

Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate

NY Rising Community Reconstruction Plan



NY Rising Community Reconstruction Program

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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

¹ Five of the 102 localities in the program—Niagara, Herkimer, Oneida, Madison, and Montgomery Counties—are not funded through the CDBG-DR program.



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 NYRCR Southern Brooklyn Peninsula Community is eligible for up to \$19.3 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,

² The NYRCR Community's total allocation comprises the following: Brighton Beach: \$4.20 million; Coney Island: \$6.15 million; Manhattan Beach: \$5.41 million, and Sea Gate: \$3.55 million.



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.



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Executive summary

A. Overview

The neighborhoods of Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate, together referred to as the Southern Brooklyn Peninsula Community (Community), are the four southernmost neighborhoods within Brooklyn, in New York City. The Community is on a former barrier island that was permanently connected to the rest of Brooklyn by infill before World War II. Despite this land connection, water extends around most of the Community.

Collectively, the Community is eligible for up to \$19.3 million in U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant–Disaster Recovery (CDBG-DR) funding to implement the projects described in this NYRCR Community Plan.

The western area of the Community is a peninsula bound to the north by Coney Island Creek and to the west and south by the Atlantic Ocean. This area contains the neighborhood of Sea Gate and most of Coney Island. Sea Gate covers all land area west of West 37th Street, and Coney Island extends between West 37th Street and Ocean Parkway. The eastern area of the Community is also a peninsula. Its water boundaries are Sheepshead Bay to the north and the Atlantic Ocean to the south and east. The neighborhood of Manhattan Beach is roughly coextensive with this peninsula; its western boundaries are Corbin Place and East 12th Street.

The remaining neighborhood, Brighton Beach, lies on Brooklyn’s mainland. It covers the area between Corbin Place and East 12th Street to the east and Ocean Parkway to the west. For the purposes of this NY Rising Community Reconstruction (NYRCR) Plan (Plan), the Belt Parkway generally defines the northern land boundary of the Community. However, the NYRCR Planning Committee (Committee) elected to expand the geographic scope of the Plan to encompass two critical assets north of the Belt Parkway but adjacent to the peninsula. These two assets are the Metropolitan Transportation Authority (MTA) Coney Island Rail Yard and Coney Island Hospital.

Storm impacts

When Superstorm Sandy made landfall on October 29, 2012, the storm inflicted tremendous damage on Brighton Beach, Coney Island, Manhattan Beach and Sea Gate. Flooding was exacerbated due to the storm coinciding with a high tide. Flood levels averaged three to five feet throughout the Community. In some areas, such as along Neptune Avenue in Brighton Beach, where floodwaters reached a height of 10 feet, homes and businesses were inundated with over five feet of floodwater. Backwater inundation, or flooding from creeks and inlets, affected the Community from Gravesend Bay by way of Coney Island Creek and Rockaway Inlet by way of Sheepshead Bay.

Saltwater inundation and other flood-related damage caused major disruptions to critical building systems, including power, heat, hot water, and elevator services in nearly all high-rise buildings. These disruptions required extensive replacement of damaged wiring and electrical systems, and repair or replacement of boilers, elevators, and generators. Affected buildings included all nine of the Community’s New York City Housing Authority (NYCHA) developments, which encompass 40 medium- and high-rise buildings. Service outages persisted for weeks or—in some cases—even months after Superstorm Sandy. More than two weeks after the storm, NYCHA reported that it had yet to restore heat and hot water to nearly 6,200 public housing residents in 22 buildings in Coney Island. These outages not only inconvenienced all NYCHA residents in the affected buildings but also endangered the health and safety of residents with access and functional needs, including the elderly and the handicapped.

The neighborhood of Sea Gate took a direct hit from devastating wave action. The Sea Gate Association’s police department and community association building both sustained significant damage, and neither facility has reopened. According to HUD, more than 80% of non-seasonal housing units in census block groups in Coney Island and Sea Gate incurred some degree of damage from Superstorm Sandy.¹



Several adult-care and nursing-home facilities were damaged by Superstorm Sandy and lost functionality after the storm, including the Mermaid Manor Home for Adults, on Mermaid Avenue in Coney Island, where storm-surge flooding breached the front doors in a manner that observers described as being “like a tsunami.” In Manhattan Beach, the Menorah Center for Rehabilitation and Nursing Care sustained significant damage to its waterfront facility serving seniors, including first-floor wind and water damage.²

Superstorm Sandy damaged more than 12 public schools across the Southern Brooklyn Peninsula. Some school buildings sustained significant damage. Electrical systems at the Coney Island Library were damaged, as were many of the library’s computers, and more than 35,000 books and DVDs. The library did not reopen until a year after the storm, in October 2013.

