to reduce flooding through increased ground infiltration. Some of these areas might be used for outdoor recreation and as gathering places during dry weather.

Additional infrastructure includes roads and facilities for communication, transportation, and government operations. While many of these facilities are under the control of other entities (e.g., Federal and State lands, private communications equipment), their functions are critical to the community. The Committee recommended the following strategies to increase the resiliency of critical infrastructure:

- Reinforce and maintain oceanfront dune system.
- Make docks more resilient.
- Use natural infrastructure (e.g. wetlands) to manage storm water runoff.
- Explore feasibility of shoreline stabilization where natural restoration is not an option.

- Repair existing drainage systems.
- Provide needed dredging.

Natural and Cultural Resources

Restoration of public recreational infrastructure for residents and tourists

Fire Island is essentially a large National Park, comprising a considerable amount of parkland, open space, recreational areas, and historical sites. Restoring and enhancing public access is vital to the long-term well-being of the Island. Public events and new activities could help to attract visitors from across the region, which helps to increase commercial traffic and revenue within the community. The restoration of remaining wetlands and the preservation of the South Shore Estuary are also critical in supporting popular recreational uses, including boating, fishing, swimming, surfing and other maritime activities. The Committee has identified the following public recreational/community facilities for restoration:

- Village of Ocean Beach Camp/Windswept.
- Cherry Grove Community House which has NYS and Federal historic landmark status.
- Ocean Beach Fire Hall.



Table 1: Summary of Needs and Opportunities, Strategies and Potential Projects

No.	Need/Opportunity	Strategy	Potential Projects
Community Planning and Capacity Building			
1.1	Improve working relationships among Fire Island communities and the mainland.	Create a mechanism for enhanced communication, collaboration and regional planning among the many Fire Island interests and the Long Island mainland.	<ul style="list-style-type: none"> Convene a Fire Island Planning Forum that meets regularly to discuss issues and policies. Include representatives of Federal, State, County and Village governments, residents, businesses, emergency responders, utilities, etc. (No cost)
1.2	Public education on barrier island issues for resiliency and preparedness.	Develop a committee to create and distribute educational booklets and resources and provide better information to the public prior to emergencies about the risk and evacuation information.	<ul style="list-style-type: none"> Homeowner and Renter Handbook addressing “what does it mean to be living on a barrier island (stewardship) and what are your responsibilities?” Topics could include: storm preparation tactics, building, day to day life, sewer access, water access and costs, beach maintenance, organization and identification of all resources that are already available, review of the current management and regulatory approaches in extreme risk areas, etc. Create public outreach campaign and/or booklet with online version for visitors about the correct ways to visit and enjoy the region (beach-goer etiquette). Encourage landlords/property managers to include a one page laminated sheet in all rental properties that has emergency evacuation instructions and flood risk information. Engage real estate professionals to play a role in communications on Fire Island. Provide public education on relationship between housing resiliency and flood insurance rates. (\$100,000 for all of the above.)
1.3	Support Fire Island’s aging population.	Provide alternatives to minimize reliance on individual motorized vehicles.	<ul style="list-style-type: none"> Study senior/disabled population transportation options for the island.
1.4	Increase resiliency of homes, businesses and public and private facilities.	Investigate funding mechanisms to raise buildings and homes/fortify pilings on existing raised homes in extreme and high risk areas.	<ul style="list-style-type: none"> Increase access to hazard mitigation funding by employing a hazard mitigation expert (grant writer/recovery manager) with experience in funding for public and private mitigation projects and grant writing. (\$300,000)
		Increase resilience of public facilities.	<ul style="list-style-type: none"> Elevate public facilities to above the 500-year event and harden to withstand hurricane level wind speeds.
Economic Development			
2.1	Sustain commercial, recreational and tourism assets and functions.	Support businesses before and after an event.	<ul style="list-style-type: none"> Create campaign to spread the news that communities are rebuilt and are running/open for business post disaster (enhance Revive FI). (\$250,000) Conduct a business survey across the Island to determine what attracts people to Fire Island and how to continue attracting visitors in the future (included in Revive FI, above). Create a better relationship with utility companies and improve resiliency of communication services through backup systems and/or the expansion of services through additional utility providers (primarily phone and data) (handled by proposed Planning Forum).
2.2.	Protect and maintain taxable assets.	Preserve local home values by minimizing risk of storm damage and flood insurance rates.	<ul style="list-style-type: none"> Increase access to property elevation grant funding, such as by employing a town hazard mitigation expert (handled by proposed Grant Writer/Recovery Manager). Encourage the Fire Island communities (Towns/Villages) to participate in the National Flood Insurance Program and to meet criteria for FEMA Community Rating System to reduce flood insurance rates (handled by proposed Planning Forum).
Health and Social Services			
3.1	Utilize management strategies to reduce exposure to potentially harmful species such as mosquitoes and ticks.	Address mosquito control and abatement strategies.	<ul style="list-style-type: none"> Discuss decentralized community-based initiatives with Suffolk County Vector Control (handled by proposed Planning Forum).
		Prevent Lyme disease by controlling current deer population.	
Housing			
4.1	Encourage resilient housing construction.	Develop a program that assists individual property owners and small businesses in navigating the complexities of insurance requirements, public programs, permitting and issues related to raising their homes.	<ul style="list-style-type: none"> Tailor the outcomes of Superstorm Sandy-related financial aid programs to Fire Islanders’ unique needs (handled by proposed Grant Writer/Recovery Manager).

