



NY Rising Community Reconstruction Program

Recover from yesterday, plan for tomorrow

Conceptual Plan - WEST GILGO TO CAPTREE



OCTOBER 2013

This document was developed by the West Gilgo to Captree 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:

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

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Member	Tom Cassidy	WGB Board Member; Gilgo resident
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Member	Arnie Lanzillotta	President Oak Island Beach Association
Member	Paul McDuffie	Unofficial liaison between the Gilgo community and the Town of Babylon; Gilgo resident
Member	Jed Meade	President of Oak Beach Civic Association
Member	Mark Nuccio	Oak Island resident
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Municipal Representative	Dorian Dale	Director of Sustainability for the County; West Gilgo resident
Municipal Representative	Brian Zitani	Babylon Department of Environmental Control



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 Department of State. 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.

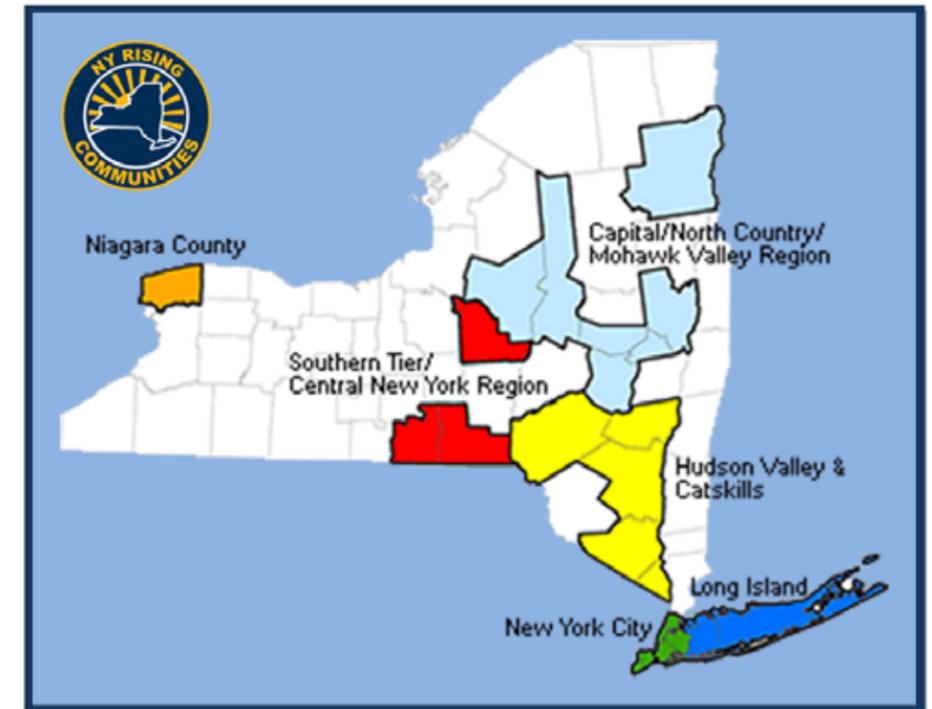
In the months ahead, communities will develop ways to implement additional strategies for economic revitalization, human services, housing, infrastructure, natural and cultural resources, and the community's capacity to implement changes.

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 plan for community reconstruction. 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.

October 31, 2013

New York Rising Communities



Find out more at:

www.stormrecovery.ny.gov





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1. Program Overview

Description of the Program

The New York Rising Community Reconstruction (NYRCR) Program is intended to empower the communities most affected by the storms to develop and implement locally-created strategies for rebuilding, strengthening, and making their respective communities more resilient against future weather events. 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 US Federal Emergency Management Administration (FEMA) *National Disaster Recovery Framework*, will consider the needs, risks and opportunities related to assets in the following recovery support function categories¹:

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

A total of 102 communities across New York State have been designated for Community Reconstruction Program assistance. Of these, a total of 10 communities, noted below, make up the eight NYRCR Committees in Suffolk County.

- 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 in March 2014, 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 storm 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; prioritizing projects and actions; conducting cost benefit analysis of chosen projects and actions as well as identifying 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 (“Committee”) that accurately 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, Village, and County representatives, elected legislative representatives, 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 engagement plan to both inform and involve residents of the NYRCR Program.

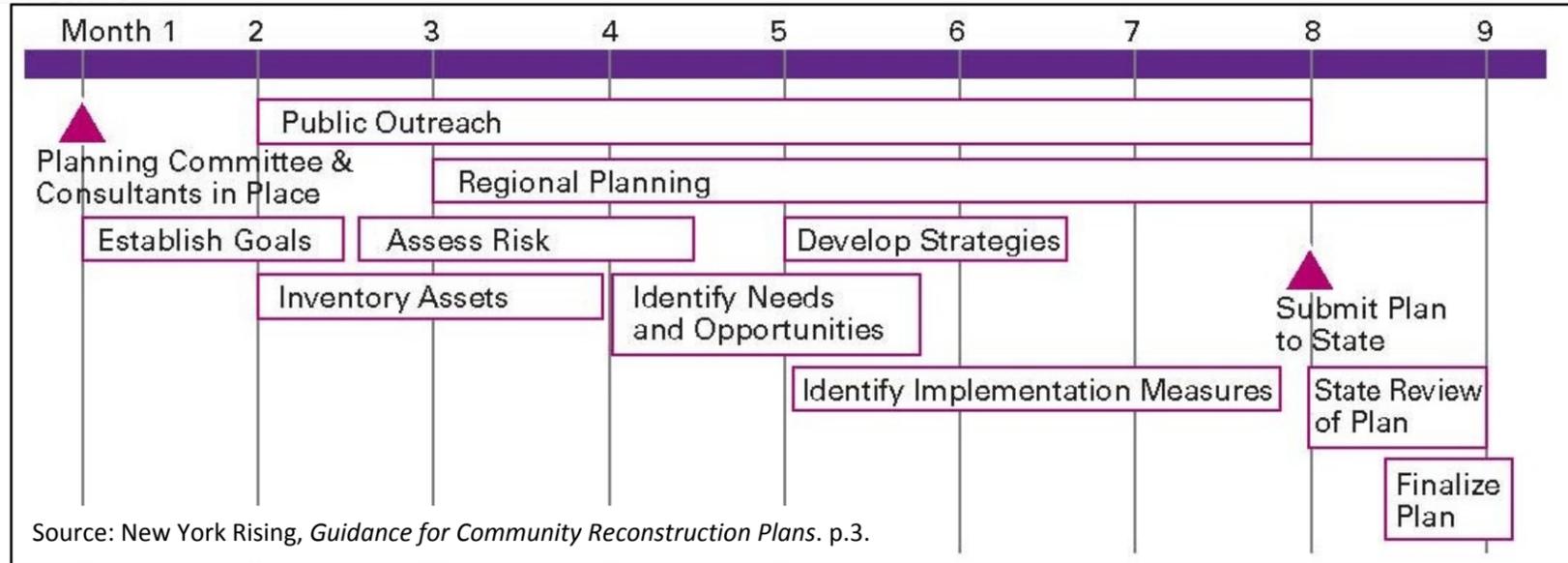
Planning Process Timeline

The NYRCR planning process is anticipated to last approximately eight months. Final plans submittals to the State are due in March 2014. Key milestones in the planning horizon (e.g., public engagement, risk assessment, identification of needs and opportunities) are shown in the adjacent graphic. This Conceptual Plan highlights the progress of the Committee for the one-year anniversary of Sandy and next steps for the completion of a final plan in March 2014. It is important to remember that project implementation will likely begin before the 8-month planning period, and will continue well beyond as the State continually works to match other funding sources -- federal, state, local, private, philanthropic, not-for-profit -- with these projects.

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. A successful NYRCR Plan, which would qualify communities to receive funding and grants to implement projects and actions identified in their plans, must contain the following components:

- **Inventory and assessment of risk to key assets and systems.** This inventory and assessment 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., wetlands, dunes, modifications to land use regulations, other improvements in community systems).
- **Protection of vulnerable populations.** Development of new measures to protect vulnerable persons through housing decisions and other services.ⁱⁱ Measures to protect these populations may include siting new facilities in lower risk areas, requiring back up power systems for critical facilities like hospitals and nursing homes, and improving communications systems to ensure that vulnerable persons are not left without aid.
- **Projects with economic growth co-benefits.** This characteristic of a successful plan relates to projects that will improve the future of the local economy but also enhance the community's resilience. Illustrative projects may include a transportation infrastructure improvement project that may result in the ancillary growth of a main business corridor. Similarly, an investment in open space could potentially serve a dual purpose as both a recreational space/community destination and also as a coastal flooding buffer protecting against storm damage.
- **Regional Coordination.** While designated NYRCR communities in Suffolk County have specific local needs, reconstruction and resiliency efforts must also relate to regional issues that arise across Long Island. As such, final NYRCR Plans must also address long-term regional objectives across Long Island.
- **Detailed implementation agendas.** Each final NYRCR Plan must include a concise description of the tasks it will take to implement the plan. This includes assigning responsibility for specific actions to specific entities or individuals and establishing timelines for each action, as appropriate.

The Conceptual Plan

The purpose of this Conceptual Plan is to provide an overview of the West Gilgo to Captree 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 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.





2. Community Overview

The NYRCR Program planning area of “West Gilgo to Captree” encompasses six distinct communities: West Gilgo, Gilgo, Oak Beach, Oak Island, Oak Island Beach Association, and Captree. All of the communities are located on Jones Beach Island, with the exceptions of Oak Island and Captree Island, which lie just north of Oak Beach in the Great South Bay. With the exception of part of Captree, which lies partly in the Town of Islip, all of the communities are located in the Town of Babylon.

The six communities are predominantly residential and the land is leased from the Town of Babylon via long-term leases until the year 2065. Oak Beach-Captree is a census-designated place with a 2010 population of 286 people in 2.8 mi.² of land and 0.9 mi.² of water. Gilgo to the west is also a census-designated place, encompassing 5.0 mi.² of land and 6.7 mi.² of water with a population of 131 people (Census figures presumably reflect year-round residents).

Historic Context

The earliest residents of these communities settled in the late 1800s for the exclusive purposes of recreation and residences. In 1878, the Babylon Town Board authorized 18 Babylon residents to sign a 21-year lease to utilize lots on Oak Island. The first privately owned cottage on Oak Island was built by Henry Livingston, who named it Little Rest. Oak Beach was also home to Station #26, one of several U.S. Life-Saving Service stations in Long Island. The first house on Oak Beach was built by Captain Chariles Arnold in 1888 who was the first year-round keeper of the USLSS. Today, Station #26 is the only remaining original station on Long Island.

Soon, Babylon granted additional leases for other residential leases on both Oak Island and Oak Island Beach. Oak Island is the only one of the six communities that to this day is only accessible by boat and does not have

electricity, sewer, or a public water system. In the early 1900s steam ferries brought residents and visitors between Oak Island and the Babylon docks.

Oak Island Beach Association was granted its original lease in 1896 for a period of nine years with the understanding that at least 20 homes would be built before the lease expired. The Association was required to pay rent of \$100 per year, plus \$5 for each home constructed. Rent would be paid on all property, regardless of whether a house was built, an agreement that remains in effect to this day.

West Gilgo, on the other hand, was settled under a different set of circumstances. The residents of High Hill Beach, a coastal community formerly located further west of the NYRCR planning area, were forced to relocate due to Robert Moses’ creation of Jones Beach State Park. In the 1930s, some of the original houses were moved by barge eastward, while others were moved by road on the newly created parkway, and rebuilt at the site of West Gilgo. Some of the homes were also taken to Amityville and Oak Island.



According to legend, Gilgo is named after a famous fisherman named Gill Burch who lived on the mainland after the Civil War. When neighbors went fishing and wanted to ensure a good catch they would go where “Gill goes.” The community was once home to a U.S. Life-Saving Service station, built

circa 1853 and discontinued in 1917. Gilgo was the first home of the East Coast Surfing Championships from 1961 to 1964. Robert Moses owned a summer home in Gilgo until he died in 1981 at the age of 92.

Captree is a state park on the easternmost tip of Jones Beach Island. The island that shares its name, Captree Island, is the first island exit on the Robert Moses Causeway from West Islip to the barrier islands, a span that was completed in 1951.

Postcards indicate that Captree was settled with summer cottages as early as the 1930s. Like Oak Island, Captree Island is exclusively residential.



The barrier island communities are a critical asset to the mainland, providing the first line of defense against the Atlantic’s powerful waves, as well as serving as a recreational and cultural gem. With the exception of Oak Island, all of the beach communities saw increased development with the extension of the Robert Moses Causeway, which provided easy access to the mainland. The character of the barrier island communities has always been a delicate balance between the interests of tourism developers who may want to exploit the prime beach location, and residents who seek to maintain the sleepy village ambiance.

Present Day

Approximately 500 households live in the barrier island communities in the West Gilgo to Captree NYRCR planning area, many of whom are increasingly choosing to live there year-round. About 420 homes are located in West Gilgo, Gilgo, Oak Beach or Oak Island Beach Association, about 30 are located on Captree Island, and roughly 50 are on Oak Island. Residents take full advantage of their surroundings of beaches and wetlands, while also being nearby to all of the conveniences of Islip and Babylon. Their children attend Babylon’s excellent schools.

Three of the communities – West Gilgo, Oak Island Beach Association, and Oak Island – are associations that have a Master lease with the Town of Babylon. The Master lease encompasses a large physical area in which the associations give sub-leaseholds to successful applicants, who in turn agree to abide by association policies. The other three communities – Gilgo, Oak Beach, and Captree – have individual leases from the Town.





The Environmental Study of the Barrier and Bay Island Communities, prepared in 1994 for the Town of Babylon and covering a study area roughly the same as the NYRCR planning area, states that “the potential for damage caused by a severe coastal storm is the most serious threat that faces the residents and property of the Outer Beach.” The report explains that this is due to the location of all of the communities within the 100-year floodplain, with 81% of the houses in the “V zone,” just 42% of the houses in the study area conforming with the minimal flood prevention standard for first floor elevation, and less than 5% of those in the V zone complying with structural requirements for resistance against wind and waves.

On the other hand, the report also states that the presence of the six communities has likely had beneficial effects on the natural environment, stating that the majority of residents partake in conservation efforts and feel strongly about protecting the ecological services of the barrier islands.

West Gilgo

West Gilgo is a gated community of approximately 80 homes where about half of the residences are now winterized and a growing number of families are year-round. Non-residential assets include a small community church, a self-service library, and an unmanned post office. West Gilgo is unique in that it is the only barrier island community in the planning area that has a public water system.



