

New York Rising Community Reconstruction
Conceptual Plan

Bellmore-Merrick

October 2013



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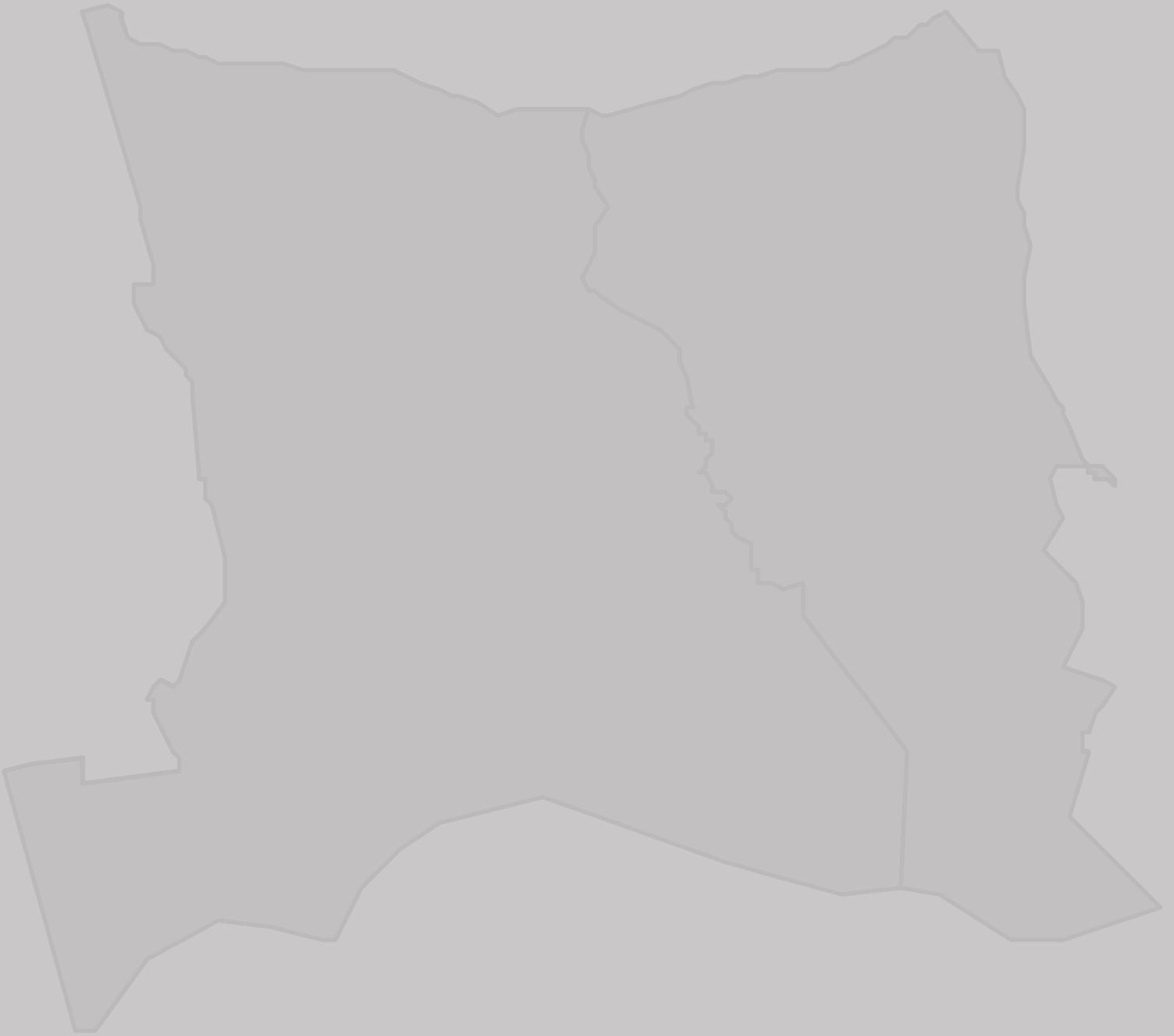
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Introduction



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.

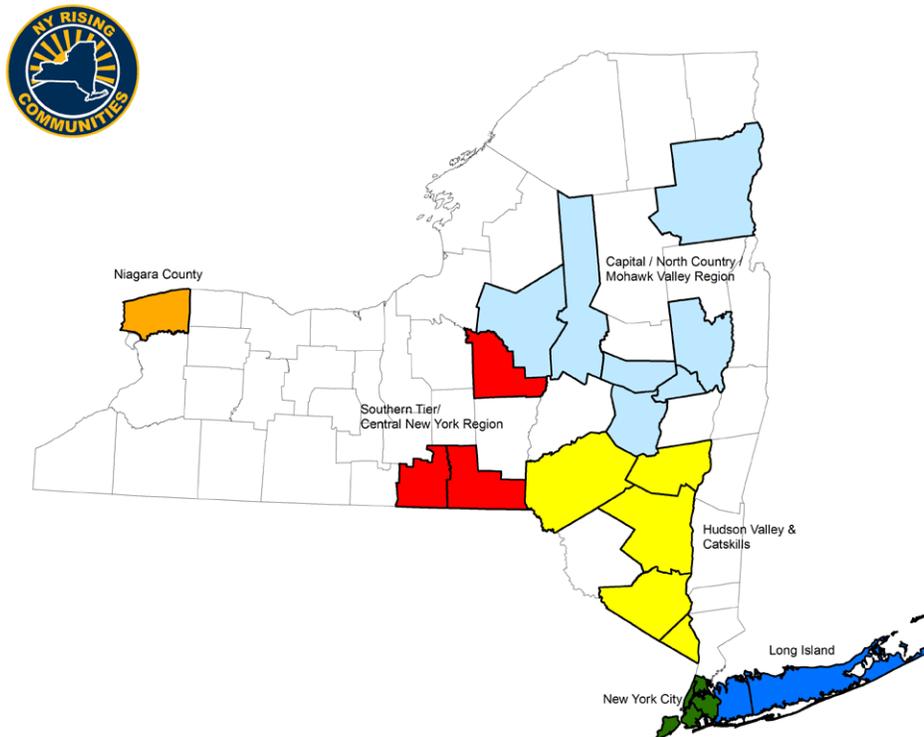
In the months ahead, communities will develop ways to implement additional strategies for economic revitalization, human services, housing, infrastructure, natural and cultural resources, and the community's capacity to implement changes.



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: StormRecovery.ny.gov/Community-Reconstruction-Program

Introduction

On October 29, the New York Tri-State region was devastated by Hurricane Sandy, the most destructive storm of the 2012 Atlantic Ocean hurricane season. The south shore of Long Island suffered massive storm surge damage, power outages, sewer line overflows, and utility and transportation disruption. Flooding from Hurricane Sandy exceeded many of the Federal Emergency Management Agency's (FEMA) 100-year flood zones. Though the initial public response was well-informed and recovery efforts were well-managed, no one was prepared for the extent of the storm's impact. Directly or indirectly, the lives and well-being of virtually everyone in the region was, and still is, affected by the events of that night.

However, as we mark the one-year anniversary of this storm, we turn our attention to the future and to what must be done to transform this disaster into an opportunity to not only restore what was lost, but to help achieve our collective vision for the future of Bellmore and Merrick. In light of our changing climate, and with the understanding that extreme storms and unpredictable weather are becoming the new normal, returning to the status quo is no longer a sufficient response. We must consider long-term recovery at the neighborhood, hamlet, and regional levels. We must rebuild to be resilient. Our goal in creating this Plan is to position Bellmore and Merrick to rebuild a safer, more resilient, sustainable community that has reduced its vulnerability and exposure to risks in order to achieve a better future for its current and future residents.

Governor Andrew M. Cuomo instructed the State to partner with local communities to capture this unique window of opportunity by creating the New York Rising Community Reconstruction (NYRCR) Program. A NYRCR Planning Committee comprised of community residents and stakeholders have been working closely with a Consultant Team and State agencies to develop the material included in this NYRCR Conceptual Plan. In addition, a series of public information meetings are being held to gather public feedback. This NYRCR Conceptual Plan identifies needs and opportunities as well as the community's goals for recovery and resiliency, and connects those to an initial set of strategies and projects.

NYRCR Planning Committee

A NYRCR Planning Committee comprised of community representatives was established to work with appropriate municipal, non-profit and consultant supporters, and to help establish a community vision and assist the Bellmore/Merrick planning process. The NYRCR Planning Committee will advise on all aspects of the project and will contribute to shaping the direction and content of the final NYRCR Plan. The NYRCR Planning Committee and Consultant Team will hold regular meetings, which are open to the public, throughout the Plan's development.



NYRCR Public Process

The public will be engaged at regular intervals throughout the planning process to provide further guidance and insight into making Bellmore and Merrick more resilient communities. The NYRCR Planning Committee and Consultant Team guide public information meetings, and regular committee meetings are open to the public.

NYRCR Conceptual Plan

The NYRCR Conceptual Plan is a preliminary step in the entire NYRCR planning process. It outlines a vision for the recovery of Bellmore and Merrick, and a preliminary set of ideas about how to establish a legacy of positive change in both communities. It is the start of a conversation of how to make Bellmore and Merrick a better place to live, work and play, now and in the decades to come. With the release of this plan, it is expected that further input will be garnered throughout the remainder of the planning and public engagement process. This content will be contained in the final NYRCR Plan, which is expected to be completed in March 2014. From that point forward, the NYRCR Plan for Bellmore and Merrick should serve as a practical tool for government agencies, private sector partners, not for profits, and the community as a whole to maximize implementation of the proposed recovery and resiliency initiatives.

The NYRCR Bellmore-Merrick Conceptual Plan is divided into four sections:

1. **Community Background:** This section includes information on the communities of Bellmore and Merrick, hereafter referred to as NYRCR Bellmore-Merrick, the geographic scope of the NYRCR Bellmore-Merrick Plan, and the impacts of Hurricanes Sandy and Irene. In addition, existing plans and studies are reviewed as potential sources for local and regional strategies that would support NYRCR Bellmore-Merrick's reconstruction efforts.
2. **Looking to the Future:** Here we move from examining the past to considering the future. It includes NYRCR Bellmore-Merrick's vision and goals for recovery and resiliency as developed by the residents and stakeholders of this community; asset inventory and flood risk maps; and needs and opportunities that have been identified.
3. **Public Engagement:** This section of the report describes the ways in which the public has and can continue to participate in the planning process.
4. **Next Steps:** Finally, the next steps section describes how we will work together to review and refine this NYRCR Bellmore-Merrick Conceptual Plan.

About the Program

About the NY Rising Community Reconstruction (NYRCR) Program

The NYRCR Program was established to provide rebuilding and revitalization assistance to communities severely damaged by Hurricanes Sandy and Irene and Tropical Storm Lee. The NY Rising Community Reconstruction program enables communities to identify resilient and innovative reconstruction projects and other needed actions based on community-driven plans that consider current damage, future threats and the communities' economic opportunities. Communities successfully completing a NYRCR Community Reconstruction Plan will be eligible to apply for funds to support the implementation of projects and activities identified in the plans.

Each NYRCR Community has a NYRCR Planning Committee that includes, among others, a representative from the county, town or village, elected legislative representatives, local residents, and leaders of other organizations and businesses in the community. The Planning Committee will take the lead in developing the content of the plan.

The State has provided each NYRCR Community with a planning team to help prepare a plan. Consultants have been hired through a State process administered by New York State Homes and Community Renewal (NYS HCR) through its Office of Community Renewal (OCR) and the Housing Trust Fund Corporation (HTFC).

Planning experts from the Department of State and Department of Transportation have been assigned to each community to provide assistance to the community and help oversee the planning consultants.



Setting the Scene

Long Island south shore residents value their proximity to estuarine water and the natural beauty of the region. The close relationship between human settlements and the natural environment on Long Island offers many quality-of-life benefits to residents and visitors but it also poses risks. The beautiful tree canopies which cool and clean the air can cause damage to elevated cable and electric power lines during wind events. Canals, tributaries and waterfronts offer access to beautiful natural landscapes but leave many properties exposed to tidal flooding and storm surges. Low density, sprawling developments and extensive paved surfaces push water into already overloaded drainage systems, tributaries and bays. Striking a better balance between proximity to nature, storm protection, and public safety is necessary to ensure that Long Island communities build back better and stronger.

Long Islanders understand that natural disasters and unpredictable weather events are not going away. As Governor Cuomo said days after Hurricane Sandy struck, “extreme weather is the new normal.”¹ In respect to this reality, it is critical to address how we plan, design, and build for the future.

