

Rockaway East

NY Rising Community Reconstruction Plan

MARCH 2014



NY Rising
Community Reconstruction Program



Members of the Rockaway East NYRCR Planning Committee

Aldean Moore (Co-Chair)
Linda Plummer (Co-Chair)
Silaka Cox
Denean Ferguson
Nathan Krasnovsky
Betty Leon
Leslie Mullings
Joanne Peterson
Isaac Richter
Gerry Romski
Eli Shapiro
Patricia Simon
Milan Taylor
Jose Velez

Front Cover Photo:
Rockaway East Boardwalk and beach at Avenue

Back Cover Photo:
Rockaway East housing stock

This document was developed by the NY Rising Community Reconstruction (NYRCR) Rockaway East Planning Committee as part of the NYRCR Program within the Governor's Office of Storm Recovery. The NYRCR Program is supported by New York State (NYS) Homes and Community Renewal, NYS Department of State, and NYS Department of Transportation.

The document was prepared by the following consultant firms:

- HR&A Advisors
- Parsons Brinckerhoff
- Beyer Blinder Belle Architects & Planners
- Mathews Nielsen Landscape Architects
- Hammes Company
- OpenPlans
- Johnson & Asberry

All photos taken by the Consultant Team unless otherwise noted.

Foreword

Introduction

In the span of approximately one year, beginning in August 2011, the State of New York experienced three extreme weather events. Hurricane Irene, Tropical Storm Lee, and Superstorm Sandy wreaked havoc on the lives of New Yorkers and their communities. These tragic disasters signaled that New Yorkers are living in a new reality defined by rising sea levels and extreme weather events that will occur with increased frequency and power. They also signaled that we need to rebuild our communities in a way that will mitigate against future risks and build increased resilience.

To meet these pressing needs, Governor Andrew M. Cuomo led the charge to develop an innovative, community-driven planning program on a scale unprecedented and with resources unparalleled. The NY Rising Community Reconstruction (NYRCR) Program empowers the State's most impacted communities with the technical expertise needed to develop thorough and implementable reconstruction plans to build physically, socially, and economically resilient and sustainable communities.

Program overview

The NYRCR Program, announced by Governor Cuomo in April of 2013, is a more than \$650 million planning and implementation process established to provide rebuilding and resiliency assistance to communities severely damaged by Hurricane Irene, Tropical Storm Lee, and Superstorm Sandy. Drawing on lessons learned from past recovery efforts, the NYRCR Program is a unique combination of bottom-up community participation and State-provided technical expertise. This powerful combination recognizes not only that community members are best positioned to assess the needs and opportunities of the places where they live and work, but also that decisions are best made when they are grounded in rigorous analysis and informed by the latest innovative solutions.

One hundred and two storm-affected localities across the State were originally designated to participate in the NYRCR Program. The State has allocated each locality between \$3 million and \$25 million to implement eligible projects identified in the NYRCR Plan. The funding for these projects is provided through the U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant – Disaster Recovery (CDBG-DR) program.¹

Forty-five NYRCR Communities, each comprising one or more of the 102 localities, were created and led by a NYRCR Planning Committee composed of local residents, business owners, and civic leaders. Members of the Planning Committees were identified in consultation with established local leaders, community organizations, and in some cases municipalities. The NYRCR Program sets a new standard for community participation in recovery and resiliency planning, with community members leading the planning process. Across the State, more than 500 New Yorkers represent their communities by serving on Planning Committees. More than 400 Planning Committee Meetings have been held, during which Planning Committee members worked with the State's NYRCR Program team to develop community reconstruction plans and identify opportunities to make their communities more resilient. All meetings were open to the public. An additional 125-plus Public Engagement Events attracted thousands of community members, who provided feedback on the NYRCR planning process and proposals. The NYRCR Program's outreach has included communities that are traditionally underrepresented, such as immigrant populations and students. All planning materials are posted on the NYRCR Program's website (www.stormrecovery.ny.gov/nyrcr), providing several ways for community members and the

public to submit feedback on materials in progress.

Throughout the planning process, Planning Committees were supported by staff from the Governor's Office of Storm Recovery (GOSR), planners from New York State (NYS) Department of State (DOS) and NYS Department of Transportation (DOT), and consultants from world-class planning firms that specialize in engineering, flood mitigation solutions, green infrastructure, and more.

With the January 2014 announcement of the NYRCR Program's expansion to include 22 new localities, the program comprises over 2.7 million New Yorkers and covers nearly 6,500 square miles, which is equivalent to 14% of the overall State population and 12% of the State's overall geography.

The NYRCR Program does not end with this NYRCR Plan. Governor Cuomo has allocated over \$650 million of funding to the program for implementing projects identified in the NYRCR Plans. NYRCR Communities are also eligible for additional funds through the program's NY Rising to the Top Competition, which evaluates NYRCR Communities across eight categories, including best use of technology in the planning process, best approach to resilient economic growth, and best use of green infrastructure to bolster

resilience. The winning NYRCR Community in each category will be allocated an additional \$3 million of implementation funding. The NYRCR Program is also working with both private and public institutions to identify existing funding sources and create new funding opportunities where none existed before.

The NYRCR Program has successfully coordinated with State and Federal agencies to help guide the development of feasible projects. The program has leveraged the Regional Economic Development Council's State Agency Review Teams (SARTs), comprised of representatives from dozens of State agencies and authorities, for feedback on projects proposed by NYRCR Communities. The SARTs review projects with an eye toward regulatory and permitting needs, policy objectives, and preexisting agency funding sources. The NYRCR Program is continuing to work with the SARTs to streamline the permitting process and ensure shovels are in the ground as quickly as possible.

On the pages that follow, you will see the results of months of thoughtful, diligent work by NYRCR Planning Committees, passionately committed to realizing brighter, more resilient futures for their communities.

The NYRCR Plan

This NYRCR Plan is an important step toward rebuilding a more resilient community. Each NYRCR Planning Committee began the planning process by defining the scope of its planning area, assessing storm damage, and identifying critical issues. Next, the Planning Committee inventoried critical assets in the community and assessed the assets' exposure to risk. On the basis of this work, the Planning Committee described recovery and resiliency needs and identified opportunities. The Planning Committee then developed a series of comprehensive reconstruction and resiliency strategies, and identified projects and implementation actions to help fulfill those strategies.

The projects and actions set forth in this NYRCR Plan are divided into three categories. The order in which the projects and actions are listed in this NYRCR Plan does not necessarily indicate the NYRCR Community's prioritization of these projects and actions. Proposed Projects are projects proposed for funding through a NYRCR Community's allocation of CDBG-DR funding. Featured Projects are projects and actions that the Planning Committee has identified as important resiliency recommendations and has analyzed in depth, but has not proposed for funding through

the NYRCR Program. Additional Resiliency Recommendations are projects and actions that the Planning Committee would like to highlight and that are not categorized as Proposed Projects or Featured Projects. The Proposed Projects and Featured Projects found in this NYRCR Plan were voted for inclusion by official voting members of the Planning Committee. Those voting members with conflicts of interest recused themselves from voting on any affected projects, as required by the NYRCR Ethics Handbook and Code of Conduct.

The Rockaway East NYRCR Community is eligible for up to \$15.1 million in CDBG-DR implementation funds.²

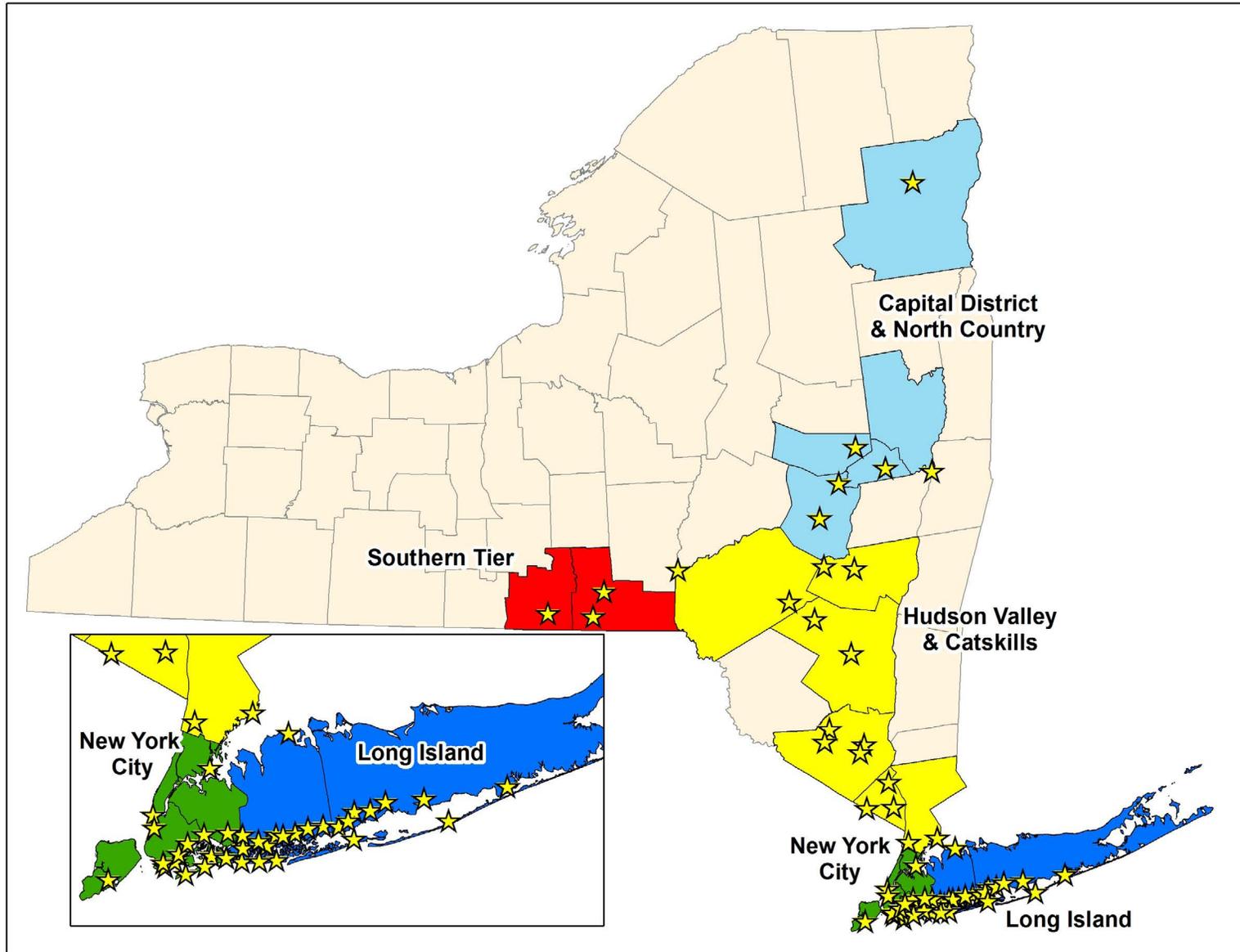
While developing projects for inclusion in this NYRCR Plan, Planning Committees took into account cost estimates, cost-benefit analyses, the effectiveness of each project in reducing risk to populations and critical assets, feasibility, and community support. Planning Committees also considered the potential likelihood that a project or action would be eligible for CDBG-DR funding. Projects and actions implemented with this source of Federal funding must fall into a Federally-designated eligible activity category, fulfill a national objective (meeting an urgent need, removing slums and blight, or benefiting low to moderate income individuals), and have

a tie to the natural disaster to which the funding is linked. These are among the factors that the Governor's Office of Storm Recovery will consider, in consultation with local municipalities and nonprofit organizations, when determining which projects and actions are best positioned for implementation.

The total cost of Proposed Projects in this NYRCR Plan exceeds the NYRCR Community's CDBG-DR allocation to allow for flexibility if some Proposed Projects cannot be implemented due to environmental review, HUD eligibility, technical feasibility, or other factors. Implementation of the projects and actions found in this NYRCR Plan are subject to applicable Federal, State, and local laws and regulations, including the Americans with Disabilities Act (ADA). Inclusion of a project or action in this NYRCR Plan does not guarantee that a particular project or action will be eligible for CDBG-DR funding or that it will be implemented. The Governor's Office of Storm Recovery will actively seek to match projects with funding sources.

In the months and years to follow, many of the projects and actions outlined in this NYRCR Plan will become a reality helping New York not only to rebuild, but also to build back better.

NYRCR Communities



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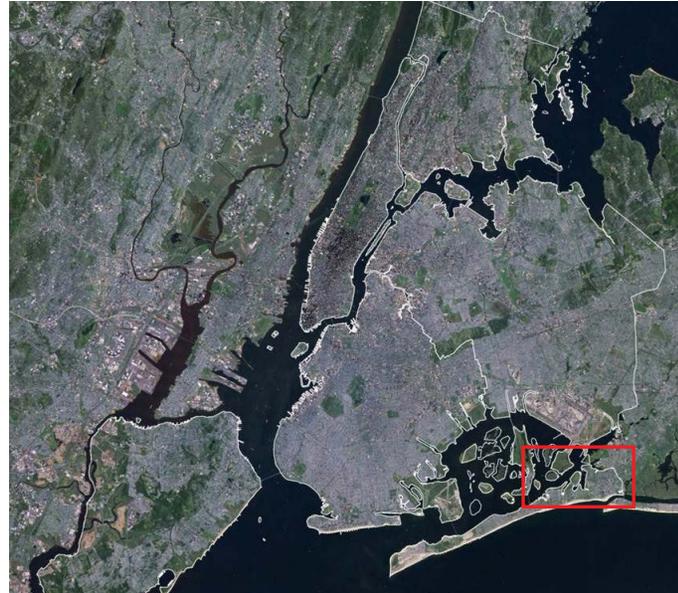
Executive summary

Executive summary

Rockaway East and the NY Rising Community Reconstruction Plan

Through the NY Rising Community Reconstruction (NYRCR) Program, the Governor's Office of Storm Recovery has allocated up to \$15.1 million in Federal Community Development Block Grant-Disaster Recovery (CDBG-DR) funding for eligible recovery and resiliency projects in the Rockaway East Community.

The Rockaway East NYRCR Planning Area (Planning Area), located at the eastern edge of the Peninsula, is bounded by Beach 74th Street to the west and by the Nassau County line to the east. Made up of 14 members of the Community, the Rockaway East NYRCR Planning Committee (Committee) includes representatives from Community Board 14, and local civic, community, and religious organizations. As a community located on a barrier island, Rockaway East shares coastal protection challenges with the two other NYRCR Communities on the Rockaway Peninsula: Breezy Point and Rockaway West.



Sandy's impact and the recovery

The neighborhoods of Arverne, Edgemere, Bayswater, and Far Rockaway on the eastern portion of the Rockaway Peninsula in Queens were hard-hit by Superstorm Sandy (Sandy). While these communities are diverse in physical and social character and experienced differing types of damage, they also share common issues and needs, and came together as the Rockaway East Planning Area to produce a community-led plan for a more resilient future through the NY Rising Community Reconstruction (NYRCR) process.

Damage from Sandy varied by neighborhood. The low-lying areas on the bay edge of the Planning Area, where homes were severely damaged and destroyed, were among the most dramatically impacted. Throughout Rockaway East, all residents suffered from lasting power outages and transportation disruptions.

In the days following the storm, residents and volunteers united to provide immediate relief and to begin the gradual process of rebuilding. Community members led and continue to drive local recovery efforts. Public input and local ownership of rebuilding decisions are reflected throughout the Plan.

Seventeen months after Sandy, its effects are still visible. Families are unable to return home, businesses remain shuttered, and efforts to enhance coastal protection are gradual. This Plan represents a community-based vision for rebuilding and enhancing the community.



The boardwalk at Beach 36th Street after Sandy. Source: Flickr user scarlatti2004, licensed under Creative Commons.



Far Rockaway skate park. Source: With permission from Denean Ferguson.

“The NY Rising Program [is] a ground-up effort to restore some sort of normalcy to the lives of people that have been affected by ... Hurricane Sandy.”

– Rockaway East NYRCR Planning Committee Co-Chair



Residential street in Rockaway East.

Community vision statement

“The neighborhoods of Rockaway East will rise up and leverage our robust social networks, diverse economy, and abundant natural resources to restore and develop a more vibrant, resilient, and sustainable community.”

A community-driven process

This NYRCR Plan is the product of a collaborative community-based process led by the Committee. Input on needs and projects were gathered through three Public Engagement Events as well as online outreach. Based on this feedback, the Committee developed a NYRCR Plan that seeks to address the unique needs of Arverne, Edgemere, Bayswater, and Far Rockaway, and of the Planning Area as a whole.

The first Public Engagement Event gathered public feedback, which was synthesized into the Community Vision Statement, based on goals that drove the subsequent process of identifying and planning projects to respond to diverse community perspectives on priorities and critical issues.

This NYRCR Plan complements and builds on the numerous other efforts already underway, led by residents, public agencies, utilities, community organizations, and building owners throughout the Rockaway Peninsula.



A vision for improved and resilient streetscaping at Mott Avenue.

The Planning Committee reviewed and assessed these initiatives in order to identify gaps that could be filled through the NYRCR Program.

Critical issues

The Vision Statement reflects the Committee’s emphasis on leveraging NYRCR funding to achieve a number of goals:

- Increase the social resiliency of Rockaway East neighborhoods, with a particular focus on supporting the Community’s most vulnerable populations. Vulnerable populations are individuals with limited mobility due to physical or other disability, inhibited communication skills (e.g., due to limited English proficiency), and/or a constricted ability to control their environment. The safety and security of many of Rockaway East’s most vulnerable residents was compromised by the effects and aftermath of Superstorm Sandy.
- The Rockaway East Planning Committee also explored coastal protection strategies that protect the Community from rising sea levels and issues exacerbated by extreme events, such as drainage and flooding.
- The need for economic revitalization, support for small businesses, and workforce development opportunities were also emphasized throughout the process.

Given the wealth of existing or planned government and citywide programs, this Plan also recommends supporting other efforts and investments by filling funding gaps or seeking policy changes.



Flooding from poor drainage in Rockaway East is a frequent problem.

A blueprint for future resiliency

The NYRCR Plan for Rockaway East offers an outline for the implementation of the goals of the Planning Committee. The Committee sought to identify projects that are highly feasible, able to be implemented on a short timeline, and whose benefits could thus be seen within the next few years.

Recovery support functions

There are six Recovery Support Functions, established by President Barack Obama in 2011 through the National Disaster Recovery Framework, that structure this NYRCR Plan. These Recovery Support Functions were utilized when developing needs, opportunities, strategies and projects to ensure that a comprehensive approach is reinforced throughout the effort to shape a comprehensive resiliency strategy for the Community.



Community
Planning
& Capacity
Building



Health &
Social Services



Economic
Development



Housing



Infrastructure



Natural & Cultural
Resources

Strategies and projects

The plan contains **3 strategies** and **11 Proposed and Featured Projects** to improve the resiliency of Rockaway East, as described below. Proposed Projects are projects that the Rockaway East Planning Committee has recommended to be funded through the NYRCR Program process. Featured Projects are innovative projects that may require additional funding sources for implementation, and for which the Committee has recommended funding an initial phase of implementation. The projects are not listed in any priority order.

Protect the community from flooding, surge, and sea level rise

- 1 **Thursby Basin Park drainage (Proposed).** This project would coordinate with the NYC Department of Parks and Recreation (NYC DPR) to construct a rain garden within the new Thursby Basin Park in Arverne, using green infrastructure to collect, store, and treat stormwater.
- 2 **Bayside coastal protection (Featured).** By restoring wetland habitat and raising portions of the Bayside Nature Trail, this project adds resiliency measures to recreational and ecological conceptual projects under consideration in Arverne, Edgemere, and Mott Basin.

Bolster Community Resiliency

- 3 **Relief center network** (Proposed).** This project would create a network of relief centers to house the coordination of relief activities following a disaster at the community level, providing a physical center for activities and capacity to coordinate with emergency management agencies and organizations.

- 4 **Local health center resiliency* (Proposed).** This project would fund capital improvements to strengthen the local health center facility against future storms and emergency events.

- 5 **Health care service expansion* (Proposed).** This project would fill a service gap by establishing a new health care facility on the Peninsula to provide either urgent care or emergency services.

- 6 **Residential education and technical assistance* (Proposed).** This proposed program entails two primary components – (1) general education and (2) individual counseling and technical assistance. The program would help property owners to fully understand the physical and financial risks facing their homes and to make more informed decisions about resiliency investments.

Strengthen Economic Resiliency

- 7 **Workforce development* (Proposed).** This project would expand workforce training and connect Rockaway East residents to employment opportunities in a range of resiliency-related industries.

- 8 **Mott Avenue corridor improvements (Proposed).** This project would make improvements to beautify street conditions, attract investment, and to help the area become more physically resilient so it can play a role in the wake of an event.

- 9 **Seasonal business and amenity expansion** (Proposed).** This project would construct a temporary shipping container market in a prominent location to showcase quality Rockaway East local businesses in a fresh context for both visitor and local markets.

- 10 **Rockaway bike share** (Featured).** Both Rockaway East and West would create a bike share program for the Rockaway Peninsula with stations sited at major transit hubs and attractions.

- 11 **Bus circulator service** (Featured).** This project would pilot a free limited-stop bus circulator that would better connect residents and visitors to the beach, ferry, and local businesses.

* Project not tied to a specific geographic point

** Project siting shown as a demonstration of concept and can be implemented in multiple locations



Rockaway East NYRCR Projects

Outline of the Plan

This NYRCR Plan begins with a Community overview, which provides a description of the Planning Area, the risk and critical issues laid bare by Superstorm Sandy, and the broader context of resiliency and recovery work already underway.

The next section, Assessment of risks and needs, describes the diverse assets at risk from future storms identified through Planning Committee discussions and public outreach. Using the risk assessment tool developed by the NYRCR Program, this section identifies key opportunities for action that support the resiliency strategies and projects proposed by the Planning Committee.

The following section, Reconstruction and resiliency strategies, describes strategies developed by the Committee to respond to needs, opportunities, and risks to assets measured through the risk assessment process.

The Proposed and Featured Projects, which are the path to implementing those strategies, are described in more detail in Implementation - project profiles.

The final section, Additional resiliency recommendations, describes additional resiliency recommendations strongly supported by the Community, but which lack an identified source of funding. It also describes the public engagement process in more detail, and provides additional supporting documentation for the NYRCR Plan.

Source (right): With permission from Denean Ferguson.



I. Community overview

A. Geographic scope of NYRCR plan

The NY Rising Community Reconstruction (NYRCR) Planning Areas were designated based on multiple factors, including data on damage resulting from Superstorm Sandy (Sandy), Hurricane Irene, and Tropical Storm Lee; local understanding of neighborhood boundaries; areas across New York City most at risk; and locations where reconstruction and new construction should be encouraged. **For the purposes of the NYRCR Program process, the Rockaway Peninsula was divided into three Planning Areas: Rockaway East, Rockaway West, and Breezy Point.**

Geographically isolated and characteristically different from New York City, the Rockaway Peninsula is an anomaly in a city more commonly associated with global commerce and communication than residential neighborhoods and beaches with small pockets of local retail. While the neighborhoods across the Peninsula vary, there are unique challenges and issues facing these urban coastal communities, including climate change, sea level rise, and other related threats. These communities have collaborated in the NYRCR planning process and will continue to work toward implementing solutions to serve the larger issues facing the Peninsula. At the same time, the Rockaway East Community (Community) presents unique

and critical challenges and opportunities for rebuilding and recovery.

Community overview

The Rockaway East NYRCR Planning Area (Planning Area) and Planning Committee (Committee) include the communities of: Arverne; Edgemere; Bayswater, and Far Rockaway (see Planning Area map). It is located on the eastern edge of the Peninsula, bounded by Beach 74th Street to the west and by the Nassau County line at approximately Doughty Boulevard to the east. The Planning Area includes a large Atlantic Ocean-facing beach to the south and a mixed-use patchwork shoreline along Jamaica Bay to the north, including industrial, private business, private retail, and a large number of city and state-owned parks. New York State has allocated up to \$15.1 million in U.S. Housing and Urban Development (HUD) Community Development Block Grant-Disaster Recovery (CDBG-DR) to implement eligible projects identified in this Rockaway East NYRCR Plan.

The Rockaway East Planning Committee, comprised of volunteer members representing various constituencies of Rockaway East, worked with the State to lead the Community through an extensive planning process to identify



Rockaway East was one of the first beach resort destinations for New Yorkers. Industrialists and other prominent figures built grand homes and hotels along the beach and bay. Source: New York Public Library Digital Library



Figure I.1: Overview of Planning Area



**New York Rising Community Reconstruction Program
Rockaway West Planning Area**

- Planning Area Boundary
- Overview of Planning Area**
- Buildings
- Roads
- Parks

Source:
New York City Department of City Planning,
MAPPluto v13.1;
NYRCR planning committee and public input.





Homes in the northern section of Arverne (above). Retail stores line the side streets off Mott Avenue; shown here: Beach 20th Street (right).

short- and long-term recovery and resiliency projects that may be funded with this allocation. The Committee also crafted a broader vision for the long-term resiliency of the Community, as well as recommended additional projects for implementation using other funding sources.

Rockaway East is an area steeped in history as a collection of oceanside neighborhoods on the edge of the nation's largest city. It served as the original urban escape and beach destination for New Yorkers through the 19th century before more seaside attractions and affordable bungalow developments started to draw middle class families to the western reaches of the



Peninsula. Then, as now, Far Rockaway had the best transportation to and from Manhattan, with ferries docking in the bayside basins and the first steam railroad terminating at what is currently the Long Island Railroad station.

While the beach has remained a consistent draw and critical natural asset to the Community, the physical, social, and economic characteristics of the Community have evolved significantly over the years. After World War II, the City looked to the Rockaway Peninsula to house returning troops and their families. Over the subsequent decades, the City and State introduced new bridges and larger roads; an influx of multi-story residential buildings sprung up, all of which shifted the nature of the Community, and increased the density of population and built environment. Further, under the banner of civic improvement, the City demolished large swaths



Members of the Rockaway East Community gather at the playground near Beach 19th street and the beach for the Rockaway Community Resource Day in 2012.

Source: With permission from Denean Ferguson.

of land for urban renewal and redevelopment. The City has slowly rebuilt the neighborhoods across the Community since that time, but a few large areas remain vacant and untouched.

The social and economic nature of the Community continued to shift through the second half of the century, mirroring much of the changes taking place throughout New York City but with the added challenges unique to a dense, coastal community located far from the urban core. These issues were compounded by the City's decision to place a disproportionately large concentration of special needs homes and retirement centers in the Community.

Over the past decade, the City has increased investment in the Community, developing new, medium scale housing, enhancing parks, and strengthening infrastructure. Today, the Community continues to be filled with multi-generational families mixed with more recently arrived households, as well as residents from all backgrounds. Peninsula residents are civically minded and highly engaged, continuing the dynamic and unmistakable Rockaway sense of being: intensely passionate, well-organized, and fierce advocates for their collective home—characteristics that would prove to be crucial in the days and weeks after Sandy.

Rockaway East is a diverse and predominantly residential community that has the highest density on the Peninsula. According to the 2010 U.S. Census, the area was home to approximately 77,000 residents (59% of the total population in South Queens) and 27,000 housing units. However, much like many of the communities

affected by Sandy, the size of the local population may have declined since the storm.³

More than half of the population of Rockaway East is black or African-American (55%), a little over a quarter is white (27%), and 12% are captured within the “Other” race category of the Census.



The beach is a defining asset for the Community. .

Around 25% of residents classify themselves as Hispanic.⁴

While the proportion of the population that is over the age of 65 is lower than the rest of the Peninsula (11% of the population in Rockaway East as compared to 17% in the rest of the Peninsula),

the density of the population in Rockaway East means there are many more seniors than the rest of the Peninsula.⁵

Parts of Rockaway East have a poverty rate above 50%, and the area as a whole faces economic challenges. The estimated median household

income in 2012 was \$35,000, lower than the median income for New York City at \$51,000.⁶ This drives other characteristics, such as lower automobile and home ownership. In some of the neighborhoods most susceptible to flooding, such as Arverne and Edgemere, 20% to 30% of households do not have access to a vehicle.⁷ The area has a high proportion of renters—69% of all households in 2010—and a lower homeownership rate than that of nearby communities and New York City as a whole.

This area has some of the highest population densities across the Peninsula, with some Census block groups having as many as 120,000 people per square mile, as compared with the highest densities in Rockaway West, at around 60,000 people per square mile.⁸ The area's density can partly be attributed to the high proportion of large multi-family residential buildings, many of which are public housing or government-regulated developments. Far Rockaway contains five New York City Housing Authority (NYCHA) public housing developments (with more than 3,400 units) and seven regulated Mitchell-Lama buildings. The housing stock varies, however, with older single-family homes and bungalows concentrated in the areas of Somerville, Edgemere, and Bayswater.



Rockaway East benefits from multiple public transit services. Above: The terminus of the A train at Mott Avenue.

The area is served well by multiple modes of public transit, including the subway system and Long Island Railroad (LIRR). There are A train subway stops at Beach 67th Street, 60th Street, 44th Street, 36th Street, 25th Street, and Mott Avenue. There is also a LIRR station in Far Rockaway. Along the northern bayside of the Peninsula, Beach Channel Drive is the main vehicular thoroughfare, connecting the area to the mainland of Queens via the Marine Parkway–Gil Hodges Memorial Bridge and the Cross Bay Bridge.

Rockaway East has aging and vulnerable infrastructure. All of the Rockaway Peninsula are served by separated storm and sanitary sewer systems operated and maintained by the New York City Department of Environmental Protection (NYC DEP). Stormwater and sewage is treated at the Rockaway Wastewater Treatment Plant (located in the adjacent Rockaway West Planning Area), which is currently under study by the City for repurposing. While the rest of New York City’s power is supplied by Con Edison, the Rockaway Peninsula is the one area of the city served by the Public Service Electric and Gas Company Long Island (PSE&G Long Island). At the time Sandy hit, the Peninsula was served by Long Island Power Authority (LIPA) but, while LIPA continues to own all of the equipment, PSE&G serves as management,

operation, and the public face of the system at the beginning of 2014.

The Community is home to a few large clusters of commercial activity, including Mott Avenue in Far Rockaway and a retail hub on Rockaway Beach Boulevard in Arverne. Anchored by high quality transit options, government and educational institutions, Mott Avenue is home to small businesses and the offices of nonprofit organizations, as well as larger-format retailers and supermarkets. The corridor in Arverne includes restaurants, a bank, small retail, and a Stop & Shop grocery store.

Rockaway East is also home to some of the only health care facilities on the Peninsula, with the health care sector serving as one of the most important employers in the Community. The sole hospital serving South Queens, St. John’s Episcopal Hospital, is located not far from Mott Avenue and has an inpatient bed capacity of approximately 400. There are also two Joseph P. Addabbo Family Health Centers, one in Far Rockaway and one in Arverne. Rockaway East, and the Peninsula as a whole, is dependent on this sector as a cornerstone of its economy, with 52% of workers employed in health care.⁹

The Planning Area benefits from a large number of community-based organizations (CBOs) and faith-based organizations (FBOs).

These many organizations, run locally and with the collective mission to directly serve the Community, represent the diversity of the residents and are deeply rooted in the culture and history of the neighborhoods. They serve as trusted networks and compel a high degree of civic engagement.

Rockaway East has abundant natural resources. Along the oceanside, the beach and boardwalk stretches the length of the Planning Area. On the bayside, the Community benefits from several natural and restored areas, including the Brant Point Wildlife Sanctuary at Vernon Basin, Dubos Point Wildlife Sanctuary, and the 253-acre Rockaway Community Park (the reclaimed Edgmere landfill) bordered by Sommerville Basin. There is also the Grass Hassock Channel, Norton Basin and Conch Basin, the open waters of Jamaica Bay, as well as undeveloped saltmarshes that collectively provides natural habitats and helps protect neighboring areas from floodwaters. Other major natural or semi-natural areas along the bayside include Michaelis Bayswater Park at Norton Basin and Bay 32nd Street, and Bayswater Point State Park at Mott Point (the mouth of Mott Basin to Jamaica Bay).



Aerial view of Far Rockaway, looking east along the coastline

Source: Flickr, wenzday01, licensed under Creative Commons.

B. Description of storm damage

Summary of storm impacts

The combination of high tide, a full moon, and Superstorm Sandy slamming into New York City created a massive surge of water that devastated many of the exposed coastal communities of the Rockaway Peninsula. Wave action from the ocean damaged structures and inundated streets and properties. Offshore buoys recorded wave heights of over 30 feet and while waves would be slightly reduced at the shoreline, these were the highest recorded heights, exceeding record waves during Hurricane Irene by one to six feet.¹⁰ While the oceanside was battered by waves, the greatest flood depths were recorded on the bayside of the Peninsula, largely due to the low elevation of the bay edge. Flood depths over 6 feet were recorded along the shorelines of Mott Basin and Edgemere as well as low-lying locations in Somerville. Likewise, during Hurricane Irene the bayside storm surge extended into Arverne, Dubos Point, Edgemere, and Bayswater and along the oceanside of Far Rockaway, further demonstrating the vulnerability of the bay edge.

Beyond the storm and the emergencies in its immediate aftermath, all residents of Rockaway East have been affected in some way by building damage, extended power



Hurricane Sandy destroyed the tracks and infrastructure of the A train crossing at Jamaica Bay. Source: Flickr, Leonard Wiggins, licensed under Creative Commons.

outages, lasting transportation disruptions, displacement, and financial hardship. Surge flooding caused damage to a significant number of homes and buildings. From the bayside, floodwaters inundated the low-lying neighborhoods of Arverne, Edgemere, Somerville, and Bayswater.

Single-family homes, many built before 1960, were more vulnerable to structural damage or complete destruction. Cars washed away or into homes and residents experienced significant personal damage and loss. Residents who did not evacuate found themselves in extremely



Figure I.2: Superstorm Sandy inundation



dangerous circumstances, some fleeing to high ground, others trapped on second floors or roofs.

Large multi-family beachside buildings experienced a surge of over ten feet into first floor lobbies, severely damaging basement or ground-level mechanicals, knocking out elevators, and rendering water pumping inoperable above the sixth floor. This damage trapped most residents and disproportionately affected vulnerable populations, especially limited-mobility seniors, who were unable to contend with multiple flights of stairs to access vital supplies and services. In-home senior care givers and health professionals who normally provide senior care services were unable to reach their job sites, leaving residents to rely heavily on neighbors for assistance.

Sewage overflow compounded the damage and created an immediate health challenge. The Rockaway Wastewater Treatment Plant in Rockaway West was inundated and rendered inoperative, and the two pumping stations in Rockaway East sustained minor damage due to flood waters and power failures. Sewage overflow mixed with flood waters and seeped into homes, creating a polluted mix that lingered for weeks.

Eastern areas of Rockaway East faced less damage and fared relatively well, largely

because of higher land elevation and partial protection afforded by the Long Beach Barrier Island. Building damage was therefore less extensive than in other areas, though all of the communities experienced extended power outage, limited access to supplies, and temporary job loss. This contributed to a substantial reduction in business activity along commercial corridors in Far Rockaway and kept businesses closed for several days. Small, locally-owned businesses scattered throughout Beach Channel Drive and the neighborhood faced significant damages (including flooding) and many have still not recovered.

Arverne by the Sea, a relatively new neighborhood, sustained much less damage because it was built to include a variety of measures designed to mitigate flooding, including raised elevation, dune protections, and drainage.

Most residents did not have phone service or the ability to connect with others. Constrained communication combined with the lack of mobility created obstacles to accessing vital supplies and information. For example, Stop & Shop on Beach 74th Street had power and fresh food, but few residents were aware or able to access it except by foot.

Important health and social services were also damaged and rendered inoperable for extended periods of time. For example, the Joseph P. Addabbo Family Health Center was damaged and unable to open its doors to provide much-needed basic essential health care after the storm. Despite being flooded, many houses of worship opened their doors to help the Community, yet some remain in poor condition over a year later. Many schools also suffered damage and were unable to reopen in a timely manner. Once public transportation and roads opened, parents had a difficult time with child care and returning to work because schools were still closed.

The primary land-based evacuation route and other intra-Peninsula arteries were flooded, blocked, or damaged. The Nassau Expressway (Route 878), the primary evacuation route for the Rockaway Peninsula, and shared with Five Towns and Atlantic Beach, was flooded and inaccessible for some time. Flooding along Beach Channel Drive at Mott Basin and piles of sand and significant debris blocked all other major roads and accessibility. Critical bridges, roadways, and public transportation were severely impacted. The Cross Bay Bridge closed in advance of Sandy and did not reopen for several days. Portions of the A train subway between Howard Beach and the Rockaway Peninsula were washed away,

leaving riders without subway access. While the Metropolitan Transportation Authority (MTA) provided shuttle services, full service along the A train line was not restored for seven months.

Utility outages left residents without power for weeks. The substations of the Long Island Power Authority (LIPA) were knocked out of service by floodwaters, and LIPA was unable to regenerate its grid for approximately two weeks. Due to electrical damage, many people were not able to turn on their electricity until they received certification from an electrician that it was safe, creating a large demand on a relatively short supply of available City-certified electricians.

Community parks, beaches, and the boardwalk were decimated. Large pieces of debris washed into the streets and across properties, causing additional widespread damage and leaving the oceanfront bare and more vulnerable. Over a year later, the boardwalk is still being rebuilt and plans to complete the boardwalk along the Far Rockaway portion of Rockaway Beach are years away and do not cover the entire Community.



Homes near Jamaica Bay have struggled to recover from the damage caused by Sandy. Source: Flickr, mercurialn, licensed under Creative Commons.

C. Recovering from the storm

Issues surrounding rebuilding homes and rehousing displaced residents are persistent and remain among the most pressing issues for residents. Structurally damaged or destroyed homes identified by the New York City Department of Buildings (NYC DOB) in Superstorm Sandy's aftermath were especially concentrated in Arverne, Edgemere, and Somerville, although homeowners in all flooded areas were affected. While some homeowners have recovered from Sandy damage, many houses remain uninhabitable or are under repair, and residents continue to live away from their homes.

Remediating mold, caused by water seepage and ponding, was a complex issue for many residents in the weeks and months after the storm and remains an issue for some homes and for neighborhood health on the whole.