No.	Need/Opportunity	Strategy	Potential Projects
Infrastructure			
5.1	Improve bayside shoreline management.	Develop a comprehensive island-wide shoreline management strategy that includes bay front communities.	<ul style="list-style-type: none"> Engineering and design study for bayside shoreline management with regulatory coordination and pilot projects.
5.2	Strengthen public water supply infrastructure and systems.	Evaluate existing public water supply infrastructure and identify areas for improvement or replacement.	<ul style="list-style-type: none"> Construct a water main between Fire Island Pines and Davis Park. This would create redundancy in the system to enhance fire protection. A connection between these two eastern communities would also make water available to Water Island and Blue Point Beach (communities that currently have no public water supply) as well as to the FINs facilities at Talisman and Watch Hill. Construct at least one additional water supply source located between Fire Island Pines and Davis Park. (SCWA expense)
5.3	Maintain safe access to all communities.	Keep emergency access route passable for emergency vehicles	<ul style="list-style-type: none"> Stabilize the emergency access route so that resources can be delivered and the route is available for emergency access with shorter response times. Acknowledge the need to balance safety and protection of the natural parks and resources.
		Provide for safe walkways.	<ul style="list-style-type: none"> Boardwalk and concrete walk repairs.
5.4	Ensure that municipalities and first responders, including fire departments, have the necessary resources to prepare for and protect the public, property and the natural environment during and after disasters.	Enhance communications to improve the ability to communicate vital information not only on the beach but to the off-island agencies that may be assisting.	<ul style="list-style-type: none"> Island-wide satellite emergency communication system.
		Ensure Fire Department personnel have proper access, rescue and fire suppression equipment for rescue operations and addressing other hazards (hazardous materials, restricted access, etc.).	<ul style="list-style-type: none"> Cherry Grove – new fire truck. Emergency Response Equipment Trailer and Supplies. Air compressor (Kismet). Provide back-up power for fire departments with arrangements for fuel delivery e.g. generator for Fair Harbor. Mini-Pumper (Saltire).
		Provide better access to EMS and lessen response time of EMS.	<ul style="list-style-type: none"> Cherry Grove – new EMS initiative.
		Limit need to travel to mainland for supplies.	<ul style="list-style-type: none"> Provide adequate resources on FI (backup generators, fuel, gas); (covered in Fire Department items above) Provide command center for coordinated distribution of supplies.
		Pursue grants and other funding sources to enhance emergency services.	<ul style="list-style-type: none"> Engage professionals to prepare grant applications for police/fire departments/EMS services (part of grant writer/recovery manager, above).
		Identify bayside assets and redundancy for resource and emergency access.	<ul style="list-style-type: none"> Implement more freight docks for delivery of resources or emergency aid by water; removal of solid waste and storm debris by water. Repair or replace Cherry Grove freight dock – engineering study and construction. Repair Atlantique Freight Dock.
5.5	Hardening of infrastructure to reduce future vulnerability and mitigate repetitive flooding.	Reinforce and maintain oceanfront dune system.	<ul style="list-style-type: none"> Town of Islip GIS Program Upgrades.
		Make docks more resilient.	<ul style="list-style-type: none"> FIMP addressing the oceanfront dune protection systems.
		Use natural infrastructure (e.g. wetlands) to manage storm water runoff.	<ul style="list-style-type: none"> Work with NYSDEC to allow replacement of docks at higher elevations (Ocean Beach). Create living shorelines wherever possible to restore natural processes, minimize erosion and create habitat Increase wetlands using dredge from other areas.
		Explore feasibility of shoreline stabilization where natural restoration is not an option.	<ul style="list-style-type: none"> Work with NYSDEC to allow replacement of bulkheads at higher elevations. Identify small gaps in bulk heading that are sources of repetitive funding and mitigate. Raise bulkheads (at least 2 feet) along Bay Walk in Seaview between the Ocean Beach border and Duneway Street in Seaview.
		Repair existing drainage systems.	<ul style="list-style-type: none"> Repair existing drainage system in Ocean Bay Park by extending drainage on Midway and Seneca to the main drain on Bayview. Additionally, the main drain needs to be repaired and relocated on Ontario and Bayview to mitigate flooding. The system should also be extended to Bayview and Superior.
		Provide needed dredging.	<ul style="list-style-type: none"> Fair Harbor Bay Beach dredging project.
Natural and Cultural Resources			
6.1	Restoration of public recreational infrastructure for residents and tourists.	Restore recreational facilities.	<ul style="list-style-type: none"> Repair Village of Ocean Beach Camp/Windswept. Repair Cherry Grove Community House which has NYS and Federal historic landmark status. Repair Ocean Beach Fire Hall.

9. Key Potential Projects

The next critical step in the planning process will be for the Committee to refine the list of potential strategies to those that are most needed and best suited for the Fire Island NYRCR Planning Area and to develop detailed projects to implement those strategies. The Committee has identified the following preliminary projects based on discussions of assets, needs and opportunities. The projects previewed here appear to have broad agreement among Committee members. Inclusion of these projects in the Conceptual Plan does not guarantee their recommendation in the Final NYRCR Plan. Nor does it preclude the inclusion of alternative or additional projects going forward. The strategies and projects contained herein are preliminary in nature and will continue to be developed, expanded upon, or in some instances, eliminated from consideration. The Committee will continue to refine its strategies and list of resiliency projects in the coming months.

The Committee has preliminarily identified several projects that would assist in recovery, provide greater resiliency and foster economic growth. The projects listed are assumed to be the start of a comprehensive list that will be generated by the Committee as the planning process continues. The projects are also subject to change as the public engagement process continues. They are identified here to give an idea of the direction of the Committee's work at this point in time.