The Intergovernmental Panel on Climate Change’s Fifth Assessment Report, 2013, states “warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased.”² These changes affect the types of weather systems, the seasonal distribution of precipitation, and the overall energy balance in the atmosphere differently at a regional level. This means that an area which has been designed around certain types and patterns of weather must now contend with different weather that comes at greater frequency and with a stronger intensity than before.

Building on this, Bellmore and Merrick residents and business owners must turn their mind to the tremendous opportunity presented by the Governor, through the New York Rising program, to set a legacy of resilience.

¹<http://www.nydailynews.com/opinion/lead-climate-change-article-1.1202221>

²PCC. Approved Summary for Policymakers, 2013

Resiliency for Long Island

For Long Island to continue to be a place for people to call home, and for it to restore its economic and social strength, resiliency must be adopted as an underpinning goal. Resilient planning, design and building on Long Island should create a higher degree of protection for existing communities while allowing for growth that is in a better balance with the natural features that make Long Island so attractive. It also sends a message across the Island – and the New York City region – that Long Island can continue to be an attractive place to live, work and play. Resilient design entails a set of strategies in designs, buildings, and institutional structures that lessen the impact of severe events and speed the recovery when those events happen. Importantly, we should not lose sight of the potential impacts of designing for resilience; oftentimes the approaches that we will discuss yield opportunities for co-benefits, which can enhance the viability of Long Island’s environment, economy and society.





Camman's Pond Park in Merrick

Community Background

1



Overview

The Bellmore and Merrick communities are comprised of two hamlets in the Town of Hempstead, located in Nassau County in Long Island. As a part of the greater New York metropolitan area, they are approximately 24 miles east of Manhattan, and 10 miles east of the Nassau-Queens Line.

The hamlets of Bellmore and Merrick are located on the south shore of Long Island between the Village of Freeport to the west and the hamlet of Wantagh to the east. Based on the 2010 census, the populations of Bellmore and Merrick were 16,218 and 22,097 respectively, with a combined population of 38,315 citizens. The combined area of both hamlets is 7.2 square miles, of which 1.5 square miles (approximately 21%) is water, including inlets and the part of the bay that is included in the hamlet boundaries. Both Bellmore and Merrick are typical hamlets with an engaged and active citizenry and strong community values. They share a school system for middle and high school, known as the Bellmore-Merrick Central High School District.

Bellmore and Merrick are directly adjacent to the East Bay, a part of the South Shore Estuary, which is buffered from the Atlantic Ocean by the barrier islands. The South Shore Estuary runs for more than 70 miles off the Nassau and Suffolk County coasts and is home to a large number of wildlife and coastal habitats. Bellmore and Merrick have a direct relationship with the Estuary through peninsulas and inlets that allow access for boats and maritime activity. Besides parkland, the waterfront is almost entirely lined with single-family homes, some of which are located along inlets with docks. There is also a marina along Shore Road in Bellmore.

Along with their waterfront properties and amenities, Bellmore and Merrick have a significant amount of open space and parkland. Parks and preserved areas in the hamlets include Fraser Avenue Park, Meroke Preserve, Norman J. Levy Park and Preserve, Newbridge Road Park, Cow Meadow Park, Merrick Road Park, Randy Lane Park and East Bay Park.

The Meadowbrook Parkway and Sunrise Highway are two major thoroughfares serving the Bellmore and Merrick areas. The Meadowbrook Parkway traverses the western edge of Merrick to intersect with Sunrise Highway, and provides access to the south shore barrier islands, including Jones Beach State Park and the City of Long Beach. Merrick Avenue, Bellmore Avenue and Newbridge Road are also heavily traveled local routes.

Bellmore and Merrick each have their own station on the Long Island Railroad (LIRR) Babylon line, which runs from the borough of Queens to the Village of Babylon in Suffolk County. Based on LIRR ridership statistics from 2006, a combined 6,681 passengers traveled west from these stations as part of their weekday morning commute.

Though they are largely residential “bedroom” communities, Bellmore and Merrick both have a significant number of commercial and retail establishments, which are clustered around Sunrise Highway, Merrick Road, Bellmore Avenue and Merrick Avenue. Bellmore has a traditional downtown cluster of businesses, known as Bellmore Village, located near

the Bellmore LIRR station along Bedford Avenue. Bellmore Village often hosts parades and other community events. Similarly, Merrick has a traditional downtown area along Merrick Avenue near the Merrick LIRR.

Both Bellmore and Merrick have relatively stable and diverse commercial bases with strong commercial occupancy rates of 92 and 88 percent, respectively. Office and industrial uses are very limited in Bellmore and Merrick, with industrial uses largely limited to automotive businesses along Merrick Road and Sunrise Highway. Despite some interest in developing higher density mixed use areas around local rail stations, current zoning regulations restrict the combination of commercial and residential functions.



Bellmore Train Station (Photo Credit: Adam Solomon)

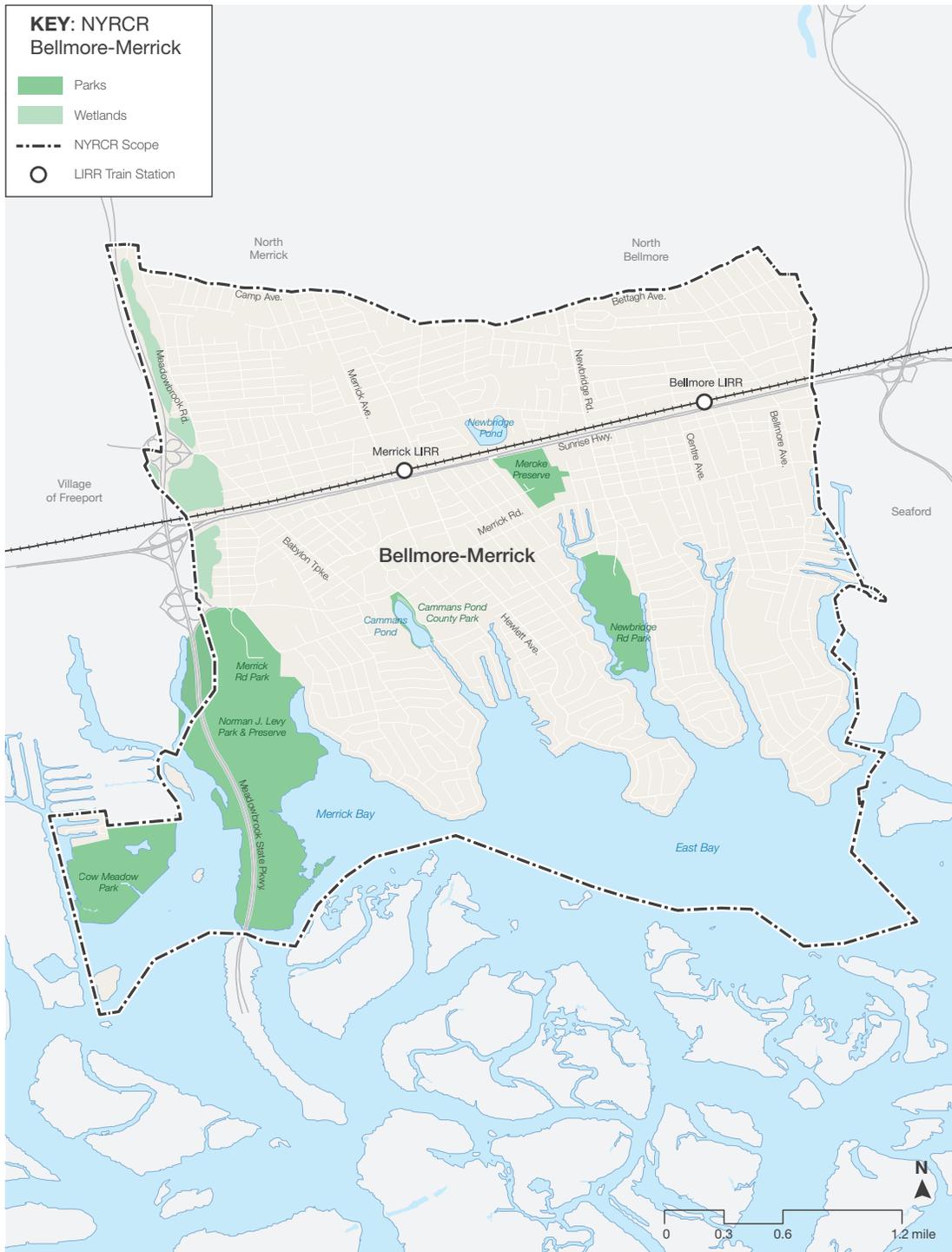
Geographic Scope

The geographic scope of the NYRCR Plan includes both the hamlets of Bellmore and Merrick, and will be referred to as NYRCR Bellmore-Merrick.

As shown below, the geographic scope of the combined NYRCR Bellmore-Merrick area extends north from the bay to Camp Avenue, which becomes Beltagh Avenue as it moves east across Newbridge Road. The eastern boundary delineates Bellmore from the neighboring hamlet of Wantagh, intersecting Sunrise Highway and the Long Island Railroad's Babylon line as it moves south back to the bay. The area's western edge surrounds Cow Meadow Park and Preserve and the inlet to the east of the Meadowbrook State Parkway until it intersects with the Parkway near Merrick Golf Course, going north along the Meadowbrook State Parkway and ending at Smith Pond.



View of Merrick Golf Course (Photo Credit: Charles Brown)





Fishing Pier, Norman J. Levy Park (Photo Credit: Charles Brown)



Merrick Road

Storm Impacts

County Impacts

Like many other areas in the greater New York metro area, Nassau County's residents and businesses were severely damaged by Hurricane Sandy. Nassau County suffered unprecedented damage to homes and businesses, public facilities, infrastructure, and environmental assets. The numbers of flooded, damaged or destroyed structures reached 74,736, with 30,036 suffering damages over 50% of their value and 117 damaged beyond repair. This included 44 power substations and facilities, 28 fire stations, 26 schools, three police stations and one medical facility.

Many community members throughout Nassau County lost homes and property, and a large number of these residents are still displaced. Many of the County's small businesses suffered major losses, which were often exacerbated as damaged roads and buildings prolonged reopening after the initial impacts of the storm, and rebuilding materials and contractors were in short supply. Although many employees were able to receive unemployment insurance, many of the owners did not qualify for the benefit. Without sufficient capital to finance repairs, and unable to afford additional loans, many of these businesses were left with no option but closure.

Nassau County's wastewater infrastructure systems failed. The Bay Park Waste Water Treatment Plant, which services approximately 40% of Nassau County, though not NYRCR Bellmore-Merrick, was inundated with 12 feet of water during Hurricane Sandy's storm surge. Despite days of emergency preparation, water from the storm surge quickly filled the engines of the plant's main pumping station, forcing the Bay Park Plant offline. Sewage began to



Cut Trees and Damage (Photo Credit: Paul Watterman)

back up and overflow into low-lying streets and homes throughout the Town of Hempstead's West Bay, flooding communities with untreated wastewater. The facility remained offline for over 50 hours before service was restored, ultimately flooding channels and waterways with approximately 200 million gallons of raw sewage.

Electrical shortages caused by saltwater flooding set fire to 32 homes within Nassau County, and resulted in fatalities from carbon monoxide poisoning and electrocution. Flooding and wind damage created a significant amount of debris, including damaged bulkheads, pilings and other marine structures, unmoored boats, and building fragments carried by the storm surge. Over 90% of the approximately 3.3 million cubic yards of debris was structural, with downed trees accounting for 172,980 cubic yards of the total amount.

The Federal Emergency Management Agency (FEMA) received approximately 1,175 requests for public assistance for public projects in Nassau County, with 258 small (less than \$67,500) and 434 large (more than \$67,500) projects deemed eligible for assistance. FEMA reported that 113,901 residents in both Nassau and Suffolk counties have applied for disaster relief assistance following Hurricane Sandy. Of the 95,534 homes that experienced flooding in these counties, only 43,106 had federal flood insurance policies.

Local Impacts

The Town of Hempstead, which includes NYRCR Bellmore-Merrick, has waterfront along nearly the entire south shore of Long Island and was greatly impacted by Hurricane Sandy and other major storms as well. During Hurricane Sandy, more than 18,000 homes were identified as having sustained some type of significant damage and 1,900 were regarded as seriously damaged.

In order to prepare for Hurricane Sandy, the Town had proactive plans for moving equipment and vehicles prior to the storm and executed a heavy media campaign to alert residents, including recommending evacuations for the most vulnerable areas. After the storm the Town established "Mobile Town Halls," as there was a dire need for the Building Department to establish a faster, more efficient process to respond to community needs. The mobile units were set up for permitting purposes and sent to communities impacted by storm. The local chapter of the Knights of Columbus created a supply center, offering clothing and non-perishables to residents affected by Hurricane Sandy. Additionally, the Town has implemented an aggressive dune replenishment program, where so far nearly 450,000 cubic yards of beach has been restored.