Homeowners and landlords continue to struggle with recovery. The storm caused significant financial hardship, especially for vulnerable populations such as low-income families or fixed-income seniors. Many did not have the means to fix the damage and most will not be able to take proactive steps to make their buildings more resilient to future events. Some of these home and building owners may qualify for the City's Build it Back (BiB) program, but the program has been slow to rebuild and in the meantime, residents

struggle with understanding various programs and options impacted by flood insurance changes. These residents continue to live either with storm damage or away from their homes.

Retail corridors have been slower to recover. Even though storm damage to commercial buildings was less severe in Rockaway East than in other parts of the Peninsula, businesses that managed to reopen after the storm found they had fewer customers because so many Peninsula residents had been displaced. Damaged businesses continue to struggle to find sufficient and affordable financing to repair and strengthen their buildings. Further, while there is a significant amount of recovery work to be done, these jobs are not being filled by the local workforce.

Long-term plans for strengthening the coastline are underway. The United States Army Corps of Engineers (USACE) is currently leading an emergency beach nourishment project. By Memorial Day 2014, the length of Rockaway Beach from Beach 19th Street to Beach 149th Street is expected to have a 200-foot beach and a 16-foot sand dune. In addition, the USACE is conducting a longer-term study for greater coastal protection that includes the ocean and bay edges of the Peninsula, with draft reports due in October 2014 for the oceanside and October 2015 for the Jamaica Bayside.

A combined dune and boardwalk system is under construction, led by the New York City Department of Parks and Recreation (NYC DPR), the New York City Economic Development Corporation (NYCEDC), and the USACE. This plan will serve both to strengthen the protective infrastructure along parts of the Peninsula's oceanside and to provide a scenic pedestrian and recreational path for residents.

A train subway service was restored at the end of May 2013 after the causeway that connects the Peninsula to Howard Beach was repaired. The MTA spent six months clearing debris, rebuilding track, replacing wiring, and building a sea wall to stabilize and protect the embankment.

To make the power supply system more resilient, PSE&G has identified hardening measures for the four substations on the Rockaway Peninsula and enacted management restructuring actions.



High tides after a rain storm push into the streets of Bayswater. Above: homes on Westbourne Ave with degraded gray and green infrastructure along Jamaica Bay.

D. Critical issues

Superstorm Sandy created and exposed a number of critical issues across the communities of Rockaway East. Through the NYRCR Planning process, the Planning Committee and public have raised a number of issues that have informed the strategies and decision making for the Planning Area.

Complexity of comprehensive coastal protection

While coastal protection is critical to the Community's future, it is difficult and largely impractical to approach at the local level. Comprehensive protection requires the coordination of multiple public and private stakeholders and comes at a substantial cost. Comprehensive protection is necessarily a long-term endeavor and becomes more challenging with sea level rise and other impacts of climate change. In the short term at least, the Community is likely to be left without full protection and must be prepared to address ongoing risks.

The conditions on the coast line in Rockaway East are especially challenging for the implementation of coastal protection because of the natural and built environment. The Bay curves around a series of points and inlets, resulting in a very long and complex shoreline. A



Private homes and docks hug the shore along the bayside of Arverne.

significant portion of the shoreline in this eastern side of the Peninsula is entirely unprotected and has experienced ecological degradation. Many of the inlets are very deep and do not support or sustain ecological infrastructure.

Beyond the natural shape of Rockaway East, the built environment contributes its own complexity. The coastal protection that already exists—such as the bulkheads along the Arverne

Peninsula—is in varying conditions and a number of the bulkheads are crumbling beyond repair. In many places, development extends right to the edge, leaving little space available to actually build protective on-land infrastructure. Because many of the area's water channels are very deep, in-water interventions will be difficult and extremely expensive. Further, along the bayside, property ownership is a mix of private and public, and residential, commercial, and natural. In order



to develop a comprehensive approach, all of the property owners would have to agree on a solution and coordinate during implementation. Depending on the solution, the property owners may be required to fund portions of the improvements themselves, and to construct the infrastructure, property acquisition or easements may be required.

Finally, even if cooperation challenges are resolved, building high walls for 100-year storm protection presents a negative impact on the Community's relationship to the water and such solutions are prohibitively expensive. Even finite interventions that protect a portion of the Planning Area from lesser storms far exceed the funds currently available to Rockaway East.

Homeowner instability due to financial shocks associated with Superstorm Sandy and future emergencies

Under current regulations, communities and homes not protected from the 100-year storm will pay increasing premiums for flood insurance. While the exact impact and scale of these increases continues to evolve at the Federal level, graduated increases are all but inevitable and there remains a possibility that rates could



Homes across Rockaway East are at risk of frequent flooding, especially along Jamaica Bay. In some places, such as in Arverne, this is exacerbated by damaged bulkheads (top right). Many homes, such as the one top left, will be difficult to elevate.

increase much more in the near future. Currently, flood protection is limited for at-risk communities in Rockaway East, and given the complexities and prohibitive costs of building comprehensive solutions to this scale, Rockaway East is unlikely to have comprehensive protection in the foreseeable future. As a result, homeowners must take action or face increasing insurance costs. In many cases, this means elevating a home, which can cost upwards of \$100,000 or in many cases be physically impractical. Even homeowners not significantly affected by Sandy, must decide whether to bear higher insurance costs, invest in elevation, or accept the status quo, each of which bear difficult tradeoffs.

Many homeowners along the coastlines lost livable, leasable spaces due to storm damage, leaving them without the rental income they need to contribute to monthly mortgage payments. Most homeowners in the Community will not be able to withstand the financial shock of increased insurance in addition to contending with paying to rebuild and loss of rental incomes. On the whole, homeowner financial stability poses a threat to the whole Community. If people can no longer afford to stay in their homes and residents leave the Community, this larger scale disinvestment would have serious economic implications for all of Rockaway East.



Many public housing building lobbies, mechanicals, and first floor apartments were damaged and await permanent repair and protective measures for the future.

Unclear mitigation strategy for multi-family buildings

After Sandy and recent changes in Federal Flood Insurance Rate Maps, New York City revised building codes to ensure new buildings

constructed in the flood plain meet specific elevation and resiliency criteria. However, there are no such rules to retrofit at-risk buildings, nor are there regulations to ensure that buildings have emergency preparedness plans to ensure some continuity of service or to safely organize and

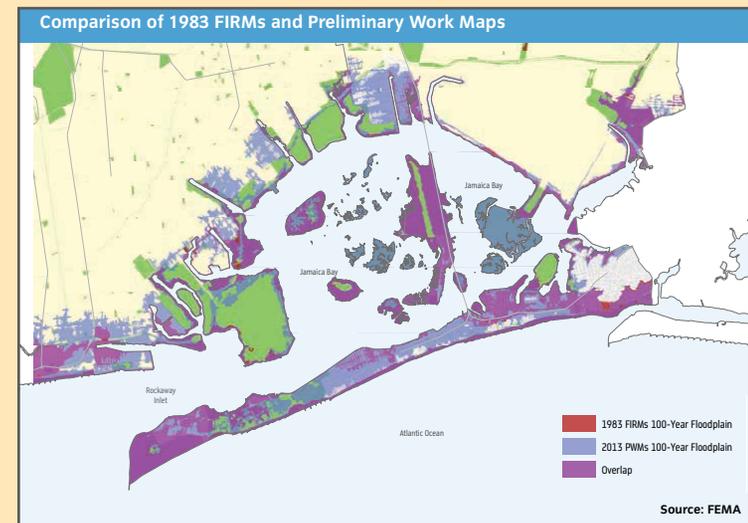
FEMA flood maps and flood risk

The Federal Emergency Management Agency (FEMA) describes its assessment of flood risk through flood maps referred to as Flood Insurance Rate Maps (FIRMs). These maps are used by the National Flood Insurance Program (NFIP) to set flood insurance rates. Before Superstorm Sandy, FEMA had begun a coastal flood study to update FIRMs for portions of New York and New Jersey, using improved methods and data to better reflect coastal flood risk. When Superstorm Sandy hit New York City, the FIRMs in use were based on information from 1983 and inundation extended well beyond what these maps estimated would be the 100-year floodplain.

After Superstorm Sandy, FEMA first released Advisory Base Flood Elevation (ABFE) maps based on the partially completed flood study for certain communities, which were designed to help in rebuilding and recovery efforts. In December 2013, FEMA released preliminary FIRMs for New York City. The final updated FIRMs are anticipated to be released in 2015. These final FIRMs will guide new Flood Insurance rates for homeowners and businesses in the floodplain. FEMA's flood maps do not take into account future conditions and thus do not factor in potential sea level rise.

National Flood Insurance Program (NFIP)

FEMA developed NFIP in the 1960s to provide homeowners with flood insurance, which was not readily available in the private market. Through NFIP, property owners in participating communities are able to buy subsidized, government-backed insurance to protect against flood losses. The Biggert-Waters Act of 2012 proposed the controversial repeal of subsidies and other restructuring in order to make the program more financially sound. Coupled with the previously mentioned FIRM map adjustments, this repeal would result in substantial premium increases for many policyholders. In a move to bring flood insurance rate relief to coastal communities in the wake of Superstorm Sandy, in March 2014 Congress passed and President Obama signed the Homeowner Flood Insurance Affordability Act into law. The law caps average annual flood insurance premium increases at 15%-18%, and allows subsidies for insurance rates that are based on best available flood maps. It also designates a flood insurance advocate to educate homeowners and policy holders on mitigation measures that can help reduce flood insurance rates, and recognizes among these measures methods for reducing flood risk that provide alternatives to building elevation for residential buildings such as attached homes whose structures cannot be elevated.



Source: NYC Special Initiative for Rebuilding and Resiliency: *A Stronger, More Resilient New York*, FEMA.

Future conditions: dealing with a changing climate

Climate change is a real and significant concern for New York's coastal communities. Two impacts of climate change have the most bearing on the future risk to New York's coastal communities from future storm events and flooding: (1) Sea Level Rise and (2) increased frequency and intensity of storm events. On March 31, 2014, the International Panel on Climate Change (IPCC) released *Climate Change 2014: Impacts, Adaptation and Vulnerability*, reiterating the risk to coastal communities across the globe and assigning a high confidence that risks from extreme weather events and of sea level rise will continue to increase in the future due to climate change. Closer to home, the New York Panel on Climate Change (NPCC) continues to look at the potential risks presented to New York City in light of climate change. In their *Climate Risk Information 2013*, the NPCC made the following projections for 2050:

- Sea Level will increase between 7 and 31 inches with a mid-range projection of 11 to 24 inches.
- The annual chance of today's 100 year storm (which is a 1% chance) will increase to between 1.4 and 5.5% with a mid-range estimate of 1.7 to 3.2%.
- Flood heights associated with a 100 year storm event will increase between .6 and 2.6 feet with a mid-range projection of .9 to 2.0 feet.
- Precipitation (rain/snowfall) will increase by 1 to 15% with a mid-range projection of 5 to 10%.

These projected changes all increase the extent and likelihood of flooding in New York's coastal communities.

communicate with residents. Without direction or requirements from the government, there are few incentives to compel private building owners to invest in resiliency plans. Further, the plan and timeline to fix and strengthen damaged public housing is unclear. Given the serious issues the residents of market-rate, regulated, and public

multi-family buildings faced during and after Sandy, the residents of the Community have serious concerns about the safety and resiliency of their homes for the foreseeable future.

Fragile economy sensitive to shocks

While Rockaway East's economy has potential, it struggled before and since Sandy. It is home to predominantly small, locally-owned businesses. Though most are located outside of the flood-zone, they remain susceptible to shocks and events—whether a blackout or the residual downstream effects of a large coastal storm or blizzard, which dampen demand for goods and services and may prevent employees from getting to work. Many lower-lying businesses that experienced significant damage have struggled to return and continue to remain at risk from future storms. This not only has an impact on business owners, but also reduces the supply of local jobs. As the overall resiliency of Rockaway East relies heavily on the ability of businesses to flourish, these residual storm impacts drag on the local economy and diminish the quality of life for all residents.

Extreme vulnerability of particular neighborhoods and vulnerable populations

Some neighborhoods across Rockaway East are more susceptible and increasingly vulnerable to extreme weather events and sea-level rise. The

largely residential neighborhoods along the bay are particularly at-risk, due to their low-lying elevation and the largely natural and exposed edges lining the Planning Area perimeter. These communities suffered the greatest damage from Sandy, but they also experience regular flooding from storms and coastal events. Recurring flooding events reduce accessibility and cause health and safety risks with standing, stagnant water in warmer months and large swaths of ice in the winter. They also cause physical damage, which is expensive to fix and depresses land values.

On average, the residents in these bayside communities have modest incomes and the issues resulting from regular flooding create undue financial, physical, and psychological burden on them. These Communities have a large range of housing types—from large multi-family buildings to single-family homes—each with their own needs during a disruptive event. Populations with special needs in an emergency, such as seniors, as well as physically and mentally handicapped residents, are particularly vulnerable to isolation during major emergencies or smaller events such as a heat wave. As demonstrated in Sandy, vulnerable populations in multi-family buildings face serious risks of isolation and lack of

emergency supplies if power is out and elevators and water are not available.

Lack of local emergency preparedness and services

Fortunately, Rockaway East residents fared relatively well after Sandy, largely because the Community came together, organized, and helped one another. But the Community is at risk of greater problems in the future without a clear plan: Where are the safest locations? Where can residents find information or help? Where are seniors or other vulnerable populations located and how can they obtain needed assistance? The Community needs to better prepare physically and socially for emergencies in order to avoid facing serious issues in the future.

In addition, health services are limited and burdened across the Rockaway Peninsula, both in an emergency and on a regular basis. Peninsula Hospital closed in 2012, putting a greater stress on already strained health care services in South Queens. St. John’s is the only hospital in the region, but it is taxed and without trauma services. Together, these issues pose a significant risk to the Community, especially during large-scale emergency events.

“When you think back to Sandy, one of the biggest issues that people had was they didn’t know where to go; they didn’t know who to speak to; and they didn’t know where the resources were for them to access—so we don’t want that to happen again...”

– Rockaway East Committee Member



Members of the Rockaway Youth Task Force.

Source: With permission from Denean Ferguson.

E. Community vision

Rockaway East's history and culture have been and will continue to be shaped by its people and geography. The devastation caused by Superstorm Sandy not only exposed the Community's vulnerability to natural events, but also affirmed the strength of its people in the face of adversity. Unified by their common connection to the land and community, residents have mobilized around a shared commitment to building a more resilient Rockaway East.

The NYRCR Program aimed to engage the entire Community in the reconstruction planning process. Over seven months, the Rockaway East Committee discussed and formulated ideas and engaged with residents across all of the Planning Area neighborhoods to gather feedback and consensus. The vision and goals established in this plan reflect the collective voice of this large and diverse Community.



Children enjoy face-painting and other fun activities along the boardwalk. Source: With permission from Denean Ferguson.

“What’s great about the NY Rising program [is] that it was really designed to have maximum community input. We’ve brought in the public [who were] able to weigh in on every step that the committee was taking... The governor recognizing the importance of communities identifying their own priority projects created this program.”

– Rockaway East Committee Member

Rockaway East vision statement

The neighborhoods of Rockaway East will **rise up** and leverage our **robust social networks, diverse economy, and abundant natural resources** to restore and develop a **more vibrant, resilient, and sustainable community.**

Short-term goals (2-5 years)

- Improve quality and type of services in existing health care centers
- Strengthen emergency preparedness
- Improve transit and access to existing infrastructure
- Address any immediate risks with both the ocean and bay edges
- Support strengthening of existing commercial corridors
- Pursue short-term beach and boardwalk renewal

Long-term goals (5-10 years)

- Become a health services hub for Southern Queens and Long Island
- Enable self-sufficiency in and after emergencies
- Expand and improve overall transit and connectedness of Rockaway East
- Create hard and soft edges to maximally protect all of the communities in Rockaway East
- Expand overall economic development and activity through the Community and become a regional destination
- Strengthen relationship between community, water, and abundant natural resources

F. Relationship to regional plans

Rockaway Peninsula overview

Situated on land that originally made up a series of barrier islands and marshland, the three Rockaway Peninsula communities have a similar geomorphology and low elevation. A good proportion of the land area is located at or just above sea level, making neighborhoods along the shorelines vulnerable to flooding even during normal high tides. The coastline ranges from long, wide beaches with gentle dunes, to soft, marshy edges, to shorelines punctured by inlets and man-made and natural basins.

On the oceanside, the Rockaway Peninsula faces risks due to its extensive unobstructed coastline and the proximity of homes and infrastructure to the water's edge. While much of the coastline contains beaches, many lack extensive natural protective features, such as dunes, and experience regular beach erosion. At the same time, as a barrier island, the Rockaway Peninsula provides valuable protection to communities within the bay, reducing surge and wave heights within the bay itself. The beach nourishment and dune-building efforts being undertaken by the U.S. Army Corps of Engineers (USACE) and others on the Peninsula therefore have risk-reducing impacts for all communities on the bay.

Communities along the bayside of the Rockaway Peninsula are at risk. Some communities are fronted by open beaches and others are set further away from the water's edge, with much of the bayside bordered by a mix of edges ranging from tidal wetlands to bulkheads, and a baywall to the west. While natural protective features and shoreline structures built along the perimeter of the bay may provide protection against the lesser storm events, they are collectively insufficient to protect against a 100-year storm. Some of the shoreline structures are aging, or inadequately maintained, leaving these communities vulnerable to flooding.

Other challenges in common

Areas of common regional interest extend beyond coastal protection, to health care and transportation.

Like its neighbors in Rockaway West, Breezy Point, and Broad Channel, the Rockaway East Community is concerned about access to health care as large providers close or consolidate their facilities and apprehensions exist about the providers that remain. The Community will coordinate efforts with Rockaway West, Breezy Point, and other South Queens NYRCR Communities to expand health care services.

The Rockaway Peninsula also faces challenges with regular transportation needs, which are exacerbated in times of disaster. Many NYRCR Communities also face insufficient emergency access. The Peninsula only has a single land-based evacuation route via NYS Route 878 (the Nassau Expressway), which it shares with residents of Five Towns and Atlantic Beach. Flooded roadways across the Peninsula hinder evacuation and emergency response. Cross-Peninsula transportation is difficult. Even for those who have access to a car, pavement conditions are poor. For many transit-dependent residents, the current system falls short. Many A train line stations lack Americans with Disabilities Act (ADA) access requirements, and the A train line's cross-Peninsula "H" service, put in place after Sandy, has been discontinued. Bus routes are circuitous yet do not take residents to key destinations, such as the ferry dock. Travel to South Queens and beyond is also problematic. Bridge tolls make every off-Peninsula car trip expensive. The Long Island Rail Road (LIRR) fare structure penalizes residents for traveling through Nassau County to get to Manhattan. Moreover, the LIRR station is not easily accessible for most residents. The Planning Committee has identified opportunities to address these challenges through cooperation with Rockaway West on a

Figure I.3: Regional map



transportation study and other projects, such as creating a bike share network or circulator bus.

As projects move from planning to implementation, Rockaway East will continue to collaborate with its neighbors on the Peninsula to leverage resources to develop solutions that solve common challenges.

Regional perspectives: Jamaica Bay

From Sea Gate on the western edge of the Southern Brooklyn Peninsula, to South Valley Stream at its headwaters in Nassau County, communities in and around Jamaica Bay suffered enormous damage from Superstorm Sandy. The Bay, known as a unique ecosystem in an urban landscape, is famous for its salt marsh islands, intertidal flats, horseshoe crabs, and migratory birds that use the area as a critical refuge during their seasonal travels. Beyond the water, Jamaica Bay is surrounded by woodland and forests that host a wide array of wildlife. This dynamic system has attracted people for generations, and many of its surrounding communities are partially defined by their close proximity to Jamaica Bay's waters. However, this proximity also served as a hazard during Superstorm Sandy. At the height of the storm, the

Bayswelled and watersurged up through a network of creeks and streams, infiltrating neighborhoods and inundating homes, businesses and roadways.

Shared risk, shared resiliency

Six active New York City NY Rising Community Reconstruction Planning Areas are connected hydrologically and ecologically by Jamaica Bay: Breezy Point, Rockaway West, Rockaway East, Broad Channel, New and Old Howard Beach, and Gerritsen Beach/Sheepshead Bay. A seventh Planning Area, the Southern Brooklyn Peninsula Community Planning Area, which includes Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate, is in close proximity at the mouth of the bay. The bay and its tributaries have a far-reaching impact that extends beyond New York City; the Village of Cedarhurst, Hewlett, Village of Lawrence, Woodmere, Village of Hewlett Neck, Village of Hewlett Harbor, Meadowmere, Inwood, and South Valley Stream Community Planning Areas in Nassau are also impacted by what happens in the Bay. Future resilience strategies must take into account the effect of the shared shoreline on this important ecological amenity.

All of the Jamaica Bay communities suffered significantly during Superstorm Sandy, some from flooding or surge and some from wave action damage. According to an assessment

conducted by New York City Department of Buildings (NYC DOB), of the buildings that suffered significant damage citywide during Sandy, 37% were located in South Queens. Homes, businesses, beaches and parklands, schools, roadways, and mass transit were all damaged; the area also endured one of the most extensive and long-lasting power outages in the City.¹²

Flooding risks are likely to be exacerbated throughout the bay by projected sea level rise associated with climate change. According to the Federal Emergency Management Agency's (FEMA) preliminary work maps, the 100-year floodplain in Queens has expanded by 40% since 1983. Floodplain expansion has been especially dramatic for the Jamaica Bay/South Queens area where the number of buildings in the floodplain has risen by 70%.¹³ It is anticipated that this trend will continue, and the low-lying areas surrounding bay communities are likely to continue to experience more frequent flooding and greater flood depths.

There are also ecological factors to consider: Jamaica Bay is a tidal estuary. Though severely degraded over the 19th and 20th centuries, the Bay remains a dynamic ecosystem, providing critical habitat to a variety of species, including a number of protected and threatened birds that inhabit both the beach and bay. Habitat loss and

degradation of the Bay’s chemical, physical, and biological environment has largely been due to human activities; however, over the last two decades, City, State, and Federal policies have yielded dramatic improvements in the Bay’s water and habitat quality.

In this hydrologically-connected system, projects and interventions in one area of the Bay can have ecological and coastal protection ramifications across the estuary. The cumulative impact of individual projects implemented in different locations around the Bay can be greater than the sum of their individual impacts. At the same time, interactions between projects can sometimes have negative effects including, though rarely, induced wave or surge activity.

Planning for Jamaica Bay

As described in the Description of Storm Damages section of this Plan, Superstorm Sandy had a devastating impact on communities, and individual NYRCR Committees have developed strategies to rebuild and become resilient to future storm risks. At the same time, communities in and around Jamaica Bay realize the need for collaboration. Understanding that projects and other actions in one area can have profound

impacts across the estuary, these communities have sought to create a unified, collective voice in support of resiliency efforts throughout the Bay. Mindful of the communities’ call for cooperation, the Governor’s Office of Storm Recovery created the Jamaica Bay Regional Working Group (JBRWG), a collection of representatives from the NYRCR communities closest to Jamaica Bay, shown in Figure I.3. The JBRWG views this final plan as the vehicle for its collective voice in support of ongoing and emerging resiliency efforts by stakeholders in Jamaica Bay.

The JBRWG believes that collaboration with agencies active in Jamaica Bay, namely the U.S. Army Corps of Engineers (USACE) and the National Park Service (NPS) is paramount. Through various habitat restoration projects, in addition to coastal protective measures along the Rockaway Peninsula, USACE has long been a committed partner in the sustainability of Jamaica Bay. Moreover, because of its management of the Gateway National Recreation Area, NPS has an ongoing interest as a responsible steward of its federally protected lands.

Lastly, the JBRWG supports the Science and Resiliency Institute at Jamaica Bay, a partnership among academic institutions, government

agencies, nongovernmental organizations and community groups dedicated to the promotion and understanding of resilience in Jamaica Bay and its surrounding communities. Institutions taking part include: Columbia University, Rutgers University, SUNY Stonybrook, Stevens Institute of Technology, Cornell University, CUNY, NASA Goddard Institute for Space Studies, the Wildlife Conservation Society, and New York Sea Grant. The Science and Resiliency Institute at Jamaica Bay was created in response to a RFEI (Request for Expression of Interest) put out by the NPS, City of New York, and Trust for Public Land, with grant funding from the Rockefeller Institute.

The JBRWG supports the following USACE and NPS projects:

- **Breezy Point/Roxbury Long-Term Comprehensive Edge Protection** – This project envisions a system of dunes, berms, marsh restoration, raised roads, floodwalls and baywalls, partially on NPS land, for comprehensive protection of the Breezy Point and Roxbury communities. This would include work at the Cove, as well as the property lines along the cooperative, including Breezy Point Tip.
- **Breezy Point Comprehensive Flood Protection System** – This proposed dune system would provide sustainable, natural flood and erosion protection utilizing the area’s existing natural features. The plan is comprised of an oceanside double dune system and complementary set of bayside flood and erosion protections that are designed to safeguard the community from future storm events. An application for this project was formally submitted by the State to FEMA on March 20, 2014, through FEMA’s Hazard Mitigation Grant Program (HMGP).
- **Broad Channel Shoreline Protection** – A potential project from the Broad Channel NYRCR committee is a “Resiliency Campus,” a rebuilding program to enhance the resiliency of several important community centers damaged during Sandy. The NPS property line hugs the campus site, the northwest quadrant of the neighborhood, and interventions here would further protect these community assets.
- **Edge Protection for Upper Jamaica Bay** – The JBRWG supports the inclusion of protective measures for communities located in upper Jamaica Bay, including Gerritsen Beach, Sheepshead Bay, and Manhattan Beach, in the USACE East Rockaway Inlet to Rockaway Inlet Reformulation Study. This would include protections for Plumb Beach and the water body of Sheepshead Bay, which were points of entry for storm surge during Superstorm Sandy.
- **Howard Beach Shoreline Protection** – The New York State Department of Environmental Conservation (NYS DEC) is currently working toward designing and implementing protective strategies on NPS property in lower Spring Creek. The Howard Beach NYRCR Committee has also proposed work on NPS property at Upper Spring Creek, Charles Memorial Park, and Shellbank and Hawtree Basins.
- **Rockaway East and West Bay and Coastal Protection** – A system of bay walls, groins, and dunes are being implemented to protect Rockaway West. The JBRWG also supports additional bayside protections including bulkheads and natural solutions at vulnerable locations in Rockaway East, along the western, northern, and eastern shoreline of Arverne, in Sommerville, and in Bayswater. Additionally, Jacob Riis Park, the westernmost boundary of the Rockaway West Planning Area geographic scope, remains NPS property. The JBRWG supports work at this location, through either dunes along the beachfront or berms within the property, and believes the project would ensure protection of the entire community.
- **Surge Barrier at Rockaway Inlet** – The JBRWG supports New York City Special Initiative for Rebuilding and Resiliency’s (SIRR) call for the USACE to initiate an expedited study to examine the feasibility of developing a surge barrier and alternative measures at Rockaway Inlet as part of the previously mentioned Rockaway reformulation study.

Existing plans, studies, and projects

Due to the myriad challenges and risks associated with the region, plans and projects to improve resilience and the overall urban environment existed before Sandy at the federal, state, regional, city levels. Attention on the region has only grown since Sandy, as have the number of planned and active projects.

To avoid duplication of plans and to best identify how the NYRCR Program may fill existing gaps, it is essential to understand and assess the scope of, and potential relationships to, existing initiatives. This includes resiliency and Superstorm Sandy recovery plans, as well as other hazard mitigation, waterfront, infrastructure, and sustainability plans. The analysis and recommendations included in these plans contributed valuable information and ideas to the NYRCR planning process and project definitions.

Key programs, plans, and projects—and their linkage to the Rockaway East Community’s rebuilding and resiliency strategies and projects—are described below. The appendix to this report contains a more detailed description of these and other federal, state, and local ongoing plans

and projects that are related to rebuilding and resiliency efforts.

Federal initiatives

U.S. Army Corps of Engineers (USACE) efforts

The USACE is a major player in both coastal protection and ecological restoration efforts within Jamaica Bay through a number of ongoing studies and projects that could provide resiliency benefits. These include studies that pre-dated Sandy as well as post-Sandy updates to the previous plans and studies. While initiated and led by the Corps, the projects that stem from these studies may have many implementation partners; including multiple State and City agencies.

- **East Rockaway Inlet to Rockaway Inlet (Rockaway Beach) often referred to as the Rockaway Reformulation Study.** This project was authorized by the Flood Control Act in 1965 and modified by the Water Resource Development Act (WRDA) of 1974. When funded, USACE designed, constructed, and maintained the project from 1977 until 2004 under additional appropriations and WRDA authorizations. Because of the high cost of continually replenishing the eroding shoreline, the Corps was directed in 2003 to “reformulate” the original plan so that a long

term, cost-effective solution to the effects of continued erosion on the Rockaway Peninsula could be identified. Funding for the reformulation was not appropriated for several years, but by 2011, the USACE identified alternatives. Sandy led to a revision of these alternatives. The Sandy Appropriations Act authorized funding for the reformulation study and reconstruction/nourishment of the previously completed ocean beach portions of the project. Phase 1, for which the draft reformulation report is scheduled to be ready by late Spring 2014, looks at beach nourishment and additional erosion control and/or storm damage risk reduction measures on the oceanside of the Rockaway Peninsula. Phase 2, for which the draft reformulation report is expected in November 2015, will investigate flooding on the Jamaica Bayside of the Peninsula and evaluate potential coastal storm risk management measures, including nature-based alternatives.

Projects that are recommended by the reformulation phases will require further cooperative teaming agreements and funding appropriations. It is under the reformulation study that coastal protection measures proposed by Rockaway East and

other communities around the Bay might be considered by the USACE.

- **Rockaway Public Beach.** This is a two-phase project to re-nourish Rockaway Beach back to its original design profile. The first phase was completed in August 2013 and added more than 500,000 cubic yards of sand to the most eroded portion of Rockaway Beach, between Beach 149th Street and Beach 89th Street. Phase 2 will add another 3,000,000 cubic yards of sand between Beach 149th Street and Beach 19th Street, to be completed by August 2014. New York City has requested that the re-nourished dune meet the 100-year flood elevation.
- **Hudson Raritan Estuary (HRE) Comprehensive Restoration Plan (CRP)** Adopted in 2009, the USACE and Port Authority of New York/New Jersey developed the HRE-CRP in collaboration with Federal, State, municipal, and non-governmental organizations as well as other regional stakeholders. The plan sets forth a consensus vision, master plan, and strategy for future ecosystem restoration in the New York/New Jersey Harbor. In Jamaica Bay, the plan identified 50 potential restoration sites. Several of these sites are located

in Rockaway East, including Brant Point, Dubos Point, and Bayswater State Park, Sommerville Basin, Conch Basin, Mott Basin, Seagirt Avenue Wetlands, and Arverne Urban Renewal Area. The HRE CRP recommendations influenced the Committee's bayside coastal protection locations and approach.

- **Jamaica Bay, Marine Park and Plumb Beach, New York Ecosystem Restoration Feasibility Study** The study is a joint undertaking of the USACE and the New York City Department of Environmental Protection (NYC DEP) initiated following Superstorm Sandy and is intended to provide an expedited limited reevaluation of USACE restoration projects in the bay, first identified in the HRE CRP, to address post-Sandy changes. The interim draft report identified eight priority restoration sites (550 acres) from the HRE-CRP recommendations. Three of those sites: Brant Point, Dubos Point, and Bayswater State Park are in the Rockaway East study area. Identifying resiliency benefits in ecological restoration projects and other nature-based approaches influenced the Committee's recommendations for bayside coastal protection.

City and local initiatives

In addition to the Federal initiatives and projects centered on Jamaica Bay, there are a number of New York City initiatives relevant to resiliency planning in Rockaway West. Other City and local initiatives take a specific look at or have specific projects within Rockaway West.

Special Initiative for Rebuilding and Resiliency

The Special Initiative for Rebuilding and Resiliency (SIRR) was convened by New York City Mayor Mike Bloomberg in December 2012 to assess the damage wrought by Superstorm Sandy and consider the implications going forward for New York City in light of climate change and sea level rise projections. In June 2013, SIRR released its findings in a comprehensive report, *A Stronger, More Resilient New York* (SIRR Report), which outlined New York City's plan for rebuilding post-Sandy and ensuring resiliency into the future. The plan contains actionable recommendations for communities affected by the storm as well as chapters covering city-wide issues, such as coastal protection, buildings, insurance, utilities, liquid fuels, health care, transportation, parks, water and wastewater, and other critical networks. For Rockaway East, SIRR proposed a number of initiatives, including working with the USACE to study dune systems, retrofitting public housing units that had been destroyed

or substantially damaged, launching a satellite Workforce 1 career center in Far Rockaway, and exploring options to mitigate risk to Jamaica Bay communities through a large-scaled regional intervention, such as a surge barrier.

NYC Recovery: Build it Back and Business Resiliency Investment Program

In addition to resiliency, the City has launched several initiatives under the NYC Recovery program to help residents across the five boroughs recover from the damage caused by Sandy. The Build It Back program seeks to assist homeowners, landlords, and tenants whose homes were damaged by the storm. The Business Resiliency Investment Program (BRIP) will offer incentives to businesses to invest in improvements to protect against severe weather. Some of these recovery programs support resiliency investments and will help improve individual homes and businesses in the communities surrounding Jamaica Bay. More information on the NYC Recovery program can be found here: <http://www.nyc.gov/html/recovery/>.

Updates to the building and zoning code

New York City's Building Resiliency Task Force identified 33 recommendations to the City Council. Many of these recommendations are still in various states of review, and 16 initiatives have been passed. In addition, the New York

City Department of City Planning's (NYC DCP) Flood Resilience Zoning Text Amendment was approved by City Council on October 9, 2013. The amendment removed obstacles to homes that are rebuilding in the flood zone, allowing homes to build to the new standards. The report and latest updates on implementation can be found on the SIRR website: <http://www.nyc.gov/html/sirr/>.

NYC Department of Parks and Recreation (NYC DPR) and New York City Economic Development Corporation (NYCEDC) Rockaway Boardwalk Rebuilding project

NYC DPR and NYCEDC have developed a concept and design for rebuilding the Rockaway Beach boardwalk destroyed by Superstorm Sandy. Resilient elements include siting the reconstructed boardwalk between a sand berm (built by USACE and anchored with maritime grassland) on the oceanside and a vegetated berm behind the boardwalk; and an inter-dunal swale and baffle wall under the boardwalk that will prevent sand migration. Construction will start in spring 2014 and proceed in phases, with the final phase scheduled for completion by Memorial Day 2017. Given the status of the plans for rebuilding the oceanside beach and boardwalk, the Committee focused efforts to protect and enhance recreational assets on the bayside.

NYCEDC Bulkhead Repair/Raising The SIRR Report recommended a citywide bulkhead raising program targeted to low-lying neighborhoods at risk of regular tidal flooding on the bayside of the Rockaway Peninsula, Broad Channel, Howard Beach, among other locations. This program will work in conjunction with a new city-wide waterfront inspections program. This program could fund repairs to existing but degraded bulkheads in Rockaway East neighborhoods like Arverne and Mott Basin.

New York City Regional Economic Development Council's Five-Year Strategy Plan

This plan entails a comprehensive economic strategy to address and promote poverty prevention/job training, government fiscal responsibility and infrastructure investment, and balanced investment among all of New York City's businesses. The Council outlines four key objectives to address these principles: improve quality of life, create a pro-growth, pro-jobs environment, invest in the future, and foster innovation and inter-regional cooperation. Specific approaches such as supporting small businesses and neighborhood revitalization align with the goals of the NYRCR Committee.

NYC DCP's Resilient Neighborhoods Initiative NYC DCP will be undertaking a

series of neighborhood planning studies in support of disaster recovery. Working closely with communities, NYC DCP will develop local strategies to address recovery needs, increase resilience, and support the vitality of neighborhoods in the near and long term. Rockaway East is in the Phase II set of neighborhoods to be examined under this initiative, which has not yet been funded. The NYRCR projects recommended by the Committee, especially those around Mott Avenue, will be an important part of a larger neighborhood resiliency approach.

NYC DPR Rockaway Parks Conceptual Plan

NYC DPR is developing a conceptual plan for future improvements to city parks on the Rockaway Peninsula, from the city limit to Beach 149th Street, and from the Bay to the ocean. The Rockaway Parks plan will incorporate resiliency measures into park improvements and is scheduled for release in spring 2014. Knowledge of NYC DPR’s plans for bayside recreation in Rockaway East revealed complementary efforts in the basins on the bayside, where it made sense for the Committee and the NYC DPR to join forces to ensure park plans are prioritized in areas of particular importance to economic resilience or coastal protection. In addition, the committee identified locations where recreational

amenities could incorporate ecological restoration and resiliency measures, such as stormwater management approaches and raised bayside trails.

Woodhaven/Cross Bay Boulevards Select Bus Service (SBS) Study

NYC Department of Transportation (NYC DOT) and the Metropolitan Transit Authority (MTA) are studying the Woodhaven/Cross Bay Boulevards for conversion of the existing Limited-Stop Q52/53 bus routes to Select Bus Service (SBS) to make existing bus service substantially faster and more reliable, while maintaining needed traffic flow and parking, and also making the corridor safer for all users. These routes extend from Rockaway Park and Arverne in the Rockaway Peninsula to Woodside and Rego Park in central Queens; therefore, the study and potential improvements will include not just Woodhaven and Cross Bay Boulevards, but also streets to the north and south including Broadway, Roosevelt Avenue, and Rockaway Beach Boulevard and thus could address cross-Peninsula transportation challenges. The study is just getting under way.

Based on the analysis of local and regional planning efforts, the following gaps were identified, which shaped the development of projects and recommendations:

- While the SIRR Report identified many initiatives for the Community, it did not identify funding or implementation steps for many of them. This is especially the case with funding programs that help individuals take proactive resiliency steps for buildings. The NYRCR planning effort is an opportunity to move some of the initiatives forward.
- Comprehensive coastal protection efforts are underway for the oceanside of Rockaway East, but the opportunity exists to further shape long-term recommendations at a regional scale. While bulkhead repair long-term planning is underway for the bayside, little activity has taken place in the eastern portion of Rockaway East.
- Resiliency of large-scale wastewater, stormwater, and power system infrastructure is being addressed with both temporary measures and long-term plans. However, neighborhood- or micro-scale power and drainage infrastructure has not been fully examined for potential resiliency benefits.
- Resiliency of commercial corridors, including Mott Avenue, is being considered, recognizing retail’s important role in the Community and the potential to expand upon this role in emergency situations.