The Committee put forth many project ideas, but felt strongly that the priority should be for projects that benefitted Fire Island as a whole and that individual community needs would be addressed as a second tier of projects. Therefore the projects described below are all island-wide projects. For a list of the community specific projects see the table in *Section 8*. It is anticipated that additional community specific projects will continue to be added as the project progresses to conclusion of the planning phase.

Create a Mechanism for Enhanced Communication, Collaboration and Regional Planning among the Many Fire Island Interests and the Long Island Mainland

Convene a Fire Island Planning Forum (no cost)

Primary Project Category: Community Planning & Capacity Building

Brief Project Description: Fire Island is a unique place in New York State due to the interrelated communities and governmental jurisdictions from the Village level to federal level that co-exist on the Island. The NYRCR process has provided a mechanism for enhanced communication on a regular basis among these entities and had advanced their dialogue and level of cooperation on important issues facing the island, which require balancing human and environmental concerns. The Committee would like to continue this dialogue so that issues and policies affecting the island can be addressed in a comprehensive and cohesive manner with all parties viewpoints represented. Therefore the Committee proposes to convene a Fire Island Planning Council that would meet regularly, perhaps on a quarterly basis and would include representatives of Federal, State, County, Town and Village governments, residents, businesses,



transportation providers, emergency responders, utilities and all other appropriate entities.

Community Benefits: The Fire Island Planning Council would provide a forum to address issues involving lives, property and the environment in an open and coordinated fashion, benefitting all of the communities and governmental lands on the Island.

Coordination with Outside Entities: This project would require coordination with the Towns of Islip and Brookhaven, the incorporated Villages of Saltaire and Ocean Beach, NYS DOS, NYS DEC, the Fire Island National Seashore, the Fire Island Association, PSEG, Verizon, as well as residents and business owners.

Implementation Timeline: Short term.

Next Steps: Upon completion of the NYRCR planning process, the Committee would continue to meet outside of the NYRCR process to invite all of the representatives to participate and together, formally setup the council and its organization. While there is no funding required from the NYRCR Program for this very important project, if brought to fruition it will be a lasting legacy of the program.

Investigate Funding Mechanisms to Increase Resiliency

Employ Recovery Manager/Grant Specialist(s) (Estimated allocation - \$300,000)

Primary Project Category: Community Planning & Capacity Building

Brief Project Description: The Committee adopted a regional approach to the priority projects, recognizing that the communities had many more projects that affected one or a group of communities, with funding needs running into millions of dollars. The Committee wanted to create a mechanism whereby these community level projects could be funded in the future through other grant opportunities. Knowing that there are hundreds of grant opportunities each year, many with short application timeframes, the Committee seeks to set aside a portion of the NYRCR Program funding to hire one or more Recovery Manager/Grant Specialists with experience in funding for public and private mitigation projects, grant writing, and federal/state grants management. The Specialist(s), who would hold a multi-year position, would increase access to hazard mitigation and other funding by seeking out and applying for grants for Village and Hamlet facilities/infrastructure, as well as manage the grants to ensure State and Federal compliance. The Specialist(s) would also serve as



a resource to homeowners and business owners who may seek guidance on individual assistance opportunities. In addition to salary and benefits, the Specialist(s) would also require an office and typical office products.

Community Benefits: There are several potential benefits of the project to the community. First is the potential to bring in additional funding for Fire Island communities which would enable them to implement longer-term resiliency efforts and projects. Secondly, the project could help create better coordination, particularly in regards to emergency management and preparedness efforts, between the multiple jurisdictional authorities on Fire Island.

Coordination with Outside Entities: This project would require coordination with the Towns of Islip and Brookhaven, the incorporated Villages of Saltaire and Ocean Beach, New York State and the Fire Island National Seashore.

Implementation Timeline: Short term.

Next Steps: Since Fire Island crosses Town lines, it would be best for a regional entity to hire the Recovery Manager/Grant Specialist. Possible entities would be the Fire Island Association, Suffolk County and NYSDOS. Regardless of the employer; the Recovery Manager/Grant Specialist would be assigned to cover all of Fire Island for a two-year period.

Enable Municipalities to Track Structures, Damage to Structures, and Permits

Enhanced GIS Emergency Management System (Estimated allocation - \$50,000)

Primary Project Category: Community Planning & Capacity Building, Infrastructure

Brief project Description: This project would fund an enhanced Geographic Information System (GIS)-enabled program for the Town of Islip and the Town of Brookhaven to improve planning, response and recovery from severe storm events. The system would be able to track incoming reports of flooding, damages, utility outages, and medical

emergencies and enable rapid and efficient deployment of resources. The ability for the system to track costs and resources allow the Town to document and report actual costs to FEMA and the State for quick reimbursement, thereby minimizing a future storm's impact to the local government budget and services. The system would also be able to receive data from remote devices that would allow "real time" information to the central office by utilizing tablets or smart phones. By way of example, a Geocortex based GIS system could provide a system to provide the necessary information before, during and after a storm. This system was successfully implemented for the State of Vermont and many other communities and could be up and running in a short time and available for use by the Office of Emergency Management for 2014. This project would also support an effort to catalogue and manage all known addresses for Fire Island properties in order to improve emergency response time and accuracy.

Community Benefits: The project could help create better coordination, particularly in regards to emergency preparedness and response efforts, between the multiple jurisdictional authorities on Fire Island.

Coordination with Outside Entities: This project would require coordination with the Towns of Islip and Brookhaven, the incorporated Villages of Saltaire and Ocean Beach, and the Fire Island National Seashore.



Implementation Timeline: Immediate for initial evaluation, purchase and operation.

Next Steps: The Town of Islip will obtain a quote for the system and work with the Town of Brookhaven to ensure that they system would be compatible with existing GIS systems in both Towns.