Specific to NYRCR Bellmore-Merrick, large swaths of land were flooded and the community faced severe problems with power outages, heavy debris and immobility due to damaged and flooded roads and compromised power lines. Many businesses have not reopened and, in many cases, residents have not yet been able to return to their homes.

¹<http://www.nytimes.com/2012/11/30/nyregion/sewage-flows-after-hurricane-sandy-exposing-flaws-in-system.html?smid=pl-share>

The Cedar Creek Water Pollution Control Plant (WPCP) remained in operation throughout the storm, but the flood and rain waters caused peak flows to be over twice their normal values. The storm surge overwhelmed the facility causing damages to internal and external equipment and materials, as well as clogging up the systems with debris, which required extensive cleaning.

In Bellmore, the areas hit hardest by Hurricane Sandy were predominantly residential; homes in Southern Bellmore near canals and the bay were inundated by an average of three feet of water. Community services in Bellmore were also seriously affected by Hurricane Sandy. The Bellmore Jewish Center was closed for 6 months while the Bellmore Avenue fire station was non-operational for 11 months. Students and teachers had to be temporarily relocated from Shore Road Elementary due to flooding. Businesses such as the Blue Water Marina, the South Bellmore Veterinary, and the CVS Pharmacy on Merrick Road were also severely damaged by the storm.

In addition to impacts experienced during Hurricane Sandy or other large storms, Bellmore-Merrick suffers from routine flooding in areas of low elevation, like Shore Road in Merrick, during high tides or heavy rainfall.



Damaged boat and dock (Photo Credit: Hugh Mason)



Nassau OEM Disaster Relief Trailer



Damaged Bulkhead (Photo Credit: Hugh Mason)



Hurricane Sandy flood waters (Photo Credit: Hugh Mason)

Existing Plans and Studies

The NYRCR Bellmore-Merrick Conceptual Plan is informed by numerous existing planning documents and efforts, several of which offer relevant strategies, projects and actions. Although the geographic scope covered by some of these documents is beyond the boundaries of NYRCR Bellmore-Merrick, many of the strategies identified are pertinent to Nassau County’s south shore and can be applied at a local level. Moreover, some of the challenges faced by NYRCR Bellmore-Merrick extend across multiple political jurisdictions and should be considered on a county or regional basis. A list of the documents consulted can be found in Appendix: Existing Plans and Studies.

Regional Plans and Studies

The changing social, environmental and economic landscape of Long Island has created a need for short-, mid-, and long-term planning goals to address the region’s future. Several groups have independently undertaken research and analysis of existing problems and concerns, and have developed recommendations based on their findings. The NYRCR Bellmore-Merrick Planning Committee and Consultant Team has reviewed this work and identified a set of key themes that outline common issues and opportunities within the region.



Residential neighborhood in Bellmore

Infrastructure Investment

Long Island's aging infrastructure is struggling to accommodate previous population growth while adapting to the increasing threat of storm events and sea level rise. Roads, bulkheads, and power and gas lines have been particularly affected by flooding and storm damage. Additionally, the transportation network no longer best serves Long Island's present-day commuting patterns and should be re-evaluated to better accommodate both regional and local mobility. Infrastructure investment has consistently been identified as critical to the region's growth and economic viability.

Water Resources

Groundwater contamination from pollution and saltwater intrusion is an issue in Nassau County, where potable water is supplied solely by aquifers. Real estate development and population growth, combined with sea level rise, threatens the future water resources of the region. Flood management, water conservation, and environmental protection have been recurring themes in many of the documents studied.

Energy

Electricity rates for Long Island residents are among the highest in the nation, and much of its energy supply depends on off-island resources. Many of the documents reviewed favored investment in energy efficiency and conservation, renewable energy sources, and distributed energy generation strategies to increase energy independence and reduce ratepayer costs.

Housing

Nassau County is dominated by single family housing, with a majority of units more than 50 years old. Escalating home prices and property tax levels limit the stock of housing available for the County's young and aging population, low-income residents, and those displaced by previous storms. Many plans have recommended an increase in smaller, affordable housing and rental developments. However, following the impacts of Hurricane Sandy it is uncertain if home prices will remain at their current level.

Governance

Long Island's mesh of municipal administrative jurisdictions can reduce public sector efficiency and limit coordination, while creating an inconsistent regulatory landscape for its residents and businesses. Many of the plans reviewed incorporate recommendations for consolidating overlapping or duplicated services, streamlining permitting processes, and establishing more comprehensive land use regulations.

Transit-Oriented Development

Recent development in Nassau County has not been planned or coordinated in a manner that supports economic and environmental sustainability. Transit-oriented development (TOD) and transit-supportive development (TSD) have been suggested as an opportunity to preserve the quality of life of Nassau County's communities while allowing for future growth.

Local Plans and Studies

The community of NYRCR Bellmore-Merrick has engaged in a number of local planning efforts to improve quality of life for its residents and to provide resilience against future storm impacts. Recently, initiatives for streetscape improvements, increased open space, and the development of community facilities have been proposed. As the community is very active, various groups have worked towards visions of improving their streets, particularly in Southern Bellmore, establishing a Recreation Center that has modern amenities and ample facilities to accommodate the community, and several other community plans. In recent years, the Bellmore Preservation Group has proactively, and successfully, staved off development that they were concerned would negatively impact the quality of their suburban life and small business economy. In addition, they worked to create green space at the LIRR station and have made efforts to preserve historic houses.

The Bellmore Civic Association started a Neighborhood Watch Program, and have advocated for a myriad of large and small projects, including building façade updates, re-painting street lines and community facilities, new signage around town, and various other projects. Their current goals include advocating for Nassau County and the Department of Public Works to complete a revitalization project along Merrick Road, repave three streets in the spring of 2014, and install a left turn signal at Bellmore Avenue for safety, and to develop plans and raise money for a pillar project for the entrances to the three peninsulas.

The Nassau County Infill Redevelopment Feasibility Study (NCIRF), 2013, is one of sixteen “place-based” projects advanced by the New York-Connecticut Sustainable Communities Initiative (Sustainable NYCT). In Nassau County, the goal of the NCIRF is to reduce reliance on automobiles and establish new land use and economic development structures that embrace multi-modal transportation opportunities and promote growth that is economically, socially and environmentally sustainable. Twenty-one station areas in three towns (including sixteen villages and hamlets) were evaluated for desire/readiness to implement transit-supported development strategies as well as the potential local and county-wide impacts of implementing transit-oriented development (TOD). Both the Bellmore and Merrick downtowns were included in the study, which provides information about each of the stations, their surrounding areas, and the potential for TOD. Evaluation criteria included physical suitability, public sector readiness, developer interest, and leadership in place. Merrick was ranked as having “low readiness, high desire,” whereas Bellmore is considered having “neutral desire, low readiness.”

As a coastal south shore community, NYRCR Bellmore-Merrick is guided by the various local environmental plans and assessments, including the NYS Coastal Fish and Wildlife Habitat Assessment, the South Shore Estuary Reserve Comprehensive Management Plan, and the Final Estuary Public Use and Tourism Study. Widely noted is the diversity and complexity of the fish and wildlife habitats, the limited amount of land available for shoreline public access and recreation, and the sensitivities to further development, increased pedestrian and

maritime activity, water pollution, and new shoreline structures. In particular, the South Shore Estuary Reserve Comprehensive Management Plan provides a significant amount of information and recommendations for the adjacent bay and natural environment, including recommended actions focused on improving water quality, restoring and protecting living resources, expanding public use and enjoyment of the estuary, sustaining and expanding the estuary-related economy and increasing education, outreach and stewardship in the Reserve.

Finally, as related to the southern NYRCR communities in Nassau County, the US Army Corps of Engineers (USACE) is working on three projects created in their existing post-Hurricane Sandy program. The program primarily focuses on those projects which were already authorized or allocated by Congress prior to Hurricane Sandy and would provide storm relief. Most relevant to NYRCR Bellmore-Merrick is the Island Park Sandy Continuous Authority Project (CAP), which focuses on the back bay areas of Nassau County to repair sea walls and provide sand fill. The USACE is currently performing a study to confirm if this project is environmentally and economically feasible. Additionally, the North Atlantic Division (NAD) is doing an Atlantic Coast Comprehensive Coastal Study with nine focus areas, including the Nassau County back bay areas.



Residential neighborhood in Bellmore

Looking to the Future

2



Community Vision

During initial NYRCR Planning Committee and public meetings, a Vision Statement was developed to reflect NYRCR Bellmore-Merrick's desires for a resilient future. This statement describes what the community seeks to become. Although it may evolve as the process continues, it gives the NYRCR Plan a purpose and provides a foundation for response. The statement is as follows:

The NYRCR Bellmore-Merrick Reconstruction Plan proactively implements measures to make our south shore community more resilient, now and in the future. While being mindful of our natural waterways, we will update infrastructure and invest in new projects so that the community as a whole will benefit, protecting our beloved communities and our quality of life. The Plan strives to:

- *Develop innovative and natural solutions to coastal storm surges and erosion management*
- *Ensure public safety during and after major natural events*
- *Ensure proper health and social services are accessible to all residents; on a daily basis and in emergency situations*
- *Support local business resilience by encouraging business continuity*
- *Refurbish fresh water resources and improve stormwater management*
- *Enhance and maintain all accessibility and maneuverability in all coastal evacuation routes*
- *Enhance public open space so it serves multiple purposes, such as recreation, resilience, and refuge*



Camman's Pond Park in Merrick

Community Assessment

The NYRCR Bellmore-Merrick Plan will reflect an assessment of risks facing regional and community assets, and the needs and opportunities presented by community members. The NYRCR Program has developed a standardized methodology consisting of six main steps for the asset inventory and risk assessment process. This allows for teams supporting each community to share a common understanding of how to categorize assets and evaluate risk, and to ensure that the results of each participating community are comparable.

The six steps are:

1. Collect preliminary data
2. Conduct supplemental data collection
3. Identify and address data gaps
4. Conduct asset inventory, classification and attributes
5. Utilize the Initial Risk Assessment Tool Implementation for Coastal Areas, which includes review by the community planning team
6. Identify management options review and other community scenarios

In addition to the asset inventory and risk assessment process, the NYRCR Bellmore-Merrick Planning Committee and Consultant Team will identify needs and opportunities within the community of NYRCR Bellmore-Merrick. The needs and opportunities presented in the NYRCR Bellmore-Merrick Conceptual Plan incorporate existing studies relating to previous storm impacts with public feedback and an analysis of key economic drivers within the community. A majority of needs relate to the repair or replacement of assets damaged by previous storms, and the economic losses attributed to damage and recovery. Other considerations such as existing projects occurring prior to storm damage and opportunities for increasing the resilience of existing assets will also be addressed in the final NYRCR Plan.

Community Assets

NYRCR Bellmore-Merrick has a variety of community assets including residential and commercial districts, schools, infrastructure, parks and ecological areas that were greatly impacted by Hurricane Sandy and which face future exposure. Many of these assets are highly valued and treasured by community members, and stakeholders have expressed particular interest in protecting them.

The NYRCR Bellmore-Merrick Planning Committee and Consultant Team are cataloging NYRCR Bellmore-Merrick's assets by collecting information and data from state, county and local sources across six asset classes, described below. Throughout the public engagement process, the NYRCR Bellmore-Merrick Planning Committee and Consultant Team will continue to add to this initial list based on feedback from the community, and will identify the assets that are most critical to protect. The "Key Community Asset" map provides a geographic overview of various asset classes located throughout the community of NYRCR Bellmore-Merrick.

Economic

Economic asset types include commercial and industrial buildings, downtown centers and commercial corridors, such as Merrick Road, and seasonal or touristic destinations.

Health and Social Services

Health and social service assets include schools and day care centers, health and elder care facilities, government and administrative services, media and communications, and critical services such as police and fire.

Housing

Housing assets include single-family and multi-family dwellings, group or senior housing and public housing. Similar building types in close proximity may be identified as a single asset, such as a particular residential neighborhood.