- Determining funding and priority of Jamaica Bay resilience projects, particularly relative to other less at-risk communities across New York City.
- Many of the Community organizations whose operations were compromised by Sandy are working to better prepare for future extreme events. However, there remains a need for enhanced coordination among community-based organizations to provide health and social services
- Finally, there are many new and ongoing Jamaica Bay resilience projects, such as wetland restoration studies, for which funding availability and priority will need to be determined.

Recovery support functions: a framework for a holistic resiliency plan

Throughout the remainder of the NYRCR Plan, six **Recovery Support Functions** are used to guide the identification of issues, assist in categorizing assets and assessing risk, frame needs and opportunities, and organize resiliency strategies. These functions are derived from FEMA's National Disaster Recovery Framework (NDRF) developed by President Barack Obama in 2011 and will help coordinate this plan with state and federal programs. These recovery support functions are:



Natural and cultural resources

Natural systems can play an important role in resiliency and recovery. The ability of natural features to withstand disruptive events as well as their ability to mitigate damage are addressed by this function. Cultural resources can play an important role in recovery through provision of spaces and forums for recovery.



Community planning and capacity building

This function addresses a community's ability to implement immediate storm recovery activities and organize long-term resiliency plans. Formal and informal community networks, dedicated emergency education and planning efforts, and experience recovering from past emergency events are characteristics that may enhance this function.



Economic development

This function addresses the ability for economic and business activities to return to normal. Developing new economic opportunities that result in a sustainable and economically strong community is a component of this function.



Health and social services

This function addresses the ability of public health, health-care facilities, and essential social services to be restored after a disruptive event.



Housing

The resiliency of a community's housing stock is addressed by this function—including both physical resiliency and financial health and resources.



Infrastructure systems

This function relates to local and regional transportation, water management, utility systems, and the ability of these to withstand and recover from disruptive events. The economic development and job creation capacity of these systems are also critical to this function.



II. Assessment of risk and needs

A. Description of community assets and assessment of risk

Assets include places and resources valued by the Rockaway East Community which are important both to the Community's recovery from Superstorm Sandy and its everyday functioning. The asset inventory describes Rockaway East's key assets, emphasizing those assets that provide critical functions. The risk assessment evaluates the risk to these assets and describes the potential storm and flood impacts to community functions. Together with the Community vision and critical issues, the asset inventory and risk assessment were used to shape the evaluation of needs and opportunities, inform the development of projects and evaluate the potential risk reduction and other benefits of Proposed Projects.

A major objective of the asset inventory is to assist in evaluating risk from future storms and flooding. In order to facilitate this evaluation, New York State Department of State (NYS DOS) has developed and mapped three assessment areas (risk areas): Extreme, High, and Moderate. The risk area was identified for each asset.

The assets identified were also organized by NY Rising Community Reconstruction (NYRCR) asset class: Housing, Economic Development, Health and Social Services, Infrastructure Systems,

What do the risk areas mean?

NYS DOS, with the assistance of the National Oceanic and Atmospheric Administration (NOAA), mapped geographic areas representing the likelihood for coastal flooding. They identified three risk areas:

- **Extreme:** Areas currently at risk of frequent inundation and vulnerable to erosion and wave action over three feet (FEMA V zone), subject to shallow coastal flooding (within the National Weather Service's shallow coastal flooding advisory threshold), or likely to be inundated in the future due to sea level rise (assumes three feet).
- **High:** Areas outside the extreme risk area that are currently at risk of infrequent inundation (FEMA A zone, meaning there is a 1% annual chance of flooding) or at future risk of shallow coastal flooding with sea level rise (assumes three feet).
- **Moderate:** Areas outside the extreme and high risk areas but currently at moderate risk of inundation from infrequent events (FEMA shaded X zone, meaning there is a 0.2% annual chance of flooding) or at risk of being in the 100 year floodplain with sea level rise (assumes three feet), and any areas expected to be inundated by a category three hurricane.

A more detailed description of the NYS DOS Risk Assessment Area Mapping Methodology can be found on the NYRCR website, as can a link to an online viewer for the risk assessment area maps, at <http://stormrecovery.ny.gov/community-reconstruction-program>.

and Natural and Cultural Resources. The Asset Classes are similar to the six Recovery Support Functions, but differ slightly in order to facilitate use of the NYS DOS risk assessment tool (described in the following section), as the tool is designed to evaluate risk to physical assets but does not evaluate community planning and

capacity building. Committee members noted that many of those assets identified as Health and Social Services in their asset inventory provided important community capacity building functions following Sandy, and would be relied on in future disasters.

Figure II.4: NYS DOS risk areas

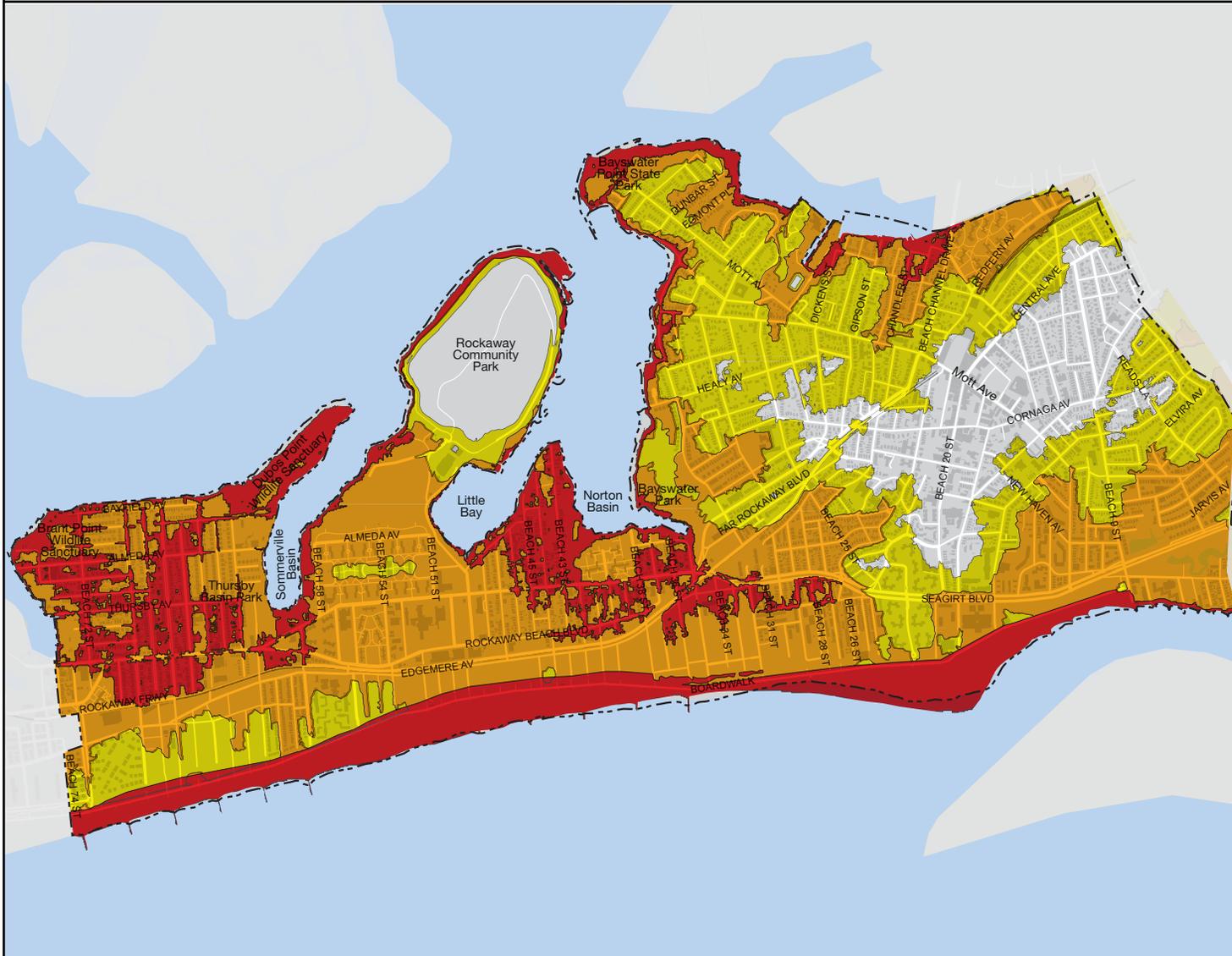


New York Rising Community Reconstruction Program
Rockaway West Planning Area

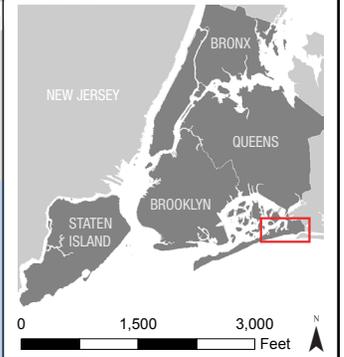
--- Planning Area Boundary

NYS DOS Risk Area

- Moderate
- High
- Extreme



Source:
Risk Areas: New York State Department of State (DOS) Risk Assessment Areas.
Basemap: New York City Department of City Planning, MAPPluto v13.1; Buildings; Street Centerlines



Assets were identified through a combination of research, data gathering, and stakeholder engagement. The list of assets described drew from extensive public outreach, including through Public Engagement Events and an online interactive community asset map (<http://rockawayeast.nyrisingmap.org>). Both the online maps and the physical maps provided at Public Engagement Events allowed community members to comment on assets and highlight the needs and issues associated with these assets. It also allowed community members to add additional or corrected information about assets and to add missing assets.

Description of community assets

The list of Rockaway East assets that were assessed using the NY Rising Risk Assessment Tool (Appendix D) includes the priority assets identified by the Rockaway East Planning Committee located within the extreme and high risk zones. Moderate risk assets were not included in the assessment, with the exception of the YMCA. All of these identified assets were categorized as having high community value.



Rockaway East has a diverse set of housing, economic, health, social, infrastructural, cultural and natural assets distributed across the Community.

II-3 Assessment of risk and needs



Housing assets

All housing in the area should be protected, but several areas of the Community merit particular focus. Housing assets vary by neighborhood and include both large multi-family residential buildings as well as single-family detached homes. Multi-family buildings include many public housing or government regulated developments. Older single-family homes and bungalows vulnerable to structural damage are concentrated in the Arverne, Edgemere, and Mott Basin neighborhoods. Medium and large multi-family buildings are concentrated in Far Rockaway. The Committee emphasized prioritizing the most vulnerable neighborhoods and small homes in high and extreme risk areas.



Economic assets

Rockaway East has two key economic corridors: along Mott Avenue and scattered along Rockaway Boulevard. The consistency and vibrancy of the corridors varies.



Housing stock and age varies widely across Rockaway East, from old single family homes in Bayswater, to a large stock of mostly mid-century public towers, to relatively new town homes at Arverne.

The Mott Avenue commercial corridor, which is in Far Rockaway along the central section of Mott Avenue as well as Beach 20th Street and Sheridan Boulevard, is one of the largest concentrations of commercial activity in the Rockaway Peninsula. It is primarily made up of retail, small businesses, and basic services.

In the western end of Rockaway East, economic assets are distributed across Arverne, along Rockaway Beach Boulevard, Beach Channel Drive, and 73rd and 74th Streets. This area includes retail, restaurants, a bank and post office, and the relatively new Stop & Shop grocery store, which was the only supermarket that remained open on the Peninsula after Sandy.



Retail across Rockaway East is mostly small and local, though some chains and big box retailers are scattered across the Planning Area.

While perhaps not currently seen as an asset, there is significant vacant land along commercially viable corridors. This underdeveloped land is a noteworthy asset to the Community. Arverne East is a development project being led by the New

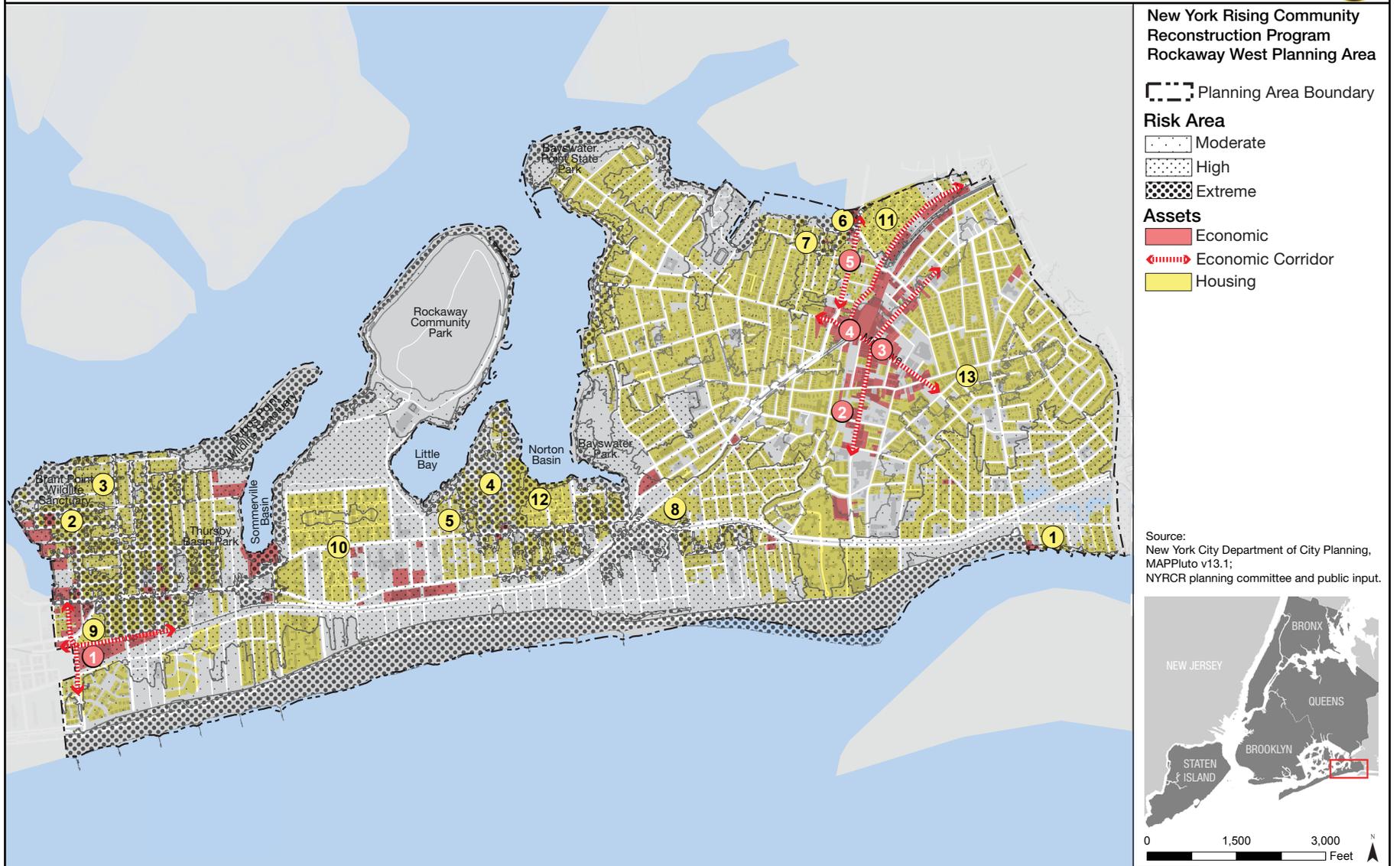
York City Department of Housing Preservation and Development (NYC HPD) on an approximately 80-acre urban renewal site between Beach 32nd Street and Beach 55th Street. The site is currently planned to incorporate commercial space.

Table II.1: Housing and economic assets

#	Housing asset name
1	711 Housing
2	Arverne Housing - Extreme Risk
3	Arverne Housing - High Risk
4	Edgemere Housing - Extreme Risk
5	Edgemere Housing - High Risk
6	Mott Basin Housing - Extreme Risk
7	Mott Basin Housing - High Risk
8	NYCHA Beach 41st Street Housing
9	NYCHA Carleton Manor
10	NYCHA Ocean Bay Apartments
11	NYCHA Redfern
12	Sessa Apartments
13	Ohel Children's Home

#	Economic asset name
1	Stop & Shop/ ABTS Retail Plaza
2	Key Foods
3	Rockaway Development & Redevelopment Corp
4	Mott Avenue Retail Corridor
5	Beach Channel Drive Retail Corridor

Figure II.5: Housing and economic assets





Health and social service assets

Rockaway East has a variety of health and social services—especially compared to the rest of the Peninsula—many of which served a critical role during Sandy emergency response and recovery. Specifically, the health and community centers, schools, and houses of worship on the higher ground around Mott Avenue played an instrumental role in the distribution of supplies and provided a place for the Community to gather. Congregation/Yeshiva Darchei Torah, Rockaway Development and Revitalization Corporation, the Nazarene Community Church, Church of God Christian Academy, Peninsula Preparatory Academy, St. Mary Star of the Sea, and Rockaway Youth Task Force were all particularly important to recovery efforts.

In the western end of Rockaway East, God’s Battalion of Prayer Ministries was also noted as a priority asset, as were the new YMCA at Beach 74th Street and Joseph P. Addabbo Health Centers.

The Joseph P. Addabbo Family Health Centers (Addabbo Centers) at 6200 Beach Channel Drive and 1288 Central Avenue are community health

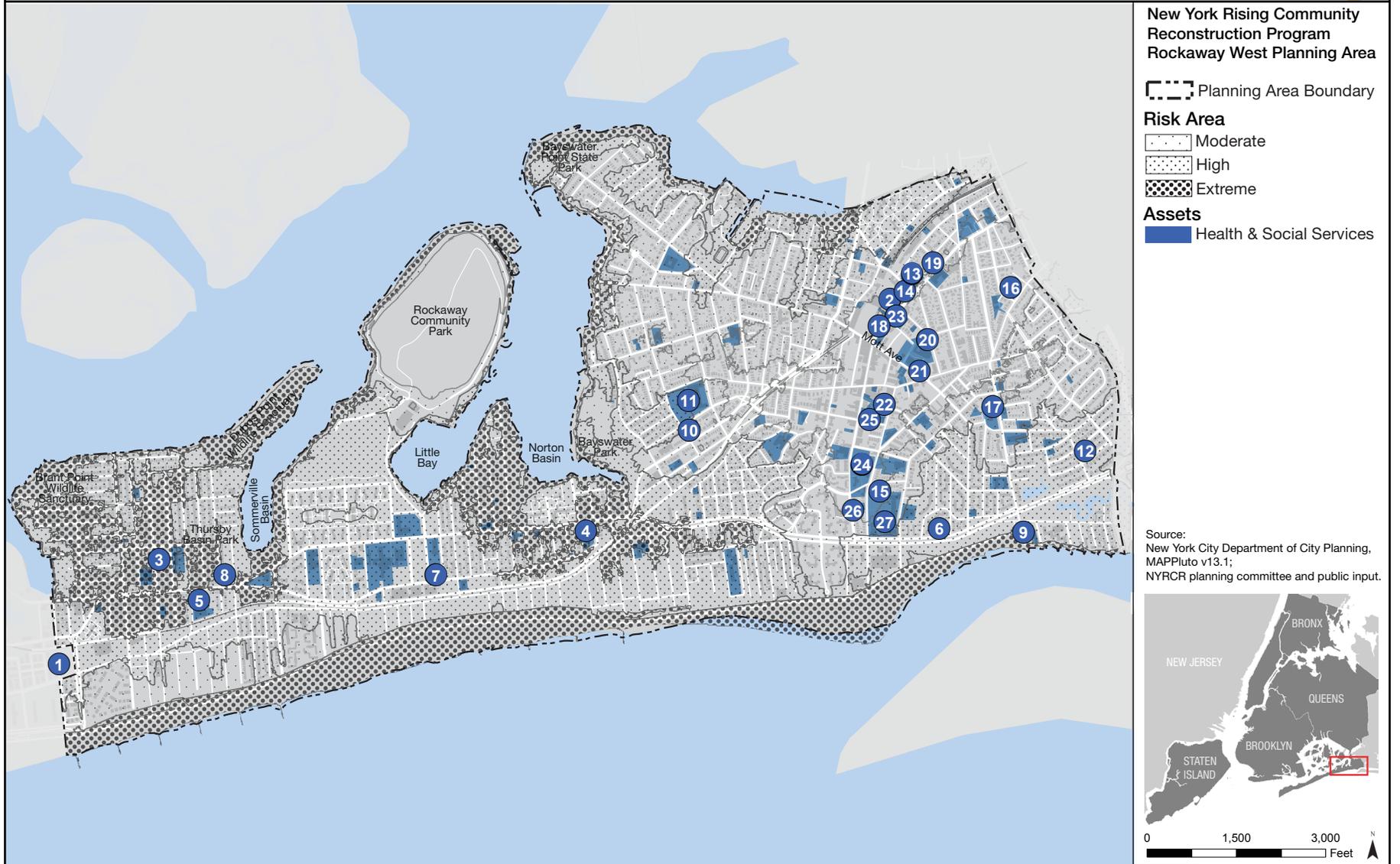
centers that provide diagnostic and medical services to low-income residents across the Rockaway Peninsula. The Addabbo Centers are key community assets that played a critical first response role by providing health services during Sandy. Despite flood damage, a power outage, and failing generators at the Arverne facility, the perseverance and the dedication of Addabbo Center staff allowed them to open soon after the storm.

As the only hospital on the Rockaway Peninsula, St. John’s Episcopal Hospital is a particularly critical asset, although it does not provide trauma care and could benefit the Community by providing other services. There are other important community health facilities, including St. Gertrude Parish, Hatzalah volunteer ambulance services, and many senior homes. These health care assets are important not only because of the services they provide the Community, but also because of the job opportunities they afford to local residents.

Table II.2: Health and social services assets

#	Health & social services asset name
1	YMCA
2	Church Of God Christian Academy
3	God's Battalion Of Prayer Ministries
4	St Gertrudes Roman Catholic Church
5	Horizon Care Center
6	West Lawrence Care Center
7	FDNY ENG 265th, LAD 121st, BN 47th, EMS STATION 47TH
8	Joseph P Addabbo Family Health Center
9	Achiezer Community Resource Center
10	Challenge Preparatory Charter School
11	Far Rockaway High School
12	Torah Academy For Girls Elementary
13	Arverne Church of God
14	Catholic Charities Counseling
15	Community Church- The Nazarene
16	Congregation Darchei
17	Congregation Kneseth Israel
18	Hatzolah Volunteer Ambulance
19	Jewish Community Council of the Rockaway Peninsula
20	Josph P Addabbo Family Health Center
21	MS 53 Brian Piccolo
22	NYPD 101st Precinct
23	Peninsula Preparatory Academy Charter School
24	Siach Yitzchok
25	St Johns Episcopal Hospital
26	St Mary Star of Sea Church
27	Wavecrest Home for Adults
28	Yesiva Darchei Torah

Figure II.6: Health and social services assets





Infrastructure systems assets

Due to the presence of the Long Island Rail Road (LIRR) and the A train line, Rockaway East is the only place on the Peninsula where residents have 24/7 access to a one-seat ride to Manhattan. This was underscored by the Committee and the public during the identification of several important transportation infrastructure assets in Rockaway East. Priority transportation assets include the LIRR’s Far Rockaway station as well as the area’s six A train stations. Beach Channel Drive (which becomes Sheridan Boulevard) and Seagirt Boulevard are important points of connectivity to Nassau County, as well

as Rt. 878, which also serves as the evacuation route for the eastern end of the Peninsula.

A number of prioritized infrastructure assets are on or near Jamaica Bay, including the Public Service Electric and Gas Company (PSE&G) substation in the Bayswater neighborhood.

Stormwater/wastewater management infrastructure is important to this Planning Area, but the existing system backs up even in normal tide cycles and storm conditions in Bayswater. Communications pre- and post-storm are also important, but were shown to be lacking during Superstorm Sandy.

Access to the Rockaway Ferry is particularly difficult for transit-dependent residents of Far Rockaway. The only way to currently connect directly to the ferry is via car. Local bus routes do not take residents of Rockaway East directly to the ferry stop at Beach 108th Street without a transfer, and the A train line stops only at Beach 105th and Beach 116th Street. Further, the subway and bus schedules are not aligned with the ferry; the frequency is such that the point-to-point time to connect from the ferry and get to Manhattan is greater than staying on a single land-based mode.



St. John’s Episcopal Hospital (left); Yeshiva Darchei Torah School (middle); God’s Battalion (right).



NYFD Engine 328 at Central Avenue



Natural and cultural resource assets

Rockaway East's abundant and important natural and recreational assets are generally clustered along the water, and thus provide both protective and recreational functions. Rockaway Beaches and the boardwalk, O'Donahue Park, and the Far Rockaway Skate Park are important assets on the oceanside. These public spaces help shape the identity of the Community and should be protected and enhanced. There are also other parks and amenities along the beach and scattered throughout Rockaway East that are important to the Community. On the bayside, Dubos Point Wildlife Sanctuary, Michaelis Bayswater Park, the underutilized Rockaway Community Park, and Bayswater Point State Park are all important. These natural wetlands and parks serve as a protective barrier to the communities along the bay, but if they are not sufficiently built up or maintained, they could be vulnerable. For example, marshland in Dubos Point has an important protective function. As there is limited access to Bayswater Point State Park, residents have proposed cleaning it up, restoring natural areas, and adding appropriate services.



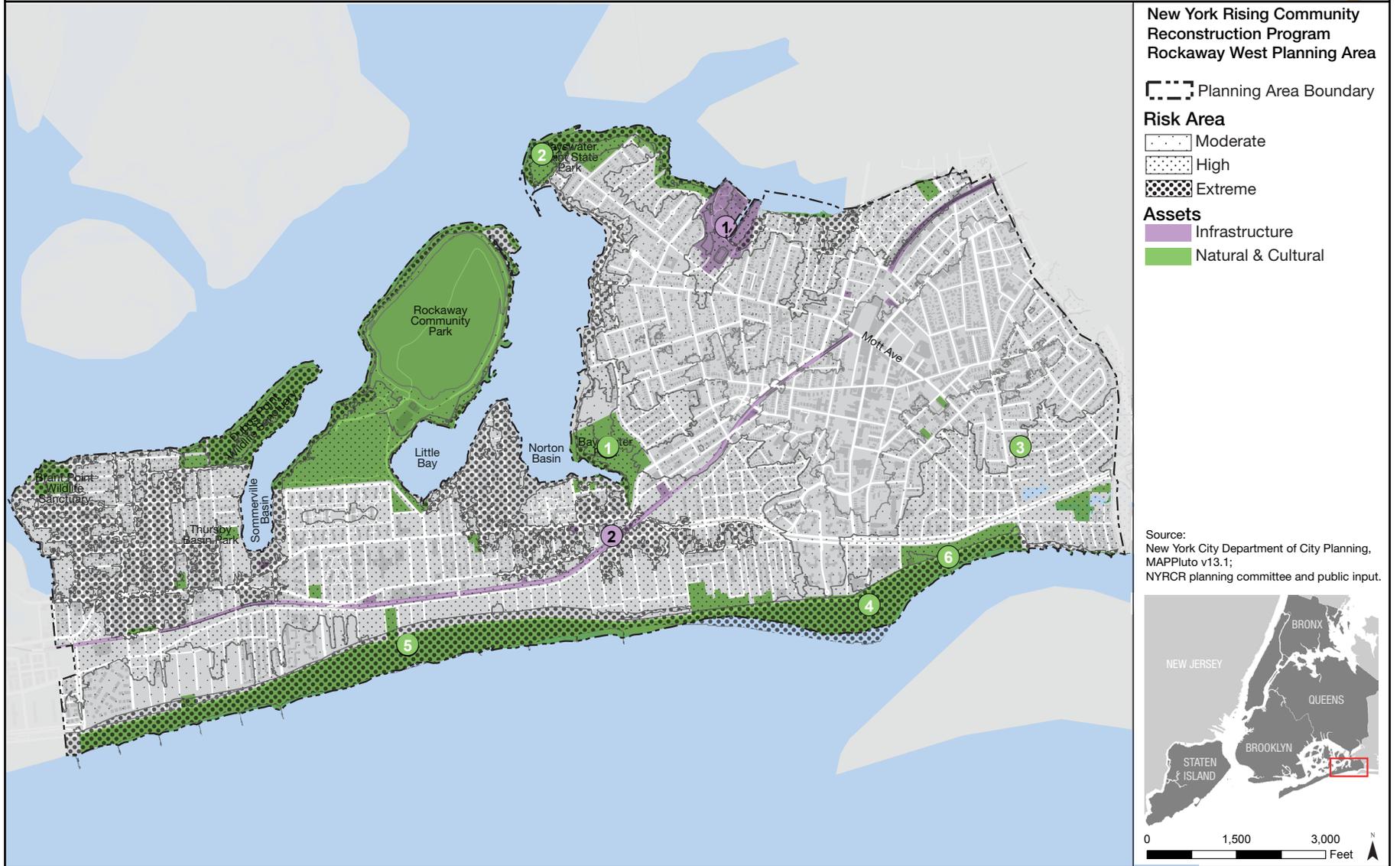
Residents and visitors show their skills at the Rockaway Teen Challenge Skateboarding Exhibition at the skate park on Beach 13th Street and Seagirt Blvd. Source: With permission from Denean Ferguson.

Table II.3: Infrastructure and natural & cultural assets

#	Infrastructure Asset Name
1	LIPA Distribution Substation
2	A Train Line

#	Natural & Cultural Asset Name
1	Bayswater Park
2	Bayswater Point State Park
3	Lannet Playground
4	O'Donohue Park
5	Rockaway Beaches and Boardwalk
6	Skate Park

Figure II.7: Infrastructure and natural & cultural assets





Rockaway East is well served by transit, including a number of stops along the elevated A train (left). Likewise, the Community has a significant number of parks, especially along the bay (right).

Assessment of risk to assets and systems

Future hazards

Hazard and exposure levels vary across the Rockaway East Planning Area. The eastern portion of Rockaway East includes some of the highest elevations in the Peninsula, including significant areas outside the NYS DOS risk areas. As this accounts for less than a fifth of the land area, most of the Planning Area falls within the high-risk area. In addition, while sea level rise and increased chance of future extreme storms bring

their own risk, many areas of Rockaway East regularly experience ongoing flooding from tidal and storm events.

Risk to assets

Over 80% of the assets assessed fell within the “high” risk area. Low-lying neighborhoods and waterfront areas along the Jamaica Bay and Atlantic Ocean shorelines are located in extreme and high risk zones and remain most at risk due to exposure to erosion, wave action, and tidal flooding. The shoreline of the Peninsula has shifted significantly over time and is still a dynamic and

changing landscape. The oceanfront coastline of Rockaway East, particularly the western portion, is at a low elevation and is highly exposed to wave action. The beaches in Rockaway East provide some protection to oceanfront assets—as do interventions, such as groins that keep sand in place—but portions of the shoreline are subject to erosion. Some portions of the oceanside continue to receive sand deposits, thus creating variation in the level of exposure along the Peninsula.

While less subject to wave action, the Jamaica Bayside of the Peninsula and the assets along

Assessing risk

Risk, in this context, is the potential for an asset to be damaged or destroyed in a future storm event. The assessment of risk to assets or systems of assets in a community produced important information to evaluate needs and opportunities and help guide Committee decisions about resiliency strategies and projects. The NYS DOS developed a risk assessment tool that is aimed at understanding flood risk to assets. The tool assigns each asset a risk score by evaluating three factors:

- **Hazard:** the likelihood and magnitude of future storm events
- **Exposure:** the local topographic and shoreline conditions that may increase or decrease the impact of coastal hazards
- **Vulnerability:** the capacity of an asset to return to service after a storm, taking into account its material strength relative to the coastal hazard as well as its regenerative capacity

Collectively, hazard, exposure, and vulnerability determine the risk that an asset could be damaged or destroyed by a coastal storm event. This analysis identifies which assets within the Community are most at risk from future storms in comparison to other assets. Further, it allows potential projects to be evaluated by their ability to reduce risk to assets. For access to the NYS DOS Risk Assessment Tool and additional information how to use it, see: <http://stormrecovery.ny.gov/resources-0>

it are at high to extreme risk from future storms. The bayside is very low-lying with significant portions of the Arverne, Edgemere, and Mott Basin neighborhoods lying at elevations that would be inundated according to the New York City Panel on Climate Change’s (NPCC) estimate of 11 to 31 inches of sea level rise by 2050—an “extremely likely” scenario.¹⁴ Flooding

from major storm events can be expected to continue to increase with rising sea levels. Low-lying areas, particularly those close to the shoreline of Jamaica Bay, also experience regular flooding from both high tides and heavy rainfall.

The Arverne neighborhood is especially vulnerable to ponding and standing water because its interior

streets are at lower elevation than the edge. As a result of this “bowl effect,” water is trapped and can gather for long periods. This situation is particularly pronounced when the storm sewer system is overwhelmed, such as during a heavy rain event.

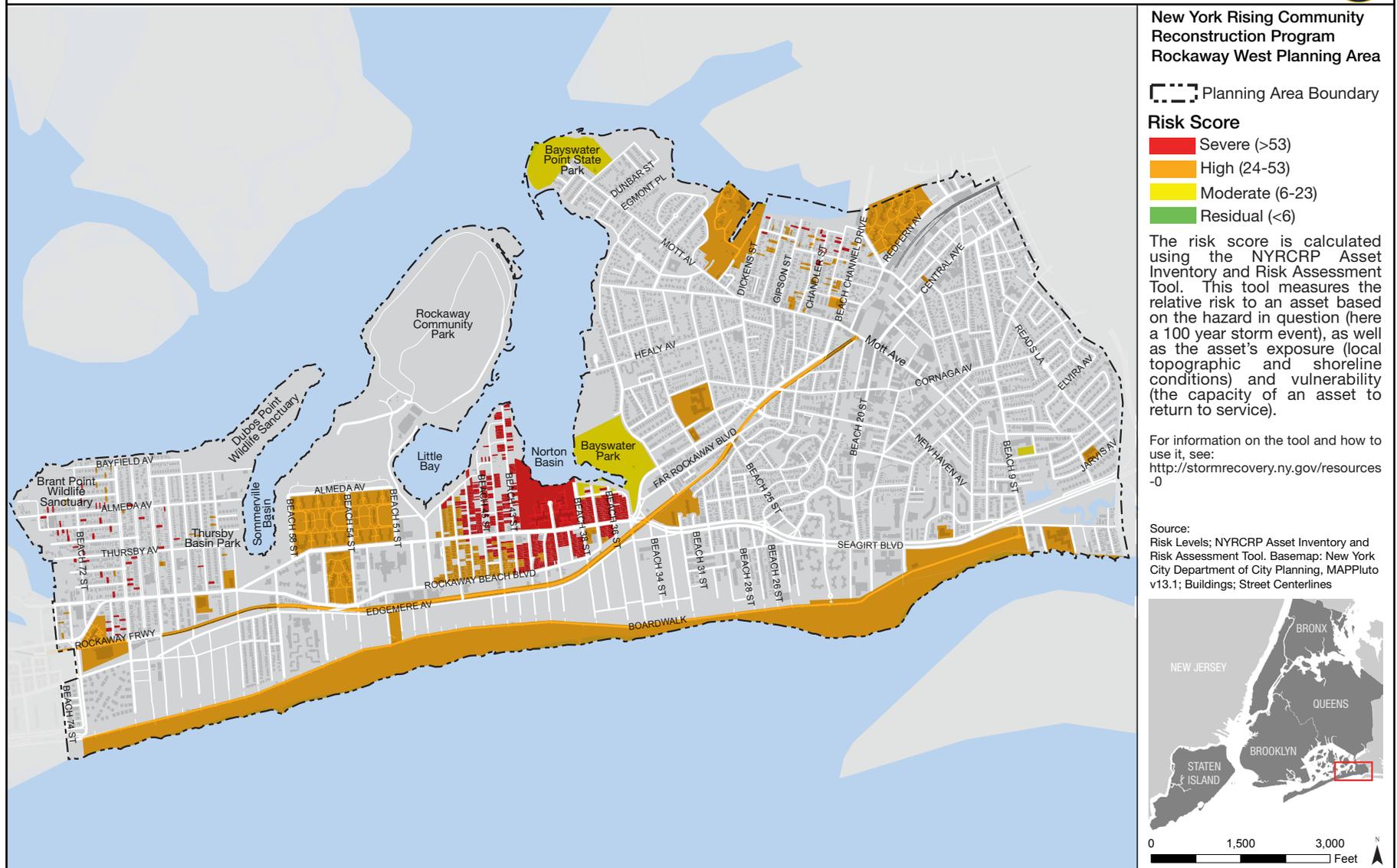
Sommerville Basin is situated between Arverne and the Rockaway Community Park. The basin provides access to Jamaica Bay, with a marina at the shoreline between Beach 62nd Street and Beach 59th Street. The basin serves as a point of inundation for storm surge into Arverne to the west and Edgemere to the east.

Edgemere encompasses the area between approximately Beach 59th and Beach 32nd Streets. The northern boundary follows the bay, including the Rockaway Community Park and a second Peninsula to the east formed by Conch Basin and Norton Basin. These two waterbodies are a continual source of flooding in the neighborhood.

Mott Basin is a low-lying subset of the Bayswater and Far Rockaway neighborhoods, encompassing the area north of Bayswater Avenue between



Figure II.8: Risk to assets



Bay 28th Street and Beach Channel Drive. This neighborhood is susceptible to flooding from high tides and more frequent storm events, especially along Chandler Street and Pinson Street.