Maintain Safe Access to All Communities

Maintenance of Emergency Access Route (Estimated allocation - \$500,000)



Primary Project Category: Infrastructure

Brief Project Description: A well-maintained and safe route for emergency vehicles is a necessity for all of Fire Island. There are several distinct sections of "Burma Road", the primary emergency access route on Fire Island, all in various levels of disrepair. Previous maintenance done on the emergency access route has deteriorated or been destroyed by Superstorm Sandy. At minimum, some type of berm construction or sandbagging must be done to protect against ocean flooding. Additionally, the road surface condition has also been compromised in several areas, particularly between the Fire Island National Seashore Checkpoint and Kismet, and needs to be reinforced. The emergency access route between Corneille Estates and Robbins Rest requires stabilization. There are also several large potholes in the road that need to be filled with a good



aggregate material. The emergency access route is a critical asset to the entire Fire Island community as it represents the primary evacuation route for the island.

Community Benefits: The community would benefit greatly from more reliable access to resources and shorter emergency response times. This is an important public safety benefit. The Committee acknowledges the need to balance safety and protection of the natural parks and resources throughout the Island.

Coordination with Outside Entities: This project would require coordination with the Towns of Islip and Brookhaven, the incorporated Villages of Saltaire and Ocean Beach, and the Fire Island National Seashore.

Implementation Timeline: Immediate for initial evaluation, design, and completion.

Next Steps: Identify areas of the emergency access route that are in most need of repair and stabilization. Coordinate with the Town of Islip, Town of Brookhaven, the Villages of Ocean Beach and Saltaire, the Fire Island National Seashore and Suffolk County DPW. Commence with the engineering, design and then permitting, contracting, bidding, construction and inspection. Commence work.

Enhance Communications

Satellite Emergency Communication System (Estimated allocation - \$200,000)

Primary Project Category: Infrastructure

Brief Project Description: During and after Hurricane Irene and Superstorm Sandy, consistent and reliable communication among emergency responders was a major challenge for Fire Island communities. Phone lines and data (email) services failed miserably. First responders on the beach were initially able to communicate via the Fire Island Wide radio system, however even that failed during the height of Superstorm Sandy. Cell phone infrastructure was inundated and phones became unreliable.

To mitigate this issue in the event of future storms, this project would fund the purchase of a Satellite system for emergency responder use, which would be installed in all of the fire houses and allow emergency responders the ability to establish broadband Internet and phone access across the island. The satellite system would set up a wireless hotspot to enable use of phones, tablets or laptops, and would include VoIP phones that can be used like standard phones and have a dedicated local number.

Community Benefits: The satellite system will improve response time and coordination among the Fire Island communities in the event of an emergency, which could potentially save lives and minimize damage to property.

Coordination with Outside Entities: This project would require coordination with the Fire Island Fire Departments, Towns of Islip and Brookhaven, the incorporated Villages of Saltaire and Ocean Beach, Suffolk County Emergency Management, NYS Emergency Management, and the Fire Island National Seashore.

Implementation Timeline: Short term

Next Steps: Fire Departments to work together to determine the optimum system for Fire Island and purchase and install the equipment.

Ensure Emergency Responders Have Appropriate Access and Equipment to Address All Hazards

Air Compressor (Estimated allocation - \$42,000)

Primary Project Category: Infrastructure

Brief Project Description: This project would purchase an air compressor to be housed at the Kismet Fire Department and available to all other Fire Departments. The air compressor is used to refill used breathing apparatus worn by firefighters during all structural fires.

Community Benefits: The equipment would be beneficial to all departments, particularly those closer to Kismet on the West End of Fire Island.

Implementation Timeline: Short term

Next Steps: Purchase equipment

Back-Up Power Generation for Critical Facilities (Estimated allocation - \$500,000)

Primary Project Category: Infrastructure

Brief Project Description: Fire Island needs to ensure that back-up power is available for all critical facilities in the event of a power outage during an emergency. The first step would be to evaluate which facilities need generator equipment, either as new installations or replacements. Critical facilities would include government buildings, fire stations, and water and wastewater infrastructure. Generators would then be purchased and installed.

Community Benefits: The project would increase the resiliency of critical facilities on Fire Island and allow them to operate at needed capacity if electricity fails during an emergency.

Coordination with Outside Entities: This project may require coordination with the Towns of Islip and Brookhaven, and the incorporated Villages of Saltaire and Ocean Beach.

Implementation Timeline: Short term

Next Steps: Evaluate needs and purchase equipment



Emergency Response Equipment Trailer & Supplies (Estimated allocation - \$100,000)

Primary Project Category: Infrastructure

Brief Project Description: This project would fund the purchase of an emergency medical supply storage trailer with lighting and back-up power for the eastern communities that would have supplies available for whichever emergency responder needed it. This would allow any medical personnel access to supplies without having to transport them at the time of the emergency, reducing response time and improving emergency responder access.

Community Benefits: Communities on the eastern end of Fire Island would benefit greatly from more reliable access to emergency services and shorter emergency response times.

Implementation Timeline: Short term

Next Steps: Contact Fire Departments to determine the specific size and requirements for the trailer, obtain quotes, determine the optimal storage location, purchase the trailer, equipment and supplies, and prepare an agreement on replenishment and upkeep of the trailer.