Infrastructure Systems

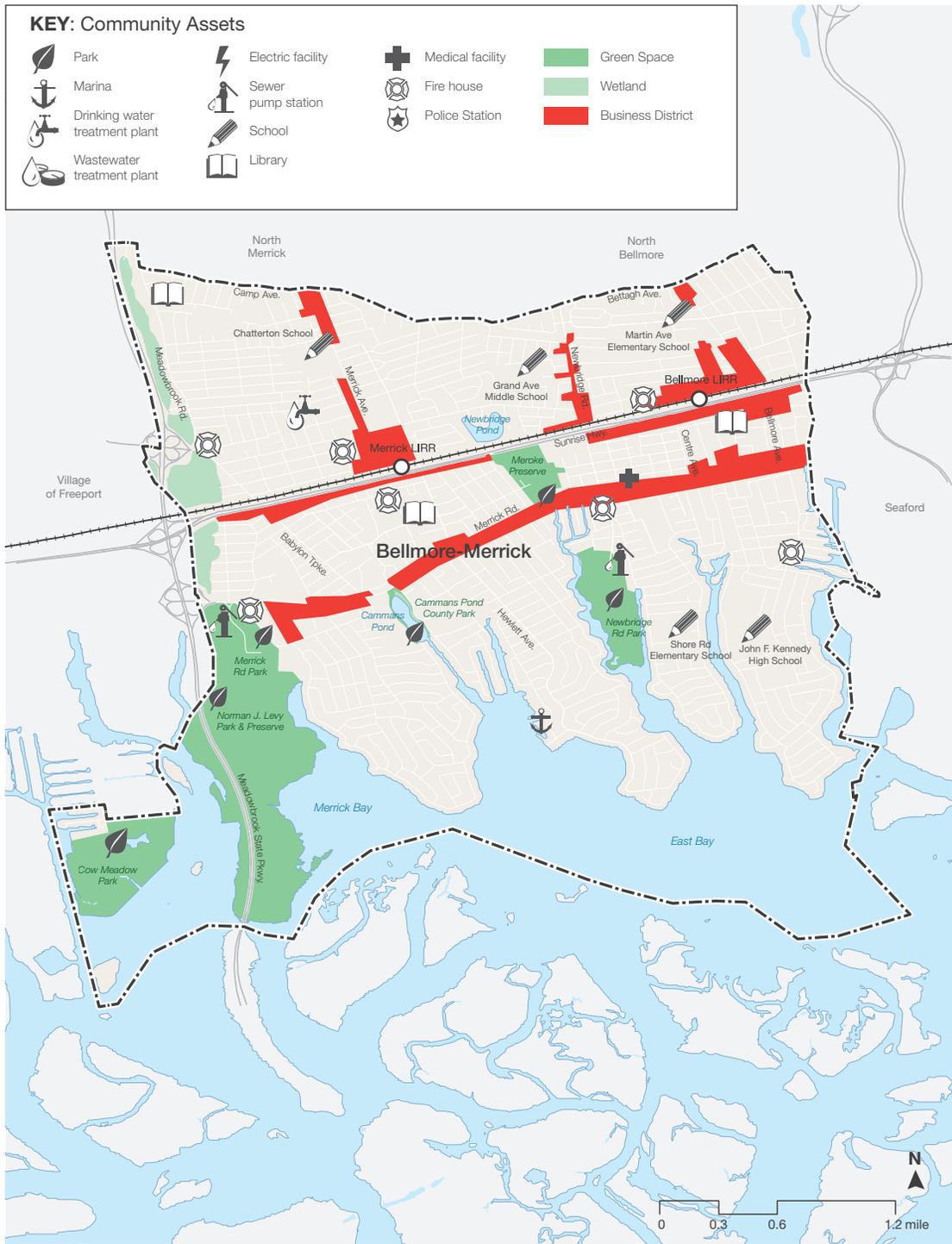
Infrastructure systems include public transit such as the LIRR, transit ways, transportation hubs, energy sources and fuel stations, water, stormwater, wastewater, and solid waste and recycling networks.

Natural and Cultural Resources

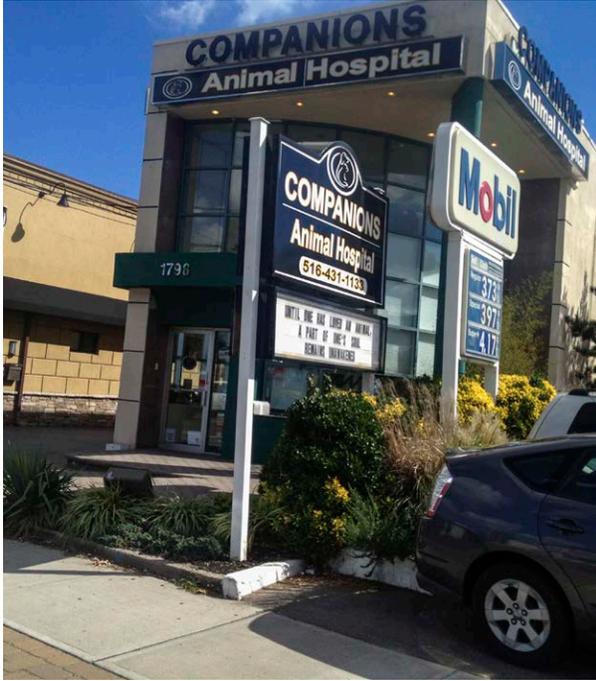
Natural assets include habitats, wetlands and marshes, parks and open spaces. Cultural assets include religious establishments, libraries and museums, historic landmarks, and arts venues.

Socially Vulnerable Populations

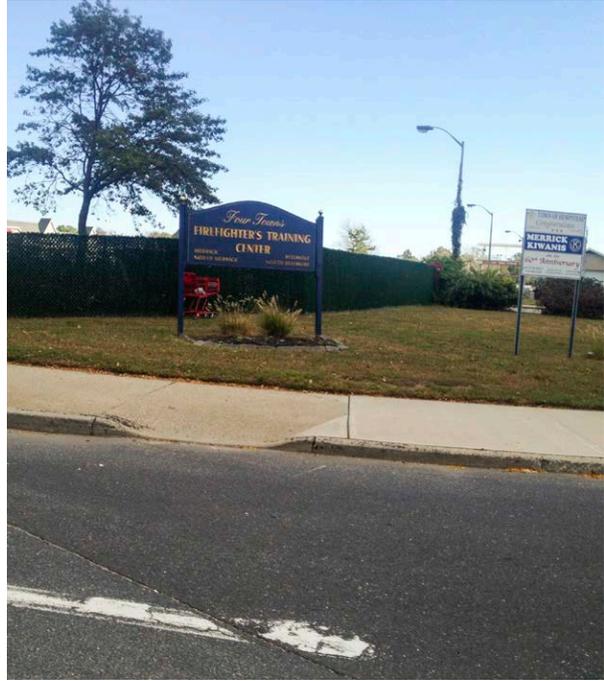
Socially vulnerable populations include assets which predominately provide services to people with disabilities, low-income populations, the elderly, young children, and people at risk of becoming, or are currently homeless.



Map 2: Key Community Assets



Companions Animal Hospital



Firefighter training center



Bellmore Village



Multi-family housing in Bellmore



Single-family residential streets in Bellmore-Merrick

Evaluation of Risks

Risk is the potential for an asset or system to be damaged or destroyed in some future event. The NYRCR Bellmore-Merrick Planning Committee and Consultant Team will engage in a comprehensive risk assessment, outlined in the following section, to understand and prioritize projects and strategies for community reconstruction and development. This analysis is based on the impacts of previous storm events, and considers three factors contributing to future risk. These factors are defined as hazards, exposure, and vulnerability.

Hazards

Hazard is a measure of the likelihood and magnitude of future storm events. Hazards will be based on the aggregated risk maps used for the asset inventory and prioritization, which identify and rate geographic areas susceptible to future inundation or erosion. Risk areas are categorized as Extreme, High or Moderate based on the frequency and magnitude of coastal threats.

Exposure

Local topographic and shoreline conditions can increase or decrease the effect of hazards on assets. Exposure is the measure of this influence on potential storm impacts. Landscape attributes such as erosion rate, beach width, and the presence and condition of natural or engineered protective features will be considered when determining asset exposure.

Vulnerability

Vulnerability reflects the level of impairment or consequences that assets may experience during and after a storm event. It is the measure of an asset's ability to resist damage. In context of vulnerable populations, it reflects the difficulty of evacuation or relocation relative to population size. Vulnerability will be determined by studying previous storm impacts and using local knowledge to develop an estimate of future effects.

Risk Areas

The risk assessment process will be informed by the creation of hazard maps, which incorporate a full range of coastal risks, and consider both the frequency and impact of flooding. The maps, prepared by the New York State Department of State (NYSDOS) for the NYRCR Program, identify three levels of risk based on aggregated information for multiple hazards. These risk areas are qualified as subject to extreme, high, and moderate risk from inundation and erosion from future storm event and sea level rise.⁵ Map 3 shows the extreme, high and moderate risk areas within NYRCR Baldwin.

Extreme Risk Areas

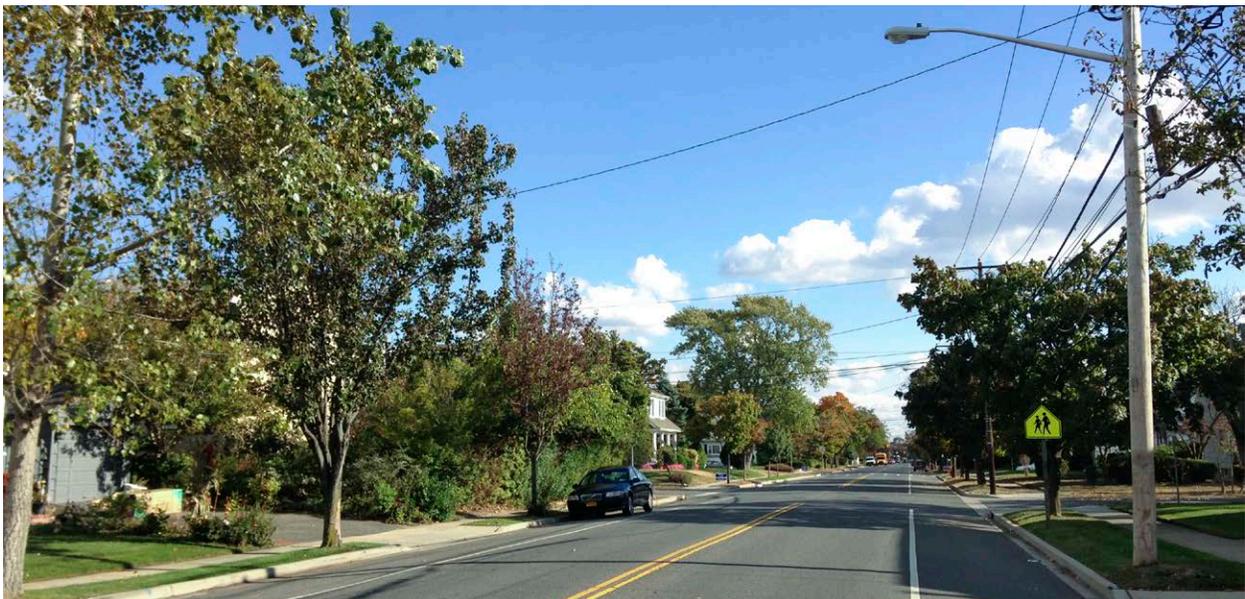
Areas currently at risk of frequent inundation, vulnerable to erosion in the next 40 years, or likely to be inundated in the future due to sea level rise.

High Risk Areas

Areas outside the Extreme Risk Area that are currently at infrequent risk of inundation or at future risk from sea level rise.