Housing assets in neighborhoods along Jamaica Bay are most at risk in Rockaway

East. This is due not only to their location and high exposure, but also the vulnerability of the housing stock and of residents. Bayside housing, particularly in Arverne, Edgemere and Mott Basin, are seen as especially vulnerable given its low elevation and the flooding that it experienced during Sandy and Irene. In addition,

the older single-family homes and bungalows that comprise the majority of these neighborhoods are particularly prone to structural and water damage. Mid- and high-rise buildings that are at risk face different issues. Buildings that house many seniors warrant special focus; after Sandy, many seniors were trapped without access to goods or services, even water, because power was out and elevators were not functional.

Systems at risk

In addition to site-specific assets within the Community, a number of key systems are at risk:

- **Transportation System:** Transportation assets that provide access into and out of the Community for both residents and service providers are vulnerable. During Sandy, portions of the A train line between Howard Beach and the Rockaway Peninsula were washed away, leaving Rockaway riders without subway service for seven months. While repairs to the rail line have reduced the vulnerability of this critical asset to future damage, it remains at risk. In addition, the lack of redundant public transportation options increases the vulnerability of the Peninsula as a whole. Similarly, vehicular access to the rest of New York City is limited to two bridges, with additional access to



Flooding on Pinson St. near Mott Basin after regular rainfall in late Winter of 2014.



Many important facilities are at risk along the bay, including the power station in Mott Basin (left) and the Edgemere Gas Collection facility (right).

mainland Long Island to the east. Since the Peninsula itself lacks many key services, the risk to transportation connections increases vulnerability by limiting resident access to these key services.

- **Tourism economy:** Tourism to Rockaway beaches was severely affected as a result of destruction to many oceanside businesses and the decimation of the Rockaway boardwalk. Risk to this industry on the Peninsula remains a concern for impacted neighborhoods and business owners.
- **Provision of Water and Wastewater:** The Rockaway Wastewater Treatment Plant (in Rockaway West) was inundated with floodwaters from the bay and was rendered

inoperative. After Sandy sewage overflow compounded the damage to homes and created an immediate health challenge. The Rockaway Wastewater Treatment Plant is currently being studied by New York City Department of Environmental Protection (NYC DEP) for potential repurposing, however this is a long-term plan and in the meantime, the plant will continue to be an important asset to maintain. \$8 million in Federal Emergency Management Agency (FEMA) funding will be used to repair damage to the plant caused by Sandy.

- **Emergency and Communication Systems:** Floodwaters inundated Long Island Power Authority (LIPA) substations, leaving Rockaway East residents without power

for weeks following Sandy. LIPA made Sandy-related repairs and has identified permanent hardening measures for each of the substations. The dependency on the Power Authority is a risk to the Community, however it provides an opportunity to implement measures to provide power off-line during storms and other emergency situations.

Using the NYS DOS Risk Assessment Tool, the majority of Rockaway East assets rank “high” with the exception of the Arverne, Edgemere, and Mott Basin Housing in extreme risk areas, which ranked “severe.”

The risk analysis has been used to inform the definition and selection of projects, particularly those that protect assets from flooding. A subsequent section discusses how some of the Planning Committee’s Community Development Block Grant–Disaster Recovery Proposed and Featured projects reduce the risk to assets identified here. A more detailed description of the Risk Assessment Methodology can be found on the NYRCR website.



Community members gather for a concert at O’Donohue Park, which is in the long recreational strip along the ocean with a high risk score.

B. Assessment of needs and opportunities

The needs and opportunities discussed here reflect the first-hand experiences of residents and their knowledge of risks, challenges, unmet demands, and untapped potential across the neighborhoods of Rockaway East. This assessment is also based on a data-driven analysis of existing conditions.



A strengthened edge

Unlike the rest of the Peninsula, which is almost entirely in the high risk zone, the neighborhoods of Rockaway East feature a greater diversity of edge conditions and topography. As a result, individual areas face vastly different levels of risk.

The dunes on the oceanside of the Peninsula are currently being restored and reinforced by the U.S. Army Corps of Engineers (USACE) and the NYC Department of Parks and Recreation (NYC DPR) is incorporating resiliency measures into its new concessions and rebuilt boardwalk. The condition of the shoreline along the bayside varies greatly by location, but offers little in the way of protection from flooding or storm surge. Much of the shoreline is natural, but the condition varies widely, from



Because Arverne by the Sea was elevated with landfill before it was built, it fared better in Sandy, but it remains at risk from future storm events without improved coastal protection.

restored wetlands in Bayswater, to debris-strewn basins in Edgemere. The Arverne Peninsula has some deteriorated bulkhead along the western and northern edges, with natural shorelines along the parklands of Brant Point and Dubos Point. Sommerville Basin has existing bulkheads along the western shore and at the marina, and a natural

shoreline that then extends around the Peninsula of Rockaway Community Park. From Little Bay in Edgemere to Bayswater, the shoreline is natural with residential development near the shoreline. In Mott Basin, deteriorated bulkheads and a natural shoreline do little to keep out storm surge even during regular high tides.



High bay water encroaches the small industry along the east edge of Arverne.

Needs: Rockaway East’s bayside is especially at-risk, increasing the need to evaluate solutions for bolstering the bayside wetlands, parks, and bulkheads. While coastal protection in Rockaway East is a long-term and expensive endeavor, these Communities need improved near-term protection from the many storms and flooding events that, while less severe than Sandy, still pose a threat to these low-lying areas that consistently

flood. To be long-lasting, measures to reduce impacts of storm events need to be site-specific and recognize the value of maintaining functional wetland ecosystems.

Because the vulnerable edge does not stop at the Beach 74th Street boundary of the Rockaway East Planning Area, any edge-strengthening solutions require coordination across the Peninsula and

adjacent Five Towns NY Rising Community of Nassau County.

Further, while the oceanside is currently being addressed by USACE and NYC DPR through the beach nourishment and boardwalk restoration projects, it is important to ensure they are completed in line with the Community’s aspirations and needs and in a timely manner to reduce current risk.

Opportunities: Areas of frequent flooding represent an opportunity to implement smaller-scale projects that are more affordable, can be implemented fairly quickly, and garner immediate results. Existing programs being implemented elsewhere on the Peninsula, such as the City’s bulkhead repair and raising program, are resources that could provide significant value in Rockaway East.

Arverne by the Sea withstood the impact of Sandy and provides a model for future building projects. As a newer development, it was intentionally designed with heightened land and features to protect against flooding.



Volunteers help distribute supplies to community members in need after Sandy. Source: Flickr user larryosan, licensed under Creative Commons.

While deep channels and fragmented ownership along the bay makes constructing physical solutions more challenging, large public parcels, such as those owned by NYC DPR, exist and provide the most immediate opportunities for intervention.

There is also an opportunity to layer in protection measures into the proposals described in the NYC DPR Conceptual Plan, which are now moving into a more detailed design phase. This would create coastal protection measures with a co-benefit of being a recreational amenity.



Improved emergency preparedness

The robust and immediate response by community-based organizations (CBOs) lessened the devastation caused by Sandy. CBOs coordinated their activities through informal relief centers in Rockaway East—physical spaces staffed by volunteers that served as hubs for the distribution of information and resources. Despite these significant efforts, many community members still struggled to find basic information, such as medical services, food, gas, working ATMs, or places to charge cell phones.

As residents in these neighborhoods rely less on Internet and electronic communications, preparedness initiatives and recovery efforts will require utilizing a range of communication channels—a task well-suited to local organizations with established social networks.⁸

Needs: While Rockaway East neighborhoods quickly organized to meet emergency needs and provide safe havens in Sandy’s aftermath, the Community needs to adopt the lessons learned from the experience. Formalizing local relief operations would make the Community better prepared, resilient, and responsive in the face

of the next major emergency. Among the many critical needs in this area, identifying and preparing common community spaces would allow people to safely gather and locate information, supplies, and services during an emergency.

As the eastern end of the Peninsula shares an evacuation route with the neighboring communities in Nassau County, there needs to be better coordination among the government agencies that oversee these roads and assurance that their condition and current layout are able to reasonably accommodate evacuation.

The density unique to Rockaway East presents its own challenges. Multi-family buildings create special risks as the issues that affect the building are magnified across its many tenants. As such, multi-family building owners need to ensure that coordination is in place for emergency plans in all their properties, especially for those serving vulnerable populations.

Opportunities: The Community’s experience during and after Superstorm Sandy showed that there is strong local capacity to provide emergency response and recovery services. With support, this capacity can be leveraged to provide a more formal network that complements citywide efforts.

Relationships between NYC OEM and CBOs can be strengthened to create a clear role for local CBOs to leverage their existing social networks and local resources to provide local on-the-ground support to their communities immediately after an emergency.



Increased economic opportunities and recreational amenities

Home to beautiful beaches, a plethora of bayside parks, and multiple transit connections, Rockaway East has potential for economic development. The main retail hub in Rockaway East—in the area around Mott Avenue’s transit nodes—serves as an important cluster of commercial activity, yet it has long faced challenges in attracting new and more diverse businesses and jobs. Although analysis indicates a modest amount of increased demand for new types of retail in downtown Far Rockaway, little change in the retail mix has occurred to date.¹⁵

Retail and local services play an important role in disaster recovery. After Sandy, retail areas throughout the City served critical functions; for instance, small neighborhood shops became



Mott Avenue presents significant opportunity to build the economic resiliency of Rockaway East.

places to charge phones and obtain supplies and services. Larger retail space also served an important role, as FEMA set up operations in these spaces. Yet many of these efforts were informal and haphazard. Even businesses outside of the floodplain—including the grocery store, the pharmacy, and the bank located at the intersection of Mott and Central Avenues—were out of service because of the power outage on the Peninsula. Restoring business operations back to normal quickly by ensuring power, protected inventory, and a functional supply chain is critical to community recovery.

Although the beaches in Rockaway West and East possess equal beauty and charm, fewer amenities



Just under the Beach 67th Street A train station, Arverne by the Sea has easy access to the beach and a commercial hub, presenting good opportunities to attract tourists.

and concessions can be found along the eastern end of the Rockaway boardwalk. These amenities are critical to attracting and keeping visitors on the east side of the Peninsula; they are also important to expanding the local economy of the Community and enhancing overall quality of life.

Needs: Increasing Rockaway East’s recreational amenities, improving retail offerings, and supporting small businesses is critical to revitalizing the local economy and creating a broad range of quality jobs. Upgrading the public spaces that tie together the retail and transportation hubs

around Mott Avenue has long been identified as a means to create conditions for an improved retail presence. In addition, the capacity of local organizations responsible for maintaining new public spaces must be increased—a requirement of NYC Department of Transportation (NYC DOT) for the installation of any non-standard street furniture or new public plazas in its right of way.

While the NYC DPR Conceptual Plan captures the vision for new beach and bayside amenities and attractions, almost all of the projects in this Plan are unfunded (highlighting the need for capital to realize this vision).

In addition, underemployed Rockaway East residents need better access to quality jobs across a range of skill sets. Local programs that can help train residents and link them to economic opportunities would be a valuable step in this direction.

Opportunities: The many programs and efforts aimed at building the resiliency of the Rockaway Peninsula constitute a major investment of resources. This creates an opportunity to employ local residents wherever possible, building both the resiliency of the communities, the capacity of the neighborhoods to respond to

disaster, and the economic stability of residents. These may include initiatives that are soon to begin or currently ongoing, such as the New York City Economic Development Corporation (NYCEDC) Business Resiliency Investment Program, the boardwalk reconstruction, and programs underway through the Rockaway Development and Revitalization Corporation.

In addition to protective infrastructure, resiliency includes the ability of a community to effectively and quickly respond to a disaster. Building the capacity of a community decreases the need for people to wait for help in both emergency and everyday situations. For example, in the wake of Superstorm Sandy, there was a major shortage of licensed electricians able to check connections and provide the paperwork necessary to restore power on the Peninsula. Having a larger base of local electricians able to make these certifications would have greatly assisted the Community in restoring power. By building local knowledge through a workforce development program, residents will be able to respond more quickly to the issues that arise in a disaster, while also creating improved economic opportunity for individuals.

Additionally, as the Mott Avenue area is entirely above the floodplain, it is well positioned to

serve as a place for emergency recovery. This poses an ideal opportunity to combine economic development with investment in emergency preparedness.

The abundance of natural assets in Rockaway East presents an opportunity to develop new economic, recreational and cultural amenities, especially on underdeveloped land with significant waterfront access. The inlets and basins of the bayside in particular are a condition that is fairly unique in New York City, and should be more open and available for public use, as has occurred along other shorelines in New York. The Arverne East site, a large vacant land area slated for mixed use development and the creation of a public nature preserve, both presents an opportunity for creative resiliency planning and the potential for new mixed-use corridors, public open space and recreational areas that collectively could bolster the economy and stitch together disconnected areas.

NYC DPR has taken a proactive approach to promoting economic development through its recent Rockaway Conceptual Plan process, in which NYC DPR worked with the Community to specify the programming and siting of new recreational amenities and attractions. In working to develop the shared vision of the Conceptual

Plan, NYC DPR has leveraged the strong will of the Community itself and provided momentum for the implementation of public space improvements that can help catalyze economic activity.

The work of other organizations to improve the condition of the Community, such as the Urban Land Institute, also provide an opportunity to expand a vision for parts of Rockaway East, as well as to lend support to long-standing ideas.



Expanded health care and more resilient social services

Rockaway East has the highest concentration of medical services on the Rockaway Peninsula, anchored around St. John’s Episcopal Hospital. Though approximately 1,000 health-service related jobs were lost due to the closing of Peninsula Hospital in 2013, the health care sector is still the largest job provider in the Rockaway Peninsula. Additionally, there are six ambulatory, diagnostic, and treatment facilities and 18 residential care facilities, ranging from nursing homes to disabled care, to skilled nursing and rehabilitation facilities. The majority of the



Residents meet with health professionals at an outdoor Community resource fair in Rockaway East. Source: With permission from Denean Ferguson.

non-hospital health care providers in Rockaway East did not close after Sandy. Of the ones that did close, most reopened a few weeks later, while still some were closed for a number of months.

Needs: Given the closure of Peninsula Hospital and the lack of urgent care facilities on the Rockaway Peninsula, there is a need for additional health

care services to support first emergencies needs. In particular, with 289 beds, St. John's Episcopal Hospital is unlikely to have adequate capacity to handle the entire Peninsula inpatient volume in the event of an emergency.

Additionally, educational facilities need to be hardened so they are able to reopen quickly

after an emergency. After Sandy, many schools remained closed for extended periods of time, forcing children to be bussed to schools located in other boroughs. This disruption impacted parent's work schedules. The additional commuting time and the stress of changing schools all had negative implications for learning and well-being.

Opportunities: Superstorm Sandy made evident the challenges of providing adequate medical care during emergency events. Joseph P. Addabbo Health Center and the medical service providers active in the area were compromised in the wake of the storm, demonstrating a critical need for more resilient medical establishments. Given its existing health care base, as well as its higher and safer elevation, the Rockaway East Community has a unique opportunity to expand the medical sector as a central hub for all of South Queens.



Protected housing

Rockaway East is a predominantly residential community, with older single-family homes in low-lying neighborhoods particularly vulnerable to flood damage. Many of these homes suffered significant property damage during Sandy and

homeowners are often unaware of the types of physical and financial resources that are available to assist them in repairing their homes, buildings, or personal property. Likewise, some residents have spent significant amounts of money repairing damaged property and are now at risk of facing other financial issues, including foreclosure and bankruptcy. For others, there are many small-scale mitigation strategies that could make the existing housing stock more resilient to future storm events and sea level rise, and home and property owners need assistance to understand and implement these strategies.

Needs: Many homeowners and residential building owners lack adequate or clear information



Both multifamily building owners and small home owners face challenges in knowing how to protect their buildings.

about housing recovery, risk, and resiliency. Residents seek reliable resources for all housing information that can help them understand the impact of changing Flood Insurance Rate Maps (FIRM) and flood insurance policies, navigate government housing programs, understand what other financing tools and options may exist, and know what, if any, mitigation options make sense to protect them physically or financially in the future.

To increase the ability of property owners to make resiliency improvements, additional resources are needed to support housing programs and organizations that provide technical assistance services to homeowners and renters. There is



also a need to ensure that multi-family building owners have emergency plans, to protect both residents and the buildings themselves.

Opportunities: Many citywide non-profits are working with local CBOs to provide training and individual assistance on housing recovery and resiliency issues. The Rockaway East Community seeks greater access to these services, as well as potentially a broader scope of service—namely, individual building audits. There may be an opportunity to tap into existing resources and institutional knowledge, to ensure that those in need of information and professional assistance receive adequate support.



Protected vulnerable populations

Rockaway East has the lowest median income on the Peninsula; some Communities within the Planning Area face some of the highest poverty levels in the State of New York.¹⁵ The Planning Area also has a high concentration of seniors and mentally or physically impaired residents. These vulnerable populations were disproportionately impacted by Sandy.¹⁶ Further for about a week



Rockaway Community Resource Fair 2012: Residents and CBO's are well equipped to help vulnerable populations and the greater Community at large, by building knowledge and networks. Source: With permission from Denean Ferguson.

after Superstorm Sandy, many New Yorkers were unable to access their places of employment, which had dire impacts for both vulnerable populations in need of care and economically struggling residents, both of which can be found in Rockaway East.

Needs: Vulnerable populations have specific and heightened needs in emergencies that require consideration when formulating resiliency strategies. These plans should consider the variety of vulnerabilities driven by physical conditions, as well as specific individual needs.



For example, seniors in multi-family housing with limited mobility and no power are especially exposed to extreme temperatures and may lack vital access to medication. Residents that live in isolated bayside homes are on the front lines of rising floodwaters with few resources available to support them. In addition, low-income residents may face greater mobility challenges for evacuation and may struggle with obtaining access to supplies and services in the aftermath of a disaster. All of these populations could benefit from preparedness plans that involve door-to-door wellness checks or other supportive tracking mechanisms.

Opportunities: Rockaway East's robust CBO network provides a valuable means of reaching a wide range of vulnerable populations. As trusted partners in providing health and human services,

CBOs have unique access to and understanding of what vulnerable populations need and where they are located. Some organizations are taking more proactive approaches to preparedness by developing and maintaining lists of residents who may require dedicated emergency assistance. In an emergency, the availability of this service could mean the difference between life and death.



Improved accessibility and circulation

The road network faces challenges due to a lack of maintenance and basic repairs. In some places, such as the Mott Avenue retail hub, the needs are so great that they may actually prevent work from being undertaken, as agencies often would not consider opening up the road without addressing the full extent of work needed.

Despite the wealth of options available in Rockaway East, intra-Peninsula transit remains a challenge. Local bus travel is slow—for example, the Q22 bus route takes 30 to 36 minutes between downtown Far Rockaway and Beach 116th Street, more than double the car travel time.

Needs: Creating new transportation networks and improving overall road circulation across the Community would increase access, improve the Community fabric and possibly spur economic growth. For example, roadways along and under the elevated train tracks can create physical barriers between communities and can cause issues with traffic flow.

Opportunities: The Rockaway ferry temporarily running to and from Beach 108th Street remains an underused asset for the entire Peninsula. Currently, most people access the ferry by car. There exists an opportunity to expand the ridership and ensure its availability as a redundant transit system by improving connections to the ferry. This could be tied into a vision for a Peninsula-wide greenway, allowing the benefits to be spread beyond ferry users and providing residents and visitors better access to the many natural resources within Rockaway East.

Moreover, building on a broad consensus around the critical mobility issues in Rockaway East and the broader Peninsula, there is an opportunity to develop a more comprehensive and coordinated evaluation of the state of transit systems and consider a range of important projects to repair and mitigate existing issues.



Children from Rockaway East & Rockaway West enjoy the outdoor seating on the ferry to Manhattan.
Source: With permission from Laura Deckelman

How does identifying needs and opportunities help to define projects?

The projects in this Plan were developed through the following Community-based process, starting with identifying assets and risks, as well as needs and opportunities:

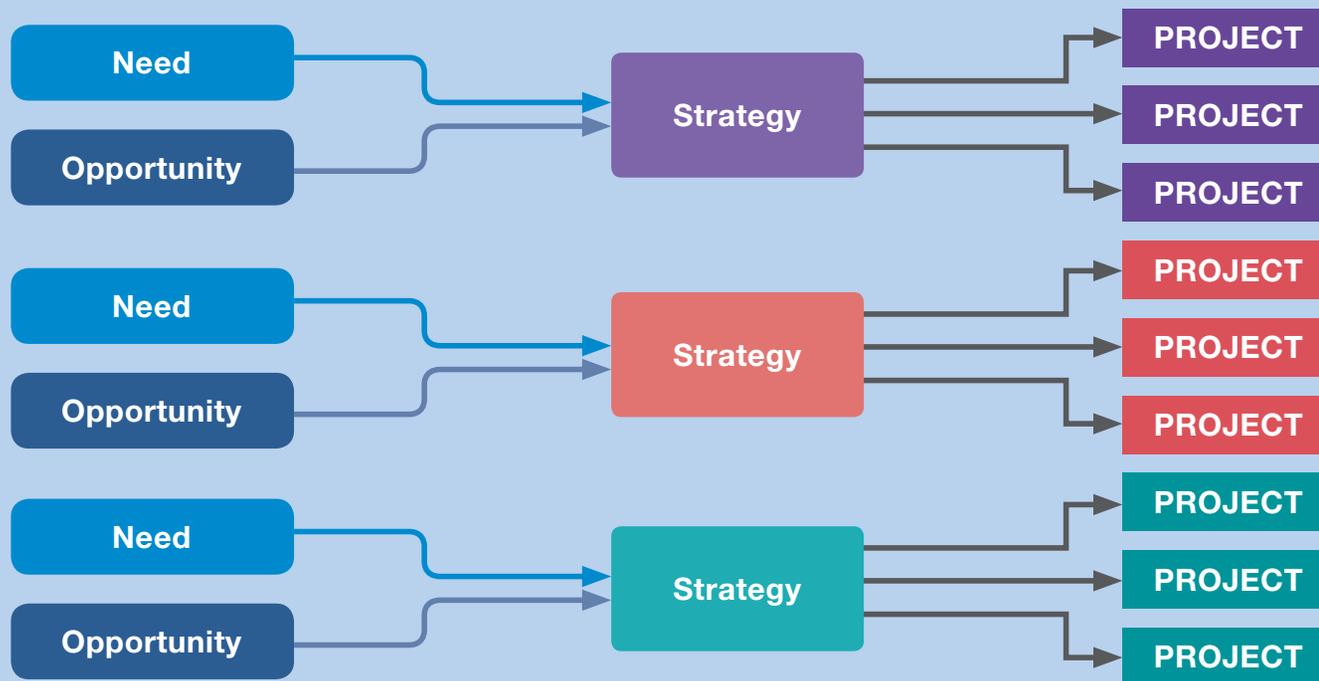
Resiliency needs and opportunities were brainstormed through extensive public engagement. **Needs** were discussed in the context of reducing short and long-term risk and increasing the resiliency of assets, systems, and people. **Opportunities** to build off of existing community strengths were also identified.

With a thorough, baseline understanding of the

Community’s resiliency needs and opportunities, the Committee identified overarching **strategies** to address the most critical needs in the Community, and to take advantage of existing opportunities. Public input guided the refinement of these strategies.

In order to implement strategies, the Committee identified specific **projects**. These projects

directly address the needs and opportunities identified at the beginning of the process.





III. Reconstruction and resiliency strategies

Reconstruction and resiliency strategies

The Rockaway East Planning Committee represents a diverse and engaged community pursuing holistic resiliency strategies. The Committee has established physical, social and economic strategies with supporting near-, medium-, and long-term goals and projects to bolster and expand the health and vitality of its neighborhoods.

Extensive Committee deliberation and community outreach generated three primary strategies for rebuilding and growing Rockaway East:

1. **Protect the community from flooding, surge, and sea level rise**
2. **Bolster community resiliency**
3. **Strengthen economic resiliency**

Together these strategies establish a long-term, comprehensive vision for the Community. Proposed and Featured Projects in this Plan will move the Community closer to achieving that vision in the near- to medium-term. Other projects and additional resiliency recommendations in this plan complement the Proposed and Featured Projects by suggesting other steps the Community can take to build a more resilient Rockaway East over time.

These strategies also outline a framework for planning and implementing resiliency initiatives beyond the NY Rising Community Reconstruction (NYRCR) Program.

Proposed and featured projects

Proposed Projects are projects that the Planning Committee recommends to be funded with the Community's NYRCR Community Development Block Grant Disaster Recovery (CDBG- DR) allocation. These are high priority projects that the Committee and Community support for funding because they address key resiliency needs, and provide immediate and/or multidimensional benefits.

Featured Projects are innovative projects for which an initial study or discrete first phase is proposed to be funded by CDBG-DR or another identified funding source, and which may require additional funding sources for full implementation.



Bayside flooding from heavy rain.



Community resiliency includes preparedness training. Source: With permission from Denean Ferguson.



1. Protect the community from flooding, surge, and sea level rise

The Planning Committee seeks a comprehensive coastal protection strategy to ensure residents and neighborhoods of Rockaway East are safe and resilient. While the Committee advocates for long-term, coordinated and comprehensive regional solutions, in the near term it proposes targeted strategies for the most vulnerable areas. This direct relief will immediately benefit the Community and provide a foundation upon which a longer term solution can evolve.

Developing a comprehensive strategy to protect against the 100-year storm in Rockaway East will be challenging and expensive: limited space along bayside shorelines constrain how much can be built on land; the existence of multiple property owners along the shoreline means a cooperative approach is needed; a deep bay channel limits what can be built in the water; and the height of a seawall to meet a 100-year storm would dramatically impact access to water and views as well as present ecological problems.

As the Committee grappled with the complexity and expense of a comprehensive coastal protection approach, it concluded that a regional



The Rockaway East Planning Committee suggests pursuing near term coastal protection strategies to protect the most at-risk neighborhoods.

approach would best reduce the Community's vulnerability.

The Committee recommends a comprehensive study and coordinated implementation of coastal protection for all at-risk communities throughout Jamaica Bay. This would expedite the United

States Army Corps of Engineers (USACE) Rockaway Reformulation Study currently under way and reinforce the Committee's advocacy for a large-scale regional intervention, such as nature-based coastal storm risk management projects within the Bay or a surge barrier at its mouth.

In the medium- to long-term, the Committee is committed to protecting the most vulnerable areas along the Bay including Arverne, Edgemere, and Mott Basin. The Committee proposes implementing measures such as raising bulkheads, restoring wetlands, and constructing berms to protect these neighborhoods against more frequent storms and tidal events. These measures could tie into existing or identified City and USACE restoration projects at Brant Point, Dubos Point, Rockaway Community Park, Bayswater Park, and Bayswater Point State Park. Together these measures can also create a recreational greenway along the shoreline.

The Committee proposes strategies that alone would not protect against a 100-year storm event, but may address ongoing, localized flooding and stormwater drainage issues. Doing so would establish strong and immediate solutions along extended unprotected edges that could be incorporated into more comprehensive future initiatives.

In the medium-term, the Committee proposes leveraging existing studies and programs to implement gray (traditionally engineered) and green (nature-based) infrastructure strategies along vulnerable edges. For example, the Community can pursue localized bayside projects

along strips of Sommerville Basin, Conch Basin, and Mott Basin, where regular flooding occurs and where NYC Department of Parks and Recreation (NYC DPR) and the USACE have already studied and proposed interventions. These projects provide opportunities to incorporate coastal protection/resiliency measures into NYC DPR's conceptual plans by funding a portion of the envisioned bayside nature trail atop a low berm. The resulting project would raise the edge while preserving access to the water. Including USACE-proposed ecological restoration measures into these sites would further strengthen the edge in these neighborhoods. Providing funding through the NYRCR Program could speed up project implementation.

In the near term, the existing NYCEDC Bulkhead Program identifies and repairs bulkheads throughout the City. The Committee urges that the City prioritize bulkhead repair in Arverne. This project, in conjunction with the Committee's proposed localized projects in Sommerville Basin, supports the development of continuous protection against more frequent storms in the Arverne neighborhood.

In the near term, the Committee proposes building on recreational improvements designed by NYC DPR for a new park at Thursby Basin in

Rockaway East seeks to improve coastal protection for the most at-risk bayside communities.

Arverne. Because its interior streets are at a lower elevation than the edge, Arverne is particularly vulnerable to ponding and standing water. As a result of this bowl effect, water is trapped and can gather for long periods. Funding a portion of the NYC DPR planned improvements—particularly the proposed rain garden—will contribute to improve stormwater drainage. Pairing this small drainage project with an elevated berm in Thursby Basin and targeted bulkhead improvements will be a meaningful step towards bayside coastal protection in Arverne.

Table III.1: Strategy: Protect the community from flooding, surge, and sea level rise (Proposed and featured projects)

Project Name	Short Project Description	Estimated cost	Proposed or Featured Project	Regional project (Y/N)
Thursby Basin Park drainage	Construct a raingarden within the new Thursby Basin Park in Arverne, using green infrastructure to collect, store, and treat stormwater.	\$250,000	Proposed Project	N
Bayside coastal protection	By restoring wetland habitat and raising portions of the Bayside Nature Trail, this project would add resiliency measures to recreational and ecological conceptual plans in Arverne, Edgemere, and Mott Basin.	\$5.3-17.9 million	Featured Project	Y



2. Bolster community resiliency

The Rockaway East Planning Committee seeks to build on existing community networks and organizations to implement a multi-pronged strategy to improve social resiliency. This strategy aims to provide safe physical spaces, ensure redundancy in key infrastructure systems, and strengthen social networks, systems, and skills. More broadly, it aims to support the health and well-being of community members year-round. The elements of this strategy focus on near-term implementation with a goal of sustaining capacity over the long term.

The Committee aims to leverage the existing assets of its many local organizations to create a formalized relief network. This network would establish a comprehensive community-based emergency preparedness strategy, establishing hardened physical locations across the Community combined with corresponding plans to connect the emergency response capabilities across groups.

The relief network would allow residents to find safe, comfortable refuge and obtain needed services or supplies. As a flexible system, it would be capable of being activated in varying degrees of events—be that a major storm such

as Sandy or smaller shocks like blackouts or temperature alerts.

The network would be created via two interrelated Proposed Projects that would (1) create two centrally located relief and communication hubs and (2) a series of smaller, distributed relief satellites. This ‘hub and spoke’ model would maximize coordination and ensure the availability of a variety of services across the Planning Area. The network would also enhance the physical resiliency of the Community by incorporating hardened buildings, back-up power, and redundant communications technology.

The network would leverage the unique strengths and relationships of different locally-based organizations, institutions, civic and volunteer groups and would connect these groups with each other as well as with residents across all neighborhoods in Rockaway East. The network would create coordinated resiliency programs, set-up peer-to-peer and mentoring initiatives, ensure public outreach, and build general readiness in organizations and people. Together, the hubs and satellites would provide comprehensive coordination of information,



Workers assisting those affected by Sandy (above).
Mott Avenue retail corridor (below).

supplies, and assistance in an emergency or event.

The Community will pursue initiatives to protect and expand health services, with a particular focus on emergency care. The Committee

The Rockaway East Planning Committee seeks to build on existing community connections and organizations to implement a multi-pronged strategy to improve overall social resiliency.

proposes a series of health care-focused projects to enhance community well-being and increase emergency services capabilities in Rockaway East.

The Committee seeks to expand emergency room and trauma services on the Rockaway Peninsula. Rockaway East would partner with Rockaway West to sponsor a Request for Proposals (RFP) inviting regional hospital networks to propose strategies to develop a stand-alone emergency room and other medical services in a central location on the Peninsula. Each Planning Committee would contribute funding toward the project. The Breezy Point and Broad Channel NYRCR Planning Areas are also supportive of this project as they would accrue benefits from an expansion in health care services.



The project would improve the physical look and resiliency at the intersection of Mott and Central Avenues.

The Committee also proposes bolstering existing at-risk health centers, especially those that serve vulnerable populations. The Proposed Project would invest in health centers to ensure they are prepared for future events and can bounce back quickly to provide critical health services during and after an emergency. These facilities

would be incorporated into the relief network to coordinate emergency planning and service provision. Investing in local health centers would also help ensure ongoing sustainability, quality, and accessibility of services in normal conditions, not just during an emergency.

Rockaway East would establish near-term programs and resources to develop the resilience knowledge and expertise of residents. The Committee proposes a Proposed Project to provide a homeowner education and counseling program. Rockaway East homeowners have expressed frustration with a lack of adequate and clear information about housing resiliency, in terms of the physical resiliency measures they can or should make, as well as financial, insurance or legal issues they should be aware of before making decisions. These needs can be addressed with a new program to help individual homeowners assess the current condition of their homes, identify appropriate resiliency interventions, and understand financing options and insurance issues.

In addition, the Committee recommends that the City or State expedite and expand housing recovery and resiliency programs. Homeowners in the Planning Area wish to see construction completed faster through the Build it Back (BiB) program, and believe that a larger volume of residents can benefit from the effort. Further, homeowners need increased access to low- or no-cost capital to help them invest in and protect their homes. The Community would also like to see faster and more comprehensive repair to New York City Housing Authority (NYCHA) public housing and proposes



The Rockaway East beach offers opportunities to expand the community's economy.

building regulations to compel all multi-family buildings to have emergency plans and back-up power. These enhanced efforts would help more residents build back and better plan for the future.

III-7 Reconstruction and resiliency strategies

Table III.2: Strategy: Bolster Community Resiliency (Proposed and featured projects)

Project Name	Short Project Description	Estimated cost	Proposed or Featured Project	Regional project (Y/N)
Relief center network	Create a network of relief centers to coordinate relief & recovery following a disaster.	\$6–\$9.4 million	Proposed Project	N
Local health care resiliency	Fund capital improvements to strengthen local health center facilities against future storms and emergency events.	\$2 million	Proposed Project	N
Health care service expansion	Coordinate with Rockaway West to attract additional health services to the Peninsula, especially emergency services.	\$1.5 million	Proposed Project	Y
Residential education and technical assistance	Provide general education and individual counseling and technical assistance to help property owners fully understand the physical and financial risks facing their homes and make more informed decisions about resiliency investments and financial decisions.	\$1 million	Proposed Project	N



3. Strengthen economic resiliency

Economic development is closely intertwined with resiliency in Rockaway East. Given the commercial and natural assets across the Planning Area, the economies of this Community have potential for growth. However, shocks like Superstorm Sandy, black-outs, or more minor train interruptions can have a significant impact on the local economy.

The Committee proposes a series of initiatives to strengthen Rockaway East’s economic resiliency. This strategy seeks to support existing business, add new business sectors and jobs, and draw more tourists and consumers to the Community. By supporting economic strength and adaptability, these efforts would help the Community respond more quickly after an event. The Committee proposes a suite of Proposed and Featured Projects and Additional Resiliency Recommendations that leverage the Community’s assets—including natural resources, strong commercial hubs, good transportation, and a large and ready workforce—to bolster the economy.

Expanding skills and creating more jobs is also an important priority. Throughout the planning process, the Committee emphasized the need to



The committee proposes strategies that will leverage existing projects, such as DPR’s project to improve Thursby Basin

invest in residents, not only to grow the economy from the bottom up, but to increase capacity and build social resilience. The Committee proposes increasing and expanding workforce development programs, with an eye toward recovery and resiliency work. The project would not only grow existing local technical programs, but also create new programs centered on technical resilience requirements and construction. Likewise, existing programs, such as training for in-home caregivers or nursing aides, can incorporate tailored emergency preparedness and response curricula to develop the capacity of the local relief network.

Finally, the Committee encourages the City and State to offer Rockaway East project-related work to local residents, including construction through (BiB), NYCHA repair programs, and NYC DPR park rebuilding and redevelopment.

The Community would seek opportunities to enhance existing and build new local businesses. The Committee proposes expanding seasonal businesses and amenities to take advantage of the natural bay and beach resources. The Committee also encourages new development on open or underutilized land, especially on the

water or at commercial hubs. For example, the Community proposes establishing a seasonal pop-up market along the water, featuring local food, goods, and services. This project would be a boon to local businesses and may draw more tourists to Rockaway East beaches. Further, the Community would like to see more businesses along the bay, such as restaurants or recreational rentals for kayaks or bikes. To complement these proposals, the Committee also suggests enhancing amenities along the water, adding more active and passive recreational elements, including a greenway on the bay and features on the boardwalk. Finally, there are opportunities to improve and expand retail near commercial hubs, such as the underdeveloped space across from the A train station in Far Rockaway or underdeveloped areas in Arverne.

The Committee also encourages investment and new development on open or underutilized land, especially where there is high potential for co-benefits. The Community supports efforts by the City, the Urban Land Institute, and others to evaluate and act on options for economic development and business creation at the Mott Avenue commercial corridor. The Committee proposes catalyzing these efforts by investing in streetscaping, public space, and redundant power along Mott and Central Avenues. The initial

improvements would align with the relief network, creating an open public space across from the Queens Library branch in Far Rockaway where people can gather, and adding solar-powered street lights that would keep the area safe during a power outage.

The Committee will pursue a series of initiatives to strengthen Rockaway East’s economic resiliency.

The Community proposes initiatives to help damaged and at-risk businesses recover from Sandy and prepare for major flooding or events. The Committee proposes a technical assistance and auditing program for local business recovery and resiliency. It would align with programs being developed by the City to increase access to best practices and maximize the number of businesses served. Additionally, the Community encourages local, State, and Federal programs to expand access to grants or low-cost loan programs to make businesses more resilient and encourage high-ground, transit-oriented development in Rockaway East. Finally, the Community proposes creation of a business-to-business program to

bolster commercial activity across the Peninsula.

The Committee proposes leveraging the Community’s strong public transportation assets to catalyze economic development. While the Community has the largest multi-modal public transportation hub in the area, there are opportunities to better connect those nodes to improve intra-Peninsula transit. The Committee suggests two Featured Projects that would boost transit connections on the Rockaway Peninsula and allow people to connect to the bay, beach, parks, ferry, and various commercial areas. First, the Committee encourages creating a Rockaway bike-share program to expand recreation and enable more flexible transit. It also suggests creating a free bus circulator that directly connects the east side of the Peninsula to the ferry. The circulator would help boost ridership and improve the viability of a sustained ferry. The ferry would offer residents a pleasant alternate commute and would also bring more tourists to the Peninsula.

Over the medium- to long-term, the Planning Committee proposes more strategic projects to expand and improve transportation, including making A train stations on the Peninsula ADA-compliant, connecting the A train station to the Long Island Railroad (LIRR) station, or bringing back the Queensway.