Flooding from Gravesend Bay and Coney Island Creek flooded the MTA Coney Island Complex, which is mostly in the 100-year floodplain. The rail yard was quickly inundated with water and debris, and tracks, switches, motors, and signal equipment were damaged. Throughout the 75-acre complex, more than 190 individual switches were flooded. A combined workforce of in-house personnel and contractors washed saltwater and sand from the switches and replaced switch motors where required.

Business activity along many of the commercial thoroughfares in the Community was hampered by flood damage and the displacement of customers months after the storm. “I don’t know of one business not affected by the hurricane,” said Yelena Makhnin, Executive Director of the Brighton Beach Business Improvement District.³ Brighton Beach Avenue was inundated by storm surge, including mud and debris up to five feet deep,⁴ and only 40% of avenue businesses⁵ were open a week after Superstorm Sandy.

Critical issues

The impacts from Superstorm Sandy highlighted numerous issues in the Community regarding coastal protection and emergency preparedness; government and non-profit coordination during the disaster; and the inability of homeowners and businesses to recover after the storm. Superstorm Sandy also highlighted the vulnerabilities of key assets, including homes,

commercial corridors, schools, and cultural and civic structures. Community and Committee feedback make clear that many assets are ill-equipped to handle severe flooding and storm surge. Therefore, increasing the resiliency of these assets is an important issue for all four neighborhoods in the Community.

Beyond these concerns related to physical assets, another critical issue discussed within the NYRCR Plan was the lack of a comprehensive Community response to Superstorm Sandy. Planning Committee Members and the public reported that the storm response was inadequate. They stated that the preparation and implementation of plans to protect vulnerable populations, evacuation protocols, and disaster relief should be improved in the future.

B. Working together to rebuild stronger, smarter, and safer

The NYRCR Planning Committee developed a draft Community vision statement using a visioning exercise during a Planning Committee Meeting. Through further refinement by Community residents and business owners, the Committee developed the following vision statement for the Community:

“Our vision is to empower and rebuild the diverse communities of the Southern Brooklyn Peninsula to be prepared, vibrant, unified, and resilient in facing the common economic, social, physical, and environmental challenges in our coastal neighborhoods.”

This Vision Statement framed the work of the Committee throughout the planning process.

Public outreach

To ensure the success of the Plan, a broad Public Engagement Strategy was established and implemented. Residents and business owners in the Community were provided extensive opportunities to contribute to the

planning process, including through three Public Engagement Events and 12 Committee Meetings, which were open to the public, between September 2013 and March 2014. Committee Members and NYRCR representatives met with numerous Community groups, residents, and business leaders throughout the planning process, including representatives of NYCHA tenant associations, senior centers, business groups, and civic organizations. The Committee also performed a survey of businesses in the Community and solicited feedback at each Public Engagement Event.

The Public Engagement Events were designed to solicit feedback from the Community regarding critical assets, strategies, and potential projects. Translators were available at each Public Engagement event and event notices were translated in five languages (English, Russian, Spanish, Mandarin Chinese, and Urdu), and posted in multiple media outlets and locations throughout each neighborhood, including:

- *The Brooklyn Paper* (local community newspaper);
- *The Russian Bazaar* (local community newspaper);
- Subway stations, storefronts, Coney Island Hospital, NYCHA lobbies, and senior centers;
- Email distribution;
- NYRCR website:
<http://stormrecovery.ny.gov/nyrcr/community/brighton-beach-coney-island-manhattan-beach-and-sea-gate>;
- Twitter: @NYStormRecovery; and
- Facebook: NYStormRecovery.

The Committee Members distributed flyers about Public Engagement Events in their neighborhoods. Flyers and electronic notices were also distributed to the businesses in the Community. The Committee's engaged volunteerism formed the foundation of this planning process. The Committee considered local issues, opportunities, and communication strategies and offered the public opportunities to provide comments at the conclusion of each Committee Meeting.

C. Final plan as blueprint for implementation

In the early stages of the planning process, the Committee identified a set of strategies to reduce the Community's exposure to risk from flooding and severe weather events. The Committee subsequently refined these strategies into a list of projects that would enable the Community to rebuild smarter, stronger, and safer. These projects represent sustainable and resilient approaches to support residents and businesses and protect the Community's considerable assets.