Gilgo

Today Gilgo is a close-knit beach community where you will often see surfers ascending from the beach tunnels after catching the morning waves. The community is known for its care for the natural environment. In 2008 Gilgo residents partnered with a local surf clothing company to create a mural project to paint the beach tunnel in an environmental theme. Residents regularly hang out at the Gilgo Beach Inn, one of the few commercial establishments in the NYRCR planning area.

Oak Beach

Oak Beach is now entirely residential, though as recently as 1999 the community was known for a raucous establishment, the Oak Beach Inn. The OBI was torn down in 2003 and in its place is a fishing dock and parking lot, which is slated to be developed into a park. The community, which contains about 200 homes, is unique in that the houses in some areas sit three rows deep from the road to the water and are connected by a series of residential boardwalks. For the homes in the second and third rows from the road, the boardwalks are the sole means of access for the residents, as well as for emergency services. Maintenance of the boardwalk system is the responsibility of the adjacent homeowner.



Oak Island Beach Association

Oak Island Beach Association is a gated community just east of Oak Beach. The Association pays for all road maintenance. The Association is unique in that it maintains a master lease with the Town of Babylon, whereas all of the leases in the other planning area communities are individual by property.

Oak Island

Oak Island maintains its identity as a seasonal community, due to the fact that the island is not served by electricity. Residents travel back and forth

from their individual docks on Oak Island to a community dock on Jones Beach Island near Captree State Park.



Captree

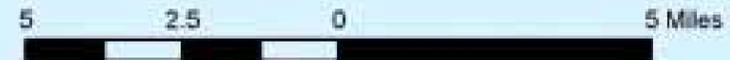
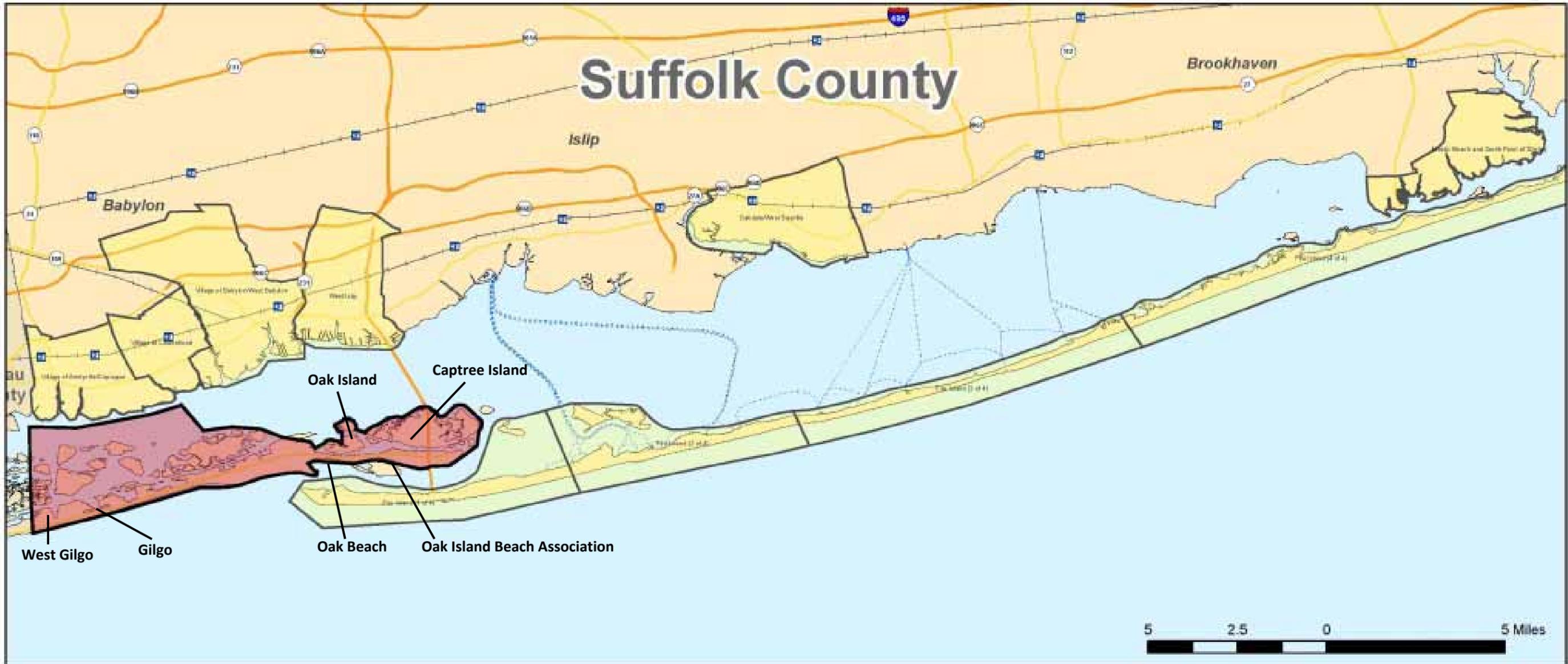
Captree Island consists today of a single entry road with approximately 30 structures. Residents enjoy fishing, clamming, seining, kayaking, and birding, along with their sweeping views of the Bay, Jones Beach Island, and Fire Island.

The primary economic assets within the planning area communities are the Captree Fleet and associated marina, bait and tackle shop, fueling station, and restaurant. Located in the marina within Captree State Park at the eastern tip of Jones Beach Island, the fleet provides open and charter boats for touring, fishing, scuba diving, and sightseeing excursions. Although a few additional commercial establishments operate, residents express the desire to leave commercial land uses to mainland Long Island.

However, the economic importance of the barrier islands cannot be underscored enough. The barrier island communities and their commitment to maintaining clean beaches and thriving wetlands attracts millions in tourism dollars every summer from visitors staying at hotels, eating at restaurants, and fueling up on the mainland before spending the day at the beaches. Furthermore, the healthy barrier island ecosystems ensure the economic sustainability of the mainland coastal communities by providing the first line of defense from nor’easters and hurricanes.



NYRCR: West Gilgo to Captree Planning Area Location



Legend

- West Gilgo to Captree Planning Area
- Other NYRCR Planning Areas
- NY Long Island Railroad Station

Roads

- Interstate
- Highways
- Ferry
- Long Island Railroad

Counties

- Nassau
- Suffolk
- Municipal Boundary





Demographic Overview

Geographic Area and Data

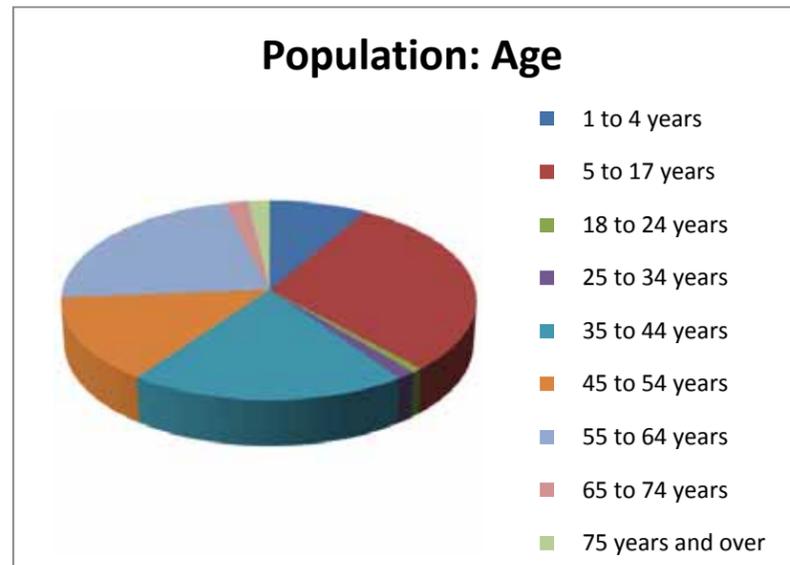
The West Gilgo to Captree NYRCR Program planning area is composed of the Gilgo Census Designated Place (CDP) and the Oak Beach-Captree CDP. With the exception of data on ethnicity and race, all demographic data depicted below is taken from the US Census Bureau's American Factfinder at the CDP level, and reflects data from the most recent American Community Survey (ACS). Demographic data relating to ethnicity and race were derived from the 2010 Census in order to provide the most recent data available in those categories.

The CDP level was selected because the availability and detail of current Census data vary by geographic location and level of analysis (CDP, Census Tract, Census Block, etc.). The CDP level provided a uniform level of data detail and reporting period. It is acknowledged that the CDP data may include some areas that are not contained within the identified NYRCR planning area; however, across all CDPs in Suffolk County, the differences between the Census CDP boundaries and the NYRCR planning area definitions are not large. Additionally, the Census data's intended use in this report is to provide an overview of the composition and general habits of the community. It is unlikely that areas included in the CDP but excluded from the NYRCR planning area would result in a substantial effect on the overview-level interpretation of the data or affect the identification of needs and opportunities or projects under the NYRCR Program.

West Gilgo to Captree General Demographics

The age of the population in the West Gilgo to Captree NYRCR planning area shows a typical suburban distribution among the Census age groups, with about 40% under 35 years old, 35% of the population between 35 and 54 years old, and 25% over 55 years old.

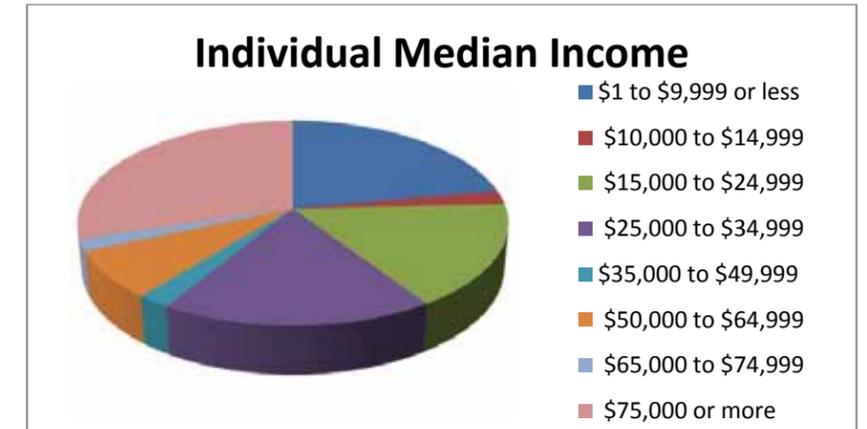
The community is 98% White with 1% Asian, and 1% classified as two or more races. Six percent of the population is Hispanic or Latino. The residents report that everyone in the community either speaks English as the only language at home or rate their English proficiency as "very good."



Income and Poverty

The community includes a diverse range of individual wage earnings. More than half earn less than \$35,000, while almost 30% earn \$75,000 or more. Although a large percentage, 22%, earns less than \$10,000, a small percentage, 3%, is under 150% of the poverty level, indicating that the population reporting individual income under \$10,000 is primarily composed of retirees and individuals in similar circumstances, not

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. Less than 25% of the residents in West Gilgo to Captree work within Suffolk County, but all of the residents work somewhere within New York. Nearly 80% of workers drive alone to work or carpool. The next largest means of travel to work is by rail, 12%, with the remaining working at home. As would be expected, there are no zero-car households, with almost half having 2 vehicles and half having 3 or more vehicles.



While workers residing in the community support a diverse array of industries, educational, health care and social services, and information, finance, insurance, and real-estate compose more than half of all industries represented. Following closely is the arts, entertainment, and recreation sector.

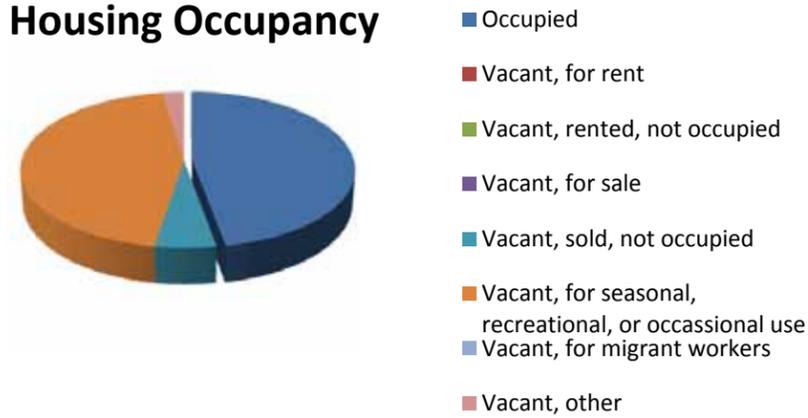




Industry



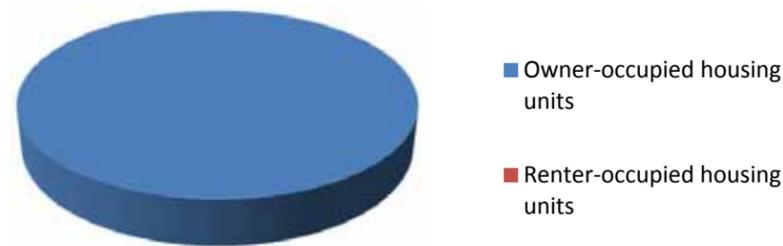
Housing Occupancy



Housing

In the West Gilgo to Captree NYRCR planning area all of the housing units are owner-occupied. More than half of the housing units are vacant, consisting primarily of seasonal residences.

Housing Type



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 West Gilgo to Captree NYRCR planning area.

The journey to work data indicates that most of the West Gilgo to Captree workers commute by car. This may raise the priority of resilient roadway infrastructure to provide a means to travel to a worker's place of employment. At the same time the opportunity to create, improve, and increase the resiliency of the pedestrian, bicycle, and transit networks should not be overlooked. Resiliency of the roadways in the West Gilgo to Captree NYRCR planning area is of particular importance because of the limited number of routes in and out of the communities.

Additionally, housing type and occupancy indicates that almost half of the housing stock is used seasonally. This indicates that in the event of a catastrophic event, a good portion of the homes that may be affected are secondary residences.

These Census findings will be incorporated into the ongoing dialogue with the West Gilgo to Captree 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. Effects of Superstorm Sandy

On Friday, October 19, 2012 a tropical depression formed in the Caribbean. In only six hours the depression intensified into a tropical storm. This 18th named storm of 2012 was designated Tropical Storm Sandy. By the following Wednesday on October 24th the storm’s maximum sustained winds had increased to 74 MPH and Sandy was upgraded to a Hurricane.ⁱⁱⁱ

After passing through the Caribbean including Jamaica, Cuba, and the Bahamas, and fluctuating between a Category 1 and Category 2 Hurricane, on Saturday October 27th Sandy turned north toward the US coast. The storm made landfall near Atlantic City, New Jersey around 8:00pm on Monday, October 29th. The winds had decreased to just below the threshold for a Category 1 Hurricane and meteorologists and the press christened this near hurricane as “Superstorm Sandy.”