Develop a Comprehensive Bayside Shoreline Management Strategy

Engineering and design study for bayside shoreline management with regulatory coordination and pilot projects (Estimated allocation - \$1,500,000)

Primary Project Category: Infrastructure

Brief Project Description: One of the largest concerns of the Committee is protection of the bayside of the barrier island. The Committee acknowledges the USACE FIMP project as the appropriate mechanism to provide ocean front protection but believes that the bayside is woefully lacking in similar protective strategy, particularly in consideration of rising sea level and more frequent and powerful storms. There are many different opinions as to the appropriate shoreline protective measures

along the bay front. In addition, one shoreline improvement can have an erosional impact on adjacent properties and therefore projects need to be coordinated and the end conditions evaluated. Therefore the Committee proposes to develop and implement an Island-wide approach to cohesive shoreline management. This project would require a coordinated effort among the various jurisdictional authorities on the island, including the Towns of Islip and Brookhaven, the Incorporated Villages of Ocean Beach and Saltaire, NYSDEC, NYSDOS and the Fire Island National Seashore. This project would include an engineering and design study to assess the feasibility of different natural infrastructure, as well as hard structure stabilization solutions for the unique conditions along the shoreline of Fire Island’s communities. Depending on the costs of the proposed improvements resulting from the engineering evaluation and the funding available, the project would include several pilot projects that would address different types of shoreline deficiencies. These pilot projects would then be able to be evaluated for effectiveness and then replicated across Fire Island where similar conditions exist. Another desired outcome of the project would be expedited permitting of the pilot and replicated projects.



Community Benefits: This project would help mitigate the extreme erosion that has occurred on the bayside of Fire Island, which was worsened by Superstorm Sandy. This project would also help prevent regular flooding that occurs on the island at high tide which is only going to increase with sea level rise. It would provide negotiated agreement among

the agencies allowing expedited permitting and surety as to how the communities can continue to be protected.

Coordination with Outside Entities: This project would require coordination with the Towns of Islip and Brookhaven, the incorporated Villages of Saltaire and Ocean Beach, NYSDOS, NYSDEC, the Fire Island National Seashore, and private property owners.

Implementation Timeline: Long term

Next Steps: Procure an engineering study of the bayside shoreline and convene the agencies to discuss appropriate methodologies for shoreline protection.



Make Docks More Resilient

Freight dock repairs and improvements (Estimated allocation - \$1,000,000)



Primary Project Category: Infrastructure

Brief Project Description: This project would allow for the repair of freight docks to enhance emergency access via boat and increase the accessibility of residents and visitors to needed resources. The freight docks can also replace some of the daily vehicular transfer of equipment, materials and solid waste with marine transfer.

Community Benefits: The community would benefit greatly from more reliable access to resources and shorter emergency response times. Vehicle use could be reduced.

Coordination with Outside Entities: This project would require coordination with the Towns of Islip and Brookhaven, NYSDOS, NYSDEC, the Fire Island National Seashore and potentially, private freight dock owners.

Implementation Timeline: Short term

Next Steps: Evaluate the existing freight docks in Cherry Grove, Fire Island Pines and Atlantique and determine costs of repairs and relative value to the island (location, capacity, configuration, staging and storage areas, etc.). Prioritize and implement repairs within funding allocation.

Support Businesses Before and After an Event

Enhance Revive FI Campaign (Estimated allocation - \$150,000)

Primary Project Category: Economic Development

Brief Project Description: The Revive FI campaign is an effort by commercial interests in Fire Island to market the available recreational and economic opportunities of the entirety of Fire Island and ensure that the public in the New York tri-State area are aware that Fire Island is well on the way to recovery from Superstorm Sandy and is open for business. Revive FI has already raised \$130,000 through private donations to develop an advertising campaign. This project would provide additional support to Revive FI for them to increase the number of communication outlets reached with the advertising campaign.

Community Benefits: Fire Island is an economic engine and provides a large sales tax base to the area. This project ensures that tourism, the primary economic driver on Fire Island, returns to or surpasses its pre-



Superstorm Sandy state.

Implementation Timeline: Short term

Next Steps: Revive FI to meet with each community with a commercial base to ensure that the campaign is comprehensive for Fire Island. Then utilize funding to obtain the greatest market coverage.



10. Regional Perspective

Regional Overview

One of the major outcomes following Superstorm Sandy was a collective realization that many of the significant issues affecting Long Island communities must be addressed at the regional level. Due to the geography of Long Island, many of the communities and counties within the Island share similar challenges as well as opportunities relative to the natural environment, physical infrastructure, and other built systems. Additionally, it is important to understand the cause and effect relationship that occurs between the barrier beach islands and the mainland. Potential regional issues are expanded upon below.

Potential Regional Issues and Concerns

Natural Environment: Long Island has 1,180 miles of shoreline fronting the Atlantic Ocean, Sound, and a number of lakes, bays, inlets and canals. Approximately one-fifth of Long Island’s land is protected from development by federal, state, county, or municipal entities. About half of this land represents over 800 public parks on Long Island ranging from small community playgrounds to larger parks like Fire Island National Seashore and Bethpage State Park. The Pine Barrens contain wetlands and dry upland areas and are inhabited by an array of wildlife species, many of which are endangered or threatened. The continued protection of Long Island’s water supply from sole source aquifers is also a significant regional issue.

Developable Land Supply: Almost two-thirds of Long Island’s land surface is developed with buildings, pavement and other manmade structures. This condition in combination with the large amount of protected/preserved land, results in a limited supply of available vacant land to accommodate new housing or economic development activities.

Water Quality: Long Island’s aquifers receive their fresh water from precipitation which percolates into the ground and is recharged into the

groundwater system. The greatest threat to the quality of this water is development (residential/commercial/industrial) in sensitive areas that would add pollutants and impede the absorption of precipitation. As water is drawn for use in coastal areas, and barrier islands in particular, less groundwater is available to be discharged into the estuaries. The subsequent loss of water and pressure allows saltwater from the ocean to flow into the aquifer, causing the groundwater to become saline and undrinkable. This is known as “saltwater intrusion” and is a threat to drinking supply on Fire Island and the mainland as well.