The NYRCR Plan includes three sets of projects to address critical community needs:

- **Proposed Projects:** Projects that the Committee has proposed to be fully funded through the Committee CDBG-DR allocation;
- **Featured Projects:** Projects where cost is beyond the Committee CDBG-DR allocation and/or their implementation will require a combination of CDBG-DR funding and other sources. These projects may include the funding of a Proposed Project, as the first phase, and the Featured Project as the second phase;
- **Additional Resiliency Recommendations:** Recommendations of projects, policy or actions that will not be funded using the Committee CDBG-DR allocation

All of the Projects included in the NYRCR Plan are important to the Community. Their order of appearance in this Executive Summary is not a reflection of project priority or ranking.

Strategy: Enable more effective response to natural disasters by enhancing emergency response protocols and communication

- **Proposed Project: Public Emergency Preparedness Outreach Campaign**
Create a local public outreach campaign that uses multiple forms of media to provide targeted and specific disaster preparedness, response, and recovery information to Community residents.

Strategy: Improve facilities, infrastructure, information sharing, and the emergency capacity of social service organizations and health/mental health service providers

- **Proposed Project: Designation of Emergency Response and Recovery Centers**

Perform a location and feasibility analysis to designate emergency response and recovery centers in each neighborhood in the Community. Also create a fund to develop continuity plans and assess facility vulnerabilities for civic groups and non-profit organizations.

Strategy: Enhance coordination between civic groups and non-profit organizations with local government agencies to make the Southern Brooklyn Peninsula better prepared for future emergencies

- **Proposed Project: Southern Brooklyn Emergency Response Plan**

Create a Southern Brooklyn Emergency Response Plan to provide specific information targeted to local neighborhoods and incorporate lessons learned from Superstorm Sandy.

Strategy: Support local businesses of all scales in their efforts to fully recover from Superstorm Sandy

- **Proposed Project: Increase Resiliency of Small Businesses Throughout the Peninsula**

Establish a small business support office; offer direct assistance to merchants for floodproofing their businesses; implement Peninsula-wide streetscape enhancements, including replacing trees, installing stormwater attenuation measures, and making landscaping improvements along business corridors.

Strategy: Expand workforce development opportunities in the Southern Brooklyn Peninsula that would enhance regional resiliency and recovery

- **Proposed Project: Vocational Training Program**

Expand vocational training programs at a high school on the Southern Brooklyn Peninsula to include green and resilient building and emergency preparedness curricula.

Strategy: Explore opportunities to expand economic activities throughout the Peninsula

- **Featured Project: Mermaid Avenue Corridor Improvements**

Revitalize the Mermaid Avenue commercial corridor through streetscape and landscape improvements that would incorporate stormwater attenuation measures.

Strategy: Protect existing housing stock by making it more flood resilient

- **Proposed Project: Sewer Connection Cut-Off Valves for Owners of 1- and 2-Family Homes**

Provide financial assistance to homeowners for installation of sewer connection cut-off valves, as well as education and public outreach related to proper operation and maintenance of these devices.

- **Proposed Project: Feasibility Study for Energy Resiliency for NYCHA and Mitchell-Lama Properties**

Conduct a feasibility study on developing microgrid, smartgrid, and/or cogeneration solutions to ensure that NYCHA and Mitchell-Lama properties maintain power in storm-related events.

- **Featured Project: Implementation of a microgrid, smartgrid, and/or cogeneration solutions for NYCHA and Mitchell-Lama Properties**

Development of microgrid, smartgrid, and/or cogeneration solutions to ensure that NYCHA and Mitchell-Lama properties maintain power in storm-related events.

Strategy: Protect the shoreline and coastal communities through structural shoreline protection enhancements

- **Proposed Project: Bulkhead Replacement at Sea Gate**

Replace the bulkhead on Sea Gate Association property and along some private residential properties.

- **Proposed Project: Implementation of Cost-Effective Storm Surge Protection for Ocean Parkway and W. 25th Street**

Install a flood barrier to protect against flooding at primary under-boardwalk access points.



- **Proposed Project: Reconnaissance Study of Storm Surge Protection for Sheepshead Bay**

Evaluate a range of options to mitigate future flood events caused by flooding and storm surge in Manhattan Beach and Sheepshead Bay.