Sandy’s historically unprecedented track approached New Jersey and New York from the east; storms typically approach from the south.^{iv} As a result, the track of Sandy resulted in a worst-case scenario for storm surge and inundation for coastal regions from New Jersey north to Connecticut, including New York City and Long Island. The storm surge came ashore near the time of high tide along the Atlantic Coast and during a full moon when tides are strongest. These factors combined for record tide levels. The storm surge in New York Harbor reached almost 14 feet at the Battery. Forty-five miles away, on the south shore of Suffolk County in Islip, the Storm surge reached nearly 8 feet. This was on top of the morning tide that had already inundated the bay front shore and had yet to retreat.

In addition to the triple threat of the enormous storm surge, the coinciding high tide and the full moon, other factors conspired to create the devastation that resulted from Sandy. Nearby maximum wind gusts ranged from 79 mph in East Farmingdale to 90 mph at Long Island MacArthur Airport in Islip. On the southward facing shores of Long Island, the storm

surge was accompanied by fiercely destructive wave action. An off-shore buoy located 15 nautical miles southeast of Breezy Point on the Rockaway Peninsula reported a wave height of 32.5 feet (the largest since record keeping began).

The devastation along the mid-Atlantic seaboard was unprecedented. Many lives were lost and estimates of damage range from 50 to 100 billion dollars in damage. On the local level, along Long Island’s South Shore, damage was also substantial.

In the barrier island communities from West Gilgo to Captree, an incessant storm surge and destructive wave action caused widespread flooding and erosion of shoreline protections. East-facing communities, such as Oak Beach and parts of Oak Island, fared the worst as easterly winds and the resultant mounting storm surge overwhelmed bulkheads, washed over jetties, submerged roads, and inundated homes. Waves battered and crumpled docks and boardwalks. A home on the eastern side of Oak Island was pushed off of its foundation and carried 250 feet into the surrounding marshes.

The storm surge continuously pushed water from the ocean through the inlets and into the bay, flooding yards, driveways, first floors, cars, roads, and parking lots and leaving debris that would take months to remove. One year after Sandy and the Town of Babylon continues to empty and replace dumpsters for the disposal of damaged elements.

One major issue was that many people did not evacuate the island, despite the fact that the Towns of Babylon and Islip had

issued mandatory evacuation orders for all residents living in the 100-year floodplain, which includes all of the barrier island communities. Many residents, however, did not evacuate because they never received the order. The reverse 911 system failed when the evacuation notice went out and, although residents knew of the impending storm, they were given a false sense of security since there appeared to be no mandatory evacuation. Most are long-time residents who had ridden out storms before. Unfortunately Sandy’s impact turned out to be worse than any storms experienced in these residents’ lifetimes.

After the storm, returning to normal was a long process. In the immediate aftermath, residents report that microwave towers, which provide cellular phone service, were nonoperational due to either flooding of electrical controls or wind damage. Connecting with family and friends for updates on the response were futile.





Power was out for as much as 30 days for some residents, meaning no electricity or heat. Temperatures dropped to freezing in the days after Sandy and most families had no choice but to evacuate until power could be restored.

With the exception of West Gilgo, which operates on a municipal water system, most homes are connected to small water supply systems or individual wells with no backup power. The lack of electricity, therefore, also meant lack of fresh water. The weakening or failure of such networks during and after Superstorm Sandy highlighted the island communities' awareness of their dependence on connections to the mainland.



Cedar Beach, located between Gilgo Beach and Oak Beach, is typically protected from erosion by Democrat Point on Fire Island, which extends further south of the beach into the Atlantic and diminishes the strength of the oncoming surf. Because of this, Cedar Beach is a relatively wide beach, particularly when compared to Gilgo and West Gilgo, which require ongoing beach replenishment. Nevertheless, the aerials at right, taken before and after Sandy, illustrate the damage and erosion wrought by Sandy's powerful waves and storm surge.



Cedar Beach 3/6/12



Cedar Beach 11/3/12

Beach and dune erosion occurred as a result of the lashing wind and powerful, unrelenting waves. The Town of Babylon reported that the section of beach from West Gilgo east to Gilgo lost over an estimated 1 million cubic yards of beach material. Despite efforts by the State and U.S. Army Corps of Engineers over the past year to restore and strengthen the dunes, residents are worried that their protective capacity has been compromised. In October 2013, high winds from a coastal storm caused a football field-sized section of dunes in front of Gilgo Beach to collapse,

leaving the community exposed and susceptible in the midst of hurricane season.



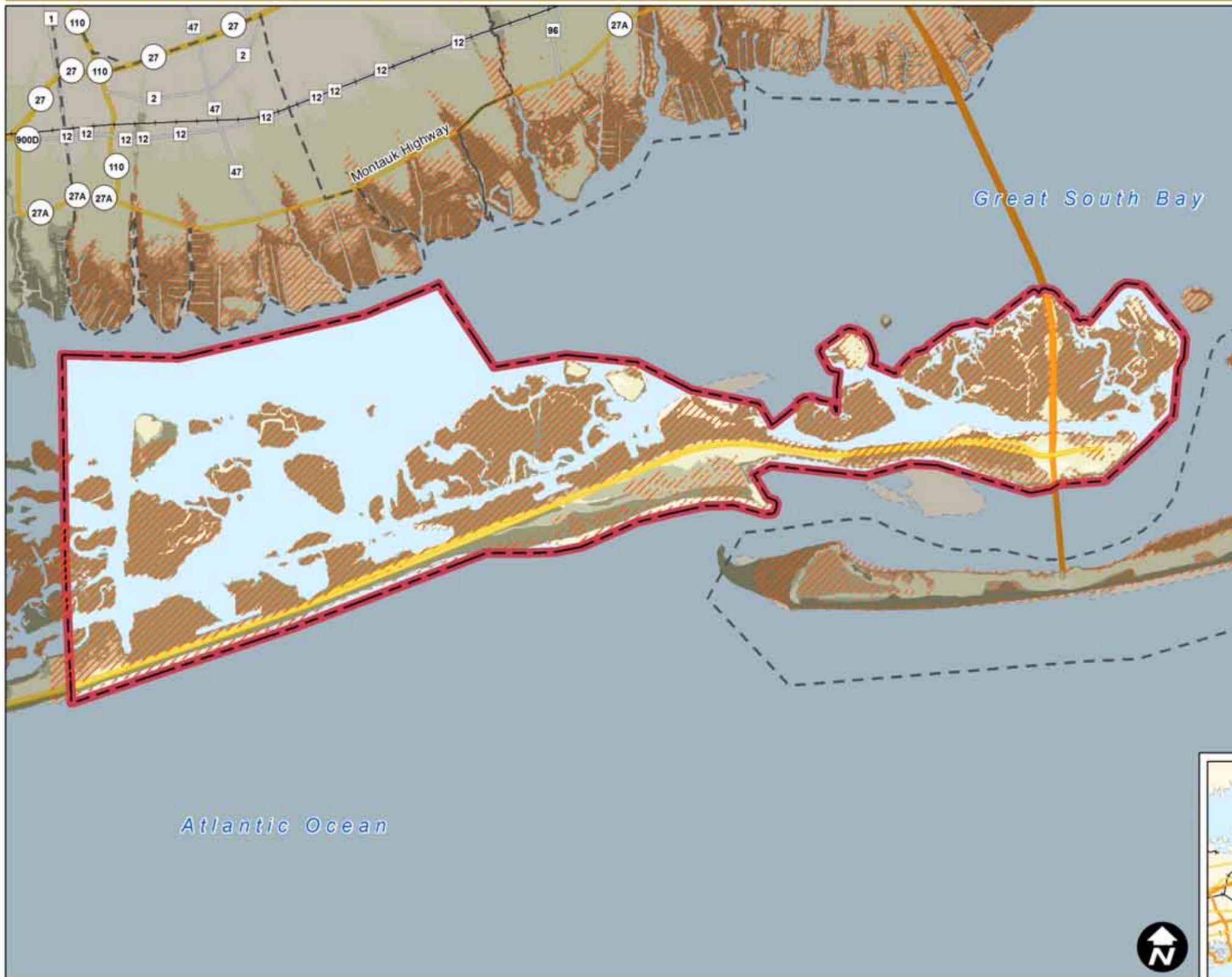
One of the most visible impacts of Sandy was the 600-foot wide breach at the Old Inlet location on Fire Island, about 20 miles east of Captree. The breach has allowed an influx of fresh ocean water into the Great South Bay that has led to a revival of the bay's ecology. The marshes serve a tremendous benefit to the barrier islands and mainland by slowing down and soaking up storm surge and reducing flooding and wave action. The breach may be an opportunity to restore the formerly thriving wetlands and the flora and fauna that comprise them.

"I am hopeful that we can begin the process of building smarter on the south shore's barrier islands to minimize man's interference with the natural processes of a dynamic shoreline. The goal should be to create a symbiotic relationship where storms can come, and storms can go with minimal damage to structures while residents and visitors serve as stewards responsible for the protection of these essential islands."

– West Gilgo to Captree Committee Member



NYRCR: West Gilgo to Captree Risk Assessment & Hurricane Sandy Inundation Areas



Legend

Risk Assessment Area

- Extreme
- High
- Moderate

Source: NYS Department of State

Area of Inundation Hurricane Sandy

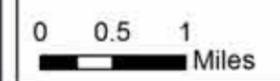
Source: Raster processing of average USGS peak surge elevations at West Islip and high-resolution LIDAR ground elevations; estimated mathematically as peak surge less ground elevation.

West Gilgo to Captree Planning Area

Other NYRCR Planning Areas

Source: NYRCR Community-hamlet planning area is defined as the US Census designed place (CDP) area.

Long Island Railroad





4. Geographic Scope of the Plan

The identification of a geographic scope for each NYRCR planning area 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. Considerations include: the locations of assets, flood zones (100-year floodplain), past experience with damages caused by storms, and potential inundation areas.

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.

West Gilgo to Captree NYRCR Geographic Scope

The West Gilgo to Captree communities define the geographic scope of the NYRCR planning area to include those 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 localities within Suffolk County fall under various overlapping jurisdictions (i.e. 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 public works infrastructure fall under different government entities with some services under the jurisdiction of a Village, others under the Town umbrella, and in the case of West Gilgo to Captree, across the Great South Bay. In spite of this challenge, best efforts have been made to work with the NYRCR Committees and the public to define a geographic scope for West Gilgo to Captree that responds to the communities' specific physical and cultural geography, risk and unique community assets.

The main challenge for the West Gilgo to Captree NYRCR communities in terms of geographic scope is the fair and equitable representation on the Committee of all six distinct communities within the NYRCR planning area. The communities are spread out along 10 miles of barrier island coastline and on three separate islands: Jones Beach Island, Oak Island, and Captree Island. Oak Island is inaccessible by vehicles and residents travel to and from the island exclusively by boat. In addition, although the island's residents are increasingly choosing to live here year-round, a significant segment of the population remains seasonal. As the planning process proceeds further into fall and winter and seasonal residents disperse, the NYRCR Committee will have to work harder to engage the public for their feedback and input into the final NYRCR plan.

The name "West Gilgo to Captree" succinctly describes the geographic scope of the NYRCR planning area from the westernmost community, West Gilgo, to the easternmost community, Captree.

With the geographic scope of the plan defined, the Jacobs/Cameron team (NYRCR Consulting Team) began a review of existing plans to incorporate and build on previous planning efforts that have been carried out for the West Gilgo to Captree communities.



"The barrier beaches both protect from and attract to the water that defines Long Island. The preeminent challenge is how to most effectively maintain the integrity of these barrier beaches."

– West Gilgo to Captree Committee Member





5. Review of Relevant Existing Plans and Studies

In order to better understand the planning environment and the work done to date within the West Gilgo to Captree NYRCR planning area geographic scope and at a regional level, an effort was undertaken to review pertinent plans, studies and reports. The following plans have been identified and reviewed:

- Hurricane Damage Mitigation Plan for the South Shore of Nassau and Suffolk Counties, October 1984
- Environmental Study of the Barrier and Bay Island Communities, June 1994
- Long Island South Shore Estuary Reserve Comprehensive Management Plan, Long Island South Shore Reserve Council, New York State Department of State (NYS DOS), 2001
- DMA 2000 Hazard Mitigation Plan – Suffolk County, New York, October 2008
- NYSDOT Ocean Parkway Shared-Use Path Project, 2008
- Fire Island Inlet to Montauk Point Reformulation Study Update, U.S. Army Corps of Engineers, 2013

Planning information that relates specifically to the six NYRCR communities was uncommon given their small size and limited planning capacity and resources. However, several plans exist for Jones Beach Island overall, particularly from the perspectives of coastal management, barrier island protection, and hazard mitigation.

The *Environmental Study of the Barrier and Bay Island Communities* provided the greatest breadth of information about both the communities and their natural surroundings. Written in 1994, the report’s data, conclusions and recommendations are pertinent today. About the communities, the report states that the average length of time that a family has occupied the same house in the study area is 25 years and the



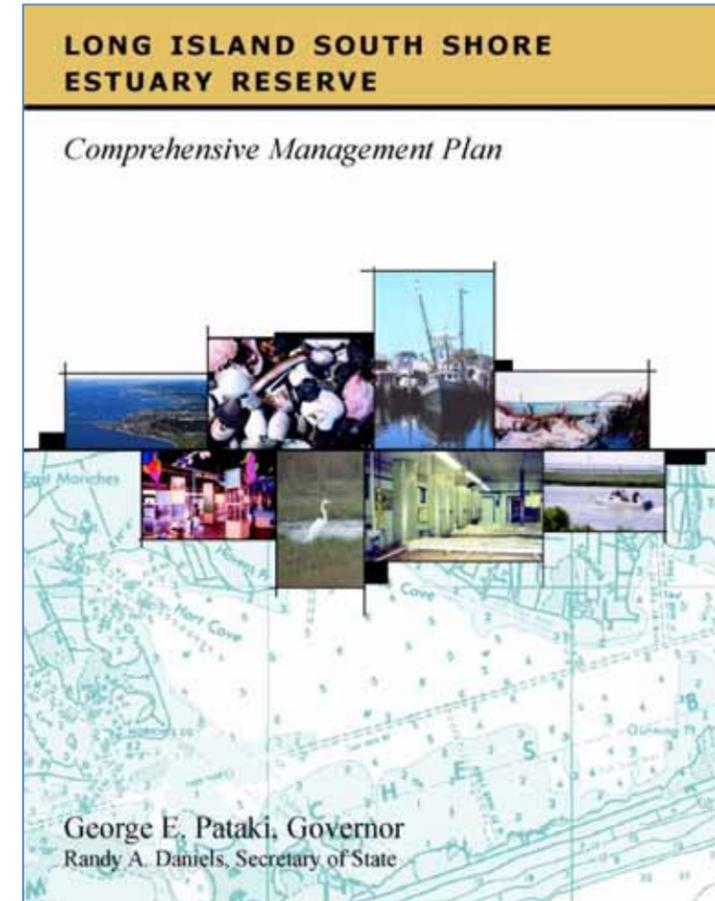
median term is 21 years. This shows that the communities are very stable and well-established. Furthermore, several families have occupied the same home for close to 100 years, passing it down through generations since the communities’ early days and indicating a very rich history.