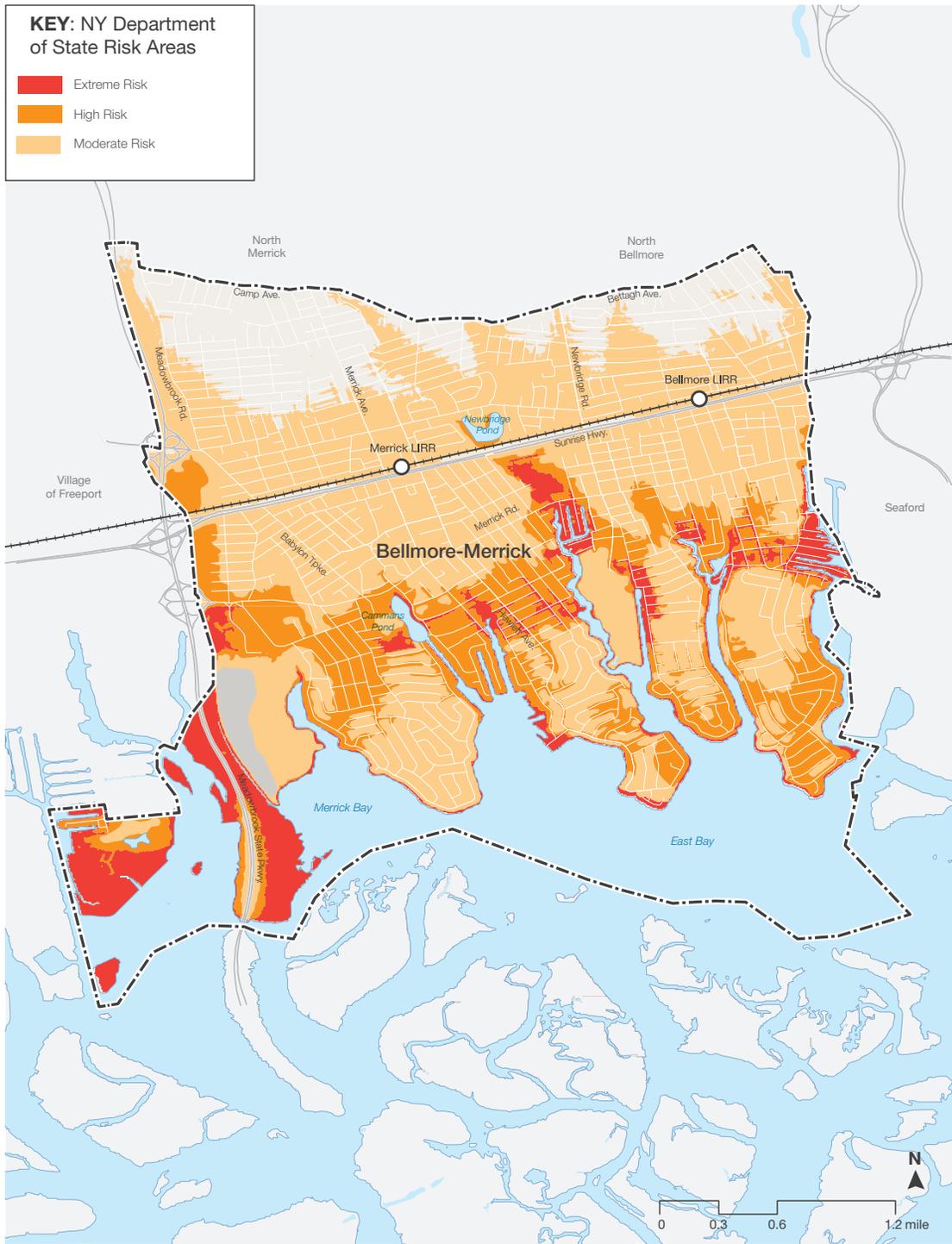
Moderate Risk Areas

Areas outside the Extreme and High Risk Areas but currently at moderate risk of inundation from infrequent events or at risk in the future from sea level rise.



Single-family residential streets in Bellmore-Merrick

⁵Guidance for New York Rising Community Reconstruction Plans: A Planning Toolkit for CR Planning Committees



Map 3: Hazard Areas in NYRCR Bellmore-Merrick

NYSDOS Risk Assessment Area Mapping Methodology⁶

To help understand the geographic distribution of coastal risk, the New York State Department of State prepared coastal risk assessment areas with assistance from the National Oceanic and Atmospheric Administration Coastal Services Center (NOAA-CSC) and the Federal Emergency Management Agency (FEMA). The following process was used to develop a geographic assessment of Extreme, High, and Moderate Risk Areas for Nassau County.

Map risk assessment areas

Data was collected from sources accurate enough to differentiate geographic areas according to likelihood of flooding, erosion, waves and storm surge. To the extent allowed by source data, places where flood water can extend upstream are reflected in the mapping. Data sources include, but are not limited to:

- **High Resolution Topography:** The best available topography data for all areas was used. This allowed for topographic mapping of elevation differences that could affect flooding potential. Topographic data for inundation analysis had an average vertical error of 9 centimeters.
- **2009 FEMA Flood Insurance Rate Maps:** Commonly referred to as 100-year flood zones, A and V zones on floodplain maps are areas with a 1% annual risk of flooding based on the most recent FEMA analysis. The boundaries of these zones are identified on Flood Insurance Rate Maps (FIRMs). The FIRMs also identify zones X and B, which are subject to a “500-year flood,” or 100-year flood with a depth less than 1 foot, or with a contributing drainage area less than 1 square mile, and areas protected by levees from the base flood. For this Risk Assessment, zones X and B are relatively low-risk areas subject to future storm surge inundation with sea level rise, in which case a higher standard for flood protection may be appropriate.
- **SLOSH Storm Inundation Zones (NY3 Basin):** The Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model from the National Hurricane Center estimates hurricane storm surge. Because category 3 hurricanes (Saffir-Simpson scale) have occurred numerous times in New York, the SLOSH category 3 inundation zone was used to identify the geographic extent of coastal inundation risk.
- **Sea Level Rise:** To account for future sea level rise, a 0-3 feet above Mean Higher High Water (MHHW) shoreline (using the NOAA VDatum for MHHW surface) that shows both possible and more likely areas impacted by sea level rise based on

mapping confidence. Future sea level rise was also accounted for by adding 3 feet of elevation to the NOAA Weather Service coastal flood advisory and adding 3 feet of elevation to the inland extent of the 100-year flood zone.

- Shallow coastal flooding: NOAA National Weather Service (NWS) shallow coastal flood advisory thresholds were used. An analysis of the number of events and duration of coastal flooding over the past 3 years, and the consequence of 0.5 and 1 meter of sea level rise was carried out.
- Susceptible Natural Shoreline Features: Areas subject to shoreline erosion are at risk of chronic impacts as well as increased storm impacts.

Compile mapping and classify geographic areas

Compile mapping into a summary, and classify geographic areas according to differences in vulnerability. Mapped areas were overlaid, and combined vulnerabilities were used to separate geographic areas into three classes:

- Extreme Risk Areas: Areas 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. This includes FEMA V flood zones, areas subject to Shallow Coastal Flooding per NOAA NWS's advisory threshold, areas prone to erosion or natural features susceptible to erosion, and areas subject to future sea level rise.
- High Risk Areas: Areas outside the Extreme Risk Area that are currently at infrequent risk of inundation or at future risk from sea level rise. These include areas bounded by the 1% annual flood risk zone (FEMA V and A zones), and areas subject to future sea level rise.
- Moderate Risk Areas: Areas outside the Extreme and High Risk Areas but currently at moderate risk of inundation from infrequent events or at risk in the future from sea level rise are Moderate Risk Areas. These include areas bounded by the 0.2% annual risk (500 year) flood zone, where available, and areas bounded by the SLOSH category 3 hurricane inundation zone.

⁶NYS Department of State, Risk Assessment Area Mapping – Datasets and Methodology
http://stormrecovery.ny.gov/sites/default/files/documents/Risk_Assessment_Area_Mapping.pdf

The NYRCR Bellmore-Merrick Planning Committee and Consultant Team has begun to review community assets within NYRCR Bellmore-Merrick based on their location relative to the risk areas outlined above. Table 1 and Table 2 identify the number of assets in each asset class and sub-class that are located within moderate, high, and extreme risk areas. The asset tables developed for the NYRCR Conceptual Plan consist of data collected from New York State and Nassau County Geographic Information System (GIS) databases. Using GIS software, County and State data was trimmed to include only assets within the NYRCR Bellmore-Merrick geographic scope. Attribute information contained within different datasets was used to parse individual assets into class and sub-class categories.

Table 1: NYRCR Bellmore-Merrick assets located in risk areas

Asset Class	Asset Sub-Class	Moderate	High	Extreme
Health and Social	Assisted Living	1	0	0
	Community Center	6	0	0
	Day Care Facility	14	1	0
	Emergency Services	15	2	0
	Government	7	0	2
	Hospital	1	0	0
	Library	3	0	0
	Other Medical	8	0	0
	Pharmacy	5	1	0
	School	25	3	0
	Veterinary	4	2	0

Asset Class	Asset Sub-Class	Moderate	High	Extreme
Natural and Cultural	Beach	0	0	0
	Cultural	3	0	0
	House of Worship	20	5	0
	Parks	3	4	8
	Recreation	13	2	0
	Wetlands (acres)	28	50	20
Infrastructure Systems	Power Facility	0	0	0
	Rail Bridges	6	0	0
	Rail Stations	2	0	0
	Roads (miles)	76	29	9
	Road Bridges	2	0	1
	Sewer Pump/Treatment	1	0	1
	Water Treatment Plants	1	0	0
	Water Wells	2	0	0
Housing	Low Density Residential	6,222	2,643	1,620
	Medium Density Residential	300	75	42
	High Density Residential	30	0	20
	Assisted Living	1	0	0

Asset Class	Asset Sub-Class	Moderate	High	Extreme
Economic	Commercial Parcels	111	8	30
	Industrial Parcels	14	2	3
	Mixed Use Parcels	91	29	6
	Retail Parcels	131	23	1
	Bank/ATM	25	5	0
	Industrial Facility	5	1	1
	Lodging	1	0	0
	Marina/Boat/Pier	1	2	6
	Office	9	0	1
	Post Office	3	0	0
	Restaurant/Food/Caterer	60	12	3
	Retail	101	16	3

Table 2: Total Number of Assets Located in Risk Areas

Asset Class	Moderate	High	Extreme	Total
Health and Social	89	9	2	100
Natural and Cultural*	39 (28)	11 (50)	8 (20)	58 (98)
Infrastructure**	14 (76)	0 (29)	2 (9)	16 (114)
Housing	6,553	2,718	1,682	10,953
Economic	552	98	54	704
	* Natural and Cultural assets in parenthesis () represent total wetland acres ** Infrastructure assets in parenthesis () represent total road miles			

Needs and Opportunities

Community needs and opportunities, shown in Table 3, were identified during initial NYRCR Committee and Public Meetings as well as through the review of existing planning documents. The NYRCR Bellmore-Merrick Planning Committee and Consultant Team will expand the list of needs and opportunities as the planning process continues and further research and analysis are completed. These issues have been organized into FEMA's National Disaster Recovery Framework's categories of recovery support functions, which blend traditional repair efforts with long-range planning for recovery and growth.

Community Planning and Capacity Building

This recovery function addresses a community's ability to implement recovery actions while planning for future storm events. It includes public education and preparedness, legislative and regulatory concerns for vulnerable populations, and building code and land use regulations that may influence future rebuilding and recovery.

Economic Development

A disaster can severely disrupt economic and business activities, and the development of new economic opportunities. This recovery function considers the needs of local businesses and institutions to recover or relocate following a storm event, and identifies development plans that may have been stalled as a result. It should also highlight investments that can provide both economic growth and greater resilience in the community.

Health and Social Services

This recovery function considers the strategies and management measures needed to ensure that health care facilities and essential social services are accessible at an appropriate level. These measures are specifically important to protecting the health and wellbeing of socially vulnerable populations. Long-term effects are also relevant, such as post-disaster health impacts on residents and recovery workers.

Housing

The housing recovery support function establishes needs and opportunities relative to community housing goals, prioritizing damaged and at-risk areas. The type and location of housing should consider current and expected demand, the availability of rental and non-rental units, and the range of housing available relative to community income levels. The effects of previous events on building code requirements can also significantly impact housing-related needs.

Infrastructure

Infrastructure needs and opportunities include a number of essential services, from flood control measures to wastewater treatment facilities. These issues should closely align with the community assets identified by the asset inventory, and recovery efforts should focus on opportunities to rebuild in a way that decreases vulnerability to future impacts.

Natural and Cultural Resources

This recovery function addresses damage to natural and cultural resources, and the actions that should be taken to preserve, rehabilitate or restore these assets or services to their initial state. Natural systems have been shown to mitigate storm impacts, and offer significant environmental and commercial benefits such as stormwater management and recreational opportunities.



Overhead power lines in a residential neighborhood

Table 3: Community needs and opportunities for NYRCR Bellmore-Merrick

Recovery Function	Community Needs (N) and Opportunities (O)
Community Planning and Capacity Building	N - Residents and business owners didn't know what to do when they evacuated, such as turn off electrical devices, which caused damage upon return to their property.
	O - Educate residents and business owners about what to do during and after a major storm.
	N - Stakeholders aren't fully aware of the degree to which they are at risk for damage from future storm events.
	O - Educate stakeholders about risks and hazards, including making risk zone maps easily accessible.
	N - Neighbors don't know if their neighbors are okay during major storm events.
	O - Create neighborhood watch and buddy system programs so neighbors can help each other during storm events.
Economic Development	N - Many local businesses were closed for extended periods after Hurricane Sandy and some never reopened.
	O - Provide technical and financial assistance for businesses to re-open after storms.
	N - Redevelopment in high elevation areas that are not in risk zones is stifled because mixed-use is not permitted by the Town.
	O - Explore new zoning opportunities in non-risk areas, such as along Sunrise Highway or near the Merrick and Bellmore LIRR stations.
	N - Commercial areas are not very walkable and residents are dependent on their cars.
	O - Re-design streets on commercial corridors and near stations to improve walkability and pedestrian environments.
Health and Social Services	N - Some residents without family or friends nearby had nowhere to go during evacuation.
	O - Create "no-fail emergency centers" that are accessible during flooding and storm events to allow community to charge phones, distribute important information and provide a safe haven for vulnerable populations.