Strategy: Replace, repair, and upgrade existing infrastructure to improve its resilience to future storm events

- **Proposed Project: Installation of Resilient Streetlights**

Install new streetlights along key business corridors and road intersections, evacuation routes, and high-density housing areas throughout the Southern Brooklyn Peninsula.

- **Proposed Project: Pilot Small-Scale Renewable Power Project**

Create a small-scale renewable power project for a small- to mid-sized senior-housing or nursing home facility.

Strategy: Repair and make more resilient damaged and/or underutilized natural and cultural resources

- **Proposed Project: Community Streetscape Enhancements**

Provide funds for peninsula-wide streetscape enhancements, including replacement of trees on public property that were destroyed or damaged by Sandy, implementation of storm water attenuation measures, and landscape enhancements along selected business corridors.

- **Proposed Project: Resiliency Upgrades for Manhattan Beach Bathhouse**

Upgrade the Manhattan Beach Bathhouse by multiple methods, potentially installing solar panels, installing other renewable-energy systems, upgrading utilities, and implementing floodproofing methods.

- **Featured Project: Adaptive Reuse of the Manhattan Beach Bathhouse**

Implementation of adaptive reuse of the Manhattan Beach Bathhouse for year-round community uses.

Strategy: Educate residents and visitors about the importance of natural and cultural resources

- **Featured Project: Environmental Youth Education Program**

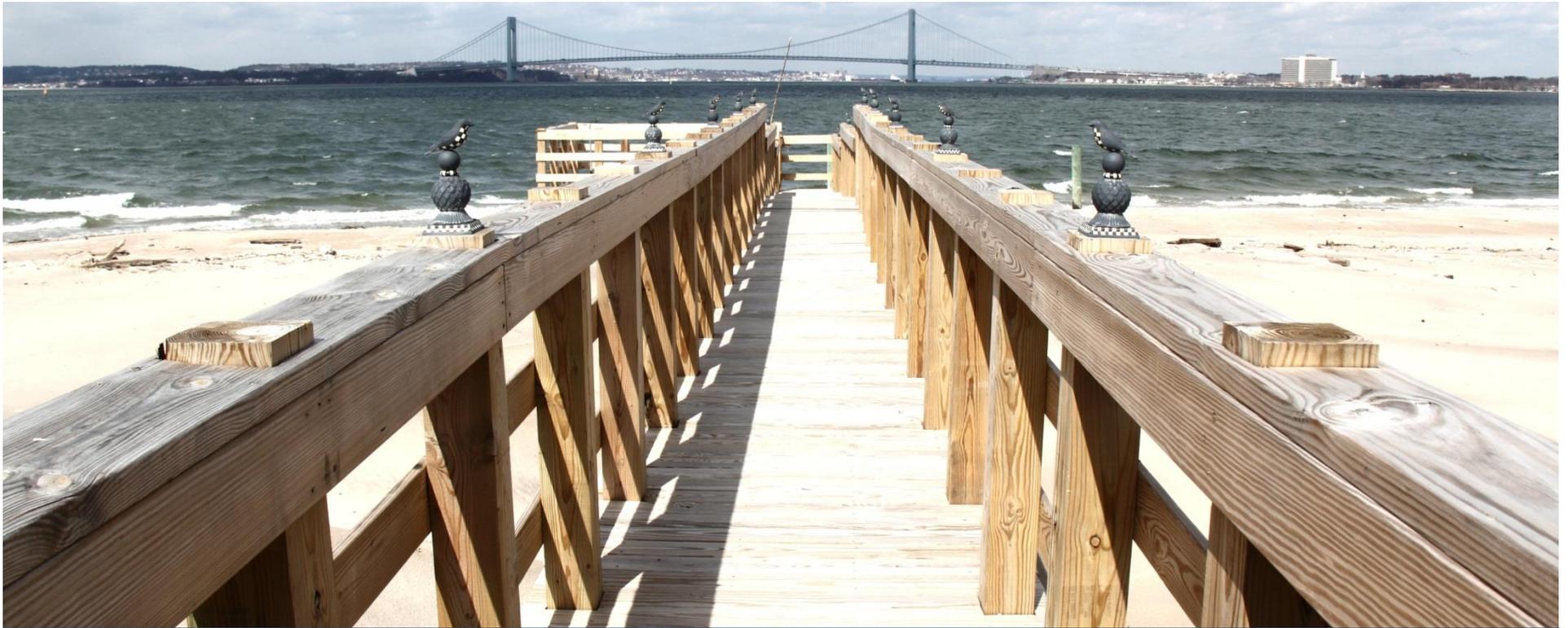
Partner with local non-profit organizations to provide educational materials and mini-courses for Community youth on natural and cultural resources.