Regarding risk, the study states that residents may have developed over the long-term a false sense of security as a result of having “escaped virtually unscathed from recent storms, which have wreaked extensive destruction in other areas of Long Island.” It goes on to predict that as a result, “some residents will not react appropriately to official directives during a storm emergency.” This expectation was realized during Superstorm Sandy when many residents did not evacuate. The report also notes that in Oak Beach the row of houses closest to the water may be the most susceptible to damages from flooding and erosion because they are located in the Coastal Erosion Hazard Area (CEHA).

Given the high susceptibility of residential structures in all six communities, the plan refers to 82 vacant lots that were never developed where the most vulnerable homes may be relocated to achieve lower risk. Other recommendations for reducing risk include beach nourishment and dune restoration at West Gilgo and Gilgo using the dredge spoil from the inlet; expansion of the Town of Babylon’s participation in FEMA’s Community Rating System; significant strengthening of the permitting and enforcement of four-wheel drive access to ecologically sensitive areas; and the establishment of civic associations in any communities where they do not already exist to streamline all residents’ compliance with codes and standards that reduce risk to the overall community.

The *Long Island South Shore Estuary Reserve Comprehensive Management Plan* from 2001 includes the Great South Bay and the other bays that are part of the estuary that lies between much of mainland Long Island and the barrier beach. The plan includes recommendations for management of the estuary in a holistic manner and in contrast to the multitude of municipal, county and state jurisdictions that divide the estuary. The plan addresses, “improving water quality, restoring and protecting living resources, expanding public use and enjoyment, sustaining the estuary-related economy and increasing public education, outreach and stewardship...” West Gilgo, Gilgo, Oak Island, and Captree Island are bay-

front communities that are inextricably tied to the estuary both economically and environmentally. The South Shore Estuary Reserve Council is assisted by the New York State Department of State.



The *Hurricane Damage Mitigation Plan for the South Shore of Nassau and Suffolk Counties* from 1984 contains strategies that continue to be discussed today, such as protecting and maintaining the dunes and constructing pedestrian crossover points as needed to protect the dunes. The Committee has not raised other strategies contained in the plan, such as the gradual phase-out of leases to homeowners as risks of flooding and erosion increase and restrictions on rebuilding after severe damages for structures located in the most vulnerable areas.

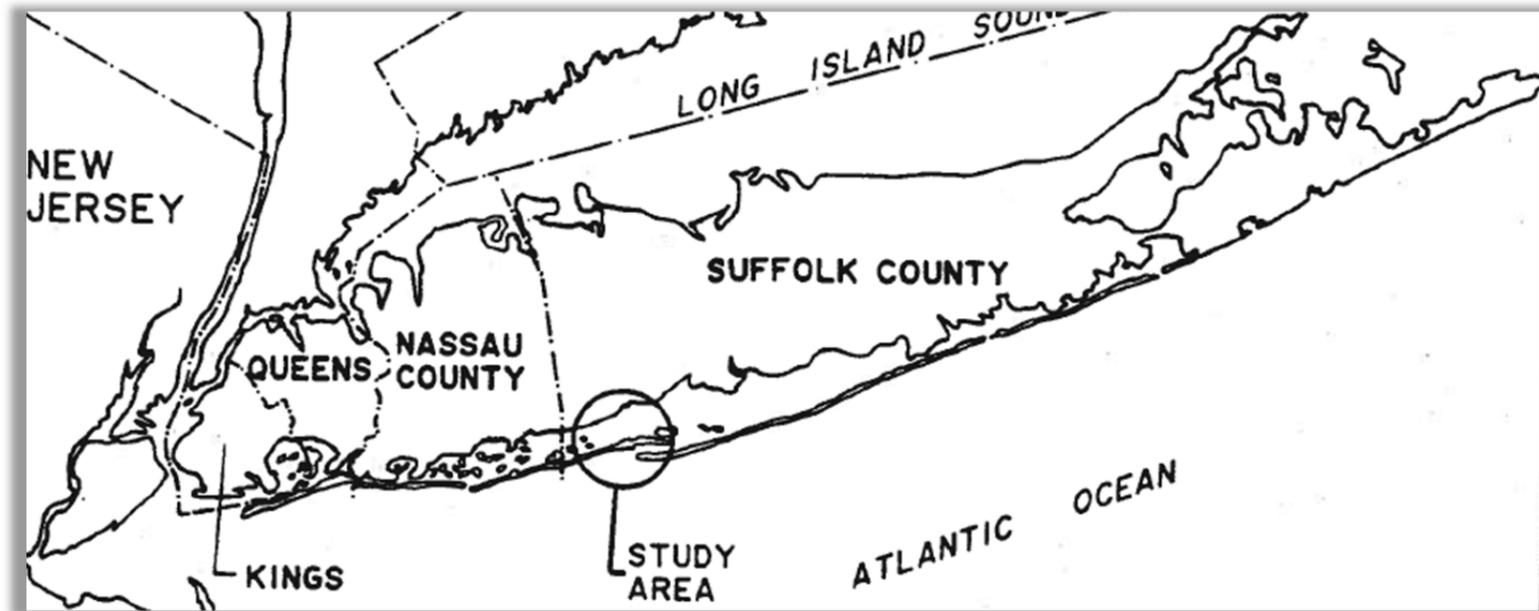


According to the *DMA 2000 Hazard Mitigation Plan*, the Town of Babylon has experienced 64 natural hazard events between 1635 and 2007, the majority of which are listed from the 20th Century due to better record keeping. The report's natural hazard risk rating lists Nor'Easters, Coastal Erosion, Severe Winter Storms, Hurricanes, and Flooding, in that order, as the highest risks to the Town of Babylon. Additionally, 24 of 26 Nor'Easter events between 1931 and 2006 were estimated to cause property, infrastructure, and economic damages exceeding 30% of the Town's total replacement cost for the years of the events. The report notes that Jones Island experiences the worst erosion rates along the entire eastern seaboard.

The geographic scope of the U.S. Army Corps of Engineers' *Fire Island to Montauk Reformulation Study* was extended in 2005 to include Gilgo, Cedar Beach, and Captree. The 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 longshore sediment transport, cross-shore sediment transport, dune growth and evolution, bayside shoreline processes, and circulation and water quality, are very similar to those of the six West Gilgo to Captree communities. 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.

The only plan identified that touches on the topic of community planning with implications for tourism and economic development is the *Ocean Parkway Shared-Use Path Project*. The plan highlights the auto-centric nature of the existing transportation infrastructure. The transportation landscape is dominated by the four-lane Ocean Parkway with periodic exits that provide access to residential communities as well as parking lots for visitors to the beaches and marinas. The lack of bicycle and pedestrian access creates safety hazards for cyclists and runners who use Ocean Parkway's shoulder for their recreational purposes. The planned bicycle and pedestrian shared pathway is designed to connect Wantagh State Parkway and the Robert Moses Causeway, which will include the NYRCR communities of West Gilgo, Gilgo, Oak Beach, and Oak Island Beach Association. The study also includes vegetated buffers to discourage illegal pedestrian crossing of the dunes. The project may be an opportunity for the NYRCR Committee to piggyback on and enhance key aspects of the plan, such as native plantings and educational kiosks.

The NYRCR Consulting Team will continue to identify pertinent technical studies and will work to integrate the findings and conclusions of these studies into the planning work where appropriate. The next step was to work with the Committee to define a Community Vision for their NYRCR planning area.





7. Community Assets

One critical element of the final NYRCR Plan will be 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 the West Gilgo to Captree communities. The purpose of the inventory is to compile a comprehensive description of the assets located within as well as beyond the planning area (i.e. a resource that is physically located outside of the West Gilgo to Captree NYRCR planning area but whose service area encompasses the six NYRCR communities) whose loss or impairment due to weather events and/or flooding would put critical facilities and essential social, economic or environmental functions of the community 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. Community assets can also include cultural, natural and recreational resources that play a critical role in a community's identify and that advance the health of the natural environment. These critical community resources promote the health, safety, and general welfare of the West Gilgo to Captree communities.

Aside from structures or services, another important community asset class relates to infrastructure and/or physical systems. These range from electric and gas utilities to key transportation routes which provide access to and within a community (i.e., roadways and rail systems). Concentrations of land uses such as those that would comprise a downtown commercial district were also noted.

Numerous data sources were reviewed and local community and Committee feedback were used in order to identify assets the West Gilgo

to Captree 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.^v

Initial Asset Inventory

The identification of known assets is an important step in developing strategies to improve the resiliency of the West Gilgo to Captree communities. The assets were identified through two methods: community engagement and technical mapping. The community engagement approach was undertaken by the NYRCR Committee, who identified assets known to community residents. The technical mapping effort was undertaken by the NYRCR Consulting Team using data supplied by NYS DOS and other state and federal agencies including FEMA. The mapping effort is intended to supplement the work of the West Gilgo to Captree communities NYRCR Committee by, 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. These "seen but unseen" assets are typically facilities and infrastructure vital to the community's health and resilience that go unnoticed on a day-to-day basis, only becoming obvious when they fail, such as small roadway bridges and more obscure government service offices. The assets identified through the mapping effort will be combined with the asset data provided by the 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 GIS data-driven thematic maps presented in this section illustrate various assets located within the West Gilgo to Captree communities. Map data is sourced primarily from geodatabase and shape-file resources provided by NYS DOS and supplemented by data readily available to the public through the NYS Department of Environmental Conservation. 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, NYS DOS data was presented.

Risk Assessment

Risk Assessment Area data is included to depict the risk level to various government services and community resources and suggest issues for further consideration in the development of strategies and projects. The tables on these pages summarize the preliminary findings, listing the assets and the Risk Assessment Area where they are located.

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 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.

1. Cultural, Natural, and Recreational Resources

The South Shore of Long Island has historically been and continues to be a natural and recreational resource. The area along the coastline is also the location most likely to be inundated during a storm event, but for undeveloped natural coastal resources, their location provides protective detention capacity lessening the impact of storm surges on inland locations. Many of these resources are relatively large in geographic area and span multiple Risk Assessment Areas.

Cultural and Recreational Resources are named according to the data set provided by the responsible government agency. Natural features that are elements of the landscape and not given place names by an agency are not named or listed individually. When wetlands are associated with a waterbody, they are named as associated with that waterbody.

The West Gilgo to Captree NYRCR area is dominated by tideland features and resources. Most of the tidal wetlands are located along the northern





shore of the NYRCR planning area. These areas are identified as parks, but serve more of an ecological function than a traditional recreational one.

Parkland Resources

Asset/Resource	Risk Assessment Area(s)
Petteanger Island State Tidal Wetlands	High and Extreme
Babylon Marsh State Tidal Wetlands	Extreme
Gilgo State Park (undeveloped)	High and Extreme
Captree State Park	Moderate and High

The parkland resources double as natural resources. This category also includes the Maritime Beach Natural Heritage Community, located primarily along the southern shore of the NYRCR planning area.

Natural Resources

Asset/Resource	Risk Assessment Area(s)
Tidal Wetlands	High and Extreme
Natural Heritage Priority Communities: Maritime Beach	Extreme

The available state data did not identify National-Register listed historic resources in the Gilgo to Captree NYRCR planning area.

2. Health and Social Services: Life Safety

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 West Gilgo to Captree NYRCR planning area does not have a police station within it. The Suffolk County Police Department provides police services for the NYRCR communities. The planning area also does not have a Fire Station within it. Fire protection is provided from the Village of Babylon. There are no hospitals located within the planning area. Good Samaritan Hospital Medical Center is located in West Islip.

3. 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.

Three state-owned facilities are located throughout the NYRCR planning area. On Gilgo Island and at the Cedar Beach area, two facilities fall within moderate to Extreme Risk Assessment Areas, while one additional facility is located in a Moderate Risk Assessment Area inside Captree State Park.

State-owned Buildings and Properties

Asset/Resource	Risk Assessment Area(s)
Main office Parks & Recreation - Captree State Park	Moderate
Envir Conservation - Babylon Marsh-elder & Petteanger Is. Tidal Wetlands	Moderate, High, and Extreme
Main office Parks & Recreation - Gilgo State Park	Moderate, High, and Extreme

4. Infrastructure: Transportation

Ocean Parkway provides east/west access and passes through a Moderate area within this NYRCR community. The Robert Moses Causeway (Moderate area) provides a north/south route from West Islip to the West Gilgo to Captree NYRCR planning area. Scour critical bridges within this NYRCR location are situated along the Robert Moses Causeway and are as follows:

Scour Critical Bridges

Asset/Resource	Risk Assessment Area(s)
Robert Moses Causeway (908J) crossing Great South Bay (BIN #s 1058811/1058812)	Extreme
Robert Moses Causeway (908J) crossing State Boat Channel (BIN #s 1058791/1058792)	Moderate

*Includes northbound and southbound spans

A review of available state data did not identify any other transportation-related infrastructure within the West Gilgo to Captree NYRCR planning area.





5. Infrastructure: Utilities

Water treatment plants, drinking water wells and communications towers are distributed throughout the West Gilgo to Captree NYRCR planning area. Approximately half of these facilities are located in Moderate Risk Assessment Areas. However, over a third of such utilities are found in the Extreme Risk Assessment Areas. Water, electric and gas distribution systems have not been mapped and quantified here but are distributed throughout developed areas in the Risk Assessment Areas.