Other threats to water quality include non-point source pollution and storm water runoff, which are county-wide concerns. Non-point sources typically include fertilizer and pesticides, oil and other automobile fluid, as well as animal and pet waste. While Fire Island has limited vehicle activity, and less volume of fertilizers and pesticides, some degree of these non-point sources exist. This type of pollution has the potential to seep into ground water and impact surface waters such as the Great South Bay. While the Great South Bay is a surface water body, it is also a significant habitat comprised of features such as barrier beaches and islands, wetlands as well as marsh islands. Additionally, the bay is a key component of the local economy which relies on the health and stability of the bay ecology. As a result, the bay is in many ways a regional resource. Degradation of water quality as a result of non-point source runoff is of rising concern relative to the bay.

Non-point source releases into the bay can result in increased bacteria levels which in turn can lead to the closure of large areas of the bay to economic activities like fishing as well as recreational marine-dependent uses. The continued discharge to ground and surface waters in addition to increased runoff from roadways and septic systems have been adversely impacting water quality and vegetation in the vicinity of the Great South Bay. These water quality concerns also have the potential to impact spawning habitats as well as many marine species that are dependent on these systems.

Utilities: Electricity and the susceptibility of the power grid are both national and regional issues of concern. Long Island’s Regional Economic Development Council (REDC) strategic economic development plan update has similarly stressed the importance of addressing utility vulnerabilities which currently exist across the Island. More specifically, one of the longest-lasting impacts of Superstorm Sandy was the vulnerability of Long Island’s electric power grid. The Smarter Grid Research, Innovation, Development, Demonstration & Deployment (SGRID3) initiative, a collaboration between Stony Brook University and Brookhaven National Laboratory, initially focused on the development and deployment of new smart grid technologies as a mechanism to reduce energy and associated costs to consumers. However, this objective changed in the wake of Superstorm Sandy with the focus shifting to autonomous control capabilities that when employed would make Long Island’s grid more resilient during weather events and able to recover more quickly in the aftermath. On Fire Island the issue of telephone and data communication is also of concern.

Climate Change: As a coastal area, Long Island is susceptible to rising sea levels, especially as it relates to storm surges. Flooding generated by major weather events, 100-year storms, or just a heavy downpour, causing damage to residences and property, have been occurring with greater frequency. According to a joint Columbia University and City University of New York study, the sea level is anticipated to increase by 4 to 12 centimeters in the New York region by the 2020s and by 30 to 56 centimeters by 2080. Should polar icecaps melt rapidly, climate models projects that sea levels will rise even more. As a result, climate change is a significant Island-wide issue. Fire Island plays an extremely important role as a barrier island in protecting the mainland of Long Island from storm surges, and as such, strengthening of its ocean front and bayfront shorelines is critical.

Other issues that are pertinent on a regional level include those related to public health and economic equity. These include projects designed to improve the quality of life for the Island’s impoverished, underinsured or at-risk populations. Emergency preparedness projects are also important to improve the overall safety of the Island’s population. These include: maintaining evacuation route access; improving the communication capability for a multi-jurisdictional response during emergency events; and emergency access to healthcare services.



11. Overview of Public Engagement to Date

Public Engagement Strategy

Governor Cuomo has been a strong proponent of bottom-up, community-driven planning; in other words, the real “experts” are the residents of the communities that have been confronted first-hand by these natural disasters. A critical component, therefore, of the NYRCR Program is the exchange of information between the NYRCR Consulting Team, the Committee, and the public to identify appropriate projects, strategies, and solutions that are likely to carry community support. The public in this case is defined as area residents, employees, civic groups, neighborhood and homeowner associations, environmental and other interest groups, business interests, governmental agencies, educational, medical, religious, and other institutions, the media, elected/ appointed officials, as well as other stakeholders who express interest in the process.

The Public Engagement Strategy will:

- Establish the means to engage and facilitate information-sharing with the public throughout the development of the NYRCR Plan.
- Educate the public and elicit public comments and suggestions regarding all aspects of the Plan within the NYRCR Planning Area.
- Employ outreach techniques that allow for collection and coordination of public communication and comments.
- Reach out to groups that might normally be underrepresented in a planning study, such as minorities, non-English speaking residents, low-income residents, seniors, youth, and the disabled.

Outreach Techniques for Disseminating and Receiving Information

The Committee utilized a number of dissemination techniques to achieve a thorough, responsive, open, and transparent communication process.



Committee Meetings

All Committee Meetings are open to the public, with meeting dates and times posted on the NYRCR website (<http://stormrecovery.ny.gov/nyrcr>). For each Committee Meeting, notifications are sent and meeting materials are prepared. They include agendas, sign-in sheets, minutes, comment log, PowerPoint presentations, graphics/boards, and handouts. The Public is invited to comment on the work of the Committee by filling out a comment form available at each Committee Meeting.

Public Engagement

While the Committee represents the interests of many, it is important to provide opportunities for the public to participate in the development of the Plan. While the primary vehicle is public engagement events, additional outreach opportunities for comment are provided at different venues in the Fire Island NYRCR Planning Area and through the NYRCR website.

Public Engagement Events

Each public engagement event includes a presentation of work done to date and an opportunity for attendees to provide feedback. The NYRCR Consulting Team provides the following for each event: public notice (including press releases, announcements, individual mailings, and other appropriate means), outreach to underserved communities and displaced stakeholders, information gathering from those attending, and the collection and inclusion of feedback into the ongoing planning process. A



summary of each public outreach session is available in hard copy and electronically.