Recovery Function	Community Needs (N) and Opportunities (O)
Housing	N - Low elevation, inland residential neighborhoods were just as flooded as shoreline areas during Hurricane Sandy and acted as a barrier between the peninsulas and the rest of the hamlet.
	N - Because of peninsulas, residents were trapped without ways to leave their homes after Hurricane Sandy; residents could not access recharge centers.
	N - Flooding came from a variety of sources, like storm drains, not just directly from the bay, making it difficult to stop or treat the problem.
	N - Flooding occurs on a regular basis during high tides and high rainfall, not just during storm events, affecting quality of life and home values.
	N - Residents didn't have anywhere to stay during Hurricane Sandy during the many months in which they couldn't live in their homes.
	N - Lingering damage to homes from Hurricane Sandy, such as sink holes and cracked foundations.
	O - Provide funding for home inspections.
	N - Many homes in Bellmore-Merrick are now abandoned.
	O - Certain areas in extreme risk zones should not be rebuilt and receding should be considered.
	Infrastructure
N - Water inundates low lying neighborhoods during major storms.	
O - Raise bulkheads, add boulders near bulkheads.	
O - Install backflow devices in stormwater system.	
O - Implement natural solutions to prevent flooding (see Natural and Cultural Resources section below).	
O - Incentivize green infrastructure improvements on private property.	

Recovery Function	Community Needs (N) and Opportunities (O)
Infrastructure	N - Trash can accumulate in storm drain system and disrupt proper functioning.
	O - Storm drains should be better maintained; installation of netting at openings should be pursued.
	O - Explore raising roads on key streets.
	N - Bellmore-Merrick's stormwater system is being affected by upland communities whose runoff overloads the drainage system.
	O - Require more impermeable surfaces, or other green infrastructure improvements, in upland areas.
	N - Different roads, as well as surface and subsurface stormwater systems, have different jurisdiction making implementation of projects and maintenance difficult.
	O - Institute governmental reforms or cross jurisdictional resiliency task force.
	O - Create a road maintenance plan that provides structure for cooperation and accountability for different jurisdictions that oversee roads in the community.
	N - Sewer/wastewater systems caused extensive damage to residences during Hurricane Sandy and should be upgraded; significant sewage backup in homes was experienced.
	O - Explore all possible funding opportunities for sewer system upgrades.
	N - Damaged power lines during storms caused significant life safety hazards and jeopardize homes and buildings following Hurricane Sandy.
	O - Upgrade electric poles and power lines to better withstand storm events and underground lines where feasible.
	O - Focus on improvements that addresses life safety, like evacuation routes and an efficient transportation network.
	N - Saltwater intrusion into homes causes electric fires.
	O - Better educate homeowners about dangers of keeping electrical equipment in basements.
N - No heat in homes following Hurricane Sandy was a significant issue, especially for socially vulnerable populations.	
O - Consider natural gas or propane generators for residential use.	

Recovery Function	Community Needs (N) and Opportunities (O)
Infrastructure	O - Explore reducing dependence on Long Island Power Authority (LIPA).
	N - Street lights didn't function after Hurricane Sandy.
	O - Use solar, or other energy source, for street lights.
Natural and Cultural Resources	N - Community needs better protection and maintenance of green and open space.
	N - Ecological systems are under threat from climate change.
	N - Many storm protection measures conflict with creating healthy ecological systems.
	O - Emphasize storm protection measures that enhance, rather than degrade, the local ecological system.
	O - Create plans for protected green space to manage stormwater and provide wildlife habitat.
	O - Develop process for acquisition of severely damaged properties for use as public open space, flood mitigation, stormwater retention and wildlife habitat.
	O - Educate public about ecological issues and how resilience can be addressed using natural systems.
	O - Use cost/benefit analysis phase of NYRCR to clearly demonstrate the environmental impacts of each storm protection measure.
	O - Raise awareness of the co-benefits of ecological preservation, for example, the role the marshes and barrier beaches play in storm protection and the role inland parks and preserves play in mitigating runoff and pollution.
	O - Leverage cultural institutions (schools, libraries, learning centers) as emergency information and meeting centers, as well as climate change education and awareness centers.



Inlet in Merrick



Power lines close to street trees on a residential street

Key Strategies and Projects

The key strategies and projects included in the NYRCR Conceptual Plan were developed to achieve rebuilding goals, increase resilience, and promote economic growth within the community of NYRCR Bellmore-Merrick. At this stage of the planning process, many of the strategies currently outlined are a product of preliminary feedback and analysis, and focus more heavily on regional issues. These strategies and projects will evolve as the planning process continues. After completion of the assessment and public outreach phase, the NYRCR Bellmore-Merrick Planning Committee and Consultant Team will have the information necessary to develop a comprehensive set of strategies that better reflect the needs and opportunities of NYRCR Bellmore-Merrick.

Strategies

The strategies outlined in this section have been organized by the FEMA National Disaster Recovery Framework's six recovery support functions, which include both traditional repair efforts and long-term planning goals. To the extent possible, they consider the risk faced by critical and non-critical community assets, the availability of funding, and the potential synergies with other planned or ongoing initiatives. The strategies listed in Table 4 reflect ideas gathered during initial NYRCR Planning Committee and public meetings, as well as review of relevant plans and consultant input. These strategies will be further refined and new strategies will be added as the public engagement process continues.

Table 4: Strategies to achieve rebuilding, resilience, and economic growth

Recovery Function	Community Strategies
Community Planning and Capacity Building	Improve local emergency action planning efforts to incorporate lessons learned from Hurricane Sandy.
	Centralize information for all emergency management and assistance programs.
	Revise regulations or legislation to accommodate resilient rebuilding.
	Educate community about resilience, climate change, and emergency preparedness.
	Facilitate communication amongst community during storm events by ensuring continued operation of cellular towers.
Economic Development	Encourage new development in areas of high elevation and outside of moderate, high or extreme risk areas.
	Improve downtown areas by encouraging infill development and improving public spaces.

Recovery Function	Community Strategies
Health and Social Services	Ensure that critical facilities, including emergency shelters, are capable of providing power during and after major storm events.
	Ensure that emergency shelters are accessible and able to accommodate the needs of community members.
	Provide safe parking areas for residents in evacuation zones to store personal vehicles during major storm events.
Housing	Encourage the development of a wider variety of housing types to support young people and seniors who want to move to or remain in Bellmore-Merrick.
	Provide multi-family housing options around downtown centers and transit hubs.
	Provide homeowners with financial support, incentives, and information to make their homes and properties more resilient.
	Provide support and assistance for residents interested in moving out of extreme-risk areas.
	Create a comprehensive housing resource for displaced residents.
	Encourage developers, contractors, and homeowners to incorporate energy efficiency measures in new buildings or renovations.
Infrastructure	Protect major streets and roads against storm impacts to facilitate evacuation and emergency services during and after major events.
	Reduce the duration and frequency of power outages by protecting electrical distribution infrastructure, including overhead lines and substations from storm damage.
	Support the use of small-scale renewable energy generation to provide power for homes and businesses.
	Protect wastewater infrastructure from storm damage and ensure that power outages do not impact system operation.
	Upgrade sewer system with equipment such as backflow devices to prevent backup and flooding.
	Modernize the energy distribution network with smart technologies.
	Invest in utility-scale renewable energy generation.
	Explore natural alternatives to infrastructure investment, such as green infrastructure methods.

Recovery Function	Community Strategies
Natural and Cultural Resources	Establish a coordinated plan to protect and maintain the region's natural water resources.
	Establish and support regional development guidelines that preserve open spaces and protect the natural environment.
	Invest in the preservation of the barrier islands as a natural protection from storms.
	Protect inlets and shorelines to minimize the impact of storm surge.
	Expand and increase access to public waterfront areas.



Tidal Wetlands (Photo Credit: Charles Brown)

Projects

The NYRCR Bellmore-Merrick Planning Committee and Consultant Team will select and prioritize potential NYRCR implementation projects. These initial projects will be reviewed to determine compliance with funding eligibility criterion and to identify alignment with federal, state and local laws and regulations. Projects will address the replacement or repair of damaged structures, address exposure to risk and increase resilience, respond to current and future housing needs, or help to restore and grow the local economy. Some projects may also provide support for other strategies, and supply the resources or management measures needed for implementation. The project list below is based on initial discussions with the Committee, public agencies and existing planning documents. Projects will evolve throughout the planning process as the project list is expanded and refined.

Table 5: Potential projects for rebuilding and resilience in NYRCR Bellmore-Merrick

Name and Location	Project Description	Result of Sandy?	Result of Other Event/Plan?
Lifeline network [Infrastructure Systems]	Determine the critical access routes, or “lifeline roads” used within the community. If located in an at-risk area, elevate lifeline roads to provide routes for emergency evacuation during storm events. To maintain functionality during power outages, retrofit streetlights and signals along these routes to operate on solar power.	Yes	No
Underground utilities [Infrastructure Systems]	Work with LIPA/PSEG and local emergency service providers to identify vulnerable overhead electricity distribution lines and relocate lines underground. Flood-proof new underground distribution substations and equipment, and existing substations located in risk areas.	Yes	No
Tree trimming [Infrastructure Systems]	Work with LIPA/PSEG and residents to identify areas where additional or more frequent tree clearing is needed. In conjunction with utility line clearing efforts, create or contract a local tree removal service to take down dead or dying trees located near distribution lines from private property.	Yes	No
Switch and feeder addition [Infrastructure Systems]	Install additional switches and feeders in areas with overhead lines to provide greater grid flexibility and the ability to isolate areas where a power failure has occurred. This can be combined with smart grid technologies to manage demand and increase response times during disasters or heavy storm events.	Yes	No

Name and Location	Project Description	Result of Sandy?	Result of Other Event/Plan?
Distributed generation incentives [Infrastructure Systems]	Create incentives to support the installation of small-scale energy generation and energy storage technologies, such as solar photovoltaics and cogeneration plants. Appropriate technologies should be determined by building size and use, and incentives should be structured accordingly.	Yes	No
Energy retrofit program [Housing, Economic]	Establish a home retrofit program and create contractor incentives for energy efficient buildings. Equipping homes and buildings with better insulation, high performance windows, and energy-efficient mechanical systems can significantly reduce energy demand, saving money and reducing strain on the power grid.	Yes	No
Homeowner education program [Housing]	Re-energizing the grid after a power loss can place unexpected loads on building circuits and equipment, which may result in fire or explosion. Establish a homeowner energy education program to prevent accidents in the aftermath of a storm or disaster, and provide incentives for smarter home controls.	Yes	No
Permanent generators for critical facilities [Health and Social Services]	Install permanent generators on the roofs or upper floors of critical assets and evacuation sites to prevent flood damage during storm events. Natural gas or propane generators should be used when possible, as gasoline or diesel-powered units are vulnerable to fuel shortages.	Yes	No
Residential generator rebate program [Housing, Socially Vulnerable Populations]	Provide rebates for residential installations of natural gas or propane generators. As part of a homeowner energy education program, provide residents with an overview of the permitting process and outline regulatory requirements for installation.	Yes	No
Disaster action planning [Health and Social Services]	Improve local disaster action planning for emergency preparation and readiness, evacuation, and recovery efforts. Solicit input from public agencies, emergency service providers, residents and business owners and establish clear lines of communication between all stakeholders as the plan is developed.	Yes	No
Community shelter network [Health and Social Services, Socially Vulnerable Populations]	Ensure that emergency shelters are accessible and able to accommodate the needs of community members. Maintain at least two points of access to critical facilities such as schools and hospitals that may also function as shelters during a disaster. Ensure that parking capacity at emergency shelters is adequate for the expected number of evacuees travelling by personal vehicle.	Yes	No