Infrastructure Resources

Asset/Resource	Risk Assessment Area(s)
7 drinking water wells	Extreme
1 drinking water treatment plant	Extreme
3 drinking water wells	Moderate
1 water treatment plant	Moderate
1 cell tower	Moderate
6 microwave towers	Moderate

6. Housing

Residences in the West Gilgo to Captree NYRCR planning area are comprised almost entirely of single-family structures that are located directly in, or adjacent to Risk Assessment Areas. Approximately half of these residences are in Extreme Risk Assessment Areas while one-third are located in High Risk Assessment Areas. The remaining residences are in Moderate Risk Assessment Areas.

Housing Resources

Asset/Resource	Risk Assessment Area(s)
223 single-family structures	Extreme
146 single-family structures	High
74 single-family structures	Moderate



7. Economic Centers

There are three commercial properties in the West Gilgo to Captree NYRCR planning area; they are all located within a High Risk Assessment Area.

Economic Resources

Asset/Resource	Risk Assessment Area(s)
3 commercial properties	High

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 Committee and community residents; however, the urgency of the NYRCR Project required that the NYRCR committee begin assessing their communities' 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, such as VFW halls and other civic organization headquarters, 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 NYRCR Committee and community input maps of assets are presented in this section following the GIS thematic maps. The Committee and community data will be reconciled with the GIS data to complete the whole picture of assets, needs, and opportunities in the NYRCR planning area.

The Committee next took into account the assets located in their NYRCR planning area, particularly those situated within risk areas, and developed needs and opportunities to make the assets and functions that serve the community more resilient. These are presented in Section 8.



NYRCR: West Gilgo to Captree Emergency Services



Legend

- West Gilgo to Captree Planning Area
- Other NYRCR Planning Areas
- Police Station
- Hospital
- Fire Station
- Long Island Railroad
- Interstate
- Highways
- Major Roads
- Streets
- Ramp
- Ferry

Risk Assessment Area

- Extreme
- High
- Moderate

0 0.5 1 2 3 Miles

Source: NYS DOT, NYS DOG, MTA



NYRCR: West Gilgo to Captree

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
- 🔴 West Gilgo to Captree Planning Area
- ⬜ Other NYRCR Planning Areas
- Long Island Railroad

Risk Assessment Area

- ⬛ Extreme
- ⬜ High
- ⬜ Moderate

Scale: 1:50,000, NAD 83, MTR

0 0.5 1 2 3 Miles



NYRCR: West Gilgo to Captree Transportation Assets



Legend

- West Gilgo to Captree Planning Area
- Other NYRCR Planning Areas
- Long Island Railroad Station
- Bridge in Poor Condition
- Scour Critical Bridge
- Long Island Railroad
- Heliports
- Highways
- Major Roads

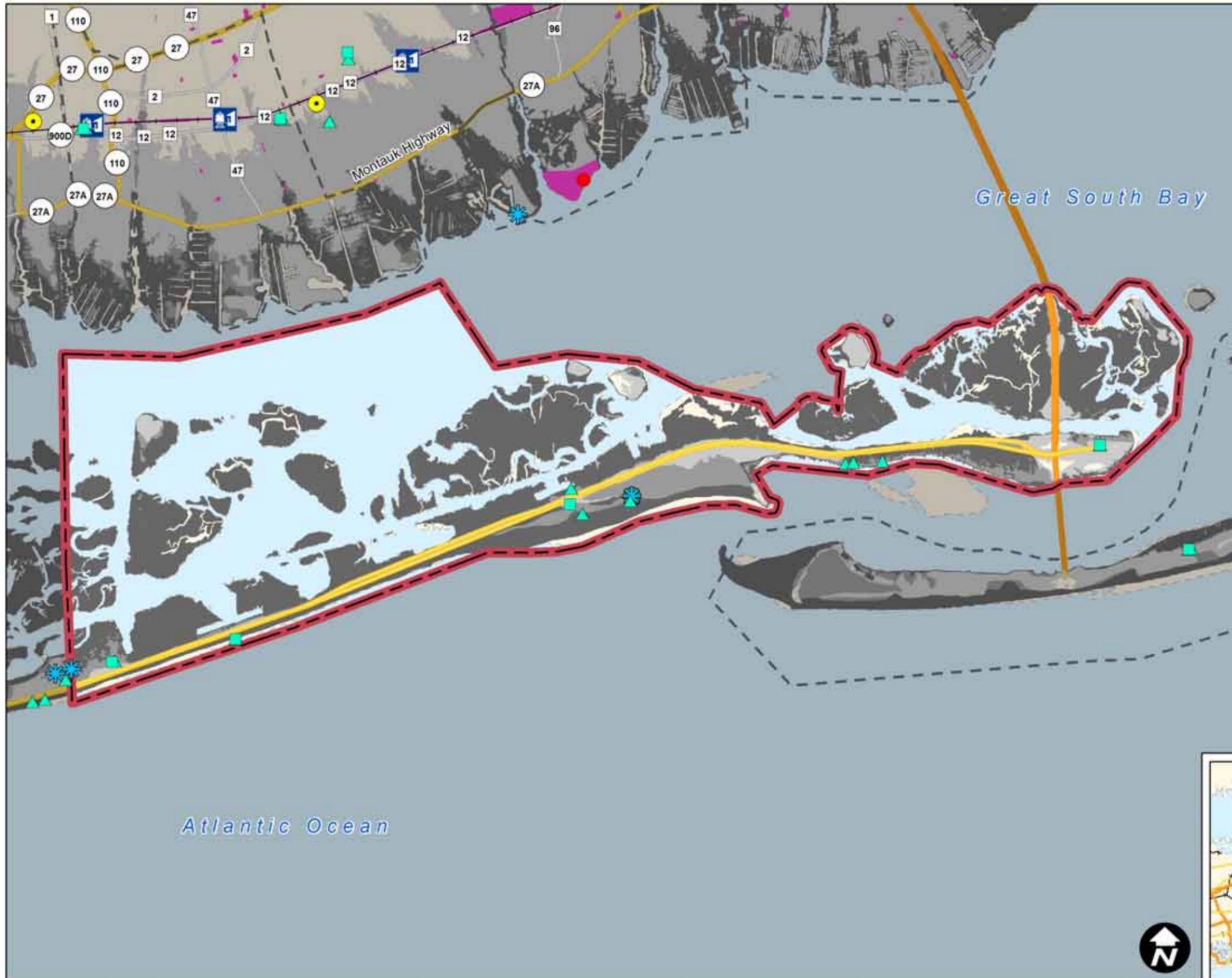
Risk Assessment Area

- Extreme
- High
- Moderate

Scale: 0 0.5 1 2 3 Miles



NYRCR: West Gilgo to Captree Utilities



Legend

- Sewage Treatment Plants
- Drinking Water Treatment Plants
- ▲ Drinking Water Wells
- FM Stations
- ✱ Microwave Towers
- Cellular Towers
- Utility Property
- Long Island Railroad Station
- West Gilgo to Captree 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: West Gilgo to Captree

Housing: Single- and Multi-Family



Legend

Housing Unit Type

- Single Family
- 2- to 3-Family
- Multi-Family
- 1 Long Island Railroad Station
- West Gilgo to Captree Planning Area
- Other NYRCR Planning Areas
- Long Island Railroad

Risk Assessment Area

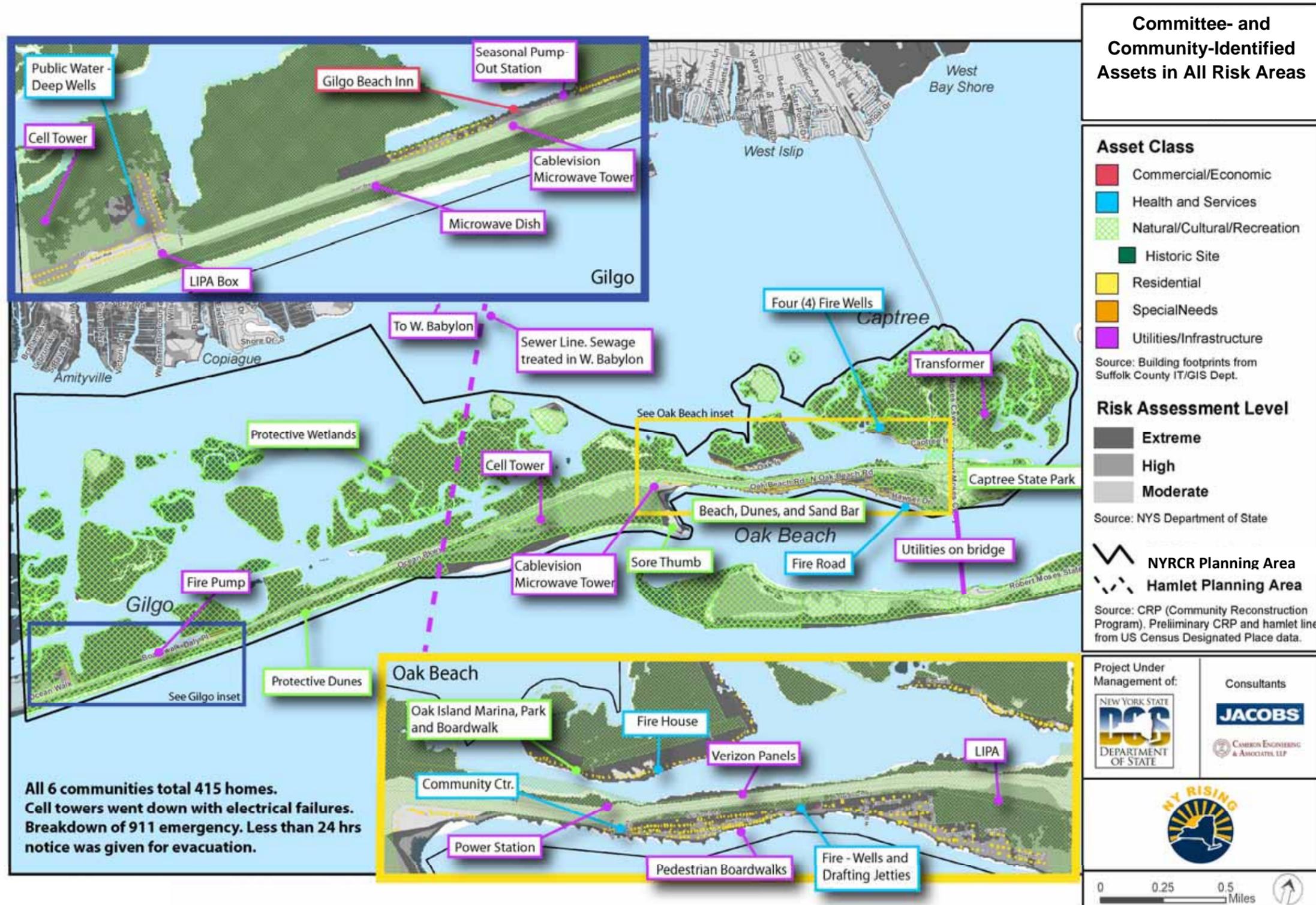
- Extreme
- High
- Moderate

Source: NYS DOT, NYS DOS, MTA

0 0.5 1 Miles



NYRCR: West Gilgo to Captree Committee- and Community-Identified Assets in All Risk Areas





8. Needs/Opportunities and Strategies

The identification of needs and opportunities, as well as the development of strategies to address those needs and opportunities, are perhaps the most critical steps in the NYRCR planning process because the outcomes of these discussions and analyses directly determine the pathway to project development. The development of needs and opportunities is in direct response to the community assets developed earlier by the Committee. Eventually the needs, opportunities, and strategies will provide the basis of the final Community Reconstruction Plan. This Plan *must* be realistic. It cannot be simply a wish list of uncoordinated projects unrelated to the realities of funding, financing, existing zoning and building codes, and the political process.

Needs may relate to repairing or relocating assets (in appropriate locations) that were damaged by recent storms; redirecting or expanding the local economy; making assets more resilient for the future; and other activities that relate to protecting the health and safety of the community. The post-disaster environment also presents opportunities to rebuild in such a way to create a community that is stronger and more resilient to future storms. Resilient communities tend to have redundant infrastructure and communication systems, diverse and flexible adaptation strategies, and collaborative public and private partnerships involved in

managing risk. Some future environmental changes will be difficult to predict, necessitating flexibility and adaptive capacity. Continued progress toward resilience will require increasing adaptive capacity and innovative solutions to address risk.

The Committee identified needs and opportunities in each of the six 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

Building on the identified community assets and their related needs, the Committee explored various possible strategies to address each of the identified needs and opportunities. Strategies can be types of projects, programs, policies, or other actions that specifically address an identifiable need and typically there exist several strategies to address a given need. At this point in the planning process, the Committee has been instructed to come up with as many strategies as possible.

The next step will be to engage experts in the various fields relevant to each need and to narrow down and prioritize the possible strategies based on a variety of considerations, including effectiveness at reducing risk, contribution to community resiliency, anticipated benefits, life-cycle costs, availability of resources, timing relative to other existing projects, and regional projects. With all possible strategies before them, the Committee can even seek to combine strategies to create the most resilient results. This is particularly useful if those combined strategies may lead to additional benefits and enhanced resiliency. Once these steps are completed, the Committee and the public can feel reassured that the chosen strategy: 1) reduces risk, 2) best meets the need, 3) is most compatible with the community, and 4) is most cost effective.

Following is a preliminary list of the West Gilgo to Captree communities' needs and opportunities and strategies in each of the six recovery support function categories. 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.

No.	Need/Opportunity	Strategy	Projects
1	Community Planning and Capacity Building		
1.1	Enhance emergency management protocols and procedures.	Work with OEM, Babylon FD, and Suffolk County 911 to update road and address ID system for improved planning and response. Verify 911 GPS data for accuracy of residential address locations.	
		Conduct annual trial run of primary and backup early warning systems, including 911 notification prior to hurricane season.	
		Update emergency management plans and evacuation/re-entry procedures with a focus on streamlining communications and operations between various relevant entities (Town of Babylon, State Police, Parkway Police, Suffolk County Police and Town of Babylon Code Enforcement).	Create barrier island resident island access identification cards and vehicle stickers to streamline access rights and re-entry for residents following emergencies. Conduct training for the Town, State Police, Parkway Police, Suffolk County Police and Town of Babylon Code Enforcement on the evacuation and re-entry of island residents.
		Update current evacuation routes based on road and bridge hazards (Wantagh and Captree Bridge). Increase awareness of evacuation routes away from risk areas through route signage.	
		Provide uniform communication devices for use by emergency responders and municipal entities during storm events. Provide annual training on devices and procedures.	Procure 2-way radio equipment for each community, for use during emergency notification and response that matches the Town of Babylon and Suffolk County's new, fully integrated system.
		Increase the connectedness of community members for post-disaster resilience, such as social media connections and emergency management registries (registration drives to sign up residents for email, text, mobile, landline phone alerts, and Facebook / Twitter updates.	