Table III.3: Strategy: Strengthen economic resiliency (Proposed and Featured Projects)

Project Name	Short Project Description	Estimated cost	Proposed or Featured Project	Regional project (Y/N)
Workforce development	Expand workforce training and connect Rockaway East residents to employment opportunities in a range of resiliency-related industries.	\$500,000	Proposed Project	N
Mott Avenue corridor improvements	Invest in improvements with resiliency benefits that beautify the street conditions to attract investment and support the role retail can play in the wake of a disaster.	\$4.5 million	Proposed Project	N
Seasonal business and amenity expansion	Construct a shipping container market in a prominent location amenable to visitors and residents to showcase quality Rockaway East local businesses in a fresh context.	\$1.5 million	Proposed Project	N
Rockaway bike share	Create a bike share program for the Rockaway Peninsula with stations sited at major transit hubs and attractions.	\$1.5 million	Featured Project	Y
Bus circulator service	Create a free limited-stop bus circulator that would better connect residents and visitors to the beach, ferry, and local businesses.	\$400,000	Featured Project	Y

Source (right): With permission from Denean Ferguson.

A group of four young people, three men and one woman, are standing behind a table outdoors. They are all wearing bright orange t-shirts with the text "ROCKAWAY YOUTH TASK FORCE" printed on them. The man on the far left is wearing a grey baseball cap and sunglasses. The man in the center is wearing a black baseball cap. The woman in the middle is wearing a necklace. The man on the far right is wearing a grey bucket hat and sunglasses. They are standing behind a table covered with a white banner that features a blue graphic of a person and the text "READY ROCKAWAY" and "www.readyrockaway.org". In the background, there is a grassy field and a multi-story brick building with balconies.

IV. Implementation— project profiles

Overview of Proposed and Featured Projects

The Proposed and Featured Projects on the following pages are those projects that the Committee, with input from the community, has either prioritized for funding through its \$15.1 million allocation of CDBG-DR or has identified funding through additional sources. This section describes each project and the potential costs and benefits that would result from each project if funded.¹⁶

Protect the community from flooding, surge, and sea level rise

- 1 Thursby Basin Park drainage
- 2 Bayside coastal protection

Bolster community resiliency

- 3 Relief center network**
- 4 Local health center resiliency*
- 5 Health care service expansion*
- 6 Residential education and technical assistance*

Strengthen economic resiliency

- 7 Workforce development
- 8 Mott Avenue corridor improvements
- 9 Seasonal business and amenity expansion*
- 10 Rockaway bike share**
- 11 Bus circulator service**

* Project not tied to a specific geographic point

** Project siting shown as a demonstration of concept and can be implemented in multiple locations



Project Overview

Recovery Support Functions



Natural & Cultural Resources



Infrastructure

Cost

\$250,000

Environmental Benefits

MEDIUM

Health & Social Benefits

MEDIUM

Risk Reduction

LOW

Timeline (years)



STRATEGY: PROTECT THE COMMUNITY FROM FLOODING, SURGE, AND SEA-LEVEL RISE

Thursby Basin Park drainage

Proposed Project

Construct a rain garden within the new Thursby Basin Park in Arverne, using green infrastructure to collect, store, and treat stormwater.

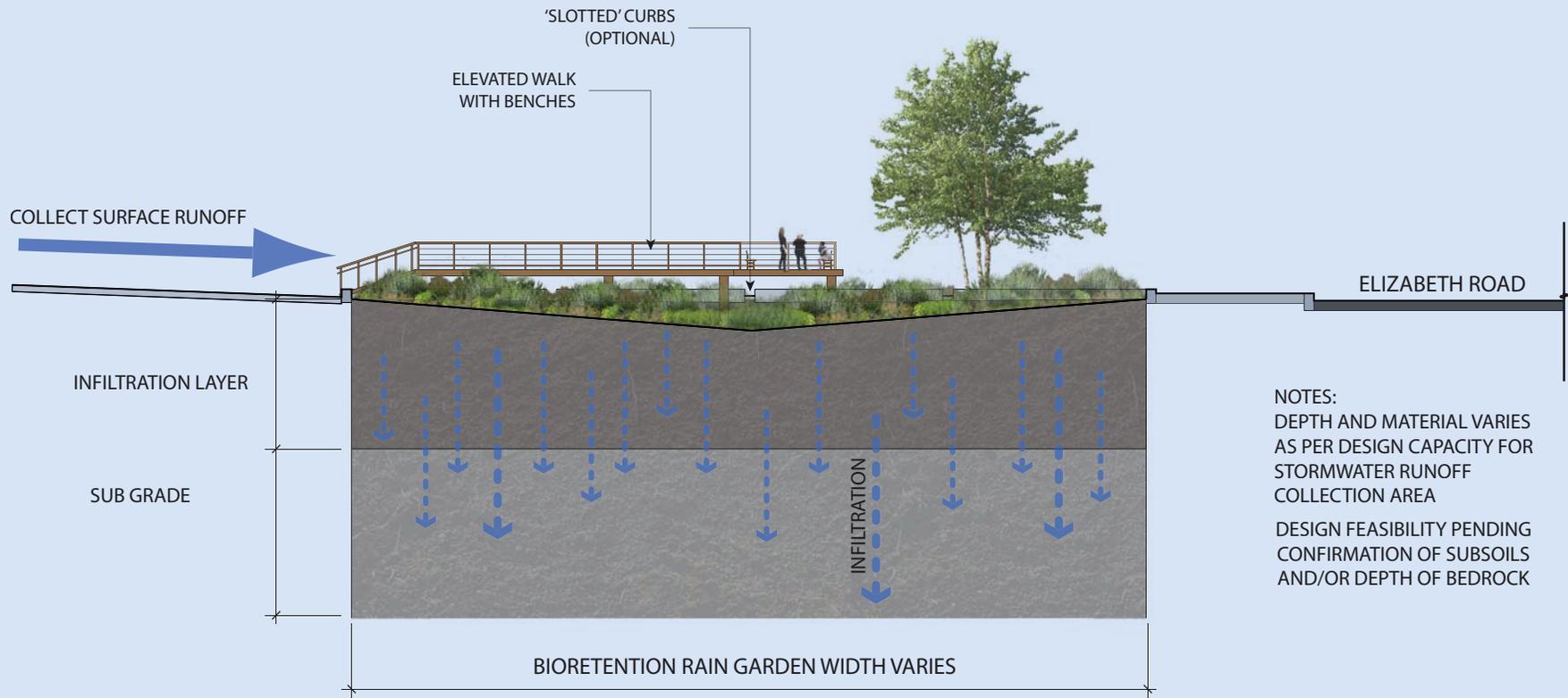
Project description

The Arverne neighborhood is particularly vulnerable to ponding and standing water, because its interior streets are at lower elevation than the bayside edge. Using retention and infiltration methods to collect stormwater before it enters the storm sewer system (or backs up out of an overwhelmed system) can alleviate ponding issues.

For an area that is so strongly rooted in its connection to nature and recreation, Rockaway East has much untapped potential in terms of recreational amenities. The New York City Department of Parks and Recreation (NYC DPR) has been working with the Community to create a Conceptual Plan for the Peninsula, and has identified recreational improvements for a new park at Thursby Basin in the Arverne neighborhood. This project can build on those improvements and ensure access to and usability of the park by providing a stormwater management system for Thursby Basin Park.

This project would fund a rain garden within the improved Thursby Park. A rain garden is a landscaped area of lower elevation than surrounding areas designed to collect stormwater in order to nourish plantings within the garden or infiltrate into the ground through an engineered layer of soil. The rain garden would help manage stormwater drainage within the new park. Depending on where it is sited within the park, it may also help improve stormwater drainage on a neighboring street.

NYC DPR has estimated a cost of \$8-10 million to create Thursby Basin Park, but only \$3 million in funding has been identified through an agreement with a local developer. The proposed project would contribute additional funding toward this initiative.



This section diagram demonstrates how the new rain garden would manage storm water and add amenities to the new park.

Cost

\$250,000

The cost estimate is based on similar stormwater management infrastructure projects built in the public right of way by New York City agencies.

Benefits

Environmental benefits

MEDIUM

Using stormwater would nourish landscaping features and plantings within the park and would create habitat for local wildlife.

Health and social benefits

MEDIUM

By reducing ponding water in low-lying areas of Rockaway East, the rain garden may reduce potential for mosquito breeding and consequent adverse health effects for residents.

Reducing ponding water improves the aesthetics of the neighborhood and the added landscape feature also has social benefits by enhancing the attractiveness of the neighborhood for residents, businesses, and visitors.

Cost-benefit analysis

This low-cost project provides storm recovery benefits, health benefits, and aesthetic benefits, and contributes to the resiliency of the larger recreational project in which it is located.



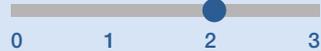
This project would build on DPR's plan for creating a rain garden in Thursby Basin, #8 in the diagram above. Source: NYCDPR Rockaway Parks Draft Conceptual Plan, March 2014¹²

Risk reduction

LOW

The rain garden would contribute to improved stormwater drainage within the park and potentially in the vicinity of the park, reducing the length of time roadways and parklands experience standing water.

Timeframe for implementation



Once approved, and assuming a straightforward permitting process, this short-term project would require approximately one to two years to design, review, permit, and construct.

Regulatory requirements

Review and/or permitting by City, State, and Federal agencies is anticipated for this project. Environmental review is prescribed by the New York State Environmental Quality Review (SEQR) Act and the New York City Environmental Quality Review (CEQR) process. Project implementation may require permits from New York State Department of Environmental Conservation (NYS DEC), New York State Department of State (NYS DOS), U.S. Army Corps of Engineers (USACE), and/or New York City Department of City Planning (NYC DCP).

Jurisdiction

This project would be located entirely on public land under the jurisdiction of New York City.



The current shoreline along Thursby Basin would benefit from the new park and drainage projects.

Project Overview

Recovery Support Functions



Natural & Cultural Resources



Infrastructure

Cost

\$5.3–17.9M

Environmental Benefits

HIGH

Health & Social Benefits

HIGH

Economic Benefits

MEDIUM

Risk Reduction

MEDIUM

Timeline (years)



STRATEGY: PROTECT THE COMMUNITY FROM FLOODING, SURGE, AND SEA-LEVEL RISE

Bayside coastal protection

Featured Project

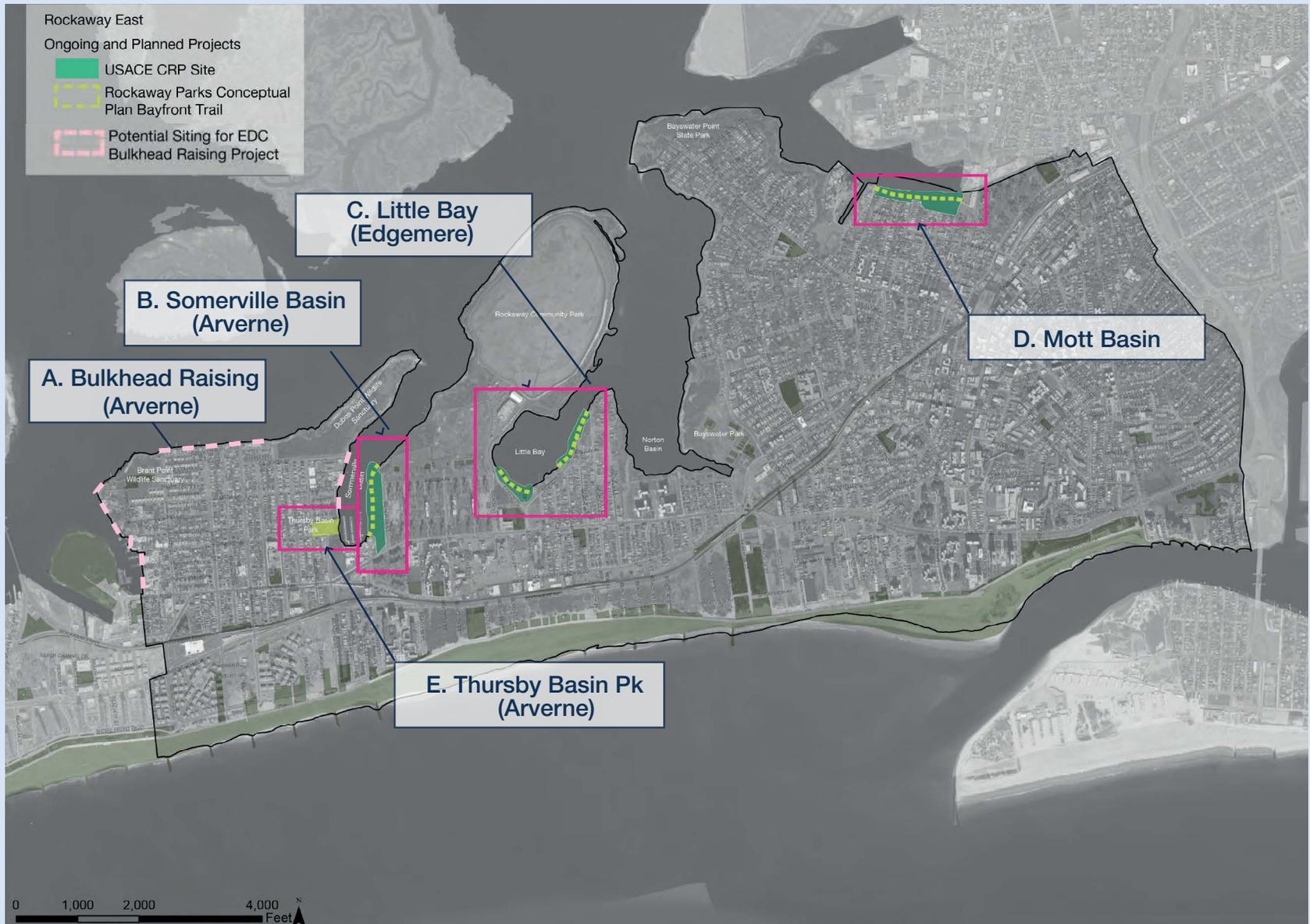
By restoring wetland habitat and raising portions of the Bayside Nature Trail, this project adds resiliency measures to recreational and ecological conceptual plans in Arverne, Edgemere, and Mott Basin.

Project description

While long-term, comprehensive coastal protection is a priority for the Committee, in Rockaway East it is a particularly challenging and expensive endeavor given the nature of the shoreline, the lack of existing coastal protection measures, and the need to coordinate many different public and private property owners. Rockaway East is likely to experience many other storms that are less severe than Superstorm Sandy, but still pose a threat to the Community. While the entire Community is at risk from coastal flooding, some areas are more vulnerable than others. The Committee feels it must highlight the potential for resiliency measures within existing plans, such as the New York City Department of Parks and Recreation (NYC DPR) conceptual plans for recreational facilities in Rockaway Peninsula.

Smaller-scale projects along at-risk areas on Sommerville Basin, Litte Bay, and Mott Basin can provide localized protection against more regular flooding caused by sea level rise, moon tides, and more frequent storm events, and can take advantage of ongoing regional and Peninsula-wide initiatives in the area. As part of the 2009 Hudson-Raritan Estuary Comprehensive Restoration Plan (HRE CRP), the U.S. Army Corps of Engineers (USACE) identified Conch Basin, locally known as Little Bay, as an opportunity for ecosystem restoration and provided potential strategies for implementation, including salt marsh restoration in all three areas; removal of debris in Conch Basin and Sommerville Basin; and upland scrub shrub buffer restoration in Mott Basin.

Additionally, NYC DPR has been working with the community to create the Rockaway Parks Conceptual

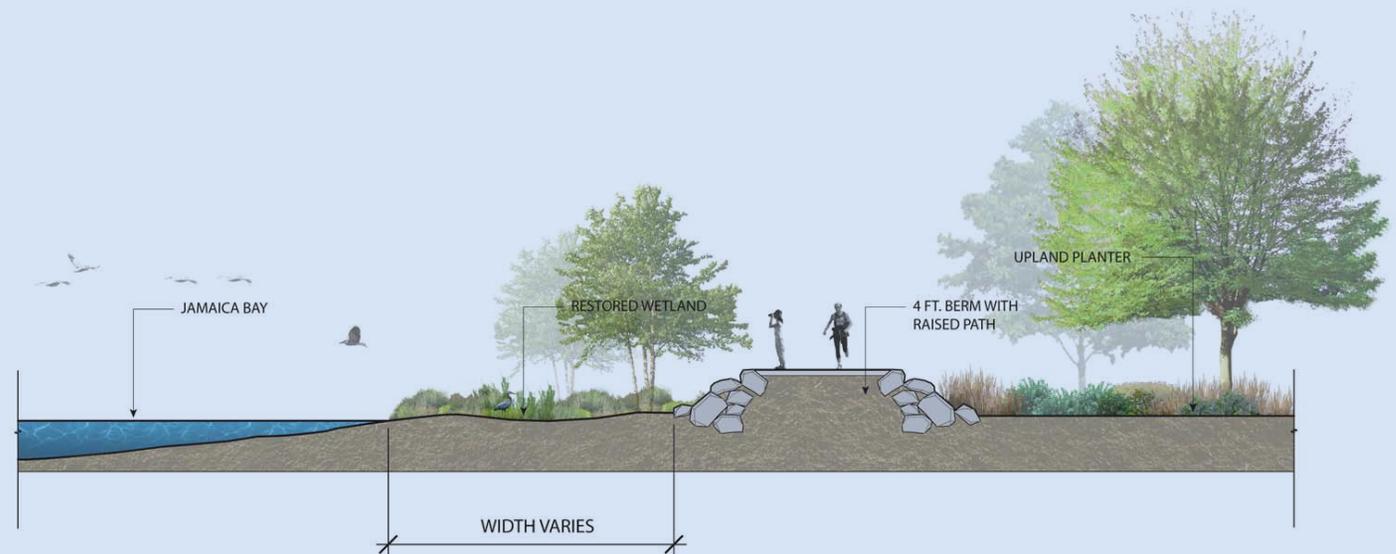


This project features key opportunities to implement targeted coastal protection in 5 vulnerable areas.

Plan, a comprehensive guide for future development of recreational facilities on the Rockaway Peninsula. The plan includes a vision for the Bayside Nature Trail, which runs along the entire shoreline to the city limit in the east.

Using the HRE CRP as a basis, coastal protection would include approximately seven acres of wetland in Sommerville Basin on currently vegetated or open land owned by the NYC DPR; 5 acres of wetland restoration in Conch Basin (much on publicly owned land); and approximately four acres in Mott Basin on currently vegetated or open land owned by NYC DPR and the NYC Department of Citywide Administrative Services (NYC DCAS).

The committee proposes building additional resiliency measures into the plan by raising the Bayside Nature Trail to create coastal protection along the edge. Instead of a bayside trail at elevation, a four foot high berm would be built to accommodate a pedestrian path on top. The approximately 2,590 foot long berm would run along Conch Basin south from Almeda Avenue to Beach 49th Street, continuing along the eastern shoreline until just north of Hough Place. In Sommerville Basin, the approximately 900 foot long berm would run south along the eastern shoreline from just north of Almeda Avenue until reaching Beach Channel Drive. And in Mott Basin, the approximately 1,640 foot long berm would run along the edge of the wetland from Pinson Street to Dickens Street.



There are many opportunities to enhance and connect Rockaway East bayside parks with elevated berms that have recreational co-benefits.

Together, the wetland restoration and berm construction provide only minor coastal protection to the neighborhoods around them. Without larger comprehensive interventions, surge would simply inundate at either end of the berm and from other basins. The project, however, is an important first step in bayside protection across the Community. Raising portions of the Bayside Nature Trail creates momentum to coordinate with NYC DPR to raise the trail along the entire bayside, and encourages resiliency measures in other City, State, and Federal projects in the area.

Additionally, in Arverne, this project can be coupled with other existing programs. The Committee recommends the bulkhead along the western, northern and eastern shoreline of the Arverne Peninsula be repaired and raised under the NYC Economic Development Corporation (NYC EDC) bulkhead raising program. This recommendation, in conjunction with the coastal protection project at Sommerville Basin, begins to create meaningful coastal protection in the Arverne neighborhood against more frequent flooding from less severe storm events.

Cost

\$5.3–17.9 MILLION

CONCH BASIN: \$8 MILLION

SOMMERVILLE BASIN: \$4.6 MILLION

MOTT BASIN: \$5.3 MILLION

This project identifies resiliency measures that can be incorporated into previously proposed plans and projects. As funding opportunities are identified for these

plans and projects, the resiliency measures should be considered.

The cost estimate assumes wetland restoration and a four-foot high berm wide enough to accommodate a future pathway.

The conceptual-level cost estimate was developed based on current unit pricing and typical soft cost assumptions. Cost estimates would continue to be refined as more information is developed about the project.

Benefits

Environmental benefits

HIGH

This project would restore wetlands along Conch Basin (Little Bay), Sommerville Basin, and Mott Basin. This would improve upon the existing edge condition and provide opportunities for a number of environmental benefits including habitat creation, shoreline stabilization, and water purification.

Health and social benefits

HIGH

This project would provide social benefits to the community through the creation of a raised bayside trail. The trail would serve as a recreational amenity for the Community, allowing for greater use of and access to the bay.

Economic benefits

MEDIUM

Based on analysis of construction and labor costs in the area, this project is estimated to create 16 construction jobs over the course of 5 years.

Cost-benefit analysis

This project would create short-term coastal protection measures that protect vulnerable communities against flooding from sea level rise and moon tides. Additional co-benefits include the restoration of habitat and development of recreational amenities for the community. These benefits justify the estimated cost of the project.

Risk reduction

MEDIUM

This project constructs shore defenses along Sommerville Basin and Conch Basin, which would protect portions of Edgemere against more frequent flooding from sea-level rise and high tides. Wetland restoration along the southern edge of Conch Basin would increase stormwater capture and slow storm surge velocity. In Mott Basin, shore defenses would protect against more frequent flooding from 10-year storm events, sea-level rise, and high tides, and would protect against surge and prevent flooding on streets such as Pinson Street, Chandler Street, and Gibson Street, which also serve as channels that funnel water farther south into the neighborhood.

While this project does not protect against a 100-year storm event, the addition of these shore defenses reduces the exposure of key assets against sea level rise and moon tides, including Edgemere Housing in the extreme and high risk areas and the New York City Housing Authority (NYCHA) Ocean Bay Apartments. Analysis using the NYS DOS Risk Assessment Tool suggests that assets protected by this Project would see a 25%-30% reduction in their risk score in a 10 year storm event. Key assets in Mott Basin, including Mott Basin Housing in the extreme and

high risk areas and NYCHA Redfern Housing would see a 25% reduction in their risk score in a 10-year storm event.

Timeframe for implementation



Once approved, and assuming a straightforward permitting process, this short-term project would require approximately five to 10 years to design, review, permit, and construct.

Regulatory requirements

Review and/or permitting by City, State, and Federal agencies is anticipated for this project. Environmental review is prescribed by the NYS SEQRA Act and the NYC CEQR process. Project implementation may require permits from US Army Corps of Engineers (USACE), NYS Department of Environmental Conservation (NYS DEC), NYS Department of Sanitation (NYS DOS), NYC Department of City Planning (NYC DCP).

Jurisdiction

This project falls under the jurisdiction of New York City laws.

Project Overview

Recovery Support Functions



Community Planning & Capacity Building



Health & Social Services

Cost

\$6–9.4M

Health & Social Benefits

HIGH

Economic Benefits

MEDIUM

Risk Reduction

HIGH

Timeline (years)



STRATEGY: BOLSTER COMMUNITY RESILIENCY

Relief center network

Proposed Project

Create a network of relief centers to coordinate relief and recovery following a disaster or major event.

Project description

This project would fund the creation of a network of relief centers, to provide and coordinate local relief services and supplies following a disaster, such as provision of food, water, power, health, medical services, and information. The project would provide funding to community facilities and organizations for construction and building hardening. It would also support staffing costs to develop and manage resiliency plans and programs.

Relief centers would leverage the local knowledge and trusted relationships of existing CBOs to provide essential information to residents and businesses; coordinate across community-based emergency health and social services; and help to evaluate community needs and efficiently distribute resources.

The proposed relief center network would be a “hub” and “satellite” model. The hub would be a large community

space where logistics, communications, and supplies can be managed and distributed. The hub would serve as a local neighborhood contact for government emergency workers and first responders and would coordinate with smaller satellite locations throughout the Community that serve as additional, localized distribution centers. To meet the needs of the entire Rockaway East population, the Planning Committee proposes two hub locations: one in Far Rockaway and one in Arverne.

The array of services to be provided across the hub and satellites would include:

- Access to food, water, power, and basic supplies
- Information about both citywide emergency response activities and local efforts
- Non-urgent medical services (first aid, mental health, etc.)



The Relief Center Network project would help formalize and organize residents and organizations to be better prepared for events and disasters. Source: Flickr User larryosan, licensed under Creative Commons.



Many organizations opened their doors and organized relief after Sandy. Source: With permission from Leslie Mullings

- Special services for seniors or other vulnerable populations

Because emergencies are unpredictable and irregular events, relief centers should be housed within existing buildings and organizations that provide year-round community services.

A relief center hub should meet physical requirements developed from Planning Committee discussions as well as local and national best practices, including:

- Location outside of the floodplain or in a flood-proof structure
- Reliable source of power and heat/cooling

- Proximity to an evacuation route
- Proximity to vulnerable populations and commercial centers
- Reinforced building structure
- Potable water system
- Restrooms (ideally with showers)
- Parking lot or other large outdoor assembly area
- Large space on ground floor
- ADA-accessibility

Satellite sites would not need to meet all of the physical requirements as the hub but should be physically distributed across the Community so that residents can access one within walking distance.

A program manager would be embedded within the hub host organization. To ensure rapid response and effective coordination during an emergency, the program manager would coordinate with satellite sites and NYC OEM. The program manager would also manage disaster preparedness-related programming, which could include trainings and practice drills, “know your neighbor” events, and outreach to vulnerable populations. The center could also host CERT or Ready New York trainings.

Selection of sites and participating organizations would occur through a competitive process based on analysis of existing efforts in the Community, organizational capacity, facility capacity, proposed services, and potential to provide a cohesive network of support in conjunction with other selected sites.



The Relief Center Network would help ensure supplies are managed and distributed to the satellite centers as needed. Source: Flickr User jaydensonbx, licensed under Creative Commons.

Based on needs identified by the Committee, ideal relief center host organizations for both hub and satellite sites would exhibit the following characteristics:

- A history of community engagement and strong community ties
- Regular community programming and capacity to provide emergency programming
- Demonstrated ability to conduct outreach to vulnerable populations
- Capacity to provide a selection of social and/or health services

- A long-term occupancy agreement or ownership of the building
- A business continuity plan
- Financial stability

Cost

\$6–9.4 MILLION

Approximately \$6 to \$9.4 million would fund the development of a relief center network in Rockaway East.

Relief centers would require funding to cover two types of expenses: capital and operational.

- Capital to harden existing buildings. Key costs for facility improvements could include: flood-proofing (if the building is located in the floodplain), back-up communications equipment, and back-up power.
- Operating support to build the host organization's capacity to support a part-time program manager to provide year-round emergency programming, and to deploy and coordinate resources during an emergency.

Estimates based on generic building types assume that two hubs and several satellite sites could receive funding for capital and operational costs. Based on a rough estimate, a relief center hub with 12,000 square feet of usable space could cost approximately \$1.3 to \$1.5 million. A satellite site in a 7,000 square foot facility could cost \$800,000 to \$1 million. These estimates assume fairly substantial floodproofing (for a few locations in the

floodplain) and costly solar power; exact costs would vary widely depending on how many facilities are selected, the physical characteristics of those buildings and sites, and the programming planned for each site.

Costs for a program manager and emergency preparedness programming at the hub could also vary widely, depending on the availability of funds and the needs identified in the Community. The annual cost of the program manager and emergency preparedness programming (plus overhead) could range from \$20,000 to \$60,000, for a total project cost of \$40,000 to \$120,000 over the course of two years. Satellite sites might also receive a discretionary amount of funding for programming. All interested parties would apply to the relief network program with a proposal for their respective needs and scope.

After two years, each participating organization would be responsible for supporting programming as well as building maintenance costs. It should also be noted that the operation of relief centers could require the purchase of supplies including medical provisions, extended shelf-life food, water, blankets, walkie-talkies, ham radios, surge protectors, or gasoline. Participating organizations would need to identify alternative funding sources for these items.

Benefits

Health and social benefits

HIGH

For the entire Community, formalizing a network of relief centers would reduce the health and safety risks associated with a disaster or event. Specifically, the relief centers would reduce the risk of:

- Sickness or discomfort related to lack of access to basic medical supplies, food, water, heat, and other necessities
- Emotional or psychological distress
- Displacement of children, relatives, and friends who might need to relocate to receive services
- Inaction or misdirected action due to confusion or lack of information across the Community

Vulnerable populations such as seniors and physically impaired residents stand to benefit the most, given that they are most likely to need assistance, yet less likely to have reliable and convenient access to critical supplies and services. Assuming the Rockaway East Planning Area boundary as the catchment area, the relief network would specifically benefit vulnerable populations, including low income residents, non-native English speakers, and seniors.

Economic benefits

MEDIUM

The relief center network is likely to support a part-time employee embedded in a CBO to help plan and build organizational capacity at hubs and across satellites over the course of two years. Capital expenses associated with hardening community centers would also create a small number of temporary jobs for construction and installation of resiliency building improvements. These jobs should be sourced locally to ensure investment in the Community.

Additionally, by protecting vulnerable populations, an emergency relief center supports diverse and thriving neighborhoods, which helps improve quality of life, a strategy in line with the New York City Regional Economic Development Council’s Strategic Plan.¹³

Cost-benefit analysis

A Rockaway East relief center network would provide numerous public benefits to a Community in the event of a disaster, including reducing overall risk to the well-being of residents—especially vulnerable populations. The reduced vulnerability of all Rockaway East residents justifies the relatively modest cost of implementing this project.

The benefits of the network would be sustainable beyond the two-year CBDG-DR funding period so long as the partnering organizations dedicate modest resources to maintain emergency equipment, and update emergency plans. There are no apparent negative externalities

associated with the Proposed Project. In addition, a year-round co-benefit to the community would be the increased capacity and coordination among CBOs participating in the network.

Risk reduction

HIGH

A relief center network would reduce risk to Rockaway East residents by providing safe havens in an emergency, ensuring publicly accessible back-up power, a centralized source for information, social and support services, and more secure emergency and recovery services. Further, investment in a relief center network would reduce the vulnerability of the organizations and community centers participating in the program.

Timeframe for implementation



Once the project has been formally initiated, it would take approximately one to two years to implement.

Project implementation would begin with a competitive bidding process that would invite local organizations meeting established criteria to apply to participate.

Organizations would submit proposals with an estimated resiliency capital scope and cost as well as a proposed approach to resiliency programming. The proposal and selection process would take approximately three to six months.

Once participating organizations are identified, organizations would create detailed plans to implement programming and capital improvements. Depending on the scope of the work, and taking into account the seasonality of construction, the capital improvement construction phase could take six to eighteen months. Programming can be implemented in a shorter time, ideally three to six months after the program manager is on board.

The key issues that could most dramatically affect the timeframe are: the length and format of the selection process and the construction challenges that may emerge with installing back-up power, flood proofing, or other capital improvements.

Regulatory requirements

It is anticipated that no regulatory review would be needed for the execution of this project, though all capital investments would be required to meet building codes, including modifications to construction in a flood zone.

It would be beneficial for the local CBOs to consult with NYC OEM as they launch the program and to seek ongoing communications and coordination with NYC OEM on citywide emergency preparedness efforts. Local CBOs would also benefit from coordinating with other city agencies or local programs to bolster information and programming over time.



Source: Flickr User jaydensonbx, licensed under Creative Commons.

Jurisdiction

The relief center network would be located in Rockaway East and fall under the jurisdiction of New York City. Because the sites would provide relief and not function as formal shelters or evacuation centers they would not be held to Federal Emergency Management Agency (FEMA) regulations.

Project Overview

Recovery Support Functions



Health & Social Services



Community Planning

Cost

\$2M

Health & Social Benefits

HIGH

Economic Benefits

LOW

Risk Reduction

HIGH

Timeline (years)



STRATEGY: BOLSTER COMMUNITY RESILIENCY

Local health center resiliency

Proposed Project

Fund capital improvements to strengthen a local health center facility against future storms and emergency events.

Project description

This project would bolster the health center to ensure continuity of health services and emergency response capabilities during and immediately after disasters. Capital improvements would strengthen the health facility against future storms and other emergency events, and would include substantial flood-proofing measures and emergency back-up power adequate for a health care facility that may be open extended hours.

To ensure rapid response and effective coordination during an emergency, the local health center would participate in a coordinated network managed by a relief center hub program manager. As a hardened satellite center, the facility would also receive operating Community Development Block Grant- Disaster Recovery (CDBG-DR) funding to coordinate activities across the relief network. This operating funding would help the health clinic set up communication systems, develop business continuity

plans, and coordinate relief and recovery services across the relief center network. After two years, the organization would be responsible for supporting these services on an ongoing basis. The health center would also need to ensure the building has basic emergency supplies and equipment, such as radios or push-to-talk phones, fully functional back-up power sources, and fuel.

Cost

\$2 MILLION

Bolstering the health center and developing programming to build capacity and coordinate activities across the relief center network is estimated to cost approximately \$2 million.



The Joseph P. Addabbo Health Centers in Far Rockaway and Arverne provide critical basic health services to the Community. The Arverne facility was damaged by Sandy and remains at risk for future storms. Source: With permission from Denean Ferguson.



St. John's hospital is the only hospital on the Rockaway Peninsula. It provides much needed care and jobs but struggles to serve the whole population.

Fairly extensive floodproofing would be applied to the facility given its vital importance to the well-being of residents during an emergency and its current vulnerability to flooding. To prevent flood damage, interventions may include flood door barriers, elevated mechanicals, exterior and interior waterproof coating, check-valves etc. Back-up power costs may include the cost of a fixed backup generator.

Benefits

Health and social benefits

HIGH

Hardening the facility would allow the health center to better withstand extreme weather conditions during an

emergency. By strengthening the facility's capacity to provide first response services to the Community, this project would reduce the health and safety risks associated with a disaster, including sickness, discomfort, injury, or death related to lack of access to medical attention.

Economic benefits

LOW

Capital expenses associated with hardening the facility would create a small number of temporary jobs for installation of resiliency measures.

Cost-benefit analysis

This project has broad public benefits and particularly serves vulnerable populations—key priorities of the Planning Committee. Hardening the health center would provide numerous benefits to the Community in the event of a disaster, including reducing overall risk to the well-being of residents—and providing critical health services.

This project would not only benefit residents in the immediate aftermath of emergency events, but improve the capacity of the health center to provide first response services year-round.

The benefits would be sustainable beyond the two-year CBDG-DR funding period so long as the health center dedicates modest resources to maintain emergency equipment, update emergency plans, and maintain communication with the other relief network locations.

There are no apparent negative externalities associated with the proposed project.

Risk reduction

HIGH

Hardening the health center would reduce risk to the Community by enhancing the ability of the center to provide critical first response services to Rockaway East residents. Analysis using the NYS Department of State (DOS) Risk Assessment Tool suggests that assets protected by this project would see a 33% reduction in the risk score in a 100-year storm event.

Timeframe for implementation



Once the project has been formally initiated, it would take approximately one to three years to implement. The key issue that could most dramatically affect the timeframe is any challenges that may emerge during construction.

Regulatory requirements

Because the center is a health care facility, this project may be subject to State regulatory review and approval. If the renovations to this facility are interior renovations, the project would be subject to the following regulations:

- Local zoning/planning board filing
- Local department of buildings filing
- Environmental Impact Survey

Once completed the center would be subject to NYC Department of Buildings review & approvals.

In the event that external work is required, it is likely that the following additional regulatory requirements would exist:

- DEP filing (based on location of site)
- SEQRA
- Phase 1 ESA
- SWPPP – EPA Storm water Pollution Prevention Plan

Jurisdiction

The proposed project would be in Rockaway East and would therefore fall under the jurisdiction of New York City.

Project Overview

Recovery Support Functions



Community Planning



Health & Social Services

Cost

\$1.5M

Health & Social Benefits

HIGH

Economic Benefits

LOW

Risk Reduction

HIGH

Timeline (years)



STRATEGY: BOLSTER COMMUNITY RESILIENCY

Health care service expansion

Proposed Project

Issue a Request for Proposals for a new health care facility on the Peninsula.

Project description

While Rockaway East has a number of health care providers, it does not have enough to serve the population, especially for emergency services. The closure of Peninsula Hospital had a serious impact on the availability of services as well as the number of local health care jobs. At the same time, the population cannot support a full second hospital. Rockaway East will coordinate with Rockaway West, Breezy Point, and Broad Channel to increase key services to the Rockaway Peninsula.

The Proposed Project seeks to attract a strong regional health care provider or developer to expand services, with a particular focus on emergency services. Because there are compelling economic reasons to cluster providers, and because the Community lacks in multiple types of care, the project could support the development of a new health care facility or campus in a centrally located area to serve the residents of Rockaway East and surrounding areas. In addition to a free-standing emergency department,

the campus could support urgent care, diagnostic and treatment services, and physician services.

For this project, the Community would invite interested parties to propose approaches to expanding and sustaining health care services on the Peninsula. The Community would then contribute funding toward the best proposal to help create the facility. Rockaway West supports this project and will match funding with Rockaway East to contribute to the development.

Cost

\$1.5 MILLION

The \$1.5 million cost would cover any financial gaps inherent in the development of a health care facility or campus. The potential use of the funding is flexible and can support building resiliency improvements, provision of working capital, or partial rehabilitation of an existing



Through the NYRCR Program process, residents from both Rockaway East and Rockaway West expressed the great need for expanded health services on the Peninsula. Source: Flickr user Army Medicine_2, licensed under Creative Commons.



This project would attract additional health care services and jobs to the Community, with a focus on emergency care. Source: Flickr user MilitaryHealth, licensed under Creative Commons.

building. Rockaway West is also contributing \$1.5 million to this project, bringing the total subsidy to \$3 million.