Public engagement events are scheduled to coincide with major milestones. A good public involvement process educates, or brings people along, during the development of the Plan, so when it is time to implement the Plan, the public and the elected decision-makers have had an opportunity to participate in the decision-making process. Members of the public who are informed and engaged in the process are more likely to support a recommended course of action. Sign language interpreters can be provided upon request at public engagement events to accommodate the hearing impaired. Event materials are available in English and if requested, in Spanish.

Presentation materials are developed for each event that illustrate the key points of the information presented using plain language, graphics, simulations, etc. These are available following the event on the NYRCR website for download. An annotated summary of events are prepared and available for public distribution.

The process includes a series of four public engagement events:

1. To define the Community Vision and solicit initial input on the asset inventory and assessment of risk to community assets
2. To solicit input from the public concerning the content of the Conceptual Plan

3. To confirm projects and implementation frameworks
4. To present the investment and action strategies

Outreach for public engagement events includes: posting on state NYRCR webpage and other electronic media; ads in weekly print media when time and budget allows; flyers and posters at strategic locations throughout the community including libraries, community centers, and other centers of activity; e-mails and/or texts to lists available from chambers, civics, school districts, churches, synagogues, American Legion, VFW, AARP, Hibernians and other community leaders. Outreach also includes requests to community organizations to post information on their websites. Phone calls are made to: elected officials and other key players in the local residential and business community and calls to each Committee member to assist them with their outreach effort (e.g., calls/e-mails to their contacts and announcements at their events).

Each event is formatted as an open house that the public can attend during any part of the allotted two to three hours. Stations are positioned around the room for the various topics. Committee members, municipal representatives, State planners and the NYRCR Consulting Team each station to provide opportunity for the community to exchange ideas in a comfortable setting. This structure provides an opportunity for each attendee to work within their own schedule and comment on all or some of the specific aspects of the process in a meaningful way.

As the project progresses, the public is presented with maps, a geographic scope, community assets, and a vision statement, needs and opportunities, strategies and projects that have been vetted and/or created by the Committee. The desired outcome of each public engagement event is to obtain the public's reactions and feedback to the Committee's work in order to incorporate their input. These comments will be compiled by the NYRCR Consulting Team and provided to the Committee in a clear and comprehensive manner. The Committee will review the public's feedback and incorporate it into the NYRCR Plan.



Online Meetings

The Fire Island community is unique in that many of the residents and employees and virtually all of the visitors are not on Fire Island in the winter and are dispersed throughout the metropolitan region. Therefore in order to reach as broad a segment of the Fire Island Community as possible, an online Public Meeting was held in conjunction with the First Public Meeting to allow anyone to provide feedback on the process through the internet. The overall plan for the Online Community Public Event #1, for Fire Island, was a digital open house which could be attended at any time 24 hours a day, seven days a week for a ten day timeframe.

The Online Public Meeting (survey instrument) provided identical stations to the in-person meeting. Respondents were asked to identify their

**Recover from Yesterday,
Plan for Tomorrow**

Fire Island NYRCR

**December 7 through
December 17, 2013**

24 Hours a Day

<https://www.research.net/s/NYRCR-FireIslandPublicMeeting>

***** ONLINE Open House Workshop *****

As part of the New York Rising Community Reconstruction Program, an online public event is being provided to gather community knowledge, experience, and recommendations that will be essential in the development of your community's reconstruction plan.

Members of the community are invited to provide input on your Community Reconstruction Planning Committee's work to date.

Simply log onto
<https://www.research.net/s/NYRCR-FireIslandPublicMeeting>
anytime from December 7th through 17th and follow the prompts to learn about the NYRCR program and provide your comments.

For more information email us at info@stormrecovery.ny.gov or visit www.stormrecovery.ny.gov/nyrcr

relationship to Fire Island (owner, renter, employee, visitor) and were able to view the Planning process and comment on what is great about their community, the Community Vision, maps including Geographic Scope, Jurisdiction Map, Risk Maps and Asset Maps. They were also able to comment on Community Needs and Opportunities and Regional Issues as well as provide general comments. A total of 567 people responded to the Online Meeting providing thousands of comments which were summarized



Welcome to the Fire Island Online Public Meeting



for the Committee's review and consideration in the planning process.

Other Considerations

Although the events are advertised as events for the NYRCR program, community members attend who are more interested in assistance with individual property concerns. To accommodate these individuals at each public engagement event tables are available in a separate area for State, FEMA, and NGO staff from the various intake centers to provide individual assistance. These community members are subsequently encouraged to participate in the NYRCR planning process.

Website

The NYRCR website will serve as a repository for downloadable versions of all public information, event and event notifications. Posted materials include an overview of the planning process, reports, maps, and documents, summaries of public engagement events, notices of public engagement events, and contact information. The website includes an area to accept public comment, as well as a section for Frequently Asked Questions (FAQs). All materials and information on the website is kept up to date. The address is: <http://stormrecovery.ny.gov/nyrcr>



Print and Broadcast Media

Study information is also disseminated through selected local, print, radio, and TV media to keep the community informed and to respond to media inquiries. A particular effort will be made to include publications, radio, and TV stations that target minority populations.

Outreach Techniques for Receiving Input

An important component of the outreach program is to understand public sentiment and to be able to answer questions and address public concerns. Several methods are provided for the public to make comments and ask questions. The NYRCR Consulting Team uses these comments to enhance and improve the NYRCR plan. The team documents all comments received and adds them to the record. Comments are also reviewed by the Committee and the NYRCR Consulting Team.

Study Team Communication

The Study Team is also available to directly answer specific questions and receive comments. The primary contact for the Study Team is: Vanessa Lockel, Community Reconstruction Program Suffolk Lead, New York Rising Community Reconstruction Program. Ms. Lockel can be reached at vlockel@stormrecovery.ny.gov.