No.	Need/Opportunity	Strategy	Projects
1	Community Planning and Capacity Building		
1.2	Increase public awareness and knowledge of Risk and Disaster Management.	Strengthen building codes to reflect future hazards.	Town should consider adopting "Moderate Wave Action" zone standards into the local flood code.
		Strengthen planning processes/reviews and enforcement policies to ensure compliance with building codes.	
		Communicate hazard and climate risks and techniques to the public to reduce risk.	
		Create public outreach campaign on the importance of healthy dune system and beach-goer etiquette. Work with the town of Babylon to address access issues when most users access the beaches.	Create a beach access plan with the Town of Babylon to ensure tunnel access when users most need it (e.g. surfers). Reinstate and fund program of Town of Babylon permitting for four-wheel drive access to the beaches, including mandatory education course. Strengthen enforcement of four-wheel drive access requirements with manned checkpoints.
		Increase education of community, especially school children of local ecology, through the integration of local ecology and natural history into science classes and programming at community centers.	Create a Local Ecology Education Center with programming for school children and families, using either an existing facility (Oak Beach Community Center or Cedar Beach Aqua Center) or a new facility in the planned Oak Beach Park. Revive the Oak Beach Park plan to emulate Fire Island's Sunken Forest with signage and information for self-guided educational nature walks.
1.3	Increase resiliency of public facilities.	Elevate public facilities and/or MEP controls to above the 500-year event and harden to withstand hurricane level wind speeds.	Elevate and/or relocate the Oak Beach Community Center.
		Locate/relocate public facilities to lower risk areas.	Locate Oak Beach Park bathroom facilities on northern side of park away from shoreline and water wells.
No.	Need/Opportunity	Strategy	Projects
2	Economic Development		
2.1	Maintain local tax base.	Make homes on barrier islands "Saleable" by minimizing risk of storm damage and flood insurance rates.	Provide grants to homeowners for house elevating.
			Increase access to property elevation grant funding, such as by employing a town hazard mitigation expert with experience in funding mitigation projects and grant writing.
			Encourage the Town of Babylon to continue participation in the National Flood Insurance Program and to meet criteria for the FEMA Community Rating System (CRS) to reduce flood insurance rates.
No.	Need/Opportunity	Strategy	Projects
3	Health and Social Services		
3.1	Increase access to public safety services.	Improve fire response by repairing fire jetties and draft wells.	Rebuild and potentially elevate fire jetties with drafting access considered.
		Improve fire response by increasing access for fire trucks from Ocean Parkway.	Construct emergency access roads at a sufficiently high elevation to minimize hazards leading to blockage / closure.
		Repair residential boardwalk system.	Install/improve/maintain signage on boardwalk system in Oak Beach to enable the quick locating of addresses and ensure boardwalk system and access points are included in the 911 GPS data.



No.	Need/Opportunity	Strategy	Projects
4	Housing		
4.1	Increase resiliency of housing.	Increase incentives for elevation or retrofit of homes.	Grants/low-cost loans for expenses incurred after lifting. Provide tax relief to homeowners who improve their properties through elevation or other mitigation measures and are met with higher assessed values.
		Acquire the most vulnerable properties where the owner cannot elevate and/or retrofit the home.	Work with the Town of Babylon to develop options for houses located in the most vulnerable locations where the owner cannot elevate and/or retrofit the home (e.g. Identify relocation plots (Town of Babylon)).
		Create a community-wide risk mitigation plan for residential structures with guidance for homeowners in various risk categories and short, medium, and long-term strategies for mitigation.	
		Mitigate power outages pre- and post-storm events.	Install back-up power or alternative power on critical assets (e.g. emergency generator or solar panels on proposed water system; generators for blocks of homes).
No.	Need/Opportunity	Strategy	Projects
5	Infrastructure		
5.1	Mitigate repetitive flooding.	Create living shorelines wherever possible to restore natural processes, minimize erosion, and create habitat.	Identify potential sites for living shorelines.
		Explore feasibility of shoreline stabilization where natural restoration is not an option.	Repair / enhance bulkhead in Gilgo, including at Gilgo Park marina to meet future risk projections. Investigate shoreline stabilization of Captree Road shoreline against marshland water that floods roadways. Raise the elevation of the Oak Island bulkhead to new code required heights.
		Where possible, create vegetated buffers to protect homes and structures.	
		Use streets and public rights of way to implement projects to store, infiltrate, filter, and detain stormwater runoff and reduce on-street flooding.	Install a trench along the northern side of Oak Beach Road to detain runoff from the roadway.
		Use public lands and green space to implement projects to store, infiltrate, filter, and detain stormwater runoff.	Design Oak Beach Park to soak up runoff and reduce flooding of Oak Beach Road.
		Reduce impermeable paved surfaces with porous pavement, pavers, gravel, and other surface materials that reduce runoff.	
5.2	Protect provision of utility services.	<i>Water/Sewer:</i> Protect potable water wells from wastewater contamination with the installation of small package treatment plants.	
		<i>Water:</i> Provide backup power for private and public water sources.	
		<i>Water:</i> Install public water system for communities that do not currently have one.	Install a public water system in the communities that do not have one with backup generators for all systems.
		<i>Power:</i> Bury power lines to reduce outages from wind-driven debris and trees.	Conduct a study to understand the most feasible, resilient, and cost-effective strategy to mitigate power outages.
		<i>Power:</i> Purchase and install emergency generator for each community and connect to to public and private structures.	
		<i>Power:</i> Develop solar power or other energy alternatives to reduce reliance on the grid.	Work with the Town of Babylon to take advantage of solar and wind permitting and incentives for street lights, traffic lights, pump systems, and powering of public facilities.
		<i>Power:</i> Harden electric conduits to the mainland to minimize future damage in storms with incorporation of power failure sensors for quick repair of outages.	Elevate the power substation on Captree Island.
<i>Power:</i> Leverage planned and funded projects involving utilities to conduct upgrades.	Bury power lines and communications conduits while trenches are already opened up, such as for the Ocean Parkway Shared-Use Path from Jones Beach to Captree.		



No.	Need/Opportunity	Strategy	Projects
5 Infrastructure (cont.)			
5.3	Improve emergency access and evacuation routes.	Develop a plan to elevate, protect, or relocate roadways/access routes to Ocean Parkway where frequent flooding restricts access and egress.	Elevate Oak Beach Rd and Captree Island Rd where the bay waters frequently flood to the 500-year elevation.
		Retrofit marina facilities for Oak Island to maintain access.	
		Work with Town and County to resolve issues with dedicated versus non-dedicated roads, such as for debris removal.	Obtain dedicated road status for residential roads in barrier island communities.
		Repair and mitigate public boat ramps as a means of egress for backup evacuation plan.	
5.4	Strengthen communications systems.	Work with cellular carriers to harden the cell towers and mainland network infrastructure to reduce service interruptions.	Install backup generators at all cellular microwave towers to ensure service during power outages.
			Install Wi-Fi towers from the Town of Babylon for post-storm internet access (Town of Babylon has wi-fi program in place in Overlook, Cedar and Gilgo).
		Ensure full cellular coverage of barrier island communities.	Install wireless service repeaters to cover all residential structures in Gilgo and West Gilgo.
		Work with phone company to harden landline connections to mainland to reduce interruptions in service.	
		Work with internet service providers to extend internet service to all residential structures.	Extend FIOS internet service to all barrier island communities.
6 Natural and Cultural Resources			
6.1	Protect and enhance recreational, cultural and historic assets.	Preserve historic and culturally significant landmarks (e.g. Oak Beach Community Center, Oak Beach Park, Gilgo Beach Inn, and the West Gilgo Beach Chapel).	Elevate the Oak Beach Community Center.
6.2	Improve the sustainability of the local and regional environment.	Restore and maintain the dunes.	Review and update means and methods, frequency, and standards of dune restoration projects (e.g. Lesson Learnt from October 2013 failure in Gilgo).
			Implement dune restoration project with a focus on long-term resiliency.
		Conduct a study of the littoral transport of sand in the inlet and beaches with consideration of various strategies to increase sedimentation on beaches from Tobay to Gilgo.	Conduct a study to determine the best, most cost-effective means of enhancing the natural sediment processes of the inlet and beaches with consideration of various strategies, including jetties.
		Implement wetlands restoration projects.	
		Identify, restore and protect fishing and shellfish breeding grounds.	



9. Potential Projects

The next critical step in the planning process is for the Committee to refine the list of potential strategies to those that are most needed and best suited for the West Gilgo to Captree communities and then to develop detailed projects. The projects are specific actions that implement a chosen strategy, which address a need or opportunity, that build on the Communities' vision.

Building on the assets, needs and opportunities identification effort undertaken earlier, the Committee has preliminarily identified ideas for several types of projects, as shown in Section 8. Previewed here are a handful of projects that appear to have broad agreement among Committee members. Inclusion of these projects in the Conceptual Plan does not guarantee their recommendation in the final 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.

Coastal Management

A major focus of the six communities in this NYRCR planning area is preservation of the natural environment, both for the continued enjoyment of its outdoor recreation amenities by residents and visitors, and as the first line of defense for life and property on the barrier islands and Long Island at large. There is a strong desire to invest in robust and healthy dunes, broad beaches, and flourishing wetlands to minimize future damage to the barrier island communities, as well as safeguard the mainland communities that the barrier islands shield.



Strengthen Dunes

Project Category: Infrastructure / Natural Resources

Project Description: The barrier island communities depend wholly on the strength of the dune system to protect the survival of their communities. Current standards and methodologies are proving to be insufficient, as indicated by large sections of the dunes failing simply from periods of strong winds. The NYRCR communities propose an immediate comprehensive review of current and alternative means and methods of dune replenishment and strengthening with a focus on long-term resiliency of the dune system. Once completed, the communities propose the implementation of the best methodology identified in the review. Though costs for such projects may be high, the benefit cost analysis will help to determine project feasibility.

Community Benefits: Research and construction jobs; economic stabilization of residences and mainland business interests; prevention of environmental damages; protection of environmentally sensitive areas; protects socially vulnerable populations.

Implementation Timeline: Immediate (less than 2 years) for the study; Intermediate (2-5 years); Long-Range (more than 5 years) for maintenance of the dunes.

Next Steps: The Committee and NYRCR Consulting Team will work with the Town of Babylon, the NYS Department of Environmental Conservation, and the U.S. Army Corps of Engineers to develop a scope of work for the project and develop a cost estimate. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.

Beach Replenishment

Project Category: Infrastructure / Natural Resources

Project Description: Going hand-in-hand with strengthening the dune system must be a strategy for replenishing the beaches on an ongoing basis. Wider beaches reduce storm damage because the energy contained in wave action and storm surge is dissipated by the break and slope of the sand. Wider beaches on the barrier islands would help to protect the dune system that in turn protects structures on the barrier islands, as well as those on mainland Long Island.

Due to the direction of the surf and the geography of Fire Island and Jones Beach Island, Gilgo and West Gilgo beaches are relatively narrow. The mechanics of the littoral drift in these locations takes the sand away more than it replenishes the supply. The narrowness of the beaches exposes the residential communities on the other side of Ocean Parkway to increased effects of storm surge. Periodic failures of the dunes at these locations increase the communities' exposure and decrease mobility on Ocean Parkway adjacent to the failures. The communities propose to study the feasibility of various nonstructural and structural strategies to protect the barrier island's infrastructure and diminish the adverse effects of coastal hazards, while restoring and maintaining the ecosystem's natural protective features and processes. Where structural methods are advised, the Committee will seek to combine them with nonstructural measures to counteract unintended consequences of the proposed structural interventions. The Committee also proposes to seek funding to implement projects that advance the recommended actions of the feasibility study.

Community Benefits: Construction jobs; economic stabilization of residences and mainland business interests; prevention of environmental damages; protection of environmentally sensitive areas; protects socially vulnerable populations.

Implementation Timeline: Immediate (less than 2 years) for feasibility study; Long-Range (more than 5 years) for planning, design, and construction of recommended nonstructural and structural measures.

Next Steps: The Committee and NYRCR Consulting Team will meet with coastal management experts to develop a range of options to be considered. They will also work with the Town of Babylon, the NYS





Department of Environmental Conservation, and the U.S. Army Corps of Engineers to develop a scope of work and cost estimate for the feasibility study and potential projects. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.

Water Supply

West Gilgo Elevation of Public Water System

Project Category: Infrastructure

Project Description: West Gilgo operates and maintains its own standalone water system that supplies water for domestic and fire suppression uses to all residents. Although the floodwaters from Sandy inundated both of the two system pump houses, the water only reached about 6-12 inches, thus sparing the electrical components. Power to the community had been lost, but a standby propane-fueled generator kept the pumps in operation during and after the storm. However, given Sandy’s modest rain, the community recognizes that flooding in a future event could be much higher, thus putting the electrical components at risk of inundation. The West Gilgo community proposes the use of approximately \$140,000 for its community water system to elevate the tops of the well heads, elevate the standby generator and propane fuel tank, and acquire and install new pump house storage tanks and piping. All elevating activities would bring the equipment to four feet above ground level to mitigate against flooding of the well heads and electrical components in future storm events, and ensure continuity of water supply for domestic and fire suppression uses.

Community Benefits: Construction jobs; prevention of environmental damages; increase in neighborhood economic stabilization; provides

access to essential health services during acute events; protects socially vulnerable populations.

Estimated Project Cost: \$140,490

Implementation Timeline: Immediate (less than 2 years)

Next Steps: The West Gilgo Committee has developed a basic scope of work and cost estimate for the project, including quotes from local drilling and water supply companies. If the Committee decides that it is a project they wish to pursue through the NYRCR program, the Committee will elevate the project to the State’s attention. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.

Gilgo Four Additional Drafting Wells

Project Category: Infrastructure

Project Description: Fire prevention and suppression are major themes for the West Gilgo to Captree NYRCR communities. Being so far from other Town of Babylon communities, it takes 18 minutes for the Babylon volunteer fire department to reach the outer beach communities, a period of time during which a small blaze can become a raging fire threatening one or more structures. The West Gilgo to Captree NYRCR communities typically address the risk of fire by drilling drafting wells and building fire jetties for use by the community’s fire pump carts or the Babylon FD’s pumper trucks. All six communities have expressed the need for a more reliable water supply for fire response and specific projects will be developed for the final plan.