Benefits

Health and social benefits

HIGH

By improving the Community's access to critical health services, this project would reduce the health and safety risks associated with a significant event. Specifically, the health care facility or campus could reduce the risk

of sickness, discomfort, injury, or death related to lack of access to medical help during an extreme event as well as on a regular basis.

Economic benefits

LOW

If this project results in a medical campus, it will produce a number of new permanent health care jobs within the Community.

Capital expenses associated with the development of the new health care campus, including installation of resiliency measures, would create a modest number of temporary construction jobs. However, the number of construction jobs cannot yet be estimated without more specific definitions of the potential site and building typology.

Cost-benefit analysis

Developing a health care campus would reduce the overall vulnerability of residents and provide critical health services.

This project would not only benefit residents in the immediate aftermath of emergency events, but also improve the capacity of the Rockaway East Community to provide key services year-round. At an estimated cost of \$1.5 million, this project could provide services that would benefit all Rockaway West residents as well as all of the residents of equally challenged Rockaway West, Breezy Point, and Broad Channel.

There are no apparent negative externalities associated with the proposed project.

Risk reduction

HIGH

Developing a health care campus would reduce overall health risk to the Community by providing critical first response services to residents of Rockaway West. This includes reducing risk during large scale emergencies, as well as responding to individual medical issues year-round.

Timeframe for implementation

Once the project has been formally initiated, it would take approximately 2 to 4 years to select the site, identify an anchor health care provider, find the third party developer, secure regulatory approvals, design, and construct. The key issues that could most dramatically affect the timeframe are any challenges associated with the Certificate of Need (CON)—the ability to identify and secure a qualified anchor provider—the challenges of generating third-party developer interest in the RFP and providing adequate financial subsidy if needed, and specific construction requirements.

Regulatory requirements

This project may be subject to State review and approval and may require environmental review depending on the location. Potential reviews that are likely to be required include:

- CON filing
- Local zoning/planning board filing
- Facility Guidelines Institute (FGI) Guidelines
- Local department of buildings filing
- Department of Environmental Protection filing (based on location of site)
- Environmental Impact Survey/State Environmental Quality Review Act
- Phase 1 Environmental Site Assessment
- Environmental Protection Agency Stormwater Pollution Prevention Plan

Depending on the site location and what environmental studies are needed, the initial phase of approvals could take up to 12 months. Once completed the facility would be subject to the following typical inspections:

- Department of Health final inspection
- NYC Department of Buildings Final Inspection for Certificate of Occupancy

The New York City Department of Health and Mental Hygiene (NYC DOHMH) is currently considering updates to CON regulations regarding free-standing emergency departments which would impact the execution of this project.

Jurisdiction

The Proposed Project would be in Rockaway East and would therefore fall under the jurisdiction of New York City.

Project Overview

Recovery Support Functions



Community Planning



Housing

Cost

\$1M

Economic Benefits

HIGH

Risk Reduction

MEDIUM

Timeline (years)



STRATEGY: BOLSTER COMMUNITY RESILIENCY

Residential education and technical assistance

Proposed Project

This proposed Residential Education and Technical Assistance program would help property owners fully understand the physical and financial risks facing their homes and make more informed decisions about resiliency investments and financial decisions.

Project description

The program would be administered by a citywide organization that would provide oversight, up-to-date information, training, access to subject matter experts, and funding to local community-based organizations (CBOs). Qualified counselors and auditors within the CBOs would provide education and technical assistance to the Community. The Committee advocates the continuation and expansion of existing homeowner counseling and assistance programs to leverage existing expertise and ensure that community needs are met.

Education, counseling and technical assistance would meet a major community need by: providing accurate and useful information around flood protection and insurance; improving residents' financial, insurance and recovery literacy; and assessing retrofit opportunities to help properties reduce risk.

"Alone we can do so little; together we can do so much"

FAR ROCKAWAY HOMEOWNERS CALL TO ACTION!

WHEN
Wednesday, Nov. 13th
6:30pm - 8:30pm

WHERE
Battalion Assembly Church



454 Beach 67th Street
Arverne, NY 11692

Why have parts of the Rockaways been left out?

We need to be heard!

WE NEED SERVICES TOO!

TOPIC OF DISCUSSION:

- **CONTRACTORS**
- **BUILD IT BACK**
- **ACTION PLAN**

SPECIAL GUESTS
Ocean Bay CDC

Contact:

Apostle
David Cockfield
718.634.7172



MOLD TREATMENT PROGRAM INFORMATION

What is the NRNYC Mold Treatment Program?

An initiative funded by the Mayor's Fund to Advance New York City, the Robin Hood Foundation and the American Red Cross and developed in partnership with the city. The Program will directly help approximately 2,000 households deal with mold left behind by water damage from Hurricane Sandy. Neighborhood Revitalization NYC will coordinate mold treatment work. The treatment work will be conducted by environmental consultants, contractors and not-for-profit organizations, staffed by volunteers.

How do I apply for the program?

Eligible homeowners referred by NRNYC's partner network can register by calling 1-855-740-MOLD (6653). Callers will have access to translation services in 179 languages. The call center operates Monday – Friday, 9am to 6pm and Saturday, 10am to 2pm.

In addition, 311, New York City's main source of government information and non-emergency services, will have information and can connect homeowners with the hotline.

How does a person qualify for the program?

There are two qualifying factors: the condition of the property (extent of water damage) and household income. Those owners under 175% AMI will qualify for the NRNYC program.

Income Eligibility by % of Area Median Income (AMI) of the New York City region.		
	120%	175%
Family of four	\$99,600	\$145,250
Family of three	\$89,640	\$130,725
Family of two	\$79,680	\$116,200
Individual	\$69,720	\$101,675

Is there a cost for the program?

The program is free for qualified participants.

What is the process once a homeowner applies?

NRNYC will review the application and schedule an environmental assessment of their property. After reviewing the report, mold treatment will be scheduled if needed. In addition, an environmental specialist will conduct a final assessment of the property.

Can residents who are not homeowners get mold treatment assistance?

NRNYC can only conduct mold treatment if we have the building owner's consent. Renters who have mold in their home can complete a brief in-take form with NRNYC. NRNYC will attempt to contact the owner of the building.

Ocean Bay Community Development Corporation (CDC) is an example of a local community-based organization that hosts events and provides one-on-one homeowner assistance. They provided significant assistance to the Community after Sandy and continue to host regular events and help homes owners navigate recovery. Source: Ocean Bay CDC facebook group page.



At an event in December 2013, a disaster case manager explains the various services Ocean Bay CDC provides homeowners in Far Rockaway. Source: Ocean Bay CDC facebook group page.

The residential education component of the program would offer property owners useful, broad and publicly accessible information. Overall, general education programming would help property owners to:

- Identify common insurance pitfalls and loopholes
- Avoid potential rebuilding, insurance or financial scams
- Understand policies and how to obtain flood insurance
- Understand resiliency retrofits, including elevating/flood-proofing building mechanicals, installing backflow prevention device, etc.
- Identify products, providers and reasonable costs
- Find financing programs for home repairs and resiliency measures
- Learn how to remediate mold

Information would be housed online in a ‘one stop shop’ repository, which would include:

- Online courses
- Publicly digestible resources (e.g., how to interpret rules and regulations)
- Print or online resiliency guidelines (e.g., outlining information on products and designs, general costs and benefits of retrofits, etc.)
- Sample documents and forms with instructions (e.g., insurance claims, financial statements, etc.)
- Request form and telephone number to access individual counseling and technical assistance

Because not all residents would be able to access an online tool, local CBO offices would house physical materials and expertise that mirrors the online repository. Further, this program can offer:

- introductory, in-person courses
- monthly speaker series covering different resiliency topics
- special ‘pop-up’ housing fairs, bringing a series of experts to the communities

The residential education program content would be managed by a central organizing entity to ensure it is current, consistent, and approved by all relevant program owners and government entities. The materials would contain information developed by specialists, including the counselors and auditors speaking to community members on a regular basis.

Because of the broad nature of these educational materials, opportunities should be explored to partner with other NYRCR Communities or organizations to create educational tools that can reach homeowners and multifamily property owners throughout the City. If costs can be shared with other parties, the balance of Rockaway East’s budget for this program could be reallocated to individual counseling and technical assistance.

The second component of this program, technical assistance, provides two types of services to residents: counseling and physical audits. Technical assistance would provide tailored, individualized advice to a smaller number of higher-need home and multifamily owners in Rockaway East.

First, home/property owners can access counseling services to ask questions, assess risks and issues, and gather information to make financial decisions. Counseling would be conducted by qualified housing, financial, and legal counselors and would include:

- assistance understanding an individual’s current flood, homeowner and property insurance
- potential risks given an individual’s home type, location, and personal financial situation
- help assessing how monthly mortgage payments could be impacted by changes in federal flood insurance rules or by an individual making retrofits to their home

- guidance on specific housing rebuilding, resiliency and recovery issues, programs, and financing tools
- legal support and representation for foreclosure-risk or other high-risk cases

Second, once a home/property owner gathers information from a counselor, the owner can determine whether s/he requires a physical audit. Physical audits would be conducted by qualified building auditors and would include:

- a physical assessment of existing damage and/or future risk to the individual’s residential property
- a list of potential retrofits to mitigate against future storm damage
- assistance finding a qualified contractor to complete retrofits (if desired)

Cost

\$1 MILLION

The proposed \$1 million allocation could cover program administration, education program development, counselors, and auditors. This cost assumes that everyone in the Community who needs it would access general education but that only a subset of the Community would seek technical assistance. If there is a significant demand from across the Community, additional funding sources may be required to scale up the services.

Likewise, if the program leverages existing citywide programs, there may be efficiencies of scale and program costs could decrease. There are a variety of public and private funding sources contributing to like programs today, including NYC’s Community Development Block Grant-Disaster Recovery (CDBG-DR) and New York State Attorney General funds.

Benefits

Economic benefits

HIGH

The program would give residential property owners the tools to make decisions and take action to protect one of their most valuable economic assets: their homes. The program would help property owners decide on the most appropriate and cost-effective resiliency measures in which to invest. It would also help them to better understand the financial implications of their insurance decisions, helping them choose the most appropriate insurance for their homes, and avoid being over- or under-insured. The program therefore would help residents understand and achieve financial security.

For this reason, the project may be especially beneficial to low-income residents who are particularly vulnerable to financial shocks from unforeseen, high-cost repair expenses resulting from flooding.

Additionally, helping the Community achieve a more stable financial outlook can improve residents’ quality of life, and flood mitigation efforts may bring down residents’ housing

costs by lowering flood insurance premiums, which are both outcomes in line with the New York City Regional Economic Development Council’s (NYC REDC) Strategic Plan.¹⁴

Finally, this program can help stabilize real estate and micro-economies of neighborhoods. Residential neighborhoods in the flood plain risk disinvestment after a major event if residents can no longer afford to stay in their homes. This disinvestment has a ripple effect on small businesses and property values and can have a deleterious impact on the Community as a whole. Further, in some communities, when lower-income populations can no longer afford to stay in their homes, higher income buyers may begin to purchase housing, driving up property values and the total cost of living, putting added pressure on the existing residents’ ability to remain in the Community.

Cost-benefit analysis

The Rockaway East Planning Committee identified housing resiliency as one of its top priorities. The committee determined that the NYRCR Program should seek to serve the Community as a whole versus individuals and that this program could most effectively do that. Through general education and technical assistance, this program would efficiently disseminate important information for home/property owners to make better-informed decisions and help them understand what they can do to protect their homes/properties and ensure their own financial security. The program can help an extremely broad array of users with general education, and would benefit those in greatest need with more tailored assistance. These risk

reduction and economic benefits have been judged by the Planning Committee to be worth the \$1 million allocation.

Risk reduction

The residential education and technical assistance

MEDIUM

program would help property owners make more informed decisions about recovery and how to best protect their homes from future events. If residents choose to implement the suggested mitigation measures to their properties, the retrofits would help protect the community’s residential housing stock from future damage.

Timeframe for implementation



Project implementation would begin with the identification of a large non-profit organization to administer the project by providing guidance and direct grants to local organizations to provide local homeowner assistance. Once the administering entity has been selected, it would begin a competitive bidding process that would invite neighborhood organizations who meet certain criteria to apply to participate as service providers that would offer individual counseling as well as contract with qualified auditors to provide technical assistance. The selection of service providers would take into account the history of providing similar services to the Community, proximity to vulnerable populations and organizational capacity. This ramp-up process is expected to take three to eight months.

Once the local organizations are identified, they would be trained and would administer the program. These services would be provided over the course of two years, until CDBG-DR funding expires. After this time, alternative funding sources would need to be secured in order to continue the program at the same scale.

Regulatory requirements

Because similar programs exist in New York City today, regulatory reviews or changes are unlikely for the execution of this project. Changes to the Federal Flood Insurance Rate Maps and insurance program would have a bearing on the program, but the program administering entity would be responsible for maintaining current and accurate materials as regulations and information changes.

The NYC Department of Buildings (NYC DOB) and Housing Preservation and Development (HPD) may be involved on a discretionary basis to oversee or certify building resiliency audits and to certify retrofit contractors. HPD and the NYS Department of Homes and Community Renewal (HCR) could also provide valuable support and help to identify synergies with existing programs.

Jurisdiction

The Proposed Project would be in Rockaway East and would therefore fall under the jurisdiction of New York City.

Project Overview

Recovery Support Functions



Community Planning



Economic Development

Cost

\$500,000

Economic Benefits

MEDIUM

Health & Social Benefits

MEDIUM

Risk Reduction

MEDIUM

Timeline (years)



STRATEGY: STRENGTHEN ECONOMIC RESILIENCY

Workforce development

Proposed Project

Expand workforce training and connect Rockaway East residents to employment opportunities in a range of resiliency-related industries

Project description

The Rockaway East Planning Committee and Community have consistently raised economic development and empowerment as a critical component of resiliency. There has been a persistent need for high-skilled jobs in the community. The Community has a high unemployment rate at 11% and overall median incomes lag behind the rest of South Queens. The Community recognizes the opportunity to expand jobs by leveraging the new needs and opportunities presented by Superstorm Sandy and other long term stresses brought on by climate change and ongoing urban growth – new, niche jobs to help build emergency preparedness and response capacity and to make the built and social environment more resilient.

The Proposed Project would expand workforce training and connect Rockaway East residents to employment opportunities in a range of resiliency-related industries. It would simultaneously build the capacity of the Community to make physical resiliency improvements as well as to react

and recover from disasters. This would include training in areas such as:

- Construction of resilient infrastructure, building improvements, and electrician certification
- Emergency medical technician and home health aide training
- Emergency preparedness and response counseling and support

The workforce training program would target resiliency construction in Rockaway East, building on existing programs where appropriate and feasible, and providing a curriculum tailored to the specific skills required for upcoming publicly-funded projects. Instruction would be administered through both classroom and laboratory/hands-on training. Skills taught by this program would include the technical skills needed for planned resiliency projects or for commercial and residential building resiliency retrofits.



Workforce development program for solar installation. Source: Solar One



The Rockaway Development and Revitalization Corporation (RDRC) uses a local community event to talk with residents about its services, including local workforce development training. Source: With permission from Denean Ferguson.

Training opportunities may also exist in coordination with the “Section 3” mandate that requires any project assisted by U.S. Department of Housing and Urban Development (HUD) to aim to have 30% of new hires be low-income individuals and/or residents of public housing.¹⁵ This provision has resulted in numerous employment and training opportunities including, in particular, the New York City Housing Authority’s (NYCHA) Resident Economic Empowerment & Sustainability (REES) Program which provides construction, janitorial, and other training

opportunities to public housing residents resulting in long-term jobs. Especially given HUD’s commitment to local hiring, a training program could be developed in association with the proposed NYRCR infrastructure projects and funded with HUD CDBG-DR dollars.

The program would be administered by a local workforce development organization and could be structured in a variety of ways, including: administration by a local workforce development organization, or administration through a partnership between NYCHA, the City and a local CBO.

Additional job opportunities may be provided by many of the resiliency projects currently being planned and implemented by the City. For example, the NYC Department of Parks and Recreation (NYC DPR) is drafting a comprehensive strategy for the Rockaway Peninsula that could support construction and maintenance jobs. Further, New York City resiliency programs could employ local construction workers to help with rehabilitation of homes damaged by Sandy. The City should work with the Community to prioritize local hiring for these and other jobs to help build and strengthen the Rockaway East Community.

By providing training in construction and building trades, with a specialty in resiliency, health and emergency services, and overall social counseling functions, Rockaway East residents can gain access to work that will exist when they graduate and would likely continue to be in high demand. They would also be better prepared to support the Community in contending with events and emergencies in the future.

Cost

\$500,000

\$500,000 would fund a workforce development program. The number of residents reached through the proposed project would depend on a number of factors including:

- Type of training provided (e.g., training for construction of coastal infrastructure versus training for resilient building trades)
- Length and depth of training provided
- Amount of wrap-around support services provided such as pre-program counseling, job placement support, and other services to support participants in the development of soft skills
- Availability of matching funds by partnering organization or foundation

Analysis of existing workforce training programs reveals the range of services and costs different types of workforce programs may entail. Below are two illustrative high and low cost construction training program alternatives. The proposed workforce program would likely be closer to the moderate cost program, but options for a more intensive program should be explored.

- High cost, intensive workforce program. For over \$20,000 per enrollee, full-time training for 18 weeks in building trades can be provided. Such a program would provide high quality instruction, extensive



Residents learn about workforce development programs at the the Hammel Houses community center (top); Ocean Bay CDC passes out interview attire to workforce development trainees in Far Rockaway (bottom). Source: Ocean Bay CDC facebook group page



“Green” and “Resiliency” construction job training can complement and support jobs to implement City and State recovery and resiliency projects. Source: Ocean Bay CDC facebook group page.

laboratory/hands-on training, small class sizes (less than 30 enrollees), enrollee outreach/recruitment, as well as wrap-around counseling services for pre- and post-training support and job placement.¹⁶

- Moderate cost, moderate intensity workforce program. For around \$4,000 - \$7,000 per enrollee, from 4 to 12 weeks, basic construction training would be provided. A program of this scale would provide basic training in a wide range of construction trades through classroom and laboratory training.

In addition to cost/student, some overhead cost may be required to manage the program.

Benefits

Economic benefits

MEDIUM

As identified in the New York City Regional Economic Development Plan, “helping small businesses access capital, hire and train workers, and develop business plans is an investment in sustainable economic growth.”¹⁷ This program would grow local jobs in small businesses through the direct training of approximately 75-250 individuals in trades that would improve not only the economic standing of the individuals, but their ability to improve the resiliency of their Community.¹⁸

Health and social benefits

MEDIUM

With the closing of Peninsula Hospital in 2012, the Rockaway Peninsula lost one of its densest clusters of health services and support jobs. With no likely replacement on the horizon, it is even more important that individuals have access to training that can lead to quality jobs within the Community and across the region.

As impacts from storms disproportionately affect economically vulnerable populations, connecting Rockaway East to employment opportunities in these sectors would directly and indirectly increase the resiliency of the Community.

Cost-benefit analysis

This is a low cost, high benefit program whose effects would be felt far beyond those who directly benefit by completing the training program. The project would have direct and potentially transformational benefits for participants by increasing economic opportunity and securing economic and social resiliency. It would also provide a local labor force that can provide relief & recovery support and implement resiliency improvements.

The project would also demonstrate the Rockaway East Community’s commitment to providing economic development opportunities for the neighborhood’s low-income residents. The aforementioned resiliency, equity, and economic benefits associated with this project are

strongly aligned with some of the top priorities identified by the Committee and the public.

There are no apparent negative externalities associated with the Proposed Project.

Risk reduction

MEDIUM

The Proposed Project would not result in direct reduction of risk to assets that would not otherwise occur, but would provide indirect reduction of risk to physical community assets by way of training workers to implement projects that reduce risk.

A workforce training program also reduces risk to participating individuals and their immediate neighborhood by increasing the employment rate. Economic security ensures social resiliency in the aftermath of a disaster; Rockaway East residents who can secure new income by participating in this program would be able to access the goods and services they need in a crisis.

Timeframe for implementation



Once the administering organization has been determined, the workforce development program could be launched within six to eight months. The selected organization should have proven experience and capacity administering similar workforce training programs—it is

therefore expected that augmenting existing programs with resiliency skills or developing a new resiliency training track would be completed fairly quickly. As the program design is finalized, outreach to Rockaway East residents would begin. The program administrator should have partners in the Rockaway Peninsula or experience conducting outreach in the Rockaway Peninsula.

Regulatory requirements

Depending on the type of training and certification required, the resiliency construction workforce training program may be required to follow certain certification requirements. Should a workforce program seek to tie into certain Federal low-income population hiring requirements, and additional regulations may apply.

Jurisdiction

The workforce program would be administered in Rockaway East and would therefore come under the laws governing New York City workforce training and licensing.

Project Overview

Recovery Support Functions



Infrastructure



Economic Development

Cost

\$4.5M

Economic Benefits

MEDIUM

Risk Reduction

MEDIUM

Timeline (years)



STRATEGY: STRENGTHEN ECONOMIC RESILIENCY

Mott Avenue corridor improvements

Proposed Project

Invest in improvements with resiliency benefits that beautify the street conditions to attract investment and support the role retail can play in the wake of a disaster.

Project description

The Rockaway East Planning Committee proposes investing in green streetscaping along the Mott Avenue corridor to seed investment, improve the quality of community public spaces, and spur the local economy. In addition, this project would make the area better prepared with back-up power and able to serve as a relief hub in future emergencies. This project would fund streetscape improvements on primary retail corridors that increase both resiliency and create a more inviting atmosphere for both residents and businesses. Streetscape elements would likely include stormwater drainage improvements that address ongoing ponding that occurs at several intersections. In the near term, improvements would also include highly efficient LED streetlights with resilient means of backup power, such as small solar panels, that remain functional in a power outage.

The scope and approach of a streetscaping program is variable, but would likely include some of the following elements:

- Street section reconfiguration, while maintaining two travel lanes in each direction
- Permeable bike lanes
- Planted curb and median bioswales
- Street trees and bioswales
- Solar pedestrian lighting
- Benches
- Bike racks and bike sharing locations
- Unified signage and wayfinding for the Mott Avenue retail corridor
- Permeable pavement in select locations



A vision for improved streetscaping at Mott Avenue.



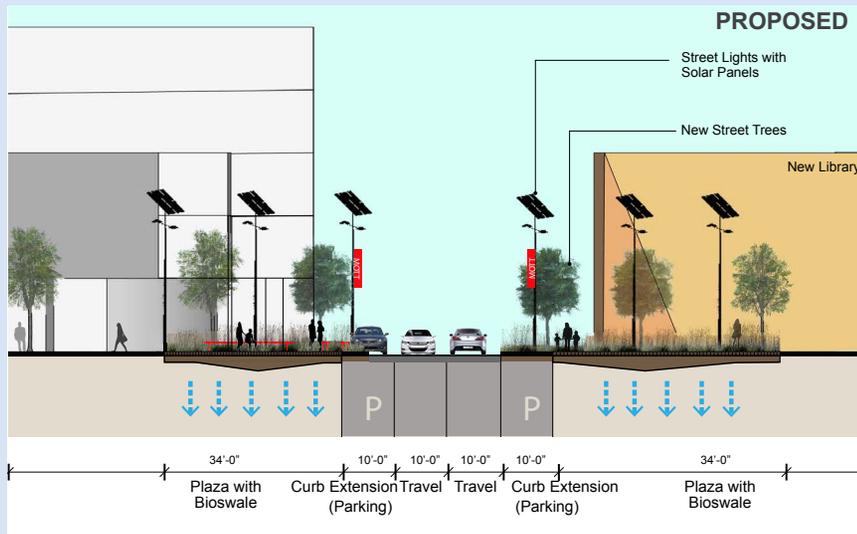
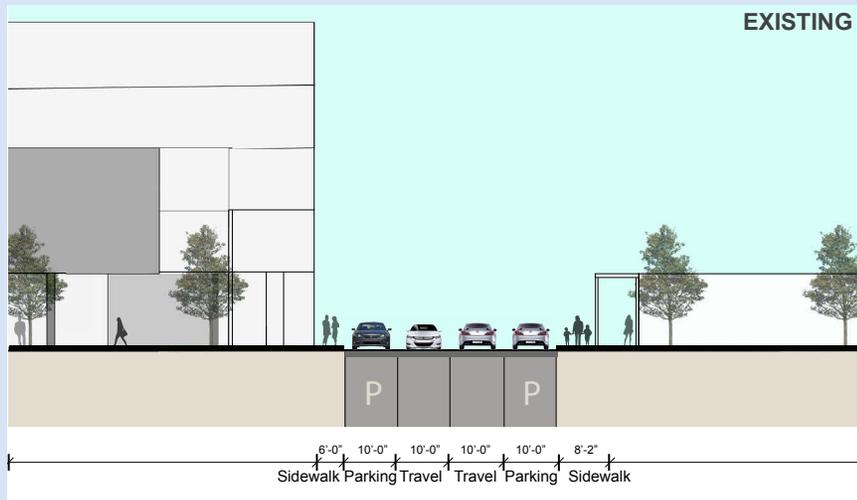
Bioswales on Seagirt Avenue provide both landscaping and drainage (left); This project would improve the streetscape and resiliency along the intersection of Mott and Central Avenues (right top, right bottom).

These elements would create a more pleasant pedestrian experience, increase transportation options, improve drainage after both common and extreme storm events, and provide a non-grid backup lighting source during an emergency. Non-grid light sources would facilitate a variety of other recovery and relief efforts, as well as support public safety.

Cost

\$4.5 MILLION

This project is estimated to cost approximately \$5 million. The cost estimate assumes 1,500 linear feet of streetscaping work between Mott Avenue and Beach



Investing in Mott Avenue would not only improve the beauty of the area, but solar street lights and bioswales will make it more resilient. This cross section diagram at Central Avenue shows how an improved corridor could look and function.

20th Street/Central Ave. Elements include excavation and removal of existing roadway and sidewalk, creation of new roadway and sidewalk (including typical asphalt for travel lanes and permeable materials for bike lanes, parking lanes, and sidewalks), landscaping and street furniture such as trees, benches, bike racks, and trash receptacles.

The conceptual-level cost estimate was developed based on current unit pricing and typical soft cost assumptions. Cost estimates would continue to be refined as more information is developed about the project.

Additionally a reserve fund for maintenance would need to be identified by the managing entity.

Benefits

Economic benefits

MEDIUM

As identified in previous retail analysis studies, a better quality of street experience in Far Rockaway may help to attract new businesses and shoppers, improving the mix and quality of retail in the area. The project is in line with the primary objective of the NYC Regional Economic Development Council’s Strategic Plan to “Create a Pro-Growth, Pro-Jobs environment” and support small businesses.¹⁹

Cost-benefit analysis

This project has long been identified as an opportunity for economic development and retail expansion in

Far Rockaway. Streetscaping can support economic development, and by layering in elements of resiliency, this project's cost becomes even more justifiable, leveraging transit, high ground, and retail services to provide emergency preparedness benefits.

Risk reduction

MEDIUM

Investment in non-grid light sources would support the creation of a safe, central hub in an emergency. This would allow key emergency services to be provided before, during and after a major event.

Drainage would be moderately improved through the installation of permeable roadway and sidewalk materials (as well as bioswales, funded under a separate proposed project), which would reduce the negative health and aesthetic impacts of standing water.

Timeframe for implementation



Once approved, and assuming a straightforward permitting process, this short-term project would require approximately one to two years to design, review, permit, and construct.

Regulatory requirements

Review and/or permitting by City, State, and Federal agencies is anticipated for this project. Environmental

review is prescribed by the New York State Quality Review (SEQR) Act and the New York City Environmental Quality Review (CEQR) process. Project implementation may require permits from and/or coordination with US Army Corps of Engineers (USACE), New York State Department of Environmental Conservation (NYC DEC), New York State Department of State (NYS DOS), New York City Department of City Planning (NYC DCP), and New York City Department Of Transportation (NYC DOT).

Jurisdiction

The Project would be located on a public right-of-way under the jurisdiction of New York City.

Project Overview

Recovery Support Functions



Economic Development

Cost

\$1.5M

Economic Benefits

MEDIUM

Health & Social Benefits

MEDIUM

Risk Reduction

NONE

Timeline (years)



STRATEGY: STRENGTHEN ECONOMIC RESILIENCY

Seasonal business and amenity expansion

Proposed Project

Construct a shipping container market in a prominent location amenable to visitors and residents to showcase quality Rockaway East local businesses in a fresh context.

Project description

This Proposed Project would grow seasonal business along the beach in Rockaway East and create an attraction for locals and tourists alike. The proposed project would fund the temporary installation of approximately 20,000 square feet of public space in the form of a shipping container market adjacent to the boardwalk or another prominent location. This market would showcase quality local businesses from throughout the eastern end of the Peninsula. Spaces would be included for both one-person microbusinesses without a physical space to small retail shops and restaurants seeking a beachside annex.

Shipping containers offer a middle ground between more formalized small retail and tent or truck-based mobile

retail. It works especially well in urban settings, evoking the industrial waterfront that has drawn legions of young New Yorkers to its coastline. There are several precedents for small, neighborhood-centric container markets across New York City, including the DeKalb Market in Downtown Brooklyn and the “See Change” market at South Street Seaport in Lower Manhattan, which came to life after Superstorm Sandy impacted many of the businesses in the area. Outside of New York, Asbury Park has featured container-based retail shops alongside its own historic beachfront.

The market would be in place for two to five years, allowing it to serve as a precursor to future permanent development. This means it can be sited on a City property



Conceptual illustration of a beachside container market in Far Rockaway.



The Dekalb market is a great example of the scale and approach this project could take. The market existed for two years on a vacant site slated for a large construction project in downtown Brooklyn. It used shipping containers to create retail spaces and offered local vendors' food and wares. It even had its own DJ and a radio station. Source: Flickr User Payton Chung, licensed under Creative Commons.

in line with other New York City Department of Parks and Recreation planning (NYC DPR) (in advance of the implementation of a project identified in the Department of Parks and Recreation Conceptual Plan), or as an interim use for a future development site, sponsored by a private land owner/developer. Other siting possibilities would help to activate underutilized locations with less development

potential, such as under the A train elevated tracks or in large parking lots. If successful, the container market could be moved to another location if needed.

The containers would include a mix of sizes and finishes to accommodate the largest possible range of businesses. In addition to the containers, the space would be outfitted

with a number of elements to make it as appealing and comfortable as any public space in New York City, including picnic benches, trash cans, bike racks, and signage.

Cost

\$1.5 MILLION

This funds the installation of a small market space of approximately 20,000 square feet, and 15 containers outfitted to suit the purposes of various businesses. If desired, grass, trees, and other greening measures could be incorporated.

Benefits

Economic benefits

MEDIUM

Creating a local pop-up container and green market would give the Rockaway East Community a local attraction for visitors and an amenity for residents, while also improving the local economy and drawing attention to the variety of businesses dispersed throughout the area. The market would also serve as a small business incubator, giving individuals a place where they can develop and test their products in a setting alongside other businesses. Because the cost to operate a pop-up market is relatively low and



Produce vendors at a farmer's market. Source: Flickr User Kristin Taylor, licensed under Creative Commons.

would be subsidized by this project, there would be a low barrier to entry for small businesses or entrepreneurs who would like to participate. For a nominal fee and no capital investment, local residents would easily be able to launch and grow various business ideas.

Health and social benefits

MEDIUM

Rockaway East lacks easy access to quality, healthy food. A recent survey on access to food in Far Rockaway found “strong evidence from the survey data as well as various interactions with residents that the Community perceives the lack of supermarkets in the Community to have the



Green markets thrive throughout neighborhoods in New York City. The market at Union Square is one of the oldest and biggest. Source: Flickr User Violette 79, licensed under Creative Commons.

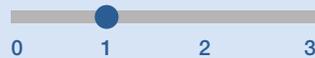
largest impact on their eating choices, satisfaction, and in some cases, health outcomes.” In this study, 50% of respondents were dissatisfied with current offerings in the Community.¹⁹ By incorporating a local green market into the program, the communities of Rockaway East could broaden their access to healthier food options.

Cost-benefit analysis

As presented, this approach represents one possible structuring, but part of the strength of this project is its ability to adapt and be scaled for implementation across a range of spaces and budgets. The highest impact elements, including increased exposure for local

businesses, increased access to healthier food options, and even the container structures themselves, can be achieved in lower-cost configurations. The project's benefits, directly relating to the strategies outlined by the Committee, are worth its costs.

Timeframe for implementation



Once the project has been formally initiated, it would take approximately six months to one year to implement. Siting the market would most impact the timeframe, depending on whether the land is public or private, has utility hook-ups, and other logistical considerations.

Regulatory requirements

Concession permits depend on the siting and the types of businesses that are located within the market.

Jurisdiction

The proposed project would be in Rockaway East and therefore falls under the jurisdiction of New York City.

Project Overview

Recovery Support Functions



Economic Development



Infrastructure

Cost

\$1.5M

Economic Benefits

MEDIUM

Environmental Benefits

MEDIUM

Risk Reduction

LOW

Timeline (years)



STRATEGY: STRENGTHEN ECONOMIC RESILIENCY

Rockaway bike share program

Featured Project

Create a bike share program for the Rockaway Peninsula with stations sited at major transit hubs and attractions.

Project description

While Rockaway East has the largest multi-modal transit hub on the Peninsula, it relies heavily on trains and city-wide buses and less on local or more flexible transit options. Intra-Peninsular transit remains a challenge and improved access to East/West or “Bay to Beach” transit would help to expand the local economy and access to resources and recreation.

Currently, the Rockaway Peninsula does not have a coordinated bike share service though interest exists. New Yorkers in Manhattan and Brooklyn have quickly adopted and celebrated the NYC Bike Share Program (Citi Bike). The system’s monthly trip totals are comparable to those of London’s successful system, even with higher prices and 2,000 fewer bikes in operation.

The Featured Project would institute a bike share system on the Rockaway Peninsula to improve intra-Peninsula connectivity, bringing more visitors across Rockaway East and increasing the mobility of residents, allowing them to more easily access amenities, such as the beach, bay, and mass transit stations or ferry, without reliance on a car.

A bike share program would be most beneficial if it reaches across the entire Peninsula, and stations are distributed from Far Rockaway to Beach 116th or Jacob Riis Park. It would be important for stations to follow bike paths along key transit lanes as well as to connect to bay and beach locations. Creating a Rockaway-specific program offers an opportunity to create a locally run business which could hire locally and create a ‘Rockaway’ brand.



Residents enjoy bicycling along the beach in Far Rockaway. A new bike share program would benefit residents and tourists alike. Source: With permission from Denean Ferguson.



Bike share programs have become popular in coastal towns, including Long Beach, NY and Miami, FL (above). Source: Flickr user Richard Masoner / Cyclelicious, licensed under Creative Commons.

Cost

\$1.5 MILLION

Infrastructure costs for instituting a bike share system are low, and the cost of operations is dependent on the model that is chosen. For an independent bike share system

that would be exclusive to the Rockaway Peninsula, a ten dock, 100 bike system costs approximately \$3 million to install, operate, and maintain over two years (this cost could be split across the two Rockaway East and West Communities at \$1.5 million each). This service would require approximately \$750,000 annually after this two-year period to operate and maintain, for which alternative funding sources would need to be secured.

Funding for this program could be obtained should there be a municipal policy decision to support bike share with public funding, as is done in most cities.

Benefits

Economic benefits

MEDIUM

Currently, most visitors to the Rockaway Peninsula beaches arrive by the subway or car and do not venture far from the transit stops and beach. A bike share system would allow visitors to more easily explore the Peninsula, letting visitors stay longer and spend more at local businesses. It would also benefit the ferry by creating connectivity between different transit modes, and by allowing visitors taking the ferry to venture farther into the Rockaway Peninsula, encouraging them to stay longer and spend more. This helps support small businesses, a primary objective of the New York City Regional Economic Development Council's Strategic Plan.

Environmental benefits

MEDIUM

A bike share encourages people to use bikes as a means of traveling short distances, lessening their dependence on cars. Further, it would create more users for the Jamaica Bay Greenway, which encourages the expansion of safe bike routes. This can be a small step towards diversifying transit options that minimize automobile use and associated impacts on the environment that are contributing to climate change.

Cost-benefit analysis

The project is a fairly low-cost capital project with multiple benefits. While it is not a traditional resiliency project, it supports needed transit redundancies, as well as offers significant economic and health benefits for the Rockaway Community.

Risk reduction benefits

LOW

While bike share would not actively reduce the risk to residents of Rockaway East, it would help facilitate mobilization and recovery efforts after an event. After Superstorm Sandy, with the subway system out of operation, mobility was severely hindered; there were hour-long lines for the transit options that were running, such as express buses and ferries.

As reported in Businessweek in November 2012, “When an earthquake rattled [Washington, D.C.] and left many commuters looking for a way around snarled traffic, Capital Bikeshare experienced a 34% increase in trips per day.” Paul DeMaio, founder of the system, said that they “had just a few bikes that were kept beyond 24 hours. People were respectful of the service, and they were able to use the service to get home to their loved ones.”²⁰

Timeframe for implementation



The Project does not face any major barrier to implementation aside from the selection of the appropriate bike share system and managing entity. This project could be implemented in six months to one year.

Regulatory requirements

The normal regulatory requirements for bike share stations and approval through the New York City Department of Transportation (NYC DOT) would apply.

Jurisdiction

The project would be in Queens County, New York City.

Project Overview

Recovery Support Functions



Economic Development



Infrastructure

Cost

\$400,000

Economic Benefits

MEDIUM

Environmental Benefits

LOW

Risk Reduction

LOW

Timeline (years)



STRATEGY: STRENGTHEN ECONOMIC RESILIENCY

Bus circulator service

Featured Project

Create a free limited-stop bus circulator that would better connect residents and visitors to the beach, ferry, and local businesses.

Project description

The Featured Project pilots a free, limited-stop, privately operated circulator bus across the Peninsula, from Far Rockaway to Rockaway Beach, running between the Mott Avenue A train Station/LIRR, the Beach 108th Street temporary Ferry Landing, and the Rockaway Beach Boardwalk at Beach 19th Street. The exact route and service would be determined based on a study of ferry schedules, ridership, and potential routes. By providing an operating subsidy and supportive amenities, the project would provide better access to jobs within the Peninsula and in Lower Manhattan. Further, it would expand residents' transit options across the Peninsula. Finally, it can boost ferry ridership and stimulate economic activity in the area surrounding the ferry landing, leading to a more resilient economic situation.