Name and Location	Project Description	Result of Sandy?	Result of Other Event/Plan?
Natural gas infrastructure modernization [Infrastructure Systems]	Work with National Grid to modernize natural gas distribution infrastructure. Identify and invest in implementable technologies to better regulate and isolate natural gas lines in the event of damage or leakage. Connect residents and businesses to gas lines where service is available, and expand service into areas of need.	No	No
Emergency parking [Infrastructure Systems, Health and Social Services]	Designate areas outside of flood zones to be used for off-street parking during flood events. Cars and other personal vehicles left in these areas will not be ticketed or towed, but can be safely stored for an amount of time deemed appropriate by the community or property owner.	Yes	No
Emergency animal shelters [Health and Social Services]	Work with local businesses and organizations to establish a refuge center for animals or families with animals to go to during a storm emergency or flood event. Establish a program to recruit volunteers, such as local veterinary professionals or students, to help manage the facility.	Yes	No
Integrated communication network [Health and Social Services]	Create a single source for comprehensive information and emergency assistance. Establish a communication network that more effectively links the local government with emergency management agencies, faith-based groups, and non-profit organizations to direct aid and recovery efforts to the community's socially vulnerable populations.	Yes	No
Back-up generator system [Health and Social Services, Socially Vulnerable Populations]	Invest in a stockpile of portable generators that can be deployed to community assets and evacuation centers where permanent generators are unavailable or yet to be installed. The generator inventory should have sufficient capacity to supplement critical facilities and support community assets, such as vulnerable populations, that may not have backup power systems in place.	Yes	No
Storm protection [Economic, Natural and Cultural Resources]	Work with Nassau County and neighboring villages and hamlets to promote construction of structural and natural mitigation measures to address high-tide flooding. Support beach nourishment and replenishment efforts to attenuate storm surges and protect inlets and shorelines along barrier islands such as Long Beach, Jones Beach and Fire Island.	Yes	No

Name and Location	Project Description	Result of Sandy?	Result of Other Event/Plan?
Fuel tanks security [Infrastructure Systems, Natural and Cultural Resources]	Ensure that damaged underground oil tanks don't allow seepage into groundwater by transferring residents from fuel oil to natural gas. Require that all tanks are sufficiently secured to prevent leaks and damage. In conjunction with National Grid, provide additional incentives for business and residents to convert to natural gas heating systems.	Yes	No
Wastewater infrastructure program [Infrastructure Systems]	Elevate sewage-pumping stations and install back-up natural gas generators on site to maintain operations during a power outage. Create a program to help home and building owners install backflow preventers on lateral sewers, and install check valves on municipal sewer pipes and at outfall locations.	Yes	No
Green infrastructure plan [Infrastructure Systems, Natural and Cultural Resources]	Work with neighboring hamlets and villages to create and implement a comprehensive green infrastructure plan, and create a shared ownership model for stormwater and wastewater infrastructure. Green infrastructure improvements can help reduce flooding and groundwater pollution, and enhance natural assets within the community.	Yes	No
Utility-scale alternative energy sources [Infrastructure Systems]	Work with Nassau County, the State, and LIPA/PSEG to develop alternative transmission-level power sources. Consider expansion of waste-to-energy operation and consider use of advanced thermal treatment for cleaner energy production.	No	Yes
Emergency cellphone service [Infrastructure Systems, Health and Social Services]	Work with local cellular service providers and regulatory agencies to expand service areas and equip cell towers with emergency backup power. Cellular phones are a critical mode of communication during emergencies and current requirements for backup power are not sufficient to maintain service through a disaster or storm event.	Yes	No
Revise zoning for resiliency [Housing]	Revise local zoning regulations to allow residents to raise their homes and utility meters without penalty. Work with State, Town and County planning agencies to ensure that needs specific to the community's rebuilding efforts are not omitted or overlooked.	Yes	No

Name and Location	Project Description	Result of Sandy?	Result of Other Event/Plan?
Downtown masterplan [Economic, Natural and Cultural Resources]	Engage in a comprehensive masterplanning process for the community's downtown and commercial districts to encourage economic development. Work with business owners to establish business improvement districts in the community, and invest in public space improvements. Masterplanning efforts should be coordinated with and support green infrastructure initiatives.	No	Yes
Flood diversion and control [Infrastructure Systems]	Strategically locate structural and natural drainage features to divert flood waters into designated catchment areas. Commission a study to determine overland flow patterns in flood-prone areas to identify locations for drainage and detention.	Yes	No
Stormwater management program [Infrastructure Systems, Natural and Cultural Resources]	Work with neighboring hamlets, villages, and Nassau County to establish a region-wide stormwater management program to improve system-wide monitoring of stormwater drainage infrastructure. Increase system capacity and use collected information to identify improvements for flood control and pollution reduction.	Yes	No
Post-storm housing Database [Housing]	Create a county-wide database of rental units and hotel rooms available to accommodate displaced residents. Use the database to identify areas with low vacancy and guide real estate development to bring more rental units online.	Yes	No
Stormwater management consolidation [Infrastructure Systems]	Work with Nassau County and the Town of Hempstead to consolidate stormwater management services so that both surface and sub-surface systems are maintained by a single entity. Currently, the Town manages stormwater inlets while the County manages piping and outlets.	No	No
Stormwater detention regulations [Infrastructure Systems, Natural and Cultural Resources]	Work with Nassau County to establish stormwater detention regulations for all property owners to reduce flooding in low-lying areas. Detention regulations typically require property owners to detain and slowly release stormwater, typically the first inch, during and after rainfall events.	No	No

Name and Location	Project Description	Result of Sandy?	Result of Other Event/Plan?
Rebuild stronger bulkheads [Infrastructure Systems]	Revise permitting and ownership models so that bulkheads are evenly maintained. Provide funding to support bulkhead construction and maintenance where it is needed, such as Shore Road, where bulkheading would help mitigate flood damage to homes and keep evacuation routes open during storm events.	Yes	No
Waterfront access [Natural and Cultural Resources]	Expand and increase access to public waterfront areas, especially in high-risk areas. Work with Nassau County and the State to establish a shoreline park trust.	No	No
Strategic adaptation [Housing, Natural and Cultural Resources]	Work with Nassau County and the State to establish thresholds for rebuilding following a major storm event. No-build thresholds should account for sea level rise, increased frequency of flood events, and increased frequency of severe (100-year) storm events. After thresholds have been exceeded, building permits will not be issued for work in high-risk areas.	Yes	No
Relocation assistance Program [Housing]	Work with Nassau County, the State and private developers to establish a relocation assistance program that gives residents relocated due to strategic adaptation priority in new developments.	Yes	No

Regional Perspectives

Many of the strategies and projects developed for the NYRCR Bellmore-Merrick Conceptual Plan are applicable to other south shore communities, and coastal areas throughout Long Island. These initiatives respond to both the common risks and vulnerabilities facing coastal communities, and cross-cutting issues that affect the entire region. Coordinated implementation on an inter-municipal or regional scale can help NYRCR Bellmore-Merrick leverage resources, opportunities, and support to meet the objectives outlined in the NYRCR Plan.

NYRCR Bellmore-Merrick will need to work with neighboring hamlets and villages along the south shore to consolidate rebuilding and resilience efforts. The challenges facing Long Island's coastal communities extend across political jurisdictions and will need to be addressed by the region as a whole. Engaging in a regional planning process will allow NYRCR Bellmore-Merrick and other south shore communities to share information and reinforce collective strategies. The final NYRCR Plan will identify projects and actions that are consistent with regional needs and opportunities, while upholding the vision of NYRCR Bellmore-Merrick's future.



Merrick Library

Actions

Actions encompass the management measures required to implement projects and strategies. In contrast to projects, actions establish policies and guidance for strategies that reduce the exposure and vulnerability of assets to storm impacts. Six management measures were identified by the NYRCR Program to organize actions for increased resilience and risk mitigation within NYRCR Bellmore-Merrick and across the region. As strategies and projects are developed for the NYRCR Plan, these measures will be developed to better reflect the needs and opportunities in NYRCR Bellmore-Merrick.

Conserve, Restore, and Enhance Natural Protective Features

These management actions use the natural landscape to promote safety and livability while reducing coasts. Approaches include natural flood storage capacity, wetland conservation, and transfer of development rights.

Resilient Construction

These actions ensure that proper construction techniques are required to provide an adequate level of safety for structure and occupants. This includes new construction and resilient retrofitting, which may be necessary where existing development in risk areas cannot be relocated or adapted.

Structural Defenses

Structural defenses are natural or engineered constructions designed to resist storm impacts. They may act as a permanent safety measure or for temporary protection as a project or strategy is deployed.

Land Use Planning and Regulation

These actions can reduce storm impacts through incorporating resilience and sustainability measures into planning regulations. Land use management can increase resilience and enhance community value while protecting natural resources and lowering costs.

Market-Based Methods

Market-based actions reduce vulnerability by incorporating the cost of risk into land and land use costs. This is achieved by establishing prices, taxes and fees that account for the economic effect of storm impacts. As a result, owners and developers can evaluate the value of a location based on the cost of future use.

Increased Awareness and Information

Actions to increase information availability allow better decision making in the rebuilding and resilience-making process. This includes education and outreach programs that provide information and create engagement within the public and private sectors.

Implementation Structure

While the NYRCR Bellmore-Merrick Planning Committee and Consultant Team has worked with the public to identify and prioritize key strategies, implementation of these strategies ultimately rests with the appropriate agencies, organizations or actors who are authorized to administer federal funds and are able to build the necessary programs or projects.

It may be beneficial to reflect on the opportunities and challenges presented by current governmental and service delivery models. There may be better ways to manage and implement necessary improvements within each community, at the inter-municipal or regional level. Numerous studies and reports, along with commentary from NYRCR Planning Committee members, suggests that governance reform and consolidation could be beneficial for Long Island. The recovery process offers an opportunity to step back, reflect, and align government services and bodies to the needs of south shore communities.

To successfully implement the strategies and projects outlined in the NYRCR Conceptual Plan, NYRCR Bellmore-Merrick will need to coordinate with the Town of Hempstead, Nassau County, and New York State to meet collective recovery and resiliency goals. For major projects, the number of overlapping governmental jurisdictions and service areas within NYRCR Bellmore-Merrick can make the implementation process difficult. Projects and strategies that affect shared services will require support from other communities within the service territory, and willingness on behalf of the service provider to participate.

Water-related projects such as the repair of bulkheads or other waterway structures will require approvals and may need to undergo a comprehensive environmental review. The New York State Department of Environmental Conservation (NYSDEC) issues permits for projects that are in, or have an impact on, wetlands and waterways. Most waterfront projects require a joint permit application to be filed with the NYSDEC and the U.S. Army Corps of Engineers (USACE). While this joint application streamlines the submission process, each agency processes the permit application separately, and the application must satisfy the concerns and requirements of both before being approved.

Coastal projects must also obtain a Coastal Consistency Certification from the New York Department of State (NYDOS) before a permit is issued by a State or Federal agency. The goal of this certification is to ensure that the proposed action will not detract from the policies set out in the State's Coastal Zone Management Act (CZMA). The CZMA also allows municipalities to create local coastal plans, termed Local Waterfront Revitalization Plans (LWRP) by the State. Additionally, the New York State Office of General Services must be consulted for any projects extending into or on State-owned lands. As most of the navigable bodies of water in New York are State-owned, a grant, easement or license from the Office of General Services will be required.



Camman's Pond Park in Merrick



Housing on the shoreline

The Nassau County Department of Public Works is also responsible for managing the design and construction of County parks and grounds, drains and drainage structures, sewers, and water infrastructure. The Nassau County Sewer and Stormwater Authority is responsible for the operation of Nassau County’s two sewage treatment plants, the Bay Park Sewage Treatment Plant and the Cedar Creek Water Pollution Control Plant, both of which were damaged and suffered outages during Hurricane Sandy. A number of other independent treatment facilities also operate within the County. The Town of Hempstead municipal sewer district collects sewage generated in NYRCR Bellmore-Merrick, and pumps it into County facilities for treatment.

Locally, the Nassau County Department of Public Works is responsible for the design, construction, repair and maintenance of all streets and bridges under County jurisdiction. Town of Hempstead roads and parking fields are maintained by the Highway Department. The Department regulates road improvement, opening and restoration projects, and issues permits for work performed within a Town right of way. Additionally, the Highway Department is responsible for the cleaning and maintenance of catch basins and storm water drains located on or along Town sidewalks and roadways. They also handle hurricane and flood preparation by clearing flood debris from roadways and parking fields, constructing barricades and closing streets.