The Gilgo community has expressed that their current level of protection from fires is insufficient, particularly during or following an event when Babylon FD is occupied by other disaster response activities and/or when Gilgo is inaccessible due to road damages/blockages. The Gilgo community proposes to identify funding to develop four additional fire drafting wells located strategically in the community for ideal coverage of the residences.

Community Benefits: Construction jobs; prevention of environmental damages; increase in neighborhood economic stabilization; provides access to essential social services during acute events; protects socially vulnerable populations.

Implementation Timeline: Immediate (less than 2 years)

Next Steps: The Committee and NYRCR Consulting Team will work with the Town of Babylon and the Village of Babylon Fire Department to develop a scope of work for the project and develop a cost estimate. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.

Oak Beach Water Systems

Project Category: Infrastructure

Project Description: The Oak Beach community currently has three small public water supply systems – the “Dougherty”, “McCarren” and “McCrodden” – that serve less than 25 residential structures each. Each system lost power following Sandy, leaving the connected residences without the ability to draw water and without residential filtration capability. In addition, all three systems have been cited for violations of NYS drinking water standards. The Oak Beach community proposes to identify funding to combine and upgrade the three public water supply systems at Oak Beach with additional capacity. The project would resolve the drinking water standards violations and the increased capacity would provide service to additional lots. The system would service up to 94 homes located between the Oak Beach Community Center and Oak Beach Park. The proposed system would be built to current codes and standards, including controls elevated above the 500-year flood elevation, above ground tanks, and a backup power supply.

Community Benefits: Construction jobs; prevention of environmental damages; increase in neighborhood economic stabilization; provides access to essential health services during acute events; protects socially vulnerable populations.

Estimated Project Cost: \$2,100,000 (preliminary engineering estimate)

Implementation Timeline: Intermediate (2-5 years)

Next Steps: The Committee and NYRCR Consulting Team will work with the Town of Babylon to develop a scope of work for the project and develop a cost estimate. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.





Oak Island Beach Association Water System

Project Category: Infrastructure

Project Description: Oak Island Beach Association residents are connected to private wells either as an individual household or jointly with up to three other lease holders on one well. The smaller wells are unregulated by NYS, but testing indicates that many do not meet NYS drinking water standards. Furthermore, most of the private wells do not have a backup power source and residences on these wells lost the ability to draw or filter water during and after Sandy. The Oak Island Beach Association proposes to identify funding to connect all residents to a newly constructed public water system. The project would resolve the drinking water standards violations and the increased capacity would provide service the entire community. The proposed system would be built to current codes and standards, including controls elevated above the 500-year flood elevation, above ground tanks, and a backup power supply.

Community Benefits: Construction jobs; prevention of environmental damages; increase in neighborhood economic stabilization; provides access to essential health services during acute events; protects socially vulnerable populations.

Implementation Timeline: Intermediate (2-5 years)

Next Steps: The Committee and NYRCR Consulting Team will work with the Town of Babylon to develop a scope of work for the project and develop a cost estimate. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.

Adaptations for Local Flood Mitigation

Adapting Captree Road

Project Category: Infrastructure

Project Description: Captree Road is a single entry road that runs along the northern edge of the inhabitable area and serves all of the Captree Island residents. The low-lying road is immediately adjacent to the marshlands and the waters of the bay frequently rise high enough to spill over the roadway, restricting access and egress to residents. The Captree community may propose adaptive measures to strengthen the shoreline along the north side of Captree Road to mitigate flooding and minimize travel disruptions.

Community Benefits: Construction jobs; prevention of environmental damages; protection of environmentally sensitive areas; increase in neighborhood economic stabilization; provides access to essential social services during acute events; protects socially vulnerable populations.

Implementation Timeline: Intermediate (2-5 years)

Next Steps: The Committee and NYRCR Consulting Team will work with the Town of Babylon to develop a scope of work for the project and develop a cost estimate. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.

Oak Island Shoreline Stabilization

Project Category: Infrastructure

Project Description: Oak Island’s structures suffered tremendous damage due to their location in direct line of Sandy’s strong winds and storm surge. Most structures on the island are elevated, but floodwaters rose to unprecedented levels. The Oak Island community may propose to strengthen, elevate, or replace the shoreline stabilization structures (currently bulkheads) along the waterfront to new code requirements to reduce damages from storm impacts.

Community Benefits: Construction jobs; prevention of environmental damages; protection of environmentally sensitive areas; increase in

neighborhood economic stabilization; protects socially vulnerable populations.

Implementation Timeline: Intermediate (2-5 years)

Next Steps: The Committee and NYRCR Consulting Team will work with the Town of Babylon to develop a scope of work for the project and develop a cost estimate. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.



Mitigation of Oak Beach Road Flooding

Project Category: Infrastructure

Project Description: Oak Beach Road is a single entry road serving all of the community’s residents that floods frequently, limiting access and egress and potentially blocking evacuation and/or emergency vehicle access during an emergency event. There exists a vegetated swale along the north side of the road that is meant to retain stormwater runoff; however, the swale has not been maintained regularly and does not function as it should. The Oak Beach community may propose to seek funding to re-establish and upgrade the capacity of the channel to handle current and projected stormwater management needs. The use of native plantings would serve the dual purpose of filtering the runoff as it percolates into the ground and recharges the water table. The re-establishment of the trench from Oak Beach Park to the Oak Beach Community Center is currently in the specifications for the Oak Beach Park project.





Community Benefits: Construction jobs; prevention of environmental damages; protection of environmentally sensitive areas; increase in neighborhood economic stabilization; provides access to essential health services during acute events; protects socially vulnerable populations.

Implementation Timeline: Intermediate (2-5 years)

Next Steps: The Committee and NYRCR Consulting Team will work with the Town of Babylon to develop a scope of work for the flood mitigation swale project. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.

Power Supply

Mitigation of Power Outages

Project Category: Infrastructure

Project Description: Like many victims of Sandy, the residents of the barrier islands faced extensive power outages. Many community members describe being without power, and therefore without water or heat, for more than 30 days. The West Gilgo to Captree NYRCR communities will investigate the best means of mitigating future power outages, be it hardening the existing power supply, determining needs for backup power supplies, seeking alternative renewable energy sources, or a combination of these. The communities will likely propose to seek funding to implement the best identified strategies to alleviate this critical issue.

Community Benefits: Construction jobs; increase in neighborhood economic stabilization; provides access to essential health and social services during acute events; protects socially vulnerable populations.

Implementation Timeline: Intermediate (2-5 years)

Next Steps: Due to the complex nature of the problem and the myriad solutions that could address it, the Committee and NYRCR Consulting Team will meet with experts in the areas of power generation and transmission to compare and prioritize strategies. The Committee must also meet with National Grid to understand current and potential requirements and strategies. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.



Communications

Mitigation of Failures to Cellular Service

Project Category: Infrastructure

Project Description: Communication is critical in the lead up and response to an emergency situation and cellular phones have become the most valuable tool to communicate with family and friends, request emergency services, and receive and pass along updates on evacuation, weather, road blocks, power outages, fuel supplies, and myriad other emergency management issues. Preventable problems arose related to cellular service provision during and after Sandy, including the submersion of electrical controls on microwave towers. The West Gilgo to Captree communities may propose to seek funding for projects that mitigate this and other issues to ensure continuity of cellular service. Such a project may be the

elevation of electrical controls on all microwave towers and backup power source.

Community Benefits: Construction jobs; increase in neighborhood economic stabilization; provides access to essential social services during acute events; protects socially vulnerable populations.

Implementation Timeline: Immediate (less than 2 years)

Next Steps: The Committee and NYRCR Consulting Team must meet with the Town of Babylon to understand current and potential requirements of cellular carriers and possible strategies. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.

Expansion of Internet Coverage

Project Category: Infrastructure

Project Description: The West Gilgo to Captree communities are not currently covered by a reliable internet service provider. Some residents use a satellite provider, while others use the wireless tower at Cedar/Overlook Beach. Not only is the lack of reliable access an everyday nuisance, particularly for year-round residents who live and potentially work from their residences, it becomes a public safety issue in times of impending emergency situations. Many residents were not sufficiently notified of Sandy's magnitude, nor did they receive the reverse 911 mandatory evacuation notification. Access to information becomes a life and safety issue when living on a barrier island. The communities propose to seek funding to extend internet coverage to the full extents of each of the six communities in the NYRCR planning area.

Community Benefits: Construction jobs; increase in neighborhood economic stabilization; provides access to essential social services during acute events; protects socially vulnerable populations.

Implementation Timeline: Immediate (less than 2 years)





Next Steps: The Committee and NYRCR Consulting Team will determine the communities' requirements and meet with the Town of Babylon and the local internet service provider to determine possible strategies, scopes of work, and costs. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.

Preservation of Historical and Cultural Assets

Oak Beach Community Center - Elevation/Retrofit

Project Category: Community Planning / Cultural Resources

Project Description: The Oak Beach Community Center is a historic structure in the heart of Oak Beach. Built in 1888 as a U.S. Life-Saving Station, the building, which is pending National Historic designation, has since served as the post office, chapel, yacht club, civic association, and now as the center of community gatherings. The center has been closed for repairs since Sandy due to wind and flood damages. The Oak Beach community may propose to elevate the building to above the 500-year flood height. Preliminary engineering plans estimate the budget to be around \$385,000. The project would include ADA accessibility to allow utilization by handicapped populations.

Community Benefits: Construction jobs; prevention of environmental damages; increase in neighborhood economic stabilization; provides access to essential social services during acute events; protects socially vulnerable populations.

Estimated Project Cost: \$385,000 (preliminary engineering estimate)

Implementation Timeline: Intermediate (2-5 years)

Next Steps: The Committee and NYRCR Consulting Team will define the scope of the project and explore ways to make the facility more resilient.

There may be significant opportunities for the facility to incorporate green infrastructure and renewable energy to showcase a more resilient Oak Beach. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.

Cedar Beach Marina Backup Power

Project Category: Community Planning / Cultural Asset

Project Description: The Cedar Beach Marina Aqua Center is a Town of Babylon recreational facility that lost power during Sandy and subsequently lost its living ecology exhibits. The communities may propose to seek funding to install a permanent mounted propane-fueled generator for the facility. The estimated cost is \$40,000 and the benefits could extend beyond continuity of operations for the facility itself. Power supply was a major issue for every community and the center could serve as a drop-in center/warming center where residents could spend time, warm up, recharge cell phones, and exchange community news.

Community Benefits: Construction jobs; provides access to essential social services during acute events; protects socially vulnerable populations.

Estimated Project Cost: \$40,000

Implementation Timeline: Immediate (less than 2 years)

Next Steps: The Committee and NYRCR Consulting Team will determine the facility's generator requirements and verify the cost estimate. Each project will also undergo a risk assessment, prioritization exercise, and cost benefit analysis to determine the need, community value, and cost-effectiveness.





10. Regional Perspective

Regional Overview

Long Island spans over 118 miles from New York Harbor to Montauk Point and has a maximum width of approximately 23 miles between the Long Island Sound to the north and the Atlantic Ocean to the south. Long Island, the 11th largest island in the nation, has a land area of over 1,400 square miles and is larger than the state of Rhode Island. Due to its island geography, 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 on the Island. For example, new impervious development in northern areas may result in excessive run off in South Shore communities. Potential Island-wide 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.^{vi} 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. In coastal areas, as water is drawn for use, 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 the Island's drinking supply.^{vii}

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. 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.

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.^{viii} 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.

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.





Regional Issues and Public Engagement

In order to obtain input regarding larger issues important to the community, a sampling of potential town-wide and regional issues have been presented to the community during public outreach events. Community members have been asked to agree or disagree with the sampling of regional project ideas. To date, the public has indicated their preference or displeasure by placing a thumbs up or thumbs down sticker on large display boards. NYRCR Committees have also been asked to provide feedback related to regional projects. Once these initial projects are further vetted within the Committee and an opportunity for collaboration with other Suffolk NYRCR communities has taken place, a more definitive list of regional strategies and projects will be developed. Potential projects on a regional level may include:

- Enhance barrier beach protection to protect mainland communities
- Harden the electrical grid to mitigate/shorten power outages
- Harden the natural gas distribution systems
- Expand natural gas connections into new areas to decrease reliance on fuel tanks
- Harden land line and cellular communication facilities
- Facilitate communication between all regional utilities/services and local government
- Long Island Rail Road (LIRR) improvements to ensure adequate transit operations
- Major roadway improvements to ensure emergency vehicle access and functioning evacuation routes
- Update regional hazard mitigation plans to address local issues
- Streamline environmental permitting procedures
- Implement regional shoreline stabilization projects emphasizing the Living Shoreline concept

- Consider regional water quality protection
- Enhance resiliency of Bergen Point Sewage Treatment Plant
- Consider region-wide storm surge protection





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 West Gilgo to Captree 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, and 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 final 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, Spanish-speaking residents, low-income residents, seniors, youth, and the disabled.

Outreach Techniques for Disseminating and Receiving Information

The NYRCR Consulting Team utilized a number of dissemination techniques in order to achieve a thorough, responsive, open, and transparent communication process.

Committee Members/Meetings

All Committee meetings are open to the public. Meeting dates and times are posted on the NY Rising website (<http://stormrecovery.ny.gov/community-reconstruction-program>). 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 can comment on the work of the Committee by filling out a comment form available at each Committee Meeting.

The Following Committee meetings have been held to date for the West Gilgo to Captree NYRCR Committee.

- **Preliminary Committee Meeting, August 23, 2013, 12:00 PM**
The preliminary meeting served to introduce the Committee members to the overall NYRCR Program and familiarize them with the anticipated process and schedule.
- **Committee Meeting 1, September 5, 2013, 6:00PM**
The first official Committee meeting introduced the conversation concerning Community Vision, the identification of Critical Assets and the development of a preliminary list of Community Needs, especially as they related to risk. Discussions of Needs and Opportunities continued over email with a draft list approved by the Committee for introduction to the public at the first public engagement event on September 21st.
- **Committee Meeting 2, October 1, 2013, 6:00PM**
The second Committee meeting focused on debriefing the results of public engagement event 1. The Committee confirmed both the

Vision Statement and the Community Assets and began the discussion of Strategies and Projects.

- **Committee Meeting 3, October 15, 2013, 6:00PM**
The third Committee meeting focused on the development of strategies to meet the identified community needs and opportunities. Members worked as a group to brainstorm strategies and projects to address each specific need. These strategies were compiled and are presented in the Strategies section of this plan.