This project would subsidize operations of the bus circulator pilot for two years. After this pilot, ridership levels and financial sustainability would drive the decision of whether or not to continue service. This consideration would include impact, if any, on ferry ridership and value, if any, to private, recreational ferry operator. If an operating subsidy is needed, an alternative funding source would have to be identified.

Creating a limited-stop bus circulator would better connect residents on the east side of the Rockaway Peninsula to the ferry at Beach 108th Street and to job opportunities in Lower Manhattan. By increasing connectivity from the ferry to the Mott Avenue corridor, a bus circulator could also spur economic development in Far Rockaway. As a side benefit, improved "Bay to Beach" transit would help to expand the local economy and access to resources and recreation.



Bus circulators provide fast point-to-point transportation. Places like Jones Beach, NY or Atlantic City, NJ (above) use them to get people to the beach and its attractions. Source: Wikimedia Commons author Adam E. Moreira.

This project is a Proposed Project in Rockaway West, creating the opportunity to extend the route of this service throughout the Peninsula.

Cost

\$400,000

The cost of this service includes hiring a contractor to operate a bus service:

- Year-round, weekday-only service in support of commuter ferry operations (total of 8 round-trips per day)
- Summertime, weekends & holiday service in support of recreational ferry operations (total of 4 round-trips per day)

Additionally, this cost includes capital money for stops, which covers:

- Three “enhanced” stations, including signage and a rest area
- 10 sign-only stations
- Funding for this service could be obtained through a partnership of local businesses and/or the long-term ferry operator.

Benefits

Economic benefits

MEDIUM

The primary objectives of the Rockaway Ferry/Beach circulator are: 1) increasing the resiliency of the Rockaway East economy by improving the connection between downtown Far Rockaway’s transit hubs, the ferry landing and jobs in Lower Manhattan, the beach, and the rest of the Peninsula; and 2) increasing ridership and creating a more sustainable service for the ferry, which is itself a powerful economic development project. This service, in conjunction with the ferry, can be an economic engine that enhances job access for Far Rockaway residents and drives visitors to and across the Rockaway Peninsula.

Environmental benefits

LOW

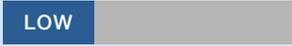
The circulator bus would slightly lessen the dependency on cars for short trips, a small step towards diversifying transit options and reducing impacts on the environment that contribute to climate change.

Cost-benefit analysis

The cost of the Featured Project is relatively low, and designed as a pilot project in order to gauge its effectiveness in circulating visitors and driving the ridership of the ferry. As such, the potential economic benefits from its implementation could be substantial if the pilot is successful.

Risk reduction

LOW



While the Project would not directly impact risk reduction, it can contribute to the long term-sustainability of the ferry at Beach 108th Street, a particularly resilient mode of transit that can provide support for evacuation and relief/recovery.

Timeframe for implementation



The project does not face any major barriers to implementation and could be implemented in six months.

Regulatory requirements

The normal regulatory requirements for bus operators would apply.

Jurisdiction

The circulator bus would operate in New York City. It is likely that a non-profit group or merchants association with the capacity to manage the operations would oversee the contract for this service.

V. Additional Materials





Bayside coastal protection is a primary recommendation.

A. Additional Resiliency Recommendations

Table V.1: Additional resiliency recommendations

Strategy	Project name	Short project description	Regional project (Y/N)	Estimated cost
Protect the community from flooding, surge, and sea level rise	Coastal protection in Edgemere	Raise coastal edge elevation along bay to create raised greenway	N	\$1-25 million
Protect the community from flooding, surge, and sea level rise	Coastal protection in Arverne/Dubos Point	Raise coastal edge elevation on Western coastline of bay	N	\$1-25 million
Protect the community from flooding, surge, and sea level rise	Coastal protection in Arverne/Brandt Point	Raise coastal edge elevation on Western coastline of bay	N	\$1-25 million
Protect the community from flooding, surge, and sea level rise	Coastal protection in Bayswater/Dunbar St and Egmont Pl	Protect against frequent localized flooding in Bayswater	N	\$1-25 million
Protect the community from flooding, surge, and sea level rise	Coastal protection in Bayswater/State Park	Protect against frequent localized flooding in Bayswater	N	\$1-25 million
Protect the community from flooding, surge, and sea level rise	USACE reformulation strategy	Complete and implement USACE reformulation strategy and dune protection	Y	No cost
Protect the community from flooding, surge, and sea level rise	Jamaica Bay surge barrier	Create surge barrier in Jamaica Bay	Y	\$25+ million

Strategy	Project name	Short project description	Regional project (Y/N)	Estimated cost
Strengthen economic resiliency	Far Rockaway multi-modal transportation hub	Work with MTA to improve Far Rockaway multi-modal transport hub	N	\$25+ million
Strengthen economic resiliency	MTA ADA-compliance	Work with MTA to make A-line stations on peninsula ADA compliant	Y	\$25+ million
Strengthen economic resiliency	Fund and implement NYC Parks Conceptual Plan	Begin to implement projects from NYC Parks Conceptual Plan, based upon feedback received from Community during process	Y	\$25+ million
Strengthen economic resiliency	Beach/boardwalk recreational and commercial amenities expansion	Expand recreational and commercial amenities to complement the City's plan for the beach/boardwalk	N	\$1-\$25 million
Strengthen economic resiliency	Expand recreational opportunities on the bay	Expand recreational opportunities on the bay, such as boating or kayaking	Y	\$1-\$25 million
Strengthen economic resiliency	Create promenade along bayfront	Create promenade along bayfront and remove barriers to accessing bay	Y	\$1-\$25 million
Strengthen economic resiliency	Increase recreation amenities	Increase amenities and services for recreational uses (bathrooms, lifeguards)	N	\$1-\$25 million
Strengthen economic resiliency	Commercial technical assistance	Support technical assistance and auditing program for resiliency for small local businesses	Y	\$1-\$25 million
Strengthen economic resiliency	Bolster commercial activity	Create business-to-business program to bolster commercial activity across the Peninsula	Y	<\$500,000
Strengthen economic resiliency	Encourage resilient business construction	Expand grant or low-cost loan programs to make businesses more resilient and encourage high-ground, transit-oriented development in Rockaway East	Y	\$1-\$25 million
Bolster community resiliency	Support redevelopment of Peninsula hospital site	Identify potential short and long term reuses of Peninsula hospital site	N	\$1-\$25 million
Bolster community resiliency	Fill gaps in scope of housing programs	Fill gaps in scope of City and State housing resiliency and recovery programs	Y	\$25+ million

Strategy	Project name	Short project description	Regional project (Y/N)	Estimated cost
Bolster community resiliency	Provide residential financial assistance	Provide financing tool to building owners to offset retrofit and increased insurance costs	Y	\$25+ million
Bolster community resiliency	Support local volunteer EMTs and ambulance services	Provide support to help local volunteer first responders better prepare for emergencies	N	\$1-\$25 million
Bolster community resiliency	Ensure school service after emergency	Create a plan to ensure continuity of service in all schools after a storm	Y	N/A
Bolster community resiliency	Create multi-family emergency readiness plan	Establish requirements for multi-family building owners to create and communicate emergency plans and ensure safety of residents	Y	N/A
Bolster community resiliency	Study improvements for shared western Nassau County/eastern Rockaway	Undertake a study with neighboring Long Island towns for road improvements to 878, the shared evacuation route for the eastern end of the Peninsula	Y	<\$500,000

B. Master Table of Projects

Table V.2: Master table of projects

Strategy	Project name	Short project description	Project category	Regional project (Y/N)	Estimated cost
Protect the Community from flooding, surge, and sea level rise	Thursby Basin Park drainage	Construct a rain garden within the new Thursby Basin Park in Arverne, using green infrastructure to collect, store, and treat stormwater.	Proposed project	N	\$250,000
	Bayside coastal protection	By restoring wetland habitat and raising portions of the Bayside Nature Trail, this project adds resiliency measures to coordinate and ecological conceptual plans in Arverne, Edgemere, and Mott Basin.	Featured project	N	17.9 million
Bolster Community resiliency	Relief center network	Create a network of relief centers to coordinate relief centers following a disaster.	Proposed project	N	\$6 – \$9.4 million
	Local health center resiliency	Fund capital improvements to strengthen a local health center facility against future storms and emergency events.	Proposed project	N	\$2 million
	Healthcare service expansion	Issue a Request for Proposals for a new health care facility on the Peninsula.	Proposed project	Y	\$1.5 million
	Residential education and technical assistance	This proposed Residential Education and Technical Assistance program would help property owners fully understand the physical and financial risks facing their homes and make more informed decisions about resiliency investments and financial decisions.	Proposed project	N	\$1 million
Strengthen economic resiliency	Workforce development	Expand workforce training and connect Rockaway East residents to employment opportunities in a range of resiliency-related industries.	Proposed project	N	\$500,000
	Mott Avenue corridor street improvements	Invest in improvements with resiliency benefits that beautify the street conditions to attract investment and support the role retail can play in the wake of a disaster.	Proposed project	N	\$4.5 million
	Seasonal business and amenity expansion	Construct a temporary shipping container market in a prominent location amenable to visitors and residents to showcase quality Rockaway East local businesses in a fresh context.	Proposed project	N	\$1.5 million

Strategy	Project name	Short project description	Project category	Regional project (Y/N)	Estimated cost
Strengthen economic resiliency	Rockaway bike share	Create a bike share program for the Rockaway Peninsula with stations sited at major transit hubs and attractions.	Featured project	Y	\$1.5 million
	Bus circulator service	Create a free limited-stop bus circulator that would better connect residents and visitors to the beach, ferry, and local	Featured project	Y	\$400,000

C. Public Engagement Process

Public Engagement

Public engagement has been central to the development of the Rockaway East NY Rising Community Reconstruction (NYRCR) Plan, as NYRCR was designed to be a community-driven process. The Rockaway East Planning Committee, comprised of local civic leaders and community activists, held Public Engagement Events and Planning Committee Meetings over the course of seven months to solicit substantial public feedback. More than 150 residents, Committee members, elected officials, and professionals, participated in Rockaway East NYRCR events. In addition to in-person engagement, the Committee used online tools such as an Interactive Community Map to solicit feedback from community members unable to attend meetings. Continuous public engagement has ensured that the NYRCR Plan reflects the Community's priorities for rebuilding and resiliency.

Planning Committee

The Rockaway East Committee Members and Co-Chairs are volunteer members selected by the State based upon their community leadership and ability to represent different constituents within the Planning Area. The Planning Committee



Public Engagement Event #1; Member of Consultant Team speaks with a Planning Committee member and a public attendee.

held 11 formal Planning Committee Meetings over the course of seven months. All Planning Committee Meetings were announced publicly on the NYRCR website, open to the public and held at community facilities throughout the Rockaway East NYCRC Planning Area.

Planning Committee Meetings addressed all topics covered in this Plan. Specific tasks and discussions held at the meetings included; identification of community assets, assessment of needs and opportunities, formalization of reconstruction and resiliency strategies, and

finalization of Proposed and Featured Projects. The Committee spearheaded community outreach strategy, identifying avenues for outreach to the Planning Area’s diverse population and solicited public feedback throughout the process.

Public Engagement Events

Public Engagement Events were designed to be highly interactive and maximize community feedback on the priorities and needs of the communities. Three Public Engagement Events were held prior to the submission of the NYRCR Plan. The Committee selected community-based venues with accessibility and proximity to targeted stakeholders. At the Public Engagement Events, the Committee offered general information about the NYRCR process; presented outcomes and information gathered to date; and solicited feedback through dynamic discussions and interactive displays. Following each Public Engagement Event, community feedback was aggregated and analyzed in order to guide discussion during Planning Committee Meetings.

Public Engagement Event #1 (October 2013)

Program Scope; Goals and Timeline; Feedback



Public Engagement Event #3; a weekend-long open house event in three locations.

on Vision; Community Assets; and Needs and Opportunities

Public Engagement Event #1, located at PS 43, showcased the NYRCR program scope and presented the Committee’s assessment of community assets and needs and opportunities.

The Public Engagement Event began with a formal presentation that introduced NYRCR and the program’s objectives to the Community. Following the presentation, an open house style event was held in which Committee members facilitated group discussion and invited community input on a number of topics including



Public attendees vote for Priority Projects at the third Public Engagement Event (above). Committee Member Jose Velez discusses project ideas with a member of the public (right).

identification of assets, needs, opportunities and goals as featured on the display boards. While the public engaged in conversation around the display boards, they were invited to take part in interactive exercises by placing stickers and notes on feedback boards. This feedback mechanism created a documented record of Community

discussion from the Public Engagement Event for the Committee to use during future meetings.

Public Engagement Event #2 (November 2013)

Contents of Draft Conceptual Plan; Gathering feedback on Strategies and Projects



The second Public Engagement solicited public responses to resiliency strategies determined by the Committee and public. The meeting utilized the same venue and a similar format to Public Engagement Event #1 and included an introductory presentation followed by breakout stations. Planning Committee members staffed the breakout stations that displayed the potential strategies. The public was again invited to interact with display boards, engage Committee members in conversation, and offer their thoughts with stickers and written notes placed on feedback boards. Community members' comments provided powerful guidance to the Committee on the types of projects to pursue that address the Rockaway East priorities and concerns and substantially shaped project development.



Committee member Reverend Leslie Mullings discusses projects with a member of the public (left). Committee Co-Chair Al Moore at Public Meeting #1 (right).



Public Engagement Event #3 featured the Proposed Projects in an open-house setting. Community members filtered in-and-out of the event, engaged with the material and fellow Community members at their own leisure, sharing their opinions on the feedback boards. Upon entering the Public Engagement Event, each Community member was given fake dollar bills, each worth \$1 million, to the total of the \$15.1 million Community Development Block Grant-Disaster Recovery (CDBG-DR) Rockaway East allocation. After reviewing the project boards, Community members were invited to cast votes on Proposed Projects at the voting table. Several members of the public came back more than once over the weekend to further review project boards and cast their final votes. The total allocation per Proposed Project was tallied and shared at the next Committee meeting to inform

Public Engagement Event #3 (February/ March 2014)

Presentation of proposed and Featured Projects, and additional resiliency recommendations; Gathering feedback on Strategies and Projects

The third Public Engagement Event was a critical opportunity to share the Proposed and Featured

Projects with the Community and obtain feedback on these projects. The Rockaway East Committee hosted the meeting over a three-day period and at a different location each day—a storefront at Arverne by the Sea Retail Transit Plaza, the Far Rockaway Library and the Bayswater Jewish Center—to maximize the opportunity for the public to provide comment.

deliberations and final voting on the Proposed and Featured Projects.

**Public Engagement Event #4 (To take place by May 2014)
Presentation of Final Plan and announcement of projects**

Public Engagement Event #4 will take place by May 2014 and conclude the Public Engagement Event series. At this Public Engagement Event, the Committee will present the Proposed Projects and the NYRCR Plan to the public.

Public Engagement Event Outreach

The Committee spearheaded outreach for Public Engagement meetings. Committee members leveraged community distribution channels to distribute emails and printed material—palm cards, flyers, and storefront posters—with Public Engagement Event information. The Rockaway East Planning Committee’s public outreach strategy utilized Rockaway East’s robust community distribution channels, including: personal and organization mailing lists and flyer distribution at schools, churches, and stores.

Online Engagement and Social Media Outreach

The NYRCR website, located at www.stormrecover.ny.gov/nyrcr, served as a valuable public resource. The Rockaway East NYRCR page is located at <http://stormrecovery.ny.gov/nyrcr/community/rockaway-east> and featured announcements, meeting dates and locations, and materials produced by the Committee throughout the process. The NYRCR website also directed visitors to the NYRCR Facebook page (located at <https://www.facebook.com/NYStormRecovery>) and Twitter account (@NYStormRecovery). Community members were also able to submit comments through the NYRCR website and by emailing info@stormrecovery.ny.gov.

A customized interactive online public engagement was generated for the Community through an online Interactive Community Map located at <http://nyrisingmap.org/>. The Community Map allowed users to confirm specific physical and cultural assets significant to Rockaway East, identify recovery and resiliency needs, and suggest rebuilding and resiliency initiatives. The Planning Committee distributed flyers with the web address listed for the Interactive Community Map. Public comments on the map were summarized and presented to

the Planning Committee, utilized as an additional feedback metric.

Table V.3: Risk assessment tool

Meaning of Risk Scores

Severe (>70)	
High (24-53)	
Moderate (6-23)	
Residual (<6)	

Asset Information							Landscape Attributes						Risk Assessment				
Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Erosion	Waterline	Shore Defenses	Protective Vegetation	Dunes	Barrier Island or Filled Wetland	Landscape Attribute Score (*Yes = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
STOP & SHOP/ ABTS RETAIL PLAZA	High	Economic	Small Business	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
YMCA	Moderate	Health and Social Services	Community Centers	No	No, Locally Significant	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.00	2	18
CHURCH OF GOD	High	Health and Social Services	Cultural or Religious Establishments	No	No, Locally Significant	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
GOD'S BATTALION OF PRAYER MINISTRIES	High	Health and Social Services	Cultural or Religious Establishments	No	No, Locally Significant	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
ST GERTRUDES ROMAN CATHOLIC CHURCH	High	Health and Social Services	Cultural or Religious Establishments	No	No, Locally Significant	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
HORIZON CARE CENTER	High	Health and Social Services	Daycare and Eldercare	Yes	Yes, FEMA	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
WEST LAWRENCE CARE CENTER	High	Health and Social Services	Daycare and Eldercare	Yes	Yes, FEMA	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
FDNY ENG 265TH, LAD 121ST, BN 47TH, EMS STATION 47TH	High	Health and Social Services	Emergency Operations / Response	No	Yes, FEMA	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
JOSEPH P ADDABBO FAMILY HEALTH CENTER	High	Health and Social Services	Healthcare Facilities	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
ACHIEZER COMMUNITY RESOURCE CENTER	High	Health and Social Services	Non-Profits	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
CHALLENGE PREPARATORY CHARTER SCHOOL	High	Health and Social Services	Schools	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
FAR ROCKAWAY HIGH SCHOOL	High	Health and Social Services	Schools	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
TORAH ACADEMY FOR GIRLS ELEMENTARY	High	Health and Social Services	Schools	No	No, Locally Significant	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
711 HOUSING	High	Housing	Multi-Family Residence	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
ARVERNE HOUSING - EXTREME RISK	Extreme	Housing	Multi-Family Residence	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	4	54
ARVERNE HOUSING - HIGH RISK	High	Housing	Multi-Family Residence	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32

Meaning of Risk Scores

Severe (>70)	
High (24-53)	
Moderate (6-23)	
Residual (<6)	

Asset Information							Landscape Attributes							Risk Assessment			
Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Erosion	Waterline	Shore Defenses	Protective Vegetation	Dunes	Barrier Island or Filled Wetland	Landscape Attribute Score (*Yes* = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
EDGEMERE HOUSING - EXTREME RISK	Extreme	Housing	Multi-Family Residence	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	4	54
EDGEMERE HOUSING - HIGH RISK	High	Housing	Multi-Family Residence	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
MOTT BASIN HOUSING - EXTREME RISK	Extreme	Housing	Multi-Family Residence	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	4	54
MOTT BASIN HOUSING - HIGH RISK	High	Housing	Multi-Family Residence	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
NYCHA BEACH 41ST STREET HOUSING	High	Housing	Multi-Family Residence	Yes	Yes, FEMA	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
NYCHA CARLETON MANOR	High	Housing	Multi-Family Residence	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
NYCHA OCEAN BAY APARTMENTS	High	Housing	Multi-Family Residence	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
NYCHA REDFERN	High	Housing	Multi-Family Residence	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
SESSA APARTMENTS	High	Housing	Multi-Family Residence	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
LIPA DISTRIBUTION SUBSTATION	High	Infrastructure Systems	Power Supply	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
A TRAIN LINE	High	Infrastructure Systems	Transportation	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	5	53
BAYSWATER PARK	High	Natural and Cultural Resources	Parks and Recreation	No	No	High	No	Yes	Yes	No	Yes	Yes	2	3	3.00	2	18
BAYSWATER POINT STATE PARK	High	Natural and Cultural Resources	Parks and Recreation	No	No	High	No	Yes	Yes	No	Yes	Yes	2	3	3.00	2	18
LANNET PLAYGROUND	High	Natural and Cultural Resources	Parks and Recreation	No	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	2	21
O'DONOHUE PARK	Extreme	Natural and Cultural Resources	Parks and Recreation	No	No	High	Yes	No	Yes	Yes	Yes	Yes	2.5	3	4.50	2	27
ROCKAWAY BEACH AND BOARDWALK	High	Natural and Cultural Resources	Parks and Recreation	No	No	High	Yes	No	Yes	Yes	Yes	Yes	2.5	3	3.50	4	42
SKATE PARK	Extreme	Natural and Cultural Resources	Parks and Recreation	No	No	High	No	No	Yes	Yes	Yes	Yes	2	3	4.00	2	24

Table V.4: Complete asset inventory

The following tables contain the complete list of assets for Rockaway East, with additions from the Planning Committee and public.

Health and Social Service Assets

Asset Name	Asset Subcategory	Address
KING, STERLING	Cultural or Religious Establishments	444 BEACH 44 STREET
LAWRENCE FAR ROCKAWAY	Cultural or Religious Establishments	12-04 BEACH 12 STREET
LAWRENCE NURSING CARE CENTER, INC	Daycare and Eldercare	3-57 BEACH 53 STREET
LONG ISLAND HEBREW LIVING CENTER	Daycare and Eldercare	4-31 BEACH 20 STREET
MACEDONIA BAPTIST CHURCH	Cultural or Religious Establishments	330 BEACH 67 STREET
MESSIANIC CONGREGATION	Cultural or Religious Establishments	612 BEACH 22 STREET
MISS D'S PLAYGROUP DAY CARE	Schools	15-26 CENTRAL AVENUE
MS 53 BRIAN PICCOLO	Schools	10-45 NAMEOKE STREET
MT CARMEL BAPTIST CHURCH	Cultural or Religious Establishments	348 BEACH 71 STREET
NEW BEGINNING CHURCH	Cultural or Religious Establishments	38-16 ROCKAWAY BEACH BLVD
NEW HAVEN MANOR CLINIC	Daycare and Eldercare	15-26 NEW HAVEN AVENUE
NEW SURFSIDE NURSING HOME	Daycare and Eldercare	22-41 NEW HAVEN AVENUE
NORTHEASTERN CONFERENCE	Cultural or Religious Establishments	52-05 ROCKAWAY BEACH BLVD
NY NY CONGREGATION OF JEHOVAH WITNESS	Cultural or Religious Establishments	6-16 BEACH 68 STREET
NYPD 101ST PRECINCT	Emergency Operations / Response	16-12 MOTT AVENUE
OCEANVIEW NURSING AND REHABILITATION CENTER	Daycare and Eldercare	3-15 BEACH 9 STREET
ON OUR WAY LEARNING CENTER	Schools	264 BEACH 19 STREET
PENINSULA CENTER FOR EXTENDED CARE AND REHABILITATION	Primary / Regional Hospitals	51-15 BEACH CHANNEL DRIVE
PENINSULA HOSPITAL CENTER	Primary / Regional Hospitals	51-15 ROCKAWAY BEACH BLVD
PENINSULA PREPARATORY ACADEMY CHARTER SCHOOL	Schools	611 BEACH 19 STREET
PENTECOSTAL CHRISTIAN CHURCH	Cultural or Religious Establishments	18-35 MOTT AVENUE
PRIME HEALTH SERVICES	Daycare and Eldercare	1149 CENTRAL AVENUE
PS 104 THE BAYS WATER	Schools	25 BEACH 28 STREET
PS 105 BAY SCHOOL	Schools	420 BEACH 51 STREET
PS 106	Schools	1-80 BEACH 35 STREET
PS 197 OCEAN SCHOOL	Schools	8-15 LANETT AVENUE
PS 215 LUCRETIA MOTT	Schools	535 GRASSMERE TERRACE
PS 253	Schools	13-07 CENTRAL AVENUE
PS 43	Schools	112 BEACH 29 STREET
PS 43 EARLY CHILDHOOD CENTER	Schools	6 MARVIN STREET
PS/MS 42 R VERNAM	Schools	460 BEACH 66 STREET

Asset Name	Asset Subcategory	Address
QUEENS NASSAU REHABILITATION AND NURSING CENTER (21)	Daycare and Eldercare	520 BEACH 19 STREET
RALPH HIRSCHKORN CHILD CARE CENTER	Healthcare Facilities	310 PLAINVIEW AVENUE
REFUGE CHURCH OF CHRIST	Cultural or Religious Establishments	18-37 MOTT AVENUE
RESORT NURSING HOME	Daycare and Eldercare	4-30 BEACH 68 STREET
ROCKAWAY ANIMAL HOSPITAL	Healthcare Facilities	18-33 CORNAGA AVENUE
ROCKAWAY CARE CENTER	Daycare and Eldercare	3-53 BEACH 49 STREET
ROCKAWAY MANOR	Daycare and Eldercare	145 BEACH 8 STREET
ROCKAWAY MEDICAL OFFICE	Healthcare Facilities	29-15 FAR ROCKAWAY BLVD
SANITATION	Public Works Facilities	20-06 NAMEOKE AVENUE
SEAVIEW MANOR	Daycare and Eldercare	210 BEACH 47 STREET
SHELDON R. WEAVER DAY CARE CENTER	Schools	12-79 REDFERN AVENUE
SIACH YITZCHOK	Cultural or Religious Establishments	15-13 CENTRAL AVENUE
ST GERTRUDES AUDITORIUM	Community Centers	307 BEACH 37 STREET
ST GERTRUDES ROMAN CATHOLIC CHURCH	Cultural or Religious Establishments	336 BEACH 38 STREET
ST JOHNS EPISCOPAL HOSPITAL	Primary / Regional Hospitals	19-04 PLAINVIEW AVENUE
ST MARY STAR OF SEA CHURCH	Cultural or Religious Establishments	19-20 NEW HAVEN AVENUE
TEMPLE CHURCH	Cultural or Religious Establishments	18-01 REDFERN AVENUE
THE PRAYER CENTER OF DELIVERANCE FOR ALL NATIONS	Cultural or Religious Establishments	16-18 CENTRAL AVENUE
TORAH ACADEMY FOR GIRLS ELEMENTARY	Schools	444 BEACH 6 STREET
TORAH ACADEMY FOR GIRLS HIGH SCHOOL	Schools	610 LANETT AVENUE
UNITED STATES POST OFFICE ARVERNE	Government and Administrative Services	329 BEACH 59 STREET
UNITED STATES POST OFFICE FAR ROCKAWAY	Government and Administrative Services	18-02 MOTT AVENUE
WAVECREST HOME FOR ADULTS	Daycare and Eldercare	2-42 BEACH 20 STREET
WEST LAWRENCE CARE CENTER	Daycare and Eldercare	14-10 SEAGIRT BOULEVARD
WORLD HARVEST DELIVERY	Cultural or Religious Establishments	15-21 CENTRAL AVENUE
YESHIVA B'NEI TORAH	Schools	7-37 ELVIRA AVENUE
YESHIVA DARCHEI TORAH	Schools	271 BEACH 17 STREET
YESHIVA FAR ROCKAWAY	Schools	8-01 FRISCO AVENUE
YMCA (FUTURE)	Community Centers	
YOUNG ISRAEL FAR ROCK	Cultural or Religious Establishments	7-16 BEACH 9 STREET
YOUNG ISRAEL OF WAVECREST AND BAYSWATER	Cultural or Religious Establishments	27-16 HEALY AVENUE

Housing Assets:

Asset Name	Asset Subcategory	Address
C VULNERABLE AND SENIORS HOUSING	Supportive Housing	
C ALL PUBLIC/REGULATION HOUSING	Affordable Housing	
C 711 Housing	Multi-Family Residence	7-11 SEAGIRT AVENUE
C OHEL CHILDREN'S HOME	Supportive Housing	12-17 GATEWAY BOULEVARD
C SESSA APARTMENTS	Multi-Family Residence	407 BEACH 45 STREET

Natural and Cultural Assets:

Asset Name	Asset Subcategory	Address
E ALMEDA PLAYGROUND	Parks and Recreation	BEACH 66 STREET
E ARVERNE BY THE SEA	Parks and Recreation	144 BEACH 66 STREET
E BAYSWATER PARK	Parks and Recreation	BEACH 38 STREET
E BAYSWATER POINT STATE PARK	Parks and Recreation	EDGEWATER ROAD
E BEACH 30TH STREET PLAYGROUND	Parks and Recreation	102 BEACH 32 STREET
E BRANT POINT WILDLIFE SANCTUARY	Parks and Recreation	DE COSTA AVENUE
E CARDOZO PLAYGROUND	Parks and Recreation	56-02 ARVERNE BOULEVARD
E CORNELL BURIAL GROUND	Parks and Recreation	CAFFREY AVENUE
E DUBOS POINT WILDLIFE SANCTUARY	Parks and Recreation	BEACH 63 STREET
E EDGEMERE URBAN RENEWAL PARK	Parks and Recreation	BEACH 45 STREET
E GREENPORT LAND ACQUISITION	Parks and Recreation	GATEWAY BOULEVARD
E JAMAICA BAY PARK	Parks and Recreation	NORTON AVENUE
E LANNET PLAYGROUND	Parks and Recreation	8-15 LANETT AVENUE
E O'DONOHUE PARK	Parks and Recreation	9-01 SEAGIRT BOULEVARD
E REDFERN HOUSES PLAYGROUND	Parks and Recreation	15-01 REDFERN AVENUE
E ROCKAWAY BEACH AND BOARDWALK	Parks and Recreation	SEAGIRT BOULEVARD
E ROCKAWAY COMMUNITY PARK	Parks and Recreation	ELIZABETH AVENUE
E ROCKAWAY FREEWAY	Parks and Recreation	BEACH 68 STREET
E SEAGIRT AVENUE WETLANDS	Parks and Recreation	SEAGIRT AVENUE
E SKATEPARK	Parks and Recreation	
E THURSBY BASIN PARK	Parks and Recreation	62-02 BEACH 63 STREET
E UNAMED PARK	Parks and Recreation	BEACH 27 STREET

Infrastructure Systems Assets:

Asset Name	Asset Subcategory	Address
D A TRAIN SUBWAY	Transportation	ROCKAWAY BEACH BLVD
D BEACH 25 STREET MTA SUBWAY STATION	Transportation	
D BEACH 36 STREET MTA SUBWAY STATION	Transportation	
D BEACH 44 STREET MTA SUBWAY STATION	Transportation	
D BEACH 60 STREET MTA SUBWAY STATION	Transportation	
D BEACH 67 STREET MTA SUBWAY STATION	Transportation	
D BULKHEAD	Stormwater	BAYFIELD AVENUE
D GAS STATION	Liquid Fuels	13-46 BEACH CHANNEL DRIVE
D GAS STATION	Liquid Fuels	38-01 BEACH CHANNEL DRIVE
D GAS STATION	Liquid Fuels	59-14 BEACH CHANNEL DRIVE
D LIPA	Power Supply	MOTT AVENUE
D LIPA	Power Supply	ROCKAWAY BEACH BLVD
D LIRR SUBSTATION	Transportation	BEACH 12 STREET
D LONG ISLAND LIGHT CO	Power Supply	FAR ROCKAWAY BLVD
D MOTT AVENUE MTA SUBWAY STATION	Transportation	
D MTA NYC TRANSIT	Transportation	FAR ROCKAWAY BLVD
D MTA NYC TRANSIT	Transportation	BEACH 42 STREET
D MTA/LIRR	Transportation	BEACH 12 STREET
D VERIZON	Telecommunications	15-02 FAR ROCKAWAY BLVD

Economic Assets:

Asset Name	Asset Subcategory	Address
A BEACH CHANNEL DRIVE RETAIL CORRIDOR	Downtown Center	
A KEY FOODS	Small Business	2020 NEW HAVEN AVENUE
A MOTT AVE RETAIL CORRIDOR	Downtown Center	
A STOP AND SHOP / ABTS RETAIL PLAZA	Small Business	70-20 ROCKAWAY BEACH BLVD
A ROCKAWAY DEVELOPMENT AND REDEVELOPMENT CORPORATION	Banks and financial Services	19-20 MOTT AVENUE

E. Related projects and programs

The projects and recommendations proposed by the Planning Committees were analyzed within the context of existing federal, regional, city, and local studies and projects. Relevant efforts include studies, campaigns, projects, funding programs, and plans that are both directly related to resiliency and emergency preparedness and those that impact community planning in Breezy Point, Rockaway West, and Rockaway East. By understanding the wide range of efforts already underway in the community, the Planning Committees developed recommendations that build-off of existing efforts, fill gaps, and avoid redundancies.

The below table of studies, plans, and projects represent a selection of the key efforts that were considered during the NYRCR process as well as a few critical regional or citywide programs that are particularly relevant to resiliency, planning, and community development. Given the interdependencies between the three Rockaway Peninsula Planning Areas, particularly in the areas of coastal protection, economic development, and transportation/emergency access and evacuation, the key reports are summarized for the three Rockaway Peninsula Planning Areas together in this Appendix.