E-Mail

E-mail comments and requests for information can be sent to the State’s e-mail address at: info@stormrecovery.ny.gov. This email address is prominently displayed on the website so that it is widely disseminated and available for public use. The NYRCR Consulting Team incorporates input and/or respond, as appropriate based on guidance from the State. The team will work with NYS to post comments or questions (with responses) that appear repeatedly to the FAQ page on the state’s website.

Comment Forms

Comment forms are available at Committee meetings and public engagement events and on the state’s website to provide an opportunity for the public to contribute their thoughts, which are then passed along to the Committee and the NYRCR Consulting Team.

Requests for Information

All requests for information will be acknowledged by the NYRCR Consulting Team within a week with a letter or email accompanied by the materials requested or by a referral to the State’s website where the material can be downloaded. If a response to the request requires more than a week, the individual making the request will be contacted with an estimate of the anticipated delivery date. An offer will always be made to provide further assistance should it be necessary.



12. Next Steps

Strategies and Projects

The process undertaken by the Committee has focused on building towards the final development of a specific plan of projects and implementation strategies that will make Fire Island more resilient. The strategies and projects presented in this NYRCR Plan are in the early stages of development. They require narrowing of scope and purpose, expert input, and prioritization. Input from specialists in several planning areas and from the public will be solicited in the coming weeks in order to begin the process of narrowing down the options to the most effective, most feasible, most appropriate, most needed, as well as most desirable to the public. The Committee will use the feedback from their peers and experts to prioritize the final list of strategies, which will be submitted to the State in early 2014.

The NYRCR Consulting Team will work with the Committee to flesh out the strategies with the greatest potential into implementable projects. Steps to prioritize strategies will include, but will not be limited to, conducting a thorough risk assessment of assets, exploring new and innovative ideas for addressing resiliency issues, and linking vulnerable assets to innovative strategies. The development of projects from these strategies will require homing in on the exact desired outcomes of projects and/or the specific geographic areas, developing detailed scopes of work and cost estimates, and defining the community benefit values to calculate the cost/benefit ratios.

The NYRCR Consulting Team, along with the State Planning team will help the Fire Island Committee to consider innovative strategies and actions to address their specific list of resiliency issues, particularly strategies that create co-benefits with other community issues. Wherever possible, the team will seek to leverage existing programs, upcoming projects, and eligible funding sources to incorporate resiliency measures that have been prioritized by the Committee.

Prioritization will be interwoven throughout the process. The assets will be categorized by risk assessment area and community value, which will serve to highlight those most critical. Stemming from the assets, the needs and strategies will be categorized into immediate, short-, medium-, and long-term, as well as discussed at length in terms of feasibility, necessity, and value. Finally, projects will be ranked by value and criticality. Additional considerations will include relation to the Community Vision and the comprehensiveness of the list (ensuring the inclusion of projects with local and regional impact and with immediate to long-term project implementation timelines).

A final list of potential projects to be advanced in this process will be submitted to the State in early 2014.

Technical Support

At present, the NYRCR Consulting Team is developing a format to engage multiple experts to discuss strategies and projects that would be most suitable for Suffolk County in general, as well as for each NYRCR community in particular. Based on Fire Island's identified needs and preliminary list of strategies, expertise may be sought from the following entities (in addition to the specialists available on the NYRCR Consulting Team) in these specified areas:

- FEMA Hazard Mitigation
 - Hardening of critical facilities and mitigation of homes
- Verizon/Other Telecommunication Utilities
 - Hardening of critical facilities
- NYSDEC
 - Permit streamlining
 - Shoreline stabilization options and living shorelines
- USACE
 - Ocean front and bay front stabilization
- US Environmental Protection Agency (USEPA)
 - Green infrastructure for repetitive flooding and water quality

NYRCR Plans will be refined as community needs evolve and based on correspondence/feedback from the organizations listed above. At a future date, as potential projects and strategies are refined, engineers/experts on the project team will be incorporated into the NYRCR Plan to discuss the feasibility and cost of projects. Additional next steps may include a potential Island-wide webinar to tackle regional issues common to all of Long Island.

Consideration of the Implementation Structure

The implementation timeline of potential projects will vary based on the complexity of the project, the institutional coordination necessary, and the potential for necessary environmental permitting. The intention of this program is to identify a range of projects which would include immediate implementation projects that could occur within 0 to 6 months; mid-term implementation projects that could be implemented within 6 months to three years; and, long-term implementation projects that could occur over a period in excess of three years.

The ability to identify projects that are programmatic in nature or that could be implemented incrementally over time is also desirable. These projects could begin with planning and design, and be implemented in sections based on risk, community desire, and relationship to critical asset. These projects may also have the ability to access or leverage multiple funding sources if they address multiple resiliency issues or can provide benefit to multiple community assets.

As projects are better defined and prioritized by the Committee and through public engagement, implementation structures and schedules will be developed and optimized to encourage the quickest and most efficient expenditure of resources and associated benefits for Fire Island.

Recent and Upcoming Events

Recent and upcoming events, aside from regularly scheduled Committee meetings are noted below.

Rebuild by Design, Nassau/Suffolk Counties, New York: The Rebuild by Design event took place in early October 2013. This event provided an opportunity to showcase Long Island and to explore the potential for innovative projects in the area. Design teams from across the nation and the Netherlands toured Nassau County extensively and also spoke with first responders from Suffolk County. The experts felt that the feedback from Suffolk's first responders was invaluable in terms of strengthening their knowledge of resilient post-storm design as well as designing for practical and emergency situations.