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 for this effort is public engagement events, additional outreach opportunities for comment will be provided at different venues in the West Gilgo to Captree NYRCR planning area and through the NY Rising website.

Public Engagement Events

Each public engagement event includes the presentation of work completed to date, as well as opportunities for attendees to provide feedback. The NYRCR Consulting Team provides the following materials 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 engagement event is available both in hard copy and electronically.

Public engagement events are scheduled to coincide with major project milestones. A targeted and well-executed public engagement process is intended to educate and raise awareness during the development of the Plan, which ensures that when the Plan is put into implementation, the public, elected officials, and key stakeholders have had ample opportunity to actively participate in the decision-making process. Members of the public who are informed and engaged in the process are more likely to support the overall Plan or become interested in a targeted component





within the Plan. 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 NY Rising website for download. A summary of each event is 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 include: posting on state NYRCR webpage and other electronic media; ads in weekly print media when time and budget allow; 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 district, 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 time, at which stations are positioned

around the room for the various topics. Committee members, municipal representatives, State planners, and the NYRCR Consulting Team staff each station to provide opportunities 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 are compiled by the NYRCR Consulting Team and provided to the Committee in a clear and comprehensive manner. The Committee reviews the public's feedback and incorporates it into the West Gilgo to Captree NYRCR planning process.

Although the events are advertised as events for NYRCR Planning, some 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.

Public Engagement Event 1

Public Engagement Event 1 was held for the West Gilgo to Captree communities on Saturday, September 21, 2013 as an outdoor open house in the Gilgo Beach parking lot on Ocean Parkway in Gilgo, NY between 9:00 AM and 11:00 AM. The event was held in conjunction with the Save the Beaches International Coastal Clean-Up Day. This event is popular with local residents from all six communities and a good fit to pair with the NYRCR Program because both programs relate strongly to connecting the community with the sustainability and resiliency of the natural environment.

Outreach efforts to attract residents, businesses and other stakeholders to the event were significant. Flyers were distributed by key email and media outlets throughout the community:

- Postings on websites for NY Rising, Save the Beaches, Gilgo.com, and the Long Island Beach Access Group
- Email notifications to Save the Beaches and all civic and community email listservs
- Committee members' contacts and social media
- Phone calls to elected officials/leaders in the Babylon and Islip community
- Media Outlets: Babylon Village Patch

Recover from Yesterday, Plan for Tomorrow

Oak Beach, Oak Island, Gilgo, West Gilgo, Oak Island Beach Association, & Captree

September 21, 2013

9:00 am to 11:00 am

Gilgo Beach Parking Lot
Ocean Parkway
Babylon, NY 11702

Public Open House Workshop

As part of the New York Rising Community Reconstruction Program, there will be a public event focused on gathering 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.

This will be an outdoor event in conjunction with the Save the Beaches' International Coastal Clean-Up Day.
Drop by any time between 9am and 11am.

For more information or to RSVP, email us at SubsilkRecovery@jacobs.com or visit www.NYSandyHelp.ny.gov





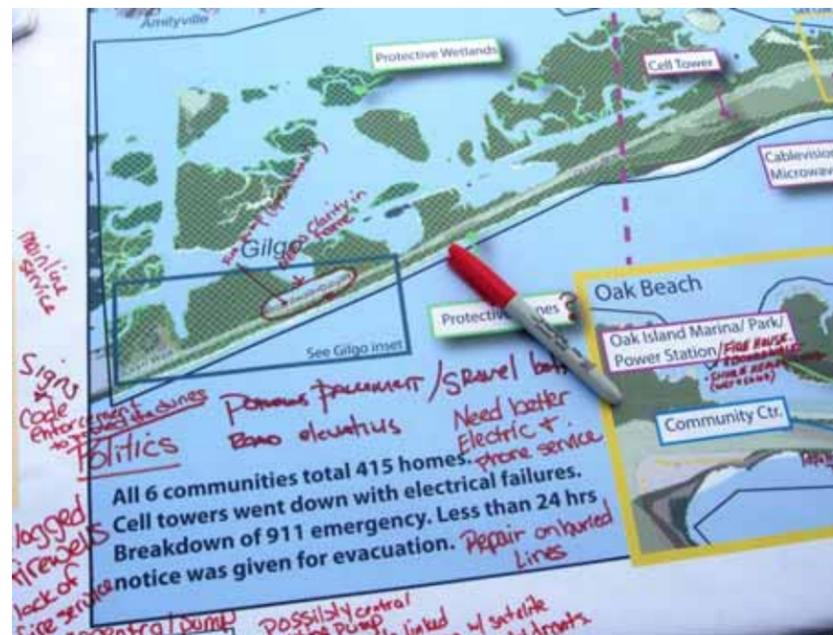
The first public engagement event was well attended with approximately 70 individuals attending the event. An open house format was utilized in order to enhance public participation and included a number of information stations that were staffed by the New York Department of State Planners, as well as the NYRCR Consulting Team. Committee members were also present at the event and engaged with community members to explain the materials and solicit input from the attendees. Information stations at the event included:

Station 1: Background/Process: Participants were provided with a handout outlining both the purpose of the first public engagement event and background on the NYRCR Program planning process.

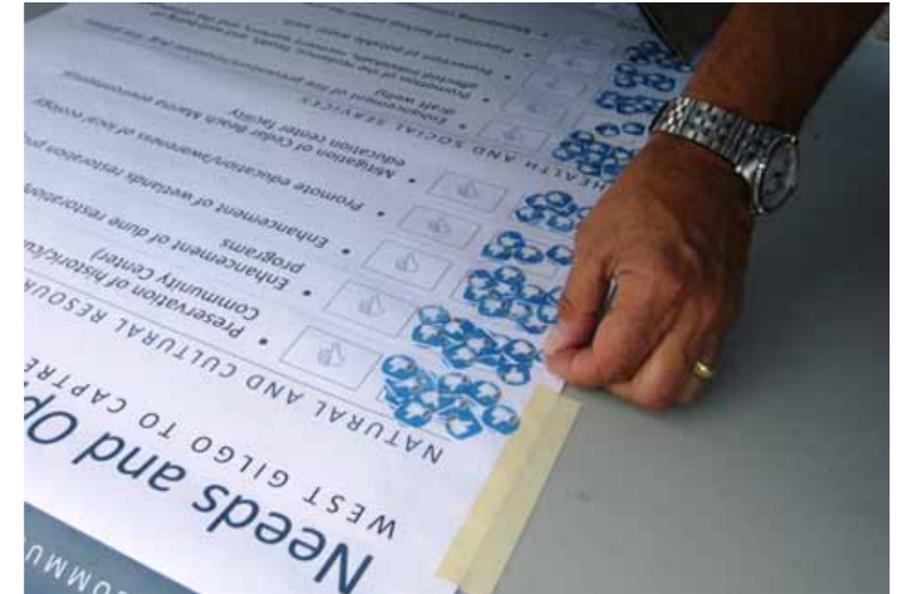
Station 2: Community Vision: Participants were asked, "What is great about your community?" and provided with index cards on which to write a word or short phrase in response. Their contributions were turned into a "Community Word Cloud," to be brought to future events and potentially added to over time. Next attendees had the opportunity to view the draft vision statement developed by their Committee and to respond with their own additional statements.



Station 3: Community Assets: Participants were asked to view the Community Assets identified to date, which were displayed on maps with shading to represent risk areas. The public was asked to add additional assets and provide comments directly on the maps using markers.



Station 4: Needs and Opportunities: Participants were asked to view the preliminary list of needs and opportunities identified by the Committees. They had the opportunity to add "thumbs-up" or "thumbs-down" stickers beside those they agreed and disagreed with, respectively, as well as to provide additional needs and opportunities.



Input from this event was shared with the Committee at their next meeting and incorporated into the materials that eventually constituted this Conceptual Plan.

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 the West Gilgo to Captree communities more resilient. The strategies and projects presented in this NYRCR Conceptual 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 by November 30, 2013.

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 West Gilgo to Captree 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 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-range project implementation timelines). A final list of potential projects to be advanced in this process will be submitted to the State by December 31, 2013.

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 West Gilgo to Captree’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:

- Suffolk County Emergency Management
 - Evacuation routes
 - Fire prevention
 - Emergency management plans
 - Provision of cellular service during emergencies
 - Provision of utilities during emergencies
- Suffolk County Public Works
 - Mitigation of repetitive flooding on roads
 - Bulkheading and shoreline stabilization structures
- NYS Department of Environmental Conservation
 - Shoreline stabilization options and living shorelines
- FEMA Hazard Mitigation
 - Hardening of critical facilities and mitigation of homes
- National Grid/PSE&G
 - Mitigation of frequent power outages

- Information on clean energy alternatives
- U.S. Environmental Protection Agency
 - Green infrastructure for repetitive flooding/water quality
- U. S. Army Corps of Engineers
 - Large-scale structural
- U.S. Housing and Urban Development
 - Relocation out of hazard zones

The West Gilgo to Captree final NYRCR Plan 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 NYRCR Consulting Team will be incorporated into the planning process to discuss the feasibility and cost of projects. An additional next step may include an Island-wide webinar on cross-jurisdictional needs and strategies 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, progress to property acquisition and eventually 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 the West Gilgo to Captree communities.

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.

Community Reconstruction Event, Albany, New York: Suffolk County had two communities featured at this October 23rd event in Albany, New York. West Gilgo to Captree Committee members and other Suffolk County NYRCR representatives were in attendance. The conference with Governor Cuomo was a unique opportunity to hear from State officials and other NYRCR communities.

Public Event #2: The NYRCR Consulting Team is currently engaged in organizing the format, logistics, and materials for the second public engagement event, tentatively scheduled for the second week of November. The event will offer an opportunity for the community to review and provide feedback on the contents of this Conceptual Plan.

West Gilgo to Captree Committee Events

- Tuesday, October 29, 2013, Committee Meeting #5: Review of Conceptual Plan in preparation for Public Event #2.
- Tuesday, November 19, 2013, Committee Meeting #6: Debrief of Public Event and confirmation of strategies list.
- Tuesday, December 10, 2013, Committee Meeting #7: Work session on preliminary project list with follow-up revisions over email to finalize by State deadline.

Upcoming Milestones

- Complete public engagement events for presentation of NYRCR Conceptual Plan (November 2013)
- Submit final NYRCR Committee-accepted list of strategies to the State (End of November 2013)
- Complete public engagement event for investment and action strategies (End of January 2014)
- Submit final NYRCR Committee-accepted list of project and actions to the state (End of March 2014)
- Provide final NYRCR Plan to State for review and approval (End of March 2014)

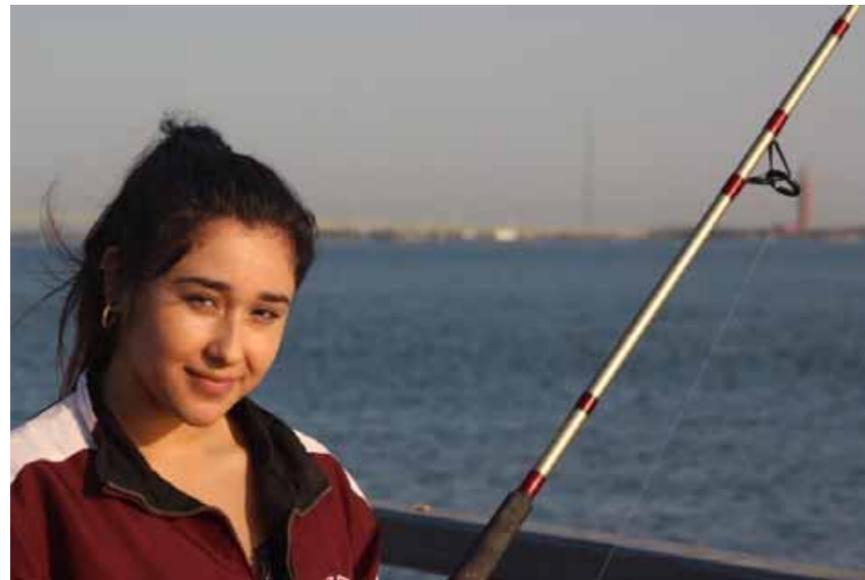


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All photos contained in this Conceptual Plan have been sourced from the NYRCR Consulting Team or Committee members with the following exceptions:

Cover: Boats at dock, Wikipedia Commons,
http://en.wikipedia.org/wiki/Captree_State_Park.
 P. 1: Governor Cuomo photo provided by NYS DOS.
 P. 3: Historic postcard, oakbeachcivicassociation.com/about/history.
 P. 9: Google Earth imagery.
 P. 12: Cover of *Long Island South Shore Estuary Reserve Comprehensive Management Plan, 2001*, <http://www.dos.ny.gov/communitieswaterfronts/pdfs/SSERCMP.pdf>.
 P. 13: Map from *Environmental Study of the Barrier and Bay Island Communities, 1994*, <http://www.gpo.gov/fdsys/pkg/CZIC-tc425-c37-n7-1994/content-detail.html>.

Endnotes

ⁱ The National Disaster Recovery Framework (NDRF) is a guide that enables effective recovery support to disaster-impacted states, tribes, territorial and local jurisdictions. This framework provides a flexible structure that focuses on how best to restore, redevelop, and revitalize the health, social, economic, natural and environmental fabric of the community and build a more resilient nation. The NDRF is consistent with Presidential Policy Directive (PPD) -8, related to National Preparedness. Excerpted from FEMA. *National Disaster Recovery Framework* <http://www.fema.gov/national-disaster-recovery-framework>

ⁱⁱ Vulnerable populations include people with disabilities, low and very-low income populations, elderly, young children, homeless and people at risk of becoming homeless.

ⁱⁱⁱ Factual information incorporated into this section of the report has been gathered through review of the NOAA website for the days leading to and directly after Superstorm Sandy, as well as review of pertinent Newsday and local Patch articles.

^{iv} US Department of Commerce, NOAA, National Weather Service. *Hurricane/Post-Tropical Cyclone Sandy, October 22–29, 2012 May 2013. p, 1,*

^v New York Rising Community Reconstruction Program. *The Process for Inventory, Risk Assessment in Coastal Areas and the Assessment of the Effectiveness of Flood Reduction Actions in Riverine Areas.* Prepared by a multi-firm working group.

^{vi} Long Island Regional Planning Council. *Long Island 2035 Visioning Initiative Final Report.* December 2009. p. 19.

^{vii} Ibid. p.21.

^{viii} Ibid. p. 21.





NY Rising Community Reconstruction Program