View of Inlet, Bellmore-Merrick (Photo Credit: Charles Brown)

NYRCR Bellmore-Merrick's stormwater management system is primarily the responsibility of the Town of Hempstead. Stormwater in Nassau County is not collected by a storm sewer system and treated before discharge. Instead, it is collected in groundwater recharge basins or directed to stormwater outfalls located along the south shore. The inter-municipal Nassau County Storm Water Management Program (NCSWMP) was established by the County, in conjunction with the NYSDEC, to provide a framework for municipalities to implement measures to manage stormwater runoff.

In NYRCR Bellmore-Merrick, energy services are provided by a partnership between the Long Island Power Authority (LIPA) and the Public Service Enterprise Group (PSEG) energy company, which was selected in 2011 by LIPA to manage the Authority's electricity network. On January 1, 2014 PSEG will take over operations of the utility. Energy infrastructure assets, such as distribution lines and transformers, are owned by LIPA and operated and managed by PSEG, which also manages third party service contracts. Natural gas service is provided by National Grid, who owns and operates the distribution system.

The NYRCR Bellmore-Merrick Conceptual Plan is the first step in the rebuilding process. As the NYRCR Bellmore-Merrick Planning Committee and Consultant Team moves through the planning and project development process, project implementation will be an important focus. The NYRCR Bellmore-Merrick Planning Committee and Consultant Team will develop a responsibility matrix to guide the implementation of individual strategies and projects. This matrix will identify the agency or agencies responsible for permitting and approval, length of time, and level of effort required for implementation.

It is possible that government management and services may need to change or evolve in order to respond to the realities presented by the Hurricane Sandy recovery process, and become more resilient to future flooding and storm events. If governmental reform could be beneficial to facilitate implementation of the NYRCR Bellmore-Merrick Plan, the NYRCR Planning Committee and Consultant Team will note how governmental management and services can evolve to respond to these new realities.

Cost-Benefit Analysis

A cost-benefit analysis will be used by the NYRCR Bellmore-Merrick Planning Committee and Consultant Team to identify and prioritize the projects and management actions proposed in the NYRCR Conceptual Plan. Each initiative will be considered in comparison to the relative costs and benefits achieved by the proposed measure. The analysis will result in a set of individual actions and projects that will be the most effective for strategy implementation, and achieve the greatest benefit to the community at the least cost.

Public Engagement

3



Public Engagement

The strategies outlined in the NYRCR Conceptual Plan ultimately will impact the quality of life for those who live and work in the community of NYRCR Bellmore-Merrick. As such, input from residents, business owners, and community leaders has been an important component of the planning process. The NYRCR Bellmore-Merrick Planning Committee and Consultant Team has worked to provide multiple opportunities for public participation and community engagement. These opportunities include the creation of an integrated planning committee, a series of public meetings, and online outreach.

The Planning Committee

Community representatives serving on the NYRCR Bellmore-Merrick Planning Committee work with the NYRCR Consultant Team to develop material for the NYRCR Bellmore-Merrick Conceptual Plan and manage the planning process. Representatives have had a major role in defining the geographic scope and vision for the community, and were critical to the community asset inventory. These meetings are open to public attendance, and as the NYRCR Bellmore-Merrick Plan progresses they will help develop key strategies, projects, and actions for future implementation.



The first public meeting on October 24, 2003

Public Information Meetings

Residents, business owners and other stakeholders in NYRCR Bellmore-Merrick will participate in a series of four public meetings, now underway, to review the work of the NYRCR Planning Committee and contribute to the ongoing planning process. The first public meeting was held on October 24th, 2013. The meeting, which included an open house, presentation, and small group discussions, introduced the NYRCR planning process to the community, and provided an opportunity to review the community vision developed by the NYRCR Planning Committee. Participants worked to establish a community vision, identify community needs and opportunities, and suggest potential recovery and resiliency projects.

The public meetings provide an opportunity for broad public involvement, and underpin the needs, opportunities and strategies developed in the NYRCR Conceptual Plan. To facilitate the work of the NYRCR Bellmore-Merrick Planning Committee and Consultant Team, three more public sessions are scheduled at critical points in the planning process. As with Public Meeting #1, a combination of open house stations, presentations, and small working groups, when appropriate, will be employed to share information with and gather feedback from participants.

Public Meeting 2

Presentation and review of the NYRCR Conceptual Plan and development of ideas of projects, programs, and ideas for implementation.

Public Meeting 3

Presentation and review of the risk assessment to community assets, and feedback relating to the process and results.

Public Meeting 4

Discussion of investment and action strategies.

Information relating to the NYRCR planning process is actively posted on the NYRCR website <http://stormrecovery.ny.gov/nyrcr/community/bellmore-and-merrick>. This includes the details for upcoming public meetings, news and announcements, and NYRCR Planning Committee contacts. The public can also submit feedback and ideas for the final NYRCR Bellmore-Merrick Plan. As the planning process moves forward, documents prepared by the NYRCR Planning Committee and Consultant Team will be made available to the general public.



Next Steps

The NYRCR Conceptual Plan is only the beginning of the NYRCR planning process. It represents the preliminary groundwork conducted to date by the NYRCR Bellmore-Merrick Planning Committee and Consultant Team to understand the conditions, needs, and aspirations of the NYRCR Bellmore-Merrick community. There is much work to be done in the following months to ensure that the strategies, projects, and actions enumerated in the final NYRCR Bellmore-Merrick Plan represent the most effective means to emerge a safer, stronger community in every way.

The NYRCR Planning Committee and Consultant Team will work diligently and cooperatively with the State to continue our progress, consulting with the public at key stages in the process to insure community input. The community will have the opportunity to review the NYRCR Conceptual Plan at an upcoming public meeting, and provide feedback. In the project's next phase we will move into the more detailed risk assessment process, during which a third public meeting will be held, and begin to engage in a larger regional planning process.

NYRCR Bellmore-Merrick was not alone in experiencing the impacts of Hurricane Sandy, and there are many initiatives that will need regional involvement and support. In the project's last phase, the NYRCR Bellmore-Merrick Planning Committee and Consultant Team will perform a cost-benefit analysis and focus on developing tangible strategies for investment and action. At this time, the public will be invited to the fourth and final meeting of the NYRCR planning process. The final NYRCR Plan will be prepared in March of 2014.

Communities like NYRCR Bellmore-Merrick who engage in and successfully complete a recovery plan will be eligible to receive funding to support implementation of the projects and activities identified in their respective planning documents. This is NYRCR Bellmore-Merrick's opportunity to leverage the insights gained in the face of significant storm damage into real, actionable initiatives that can protect and enhance the community.



Birds, Norman J. Levy Park (Photo Credit: Charles Brown)

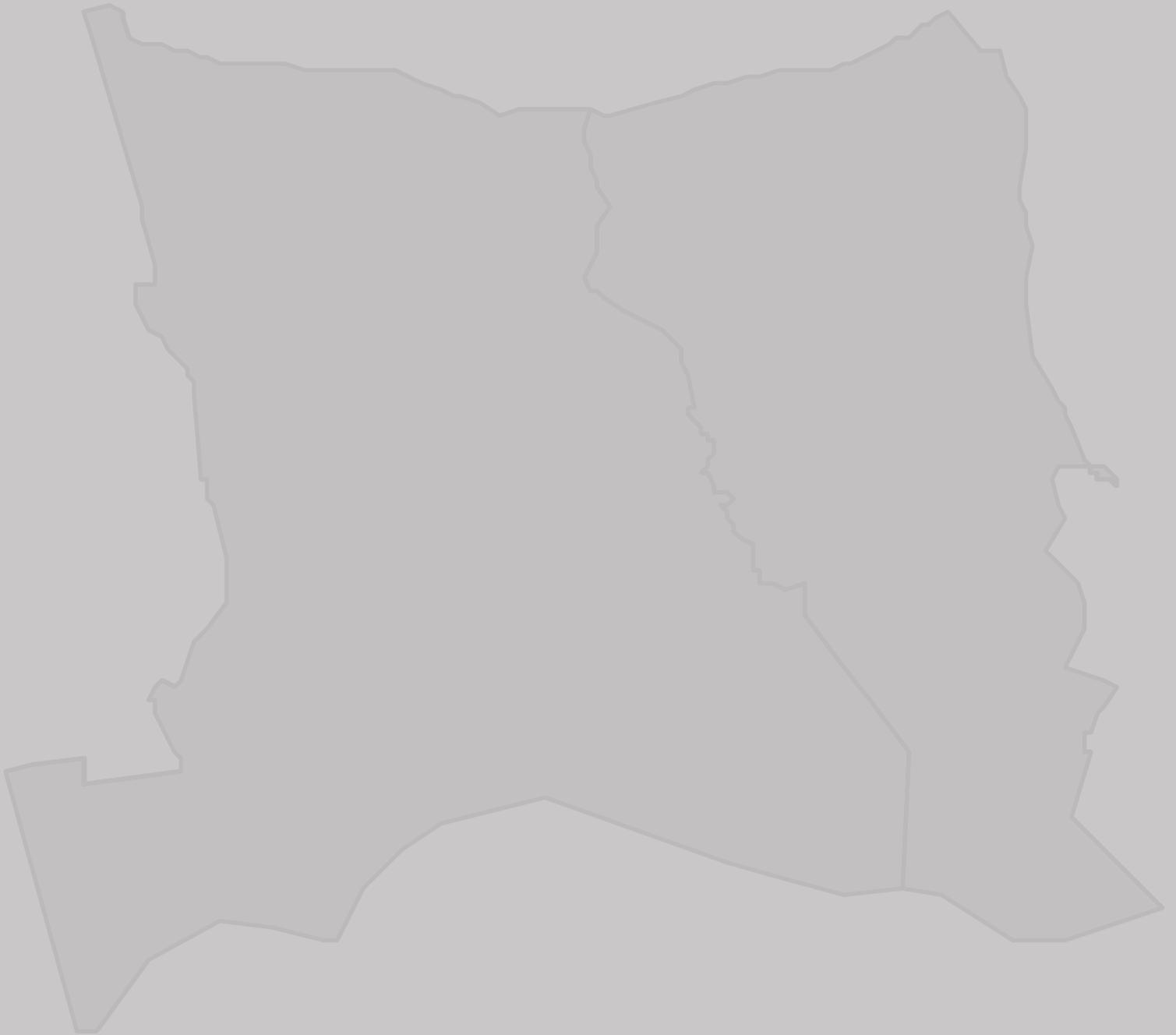


Windmill, Norman J. Levy Park (Photo Credit: Charles Brown)

2013				2014		
September	October	November	December	January	February	March
Organize For Action						
Inventory Assets						
Determine Needs and Opportunities						
	Concept Plan					
		Risk Assessment				
		Engage in Regional Planning Process				
				Develop Strategies for Investment & Action		
				Complete CR Plan		

Project Timeline

Appendix



Appendix

Existing Plans and Studies

The NYRCR Bellmore-Merrick Planning Committee and Consultant Team reviewed a number of planning documents focused on issues in Long Island and Nassau County. Table 6 lists the title, date of publication and author of previous work used for this study.

Table 6: Existing planning documents for the Long Island Region

Document Name	Date Published	Author
South Shore Estuary Reserve Comprehensive Management Plan	2001	South Shore Estuary Reserve Council
NYS Coastal Management Plan	2006	NYSDOS
LI 2035 Visioning Initiative	December 2009	Long Island 2035 Study Team
Coastal Fish and Wildlife Habitat Assessments	December 2008	NYSDOS
Places to Grow – An Analysis of the Potential for Transit-Accessible Housing and Jobs in Long Island’s Downtowns and Station Areas	January 2010	RPA
South Shore Estuary Reserve Workplan Implementation- Estuary Public Use and Tourism Study	September 2010	Cashin Associates for Town of Oyster Bay & DOS
Draft Nassau County Master Plan	October 2010	Nassau County
Sustainable Strategies for LI 2035	December 2010	Long Island Regional Planning Council
Nassau County Consolidated Plan	2010	Nassau County
New Vision for the LI Economy	November 2011	Long Island Regional Economic Development Council

Document Name	Date Published	Author
LI Comprehensive Economic Development Strategy	August 2012	LIRPC and Long Island Comprehensive Economic Development Strategy Committee
Cleaner Greener LI Regional Sustainability Plan	April 2013	AECOM, RPA
Strong Island – Recovery & Resurgence – Strategic Economic Development Plan for Nassau and Suffolk Counties (Update)	September 2013	Long Island Regional Economic Development Council
Nassau County Infill Redevelopment Feasibility Report	September 2013	Parsons Brinckerhoff, Nassau County Dept. of Public Works, Regional Plan Association and NY-CT Sustainable Communities Consortium
Blue Water Trail Master Plan	October 2013	Nassau County
Community Profiles	Various	Census Data