Table V.5: Existing plans, studies, and projects: Emergency preparedness and capacity building

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure Natural & Cultural Resources	
Precedent: Disaster preparedness model development	Red Hook Coalition; Good Shepard Services	The Red Hook Coalition is developing a long-term community recovery and emergency preparedness plan that will be a NYC Office of Emergency Management recognized document. This document will identify necessary mitigation, select projects to be undertaken, assign champions, and develop strategies to implement the plan. Supplementing this planning effort, the Red Hook Coalition will help coordinate a teen Community Emergency Response Team (CERT) training program that will engage youth in disaster preparedness.	X		X			

Table V.5: Existing plans, studies, and projects: Emergency preparedness and capacity building

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions				
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure Natural & Cultural Resources
Precedent: Red Hook WiFi	The Digital Stewards, Red Hook Initiative (RHI)	A community-wide WiFi network was developed by the Red Hook Initiative involving neighbors and volunteers. Well over 18 wireless routers have been installed at businesses and non-profits, extending the coverage to all of the main corridors in Red Hook. This program is now being elevated as an example for both disaster response and access expansion regionally and nationally.	X				X
2014 NYC Hazard Mitigation Plan (HMP)	New York City Office of Emergency (OEM); NYC Department of City Planning (DCP)	The HMP identifies the City’s risk to a range of hazards and identified strategies to reduce the effects of these hazards. Strategies outlined in the report influence all neighborhoods of New York City, including across the Rockaway Peninsula.	X				

Table V.6: Existing plans, studies, and projects: Coastal Protection

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
Hazard Mitigation Grant Program	Federal Emergency Management Agency	FEMA’s Hazard Mitigation Grant Program (HMGP) provides funds to support a variety of types of projects that will reduce or eliminate losses from future disasters. Projects must provide a long-term solution and a project’s potential savings must be more than the cost of implementing the project. Funds may be used to protect either public or private property or to purchase property that has been subjected to, or is in danger of, repetitive damage. In New York, the HMGP program is administered by New York State. The Breezy Point/Roxbury Community is under consideration for a substantial grant to implement coastal protection measures on the ocean and bay sides of the Community.		X	X		X	X

Table V.6: Existing plans, studies, and projects: Coastal Protection

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
Hurricane Sandy Coastal Resiliency Competitive Grants Program	Department of the Interior	The Hurricane Sandy Coastal Resiliency Competitive Grants Program, funded by the Department of the Interior (DOI) and administered by the National Fish and Wildlife Foundation (NFWF), will award more than \$100 million in grants throughout the region affected by Hurricane Sandy to projects that assess, restore, enhance or create wetlands, beaches and other natural systems to better protect communities, as well as fish and wildlife species and habitats, from the impacts of future storms and naturally occurring events. The Breezy Point/Roxbury Community has partnered with Gateway National Recreation Area to apply for a DOI/NFWF grant to undertake actions to restore the Cove and Breezy Point Tip. The growing acceptance of these types of restoration/resiliency approaches also influenced the development of coastal protection measures in Rockaway West and Rockaway East.					X	X
Targeted Bulkhead Repair/Raising Program	NYC Economic Development Corporation (EDC)	The SIRR Report recommended a city-wide bulkhead raising program targeted to low-lying neighborhoods at risk of regular tidal flooding on the bayside of the Rockaway Peninsula, Broad Channel, Howard Beach, among other locations. This program will work in conjunction with a new citywide waterfront inspections program. NYC EDC is the implementation agency. Beach Channel Drive is already undergoing bulkhead repair under this program. The program could be a source of funding for bulkhead repair in Arverne in Rockaway East.					X	

Table V.7: Existing plans, studies, and projects: Miscellaneous community planning, public realm, open space, and waterfront planning efforts

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
SIRR Report	Special Initiative for Rebuilding and Resiliency	Special Initiative for Rebuilding and Resiliency. On June 11, 2013, former Mayor Michael Bloomberg announced the release of A Stronger, More Resilient New York (SIRR Report), forming New York City’s plan for rebuilding post Sandy and ensuring resiliency into the future. The plan contains actionable recommendations both for rebuilding communities in the City affected by the storm and for increasing the resiliency of buildings and infrastructure citywide. All NYRCR Communities within the city have and will need to continue to coordinate with ongoing City initiatives. More broadly, the SIRR Report lays out numerous city-wide initiatives to improve resiliency for systems, including coastal protection, buildings, insurance, utilities, liquid fuels, healthcare, transportation, parks, water and wastewater, and other critical networks.	X	X	X	X	X	X
NYC Building and Zoning Code Revisions	NYC Building Resiliency Task Force	Ongoing and potential future updates to the building and zoning code are particularly relevant to NYRCR communities in the Rockaway Peninsula. The NYC Building Resiliency Task Force identified 33 recommendations to the City Council. Many of these recommendations are still in various states of review, and 16 initiatives have been passed. In addition, the New York City Department of City Planning’s Flood Resilience Zoning Text Amendment was approved by City Council on October 9, 2013. The amendment removed obstacles to homes that are rebuilding in the flood zone, allowing homes to build to the new standards.				X	X	

Table V.7: Existing plans, studies, and projects: Miscellaneous community planning, public realm, open space, and waterfront planning efforts

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
Dredged Materials & Climate Change Pilot Project: Technology, Applications and Demonstration Project - Phase 1	PANYNJ and Nautilus	The Port Authority of New York & New Jersey (PANYNJ) is exploring the beneficial reuse of dredged materials in ways that are environmentally sustainable and can improve coastal resiliency through the Dredged Materials & Climate Change Pilot Project. During the first phase, the pilot is aimed at 1) analyzing state-of-the-art technologies for the reuse of dredged materials, 2) evaluating a range of possible applications that could help address climate change, and 3) proposing a future demonstration project on southwest Brooklyn's waterfront. The findings could provide additional coastal protection options for low-lying South Queens neighborhoods.					X	X
Special Initiative for Rebuilding and Resiliency (SIRR) Analysis - Environmental Justice Alliance	Sandy Regional Assembly, Environmental Justice Alliance (NYC-EJA)	Report analyzes proposals made by the SIRR Report and provides supplemental recommendations aimed at addressing environmental justice and social justice issues. Proposals relevant to Red Hook include providing funding for the Red Hook Significant Maritime Industrial Area (SMIA), expediting the remediation of the Gowanus Canal, and establishing a Community Resilience Center.	X	X	X	X	X	X
DDC Capital Project at Brooklyn Public Library	NYC Department of Design and Construction (NYCDDC) and Brooklyn Public Library	Red Hook Library boiler to be replaced after sustaining considerable damage in Superstorm Sandy			X		X	

Table V.7: Existing plans, studies, and projects: Miscellaneous community planning, public realm, open space, and waterfront planning efforts

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
NYC DCP's Resilient Neighborhoods Initiative	New York City Department of City Planning (DCP)	NYC DCP's Resilient Neighborhoods Initiative is a series of neighborhood planning studies in support of disaster recovery. Working closely with communities, NYC DCP will develop locally specific strategies to address recovery needs, increase resilience, and support the vitality of neighborhoods in the near and long term. Rockaway West is in the phase I set of neighborhoods to be examined under this initiative, which is just getting underway in spring 2014. Rockaway East is in a Phase II set of neighborhoods to be examined under this initiative; however, Phase II has not yet been funded. The NY Rising projects recommended by the Committees, especially those around Beach 108 th Street and Mott Avenue, will be an important part of a larger neighborhood resiliency approach.	X	X				

Table V.8: Existing plans, studies, and projects: Housing

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions				
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure Natural & Cultural Resources
Weathering the Storm: Rebuilding a More Resilient New York City Housing Authority Post-Sandy	The Alliance for a Just Rebuilding; ALIGN; Community Development Project at the Urban Justice Center; Community Voices Heard; Faith in New York; Families United for Racial and Economic Equality; Good Old Lower East Side; Red Hook Initiative; New York Communities for Change	This report assesses how NYCHA residents living in storm-affected zones are faring after Superstorm Sandy and proposes solutions for how NYCHA and the City can address the issues exposed by Sandy. For this research, participating community groups surveyed public housing residents living in NYCHA buildings in Red Hook, Coney Island, Lower East Side, Far Rockaway, and Gowanus. The report includes research findings and recommendations.				X	
NYC Recovery: Build it Back Program	NYC Recovery	The City's "Build It Back" program seeks to assist homeowners, landlords, and tenants whose homes were damaged by the storm. The NYC Recovery Program is also offering business loans and grants to small business owners whose businesses were damaged by the storm. Most of these recovery programs support resiliency investments and will help improve individual homes and businesses in the communities surrounding Jamaica Bay.				X	

Table V.8: Existing plans, studies, and projects: Housing

			Recovery Support Functions					
Precedent: Sandy Design Help Desk	Fifth Avenue Committee (FAC); Enterprise Community Partners; Architecture for Humanity; New York City Housing Recovery Office (HRO)	A weekend workshop, staffed by volunteer architects, provided pro-bono assistance to Red Hook homeowners/building owners addressing questions about resiliency upgrades and repairs. The workshop was able to assist 12 property owners and highlighted the key challenges that homeowners are facing in repair/resiliency work.				X		
Precedent: Gowanus Houses tenant disaster training program	Fifth Avenue Committee (FAC); Families United for Racial and Economic Equality (FUREE)	The disaster preparedness project will engage and train tenants in Gowanus Houses on climate change, disaster planning and recovery; create a community hub; and develop a disaster preparedness plan and training program for volunteers to respond in disasters	X				X	
FAR ROC Design Competition	NYC Housing Preservation & Development (HPD)	FAR ROC [For a Resilient Rockaway] is a two-phase design competition that will explore innovative strategies for the planning, design and construction of a resilient and sustainable development at Arverne East, an 80+ acre site on the Rockaway Peninsula. The Competition received 117 unique design proposals from over 20 countries around the globe. Competitions winners were announced in October 2013. The winning proposal, “Small Means & Great Ends,” incorporates a series of small, affordable, and smart interventions that center on three strategies: reduce and control damage; provide access in the event of a storm; and ensure quick recovery. The design aims not only to better weather future natural disasters, but also to create a stronger socio-economic environment—moving beyond resilience and becoming ‘antifragile’, where both the design and community benefit and improve after enduring stress.					X	
Best practices for disaster response in supportive housing report	Supportive Housing Network of NY	Research and report on best practices in disaster response plans to supportive housing providers and government partners; clarify government agency roles and protocols as they apply to supportive housing during disasters	X				X	
White paper on reducing regulatory barriers for MF retrofit	Furman Center for Real Estate and Urban Policy	Identify promising retrofit strategies for three common affordable, multi-family housing building types; Prepare and publicize three case studies and engineering analysis and a white paper on findings and recommendations to reduce regulatory barriers					X	
Physical Needs Assessment (PNA) model development with resiliency considerations	NYC Energy Efficiency Corporation	Incorporation of additional resiliency and energy saving analysis into Physical Needs Assessment (PNA), Develop a model for PNA reports that includes energy efficiency and resiliency	X				X	

Table V.9: Existing plans, studies, and projects: Economic development & economic opportunity

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
Neighborhood Game-Changer Investment Competition	New York City Economic Development Corporation (EDC)	NYCEDC launched a \$90,000,000 competition for development of “game-changing” projects that will enhance the vitality, connectivity, and economic strength of areas impacted by Superstorm Sandy including South Queens.		X				
NYC Recovery: Business Resiliency Investment Program (BRIP)	New York City Economic Development Corporation (EDC)	The Business Resiliency Investment Program (BRIP) is a \$110 million CDBG-DR-funded program that will provide funds to both business tenants and owners to make improvements that enhance resiliency to severe weather-related events. It will focus on funding a portion of the incremental costs of one or more “Approved Resiliency Measures” through grants and loans; the program focuses on funding resiliency improvements and not repairs.		X				
New York City Regional Economic Development Council’s Five-Year Strategy	New York City Regional Economic Development Council	This plan is a comprehensive economic strategy to address and promote poverty prevention/job training, government fiscal responsibility and infrastructure investment, and balanced investment among all of New York City’s businesses. The Council outlines four key objectives to address these principles: improve quality of life, create a pro-growth, pro-jobs environment, invest in the future, and foster innovation and inter-regional cooperation. Specific approaches such as supporting small businesses and neighborhood revitalization align with the goals of NYRCR.		X				

Table V.10: Existing plans, studies, and projects: Transportation

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions				
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure Natural & Cultural Resources
2010 Comprehensive Citywide Ferry Study	NYC Economic Development Corporation (EDC)	This study provided an overview of development potential for passenger ferry transportation throughout New York City. The planning study analyzed and prioritized potential routes drawn from a group of over forty waterfront sites in the five boroughs. As discussed in the study, enhanced ferry service in Red Hook could provide multiple local and regional benefits, including increased access to a variety of destinations in Red Hook, as well as substantial reductions in commuting time to Manhattan, which could further increase the neighborhood's attractiveness.					X
2013 Comprehensive Citywide Ferry Study	NYC Economic Development Corporation (EDC)	Given the success of the East River Ferry's first two years of service and dramatic development changes on New York City's waterfront, NYC EDC is developing an updated and expanded Citywide Ferry Study that builds on the recommendations first identified in the 2010 Comprehensive Ferry Study. A preliminary report was published in late 2013 as a precursor to the Final Report that is anticipated for release in 2014. The preliminary report's findings on economic impacts and potential value capture strategies have relevance for NY Rising communities considering bolstering ferry service. The report found that residential property values near East River ferry stops in Brooklyn and Queens increased 8% over comparable property values further from the stops; similarly areas near ferry stops realized almost 5% more residential and commercial building space development than areas farther from ferry stops. The report found that ferry routes serving more distant locations provide accessibility benefits but generate higher operating costs requiring greater funding support if they are to maintain fares similar to other transit modes.					X

Table V.10: Existing plans, studies, and projects: Transportation

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions				
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure Natural & Cultural Resources
Ferry Policy and Planning in New York City: Considerations for a Five-Borough Ferry System	NYC EDC	In conjunction with the Citywide Ferry Study update, this paper provides a preliminary road map for expansion to a five-borough ferry system, building on lessons learned and defining best practices.					X
New York-New Jersey-Connecticut Hurricane Sandy Follow-up and Transportation Vulnerability Assessment and Adaptation Analysis Project	FHWA; New York, New Jersey and Connecticut Departments of Transportation; North Jersey Transportation Planning Authority (NJTPA); New York Metropolitan Transportation Council (NYMTC); South Western Regional Planning Agency (SWRPA); Greater Bridgeport Regional Council (GBRC)	This research project, initiated by Federal Highway Administration (FHWA), will examine the impacts on the transportation system from Hurricanes Sandy and Irene and Tropical Storm Lee and identify strategies to protect select transportation assets from the impacts of extreme weather and climate change.					X

Table V.10: Existing plans, studies, and projects: Transportation

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions				
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure Natural & Cultural Resources
Metropolitan Transportation Authority (MTA) Capital Needs Assessment 2015-2034	Metropolitan Transportation Authority (MTA)	The 20-year capital needs assessment establishes the planning context prior to the development of five-year capital programs for the MTA. As discussed in the document, MTA’s goal is to maintain a transportation system that is resilient to future natural hazards and the impacts of possible climate change.					X
MTA Rockaway Crossings Mater Plan	Metropolitan Transportation Authority (MTA)	MTA Triborough Bridge and Tunnel Authority (TBTA) is conducting a study to assess and develop engineering alternatives for potential replacement or reconstruction scenarios for the Rockaway Crossings – the Gil Hodges Memorial Bridge and Cross Bay Bridge. The study will develop a Long Term Rockaway Crossing Facility Master Plan, outlining future capital expenditures the Authority should allocate as part of its capital Program.					X
New York Metropolitan Transportation Council (NYMTC) Plan 2040 Regional Transportation Plan (RTP)	New York Metropolitan Transportation Council (NYMTC)	Adopted in September 2013, this plan includes the NYMTC members’ vision for the planning area and lays out the long-range framework for maintaining and improving the region’s transportation system. One of seven “shared goals” of the NYMTC members is to improve the resiliency of the regional transportation system. As discussed in the document, NYMTC’s members will continue to plan for improving the resiliency of the transportation system so that the system can better resist disruptions to services and facilities and recover from them when they occur.					X

Table V.10: Existing plans, studies, and projects: Transportation

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
Woodhaven/Cross Bay Boulevards Select Bus Service (SBS) Study	New York City Department of Transportation (NYC DOT) MTA/NYCTransit	NYC DOT and MTA/NYC Transit are studying the Woodhaven/Cross Bay Boulevards for conversion of the existing Limited-Stop Q52/53 bus routes to Select Bus Service (SBS) to make existing bus service substantially faster and more reliable, while maintaining needed traffic flow and parking, and also making the corridor safer for all users. These routes extend from Rockaway Park and Arverne in the Rockaway Peninsula and Rego Park in central Queens; therefore, the study and potential improvements will include not just Woodhaven and Cross Bay Boulevards, but also streets to the north and south including Broadway, Roosevelt Avenue, and Rockaway Beach Boulevard. The Woodhaven/Cross Bay Boulevards corridor was first identified as a preferred location for Select Bus Service improvements in 2009, which led to short-term safety improvements. Long-term recommendations include roadway capital improvements and the implementation of Select Bus Service. This study is just getting under way and the first public workshop will be held on April 24, 2014.					X	

Table V.10: Existing plans, studies, and projects: Transportation

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
Remediation of Rockaway Park Former Manufactured Gas Plant Site	NYS DEC and National Grid	The Rockaway Park Former Manufactured Gas Plant (MGP) site sits on a large block at the northwest corner of Beach Channel Drive and Beach 108th Street. From the late 1870s until 1958, gas for cooking, lighting, heating, and commercial purposes was manufactured at the site. Evidence of by-products that resulted from the manufacturing process were found at the site, and required clean-up and remediation to contain contaminants from further spreading in subsurface soil or groundwater. Remediation measures on the site included excavation of soil to eight feet below grade, installing migration barriers, developing recovery wells, and capping the site, among other activities. Remediation measures were completed on the site itself in 2012, before Superstorm Sandy hit. The site was used for staging for Sandy recovery activities, and a portion of the site is currently used for parking for the Rockaway Ferry. Off-site remediation activities are still being defined, but will include complete remediation in the city-owned bulkhead area across Beach Channel Drive; the resulting landscaped open space is included in the NYC DPR Rockaway Parks Conceptual Plan as the Beach 108th Esplanade.		X				X
Assorted DDC Capital Projects and NYC DOT 10 Year Capital Plan Projects	NYC Department of Design and Construction (DDC); NYC Department of Environmental Protection (DEP); NYC Department of Transportation (DOT)	Assorted capital transportation projects planned, underway, or recently completed include: – Reconstruction of Columbia Street, Phase II/BED768B/SEK002321 (HWK700B) – Reconstruction of Columbia Street/BED768 (HWK700A) – Brooklyn Waterfront Greenway: Sunset Park Connector (HWK1048D) – Retaining wall - Hamilton Avenue westbound (RWK017) - east of Smith Street – Retrofit/upgrade of asphalt plant at Hamilton Avenue (HWKF2007) – Hamilton Avenue/Gowanus Canal (BIN 2-24023)					X	X

Table V.11: Existing plans, studies, and projects: Drainage & energy

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
NYC Wastewater Resiliency Plan: Climate Risk Assessment and Adaptation Study	NYC Department of Environmental Protection (DEP)	Building upon previous studies, this climate risk assessment and adaptation study sets forth cost-effective strategies for reducing flooding damage to wastewater infrastructure and safeguarding public health and the environment. This comprehensive study examined buildings and infrastructure at DEP’s 96 pumping stations and 14 wastewater treatment plants, identifying and prioritizing infrastructure that is most at risk of flood damage. The plan identified \$15.1 million in resiliency upgrades for Rockaway WWTP, which occupies a superblock along Beach Channel Drive between Beach 108th and Beach 104th streets. Given the damage experienced in Superstorm Sandy and the expense to make the WWTP resilient, the plan notes that NYC DEP is evaluating alternatives for the WWTP, including conversion to a pumping station. Changing the function of the WWTP is a long-term effort, but could greatly benefit plans the Committee has identified for economic resiliency along Beach 108th Street and Beach Channel Drive. The plan also made recommendations for resilience measures at the Bayswater and Seagirt Pumping Stations in Rockaway East.					X	

Table V.11: Existing plans, studies, and projects: Drainage & energy

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
Green Infrastructure Program	NYC DEP	<p>In many parts of New York City, both stormwater and household wastewater flow into a common system, called a combined sewer. In heavy rain events, the system becomes overwhelmed and a mix of excess stormwater and untreated wastewater discharges directly into the City’s waterways at combined sewer outfalls.</p> <p>NYC DEP’s Green Infrastructure Program was created to address water quality impacts that result from combined sewer overflow events. Under this program, NYC DEP and its partner agencies design, construct and maintain a variety of sustainable green infrastructure practices such as green roofs, rain gardens, and Right-of-way Bioswales on City-owned property such as streets, sidewalks, schools, and public housing. The program also provides grants for green infrastructure projects on private property.</p> <p>The Rockaway Peninsula is served by separated stormwater sewers (or by no stormwater system at all in places, simply surface drainage), so the area is not eligible for the NYC DEP Green Infrastructure Program projects or grants. However, the program’s structure, standard designs, and its emphasis on funding maintenance provide guidance and resources for developing a successful bioswales program.</p>					X	X
DDC Capital Projects	NYC Department of Design and Construction (DDC); NYC Department of Environmental Protection (DEP)	Assorted repairs and rehabilitation of intercepting sewers is being undertaken.					X	

Table V.12: Existing plans, studies, and projects: Natural resources & open space

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
NYC DCP New York City Comprehensive Waterfront Plan—Vision 2020	NYC DCP	A comprehensive analysis and overall vision for New York City’s 520 miles of shoreline. It includes a strategic framework for the City’s waterfront, short- and long-term strategies, and is used to guide land and water use decisions. Priorities in the plan focus on expanding public access, supporting the working waterfront, improving water quality, restoring the ecology of the waterfront, enhancing the Blue Network (the waterways between the five boroughs), and increasing the resiliency of the City in respect to climate change and sea-level rise.						X
NYC DCP New York City Waterfront Revitalization Program	NYC DCP	The New York City Waterfront Revitalization Program (WRP) is the city’s principal coastal management tool, and implements the CWP. It establishes the City’s policies for development and use of the waterfront, and provides the framework for evaluating the consistency of all discretionary actions in the coastal area. When a proposed project is located in the City’s designated waterfront area, and it requires a local, state, or federal discretionary action, a determination of the project’s consistency with the policies and intent of the WRP must be made before the project can move forward.		X				X
NYC DCP Designing for Flood Risk	NYC DCP	Designing for Flood Risk identifies key principles to guide the design of new buildings in flood zones so that construction will be more resilient to the effects of climate change and coastal flood events. Recognizing the distinct character and needs of higher-density urban environments, the report provides recommendations for how regulations and individual project design can incorporate these principles. The study informed the Department of City Planning’s Flood Resilience Zoning text amendment adopted by City Council in 2013.		X			X	

Table V.12: Existing plans, studies, and projects: Natural resources & open space

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
NYC DCP Urban Waterfront Adaptive Strategies	NYC DCP	The Urban Waterfront Adaptive Strategies (UWAS) report, prepared by the New York City Department of City Planning, provides a systematic assessment of the coastal flood hazards from climate change and sea-level rise that face New York City. The UWAS lays out a risk-based, flexible process for identifying, evaluating and implementing potential coastal protection strategies. It recognizes that waterfronts vary, and may require a range of strategies at different scales. The report also identifies a range of potential adaptive strategies, and analyzes each for their ability to protect waterfront communities. The UWAS strategies informed the development of coastal protection measures for all Rockaway Peninsula Planning Areas.						
Rockaway Public Beach	USACE	This is a two-phase project to re-nourish Rockaway Beach back to its original design profile. The first phase was completed in August 2013 and added more than 500,000 cubic yards of sand to the most eroded portion of Rockaway Beach, between Beach 149 th Street and Beach 89 th Street. Phase 2 will add another 3,000,000 cubic yards of sand between Beach 149 th Street and Beach 19 th Street, to be completed by August 2014. New York City has requested that the re-nourished dune meet the 100-year flood elevation.						X

Table V.12: Existing plans, studies, and projects: Natural resources & open space

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
WAVES Action Agenda & Brooklyn Waterfront Greenway Plan	NYC Mayor's Office	<p>The Waterfront Action Agenda is the three year implementation component of Vision 2020: New York City Comprehensive Waterfront Plan. The WAVES Action Agenda recommends initiatives throughout the City to transform the City's waterfront. Among the recommendations for the Rockaway Peninsula are the following:</p> <ul style="list-style-type: none"> • Constructing new recreational amenities and landscaping at Rockaway Beach Park • Continuing development of the Edgemere Urban Renewal Area, adding an additional 434 homes, 5.5 acres of parkland, 4 acres of restored wetlands, and infrastructure and pedestrian improvements to the existing 307 housing-unit development. • Transforming the vacant lot at the Beach 80th Street Marina into a public waterfront esplanade • Completing construction of next phase of Arverne by the Sea: the Dunes, a 270 two-family home development, and a new YMCA recreation center • Studying the feasibility of planting 3,000 eelgrass plants at Breezy Point Tip 				X	X	X

Table V.12: Existing plans, studies, and projects: Natural resources & open space

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
Science and Resilience Institute at Jamaica Bay (SRI@JB)	Brooklyn College, City of New York, National Park Service	<p>The Science and Resilience Institute at Jamaica Bay (SRI@JB) is a new top-tier science and resilience center hosted by Brooklyn College in New York City. The Institute. is a partnership among academic institutions, government agencies, nongovernmental organizations and community groups. Core partnerships are sustained among the National Park Service, the City of New York, and a Consortium of nine research institutions. The Institute advances understanding of how the Jamaica Bay system responds to disturbance and shares this information to facilitate efforts to promote greater resilience in New York City and around the world through the following core activities:</p> <p>Conducts research to understand the temporal nature and robustness of the resilience of Jamaica Bay, New York Harbor, Hudson Raritan Estuary and Gateway National Recreation Area</p> <p>Develop models for studying the fundamental nature of resilient systems, and</p> <p>Determine how best to manage ecosystems to ensure resilience and sustainability;</p> <p>Provides technical assistance and guidance to the institute’s governmental partners, including the National Park Service, New York City Parks and the New York City Department of Environmental Protection; and</p> <p>Serves as a center for education and the dissemination of knowledge about processes that affect resilience and contribute to the changes in the urban ecosystem.</p> <p>Further information on the institute, which is still ramping up operations, can be found at http://www.srijb.org.</p>	X		X		X	X

Table V.12: Existing plans, studies, and projects: Natural resources & open space

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
Jamaica Bay Watershed Protection Plan	NYC Department of Environmental Protection (DEP)	Authorized in 2005 and initially published in 2007, the plan is intended to support restoring and maintaining the water quality and ecological integrity of the Bay. A number of ongoing initiatives driven by this plan include wastewater treatment upgrades, green infrastructure and other stormwater management improvements and a variety of ecological improvements and pilot projects. The Plan recommends complete sewer separation for the Rockaway Peninsula in the many ongoing sewer projects listed on the City’s online project mapper ; transfer of lands in Edgemere from NYC Housing Preservation and Development (NYC HPD) to NYC Department of Parks and Recreation (NYC DPR); increased access to Jamaica Bay through implementation of a Rockaway Gateway Greenway; and the acquisition of additional lands for the Seagirt Avenue wetlands restoration project. While Breezy Point does not participate in the City wastewater or stormwater systems, understanding the City’s evolving approaches to water management could influence future decisions.					X	X
Gateway National Recreation Area General Management Plan	National Park Service (NPS)	The majority of the undeveloped land in and around the bay is part of Gateway National Recreation Area, one of the nation’s few urban national parks, encompassing 26,607 acres across Brooklyn, Queens, Staten Island, and New Jersey. Given this large presence, NPS will be an important player in resiliency efforts in the Bay. The park is currently updating its General Management Plan (GMP), which has been prepared over the last four years and will guide future management of the park. The final GMP and Environmental Impact Statement will be released in Spring 2014.					X	X

Table V.12: Existing plans, studies, and projects: Natural resources & open space

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
Hudson Raritan Estuary (HRE) Comprehensive Restoration Plan (CRP)	U.S. Army Corps of Engineers (USACE); Port Authority of New York and New Jersey (PANYNJ)	Adopted in 2009, the USACE and Port Authority of New York/New Jersey developed the HRE-CRP in collaboration with Federal, State, municipal, and non-governmental organizations as well as other regional stakeholders. The plan sets forth a consensus vision, master plan, and strategy for future ecosystem restoration in the New York/New Jersey Harbor. In Jamaica Bay, the plan identified 50 potential restoration sites. Several of these sites are located on the Rockaway Peninsula: Breezy Point Tip and The Cove (near the Breezy Point/Roxbury planning area); Vernam/Barbadoes and Rockaway Reef, in the Rockaway West vicinity; and several locations in Rockaway East, including Brant Point, Dubos Point, and Bayswater State Park, Somerville Basin, Conch Basin, Mott Basin, Seagirt Avenue Wetlands, and Arverne Urban Renewal Area. The identified sites and the proposed ecological restoration measures influenced Committee coastal protection project development.					X	X
Jamaica Bay, Marine Park, and Plumb Beach New York Ecosystem Restoration Feasibility Study	U.S. Army Corps of Engineers (USACE); NYC Department of Environmental Protection (DEP)	The study is a joint undertaking of the USACE and the New York City Department of Environmental Protection (NYC DEP) initiated following Superstorm Sandy and is intended to provide an expedited limited reevaluation of USACE restoration projects in the bay to address post-Sandy changes. The interim draft report identified eight priority restoration sites (550 acres) from the HRE-CRP recommendations; three of them (Brant Point, Dubos Point, and Bayswater State Park) are in Rockaway East. The feasibility study will look at Marsh Island Restoration Projects being undertaken under the USACE’s Continuing Authorities Program. The study shows the growing acceptance of ecological restoration as a potential resiliency measure, which informed development of coastal protection measures. This study may be combined with the Rockaway Reformulation Study’s Phase 2.					X	X

Table V.12: Existing plans, studies, and projects: Natural resources & open space

Plan/Project Name	Lead Organization(s)	Initiative Description	Recovery Support Functions					
			Community Planning & Capacity Building	Economic Development	Health & Social Services	Housing	Infrastructure	Natural & Cultural Resources
East Rockaway Inlet to Rockaway Inlet (Rockaway Reformulation Study)	U.S. Army Corps of Engineers (USACE)	<p>This study is often referred to as the Rockaway Reformulation Study. The project was authorized by the Flood Control Act in 1965 and modified by the Water Resource Development Act (WRDA) of 1974. When funded, USACE designed, constructed, and maintained the project from 1977 until 2004 under additional appropriations and WRDA authorizations. Because of the high cost of continually replenishing the eroding shoreline, the Corps was directed in 2003 to “reformulate” the original plan so that a long term, cost-effective solution to the effects of continued erosion on the Rockaway Peninsula could be identified. Funding for the reformulation was not appropriated for several years, but by 2011, the USACE had identified alternatives. Superstorm Sandy led to need to revise these alternatives. The Sandy Appropriations Act authorized funding for the reformulation study and reconstruction/re-nourishment of the previously completed ocean beach portions of the project. Phase 1, for which the draft reformulation report is scheduled to be ready by late Spring 2014, looks at beach nourishment and additional erosion control and/or storm damage risk reduction measures on the ocean side of the Rockaway Peninsula. Phase 2, for which the draft reformulation report is expected in November 2015, will investigate flooding on the Jamaica Bay side of the peninsula and evaluate potential coastal storm risk management measures, including nature-based alternatives.</p> <p>Projects that are recommended by the reformulation phases will require further cooperative teaming agreements and funding appropriations. It is under the reformulation study that coastal protection measures proposed by NYRCR Communities around the bay might be considered by the USACE.</p>					X	X

F. Endnotes

- 1 Five of the 102 localities in the program—Niagara, Herkimer, Oneida, Madison, and Montgomery Counties—are not funded through the CDBG-DR program.
- 2 The following allocations comprise the NYRCR Community’s total allocation: Far Rockaway - \$5.5 million; Arverne and Edgemere - \$9.5 million (which is a portion of the originally-announced \$16.8 million “Rockaway” allocation).
- 3 Esri. Census 2010 Summary Profile: Rockaway West. Washington: US Census Bureau, 21 Dec 2010. Microsoft Excel file
- 4 Esri. Census 2010 Summary Profile: Rockaway West. Washington: US Census Bureau, 21 Dec 2010. Microsoft Excel file.
- 5 Esri. Census 2010 Summary Profile: Rockaway West. Washington: US Census Bureau, 21 Dec 2010. Microsoft Excel file.
- 6 Esri. Census 2010 Market Profile: Rockaway West. Washington: US Census Bureau, 21 Dec 2010. Microsoft Excel file.
- 7 Esri. Census 2010 Summary Profile: Rockaway West. Washington: US Census Bureau, 21 Dec 2010. Microsoft Excel file.
- 8 Esri. 2007-2011 American Community Survey Population Summary: Rockaway East. Washington: US Census Bureau, 6 Dec 2012. Microsoft Excel file.
- 9 2013 Dun & Bradstreet via Esri. Census 2010 Summary Profile: Rockaway West. Washington: US Census Bureau, 21 Dec 2010. Microsoft Excel file
- 10 Hurricane Sandy.” NOAA National Weather Service. NOAA National Weather Service. n.d. Web. 23 Mar 2014.
- 11 New York City. Special Initiative for Rebuilding and Resiliency. A stronger, More Resilient New York. 11 June 2013. Web. 3 Mar 2014.
- 12 New York City. Special Initiative for Rebuilding and Resiliency. A stronger, More Resilient New York. 11 June 2013. Web. 3 Mar 2014.
- 13 New York City Panel on Climate Change. Climate Change Adaptation in New York City: Building a Risk Management Response. The New York Academy of Sciences, May 2010. Web. 3 Mar 2014.
- 14 Esri. Census 2010 Market Profile: Rockaway West. Washington: US Census Bureau, 21 Dec 2010. Microsoft Excel file.
- 15 Esri. Census 2010 Market Profile: Rockaway West. Washington: US Census Bureau, 21 Dec 2010. Microsoft Excel file.
- 16 (1) Construction costs have been provided by VJ Associates, a construction cost consulting firm. To provide cost estimates that account for the preliminary level of design work that has been conducted, conservative markups were included. As a percentage of estimated hard costs these include: general requirement (10%), general contractor overhead and profit (21%), design contingency (25%), soft cost allowance (30%), and 3% annual escalation. (2) Certain components of building hardening costs were provided by Dewberry, an architecture and engineering firm. (3) All construction job estimates are based on local construction cost and construction wage data, as well as standard industry assumptions of labor as a percentage of total hard costs. Data source is Bureau of Labor Statistics, Quarterly Census of Employment and Wages 2012.
- 17 Esri. Census 2010 Market Profile: Rockaway West. Washington: US Census Bureau, 21 Dec 2010. Microsoft Excel file.
- 18 Karp Resources. Build Back Better, Part 2. 6 Dec 2013.
- 19 Ira Boudway. “How Bike Sharing Would Have Helped New York After Sandy.” Bloomberg Businessweek. Businessweek, 2 Nov 2012. Web. 3 Mar 2014.

G. Glossary

ADA Americans with Disabilities Act A law enacted by U.S. Congress that prohibits discrimination against people with disabilities in employment, transportation, public accommodation, communications, and government activities.	CBO Community-Based Organization A not-for-profit organization that operates within a local community.	A review process, mandated by State law, for any proposed construction, renovation, expansion or acquisition of a health care facility.
BFE Base Flood Elevation The computed elevation resulting from floodwater that has a 1% chance of equaling or exceeding that level in a given year.	CDBG-DR Community Development Block Grant-Disaster Recovery Federal grants administered by the U.S. Department of Housing and Urban Development HUD and allocated to cities, counties and States to facilitate rebuilding and recovery of disaster areas as designated by the President of the United States.	CRP Comprehensive Restoration Plan A master plan developed among stakeholders to facilitate ecosystem restoration within a defined area.
BiB NYC Build It Back A program provided by the City to assist homeowners, landlords and tenants repair or receive reimbursement for property and homes damaged by Superstorm Sandy.	CEQR New York City Environmental Quality Review A State Environmental Quality Review Act (SEQR) mandated process by which City agencies determine the effect, if any, the approval of a discretionary action of the City may have on the environment.	DHSES Division of Homeland Security and Emergency Services New York State governmental agency responsible for coordination and support of counter terrorism, emergency management, fire prevention and control, and interoperable and emergency communications.
BRIP New York City's Business Resiliency Investment Program A \$110 million CDBG-DR-funded program that will be implemented by New York City Economic Development Corporation NYCEDC and will provide funds to both business tenants and building owners to make improvements that enhance resiliency to severe weather-related events.	CERT Community Emergency Response Team An organization composed of volunteers trained and tasked to provide supplementary emergency care during a major disaster.	EPA Environmental Protection Agency The U.S. Federal government agency responsible for the protection of human health and the environment through the enforcement of regulations passed by the U.S. Congress.
	CON Certificate of Need	ESA Environmental Site Assessment A report prepared for a real estate holding that identifies potential or existing environmental contamination liabilities.

FEMA

Federal Emergency Management Agency
An agency within the U.S. Department of Homeland Security responsible for the coordination of the response to a state of emergency declared disaster.

FGI

Facility Guidelines Institute
A not-for-profit corporation that provides oversight during a facility review process.

FIRMs

Flood Insurance Rate Maps
The official map of a community used by FEMA to delineate a community's base flood elevations, flood zones, and floodplain boundaries.

GMP

General Management Plan
A plan developed and implemented by National Park Service

NPS

concerning the preservation, protection and management of a national park.

HRE

Hudson Raritan Estuary
An estuary within the boundaries of New York State and New Jersey State that includes Jamaica Bay, Lower Bay, Arthur Kill, Kill Van Kull, Newark Bay, Hackensack River and Passaic River, Lower

Hudson River, Harlem River, East River, Western Long Island Sound, and Upper Bay.

HRE-CRP

Hudson Raritan Estuary Comprehensive Restoration Plan
A plan developed in 2009 by USACE and Port Authority of New York/New Jersey that established a vision, master plan, and strategy for future ecosystem restoration in the New York/New Jersey Harbor.

HUD

United States Department of Housing and Urban Development
The U.S. Federal government executive department responsible for executing federal policies on housing and metropolises.

LIPA

Long Island Power Authority
A municipal subdivision of the State of New York that operates a retail electric system on Long Island and provides service to customers in Nassau and Suffolk counties and the Rockaway Peninsula in Queens.

LIRR

Long Island Rail Road
A commuter rail system in New York, publicly owned by the MTA that stretches from Manhattan to the eastern tip of Suffolk County on Long

Island.

MTA

Metropolitan Transportation Authority
A public benefit corporation responsible for providing public transportation in 12 counties in southeastern New York and two counties in southwestern Connecticut.

NFIP

National Flood Insurance Program
A FEMA run program that provides government-sponsored flood insurance to homeowners, renters and business owners.

NPCC

New York City Panel on Climate Change
An Intergovernmental Panel on Climate Change, convened by Mayor Michael Bloomberg in August 2008 as part of PlaNYC, the City's long-term sustainability plan.

NPS

National Park Service
The U.S. Federal government executive department responsible for the management of U.S. national parks, American national monuments, and historical properties.

NYC DCAS

New York City Department of Citywide Administrative Services
A New York City Governmental agency that

ensures that City agencies have the critical resources and support needed to provide the best possible services to the public.

NYC DCP

New York City Department of City Planning
The New York City governmental agency responsible for the strategic development of the City's physical and socioeconomic planning.

NYC DEP

New York City Department of Environmental Protection
The New York City governmental agency responsible for providing the City's water supply; managing the City's wastewater system, and regulating the City's environment, including air quality, hazardous waste, and quality of life issues.

NYC DOB

New York City Department of Buildings
The New York City governmental agency responsible for the enforcement of building codes and zoning regulations, the issuance of building permits, and the inspection of new and existing building.

NYC DOHMH

New York City Department of Health and Mental Hygiene
The New York City governmental agency responsible for public health, including the

issuance of birth certificates and dog licenses and the enforcement of restaurant code.

NYC DOT

New York City Department of Transportation
The New York City governmental agency responsible for the management of the City's transportation infrastructure.

NYC DPR

New York City Department of Parks and Recreation
The New York City governmental agency responsible for the management of City parks, monuments, and historic house museums, the preservation of the City's ecological diversity, and the provider of recreational and athletic facilities and programs.

NYC HPD

New York City Department of Housing Preservation and Development
The New York City governmental agency responsible for the development and maintenance of the City's housing stock.

NYC OEM

New York City Office of Emergency Preparedness
The New York City governmental agency responsible for preparation, coordination and education of emergency response and recovery.

NYCEDC

New York City Economic Development Corporation
The City's official economic development organization charged with leveraging the City's assets to promote economic growth.

NYCHA

New York City Housing Authority
A public authority responsible for administering public housing for low- and moderate-income residents in New York City.

NYRCR

NY Rising Community Reconstruction
A program 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.

NYS DEC

New York State Department of Environmental Conservation
The New York State governmental agency responsible for the conservation, improvement, and protection of natural resources, the management of State owned lands, and the regulation of environmental laws and regulations.

NYS DOS

New York State Department of State
The New York State governmental agency

responsible for strategic investment in the revitalization and economic growth of regions.

NYS HCR

State Department of Homes and Community Renewal

New York State governmental agency incorporating of all the State’s major housing and community renewal agencies under a single leadership and management structure.

NYS SEQR

New York State Environmental Quality Review

A mandated process by which the sponsoring or approving governmental body determines and mitigates the effect, if any, the approval of a discretionary action of a government entity may have on the environment.

PSE&G

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

A New Jersey based utility company that provides service to nearly three quarters of New Jersey’s population with additional customers in Nassau and Suffolk counties and the Rockaway Peninsula of Queens.

REES

Resident Economic Empowerment and Sustainability Program

An office within the New York City Housing Authority (NYCHA) that develops and implements

programs to support residents’ economic opportunities.

RFP

Request for Proposals

A bidding process, by which, an agency or business outlines a procurement of services and accepts solicitations from potential suppliers.

SIRR Report

A Stronger, More Resilient New York

A comprehensive City plan commissioned by former Mayor Michael Bloomberg detailing actionable recommendations for the rebuilding and increased resiliency of communities and infrastructure impacted by Superstorm Sandy.

SWPPP

Storm Water Pollution Prevention Plan

A plan to prevent or control erosion and the discharge of pollutants in storm water runoff.

USACE

United States Army Corps of Engineers

The U.S. Federal agency under the Department of Defense composed of civilian and military personnel and responsible for providing public and military engineering services.

WWTP

Wastewater Treatment Plant

A facility designed to remove biological or chemical waste products from water.



**NY Rising
Community Reconstruction Program**