Strategy: Evaluate opportunities for creating or enhancing natural shoreline protection measures

- **Proposed Project: Dune Grass Plantings and Infrastructure Improvements**

Plant beach grass along the boardwalk in Brighton Beach and Coney Island at six locations; relocate of six water utility valves from under the ocean side of the boardwalk to a less vulnerable location on the inland side of the boardwalk, and install two beach access mats.





Section I: Community overview

Section I: Community overview

As a part of the NY Rising Community Reconstruction (NYRCR) Program, the State of New York convened the NYRCR Planning Committee (Committee) to represent the communities of Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate, also referred to as the Southern Brooklyn Peninsula Community (Community). The Committee consists of 14 residents who are leaders from civic organizations, business groups, and professional and non-profit associations. The Committee worked closely with residents and local stakeholders in an eight-month community-based planning process. The goal of the Committee was to create this NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Plan (NYRCR Plan), which includes a long-term vision for the Community and implementable projects and actions for the Southern Brooklyn Peninsula to recover from Superstorm Sandy and reduce the risk posed by extreme weather events in the future. The State of New York has allocated up to \$19.3 million in U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant-Disaster Recovery (CDBG-DR) monies to fund eligible projects identified in the Committee's NYRCR Plan.

This NYRCR Plan aims to address damage from Superstorm Sandy, mitigate future threats to the Community, and foster a brighter economic future for the Community. The Committee developed this plan by analyzing these factors through the six Recovery Support Functions established by President Barack Obama in 2011 throughout the National Disaster Recovery Framework: Community Planning and Capacity Building; Economic Development; Health and Social Services; Housing; Infrastructure; and Natural and Cultural Resources. The Recovery Support Functions are defined in the box on the right.

This NYRCR Plan:

- Is a product of a locally driven, grassroots planning process;
- Provides a Community vision that addresses regional and Community recovery and resilience;
- Assesses each community's vulnerability to the negative effects of future natural hazards;
- Assesses the need for economic development; and

- Describes cost-effective strategies, projects, and actions that will increase the resilience of these unique communities, provide protection to vulnerable populations, and promote sound economic development.

The Six Recovery Support Functions

Community Planning and Capacity Building: This function addresses how the Community will restore or enhance its ability to organize, plan, manage, and implement its recovery. This strategy involves Community engagement of a wide range of public, private, and non-governmental organization stakeholders.

Economic Development: This function addresses how the Community will restore economic and business activities and develop new economic opportunities, provide goods and services, resume commerce and employment, and generate revenue.

Health and Social Services: This function addresses how the Community will restore and improve essential health and social services, including health and social services for vulnerable populations.

Housing: This function addresses how the Community will meet the demand for affordable housing (and promotion of affordable housing), address post-disaster housing needs, and encourage disaster-resistant housing for all income groups.

Infrastructure: This function addresses how the Community will restore, repair, and manage essential infrastructure services.

Natural and Cultural Resources: This function addresses how the Community will approach natural and cultural resource management in the contexts of risk reduction and economic development.

In addition to HUD CDBG-DR funding, other public and private funding sources have been identified to implement the projects discussed in this NYRCR Plan. These funding sources range from Federal agency grants and low-interest loans to State and City of New York (City) funding sources and foundation grants.



A. Geographic scope of NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Plan

The Community comprises the four southernmost neighborhoods in Brooklyn (Kings County), in the City of New York. The Community is on a former barrier island, as depicted in the 1880 map to the right. The Community was permanently connected to the rest of Brooklyn by infill before World War II. Despite this land connection, water extends around most of the Community.

The western area of the Community is a peninsula bounded to the north by Coney Island Creek and to the west and south by the Atlantic Ocean. This area contains Sea Gate and most of the Coney Island neighborhood. Sea Gate covers all land area west of West 37th Street, and Coney Island extends between West 37th Street and Ocean Parkway. The eastern area of the Community is also a peninsula. Its water boundaries are Sheepshead Bay to the north and the Atlantic Ocean to the south and east. The neighborhood of Manhattan Beach is roughly coextensive with this peninsula; its western boundaries are Corbin Place and East 12th Street.

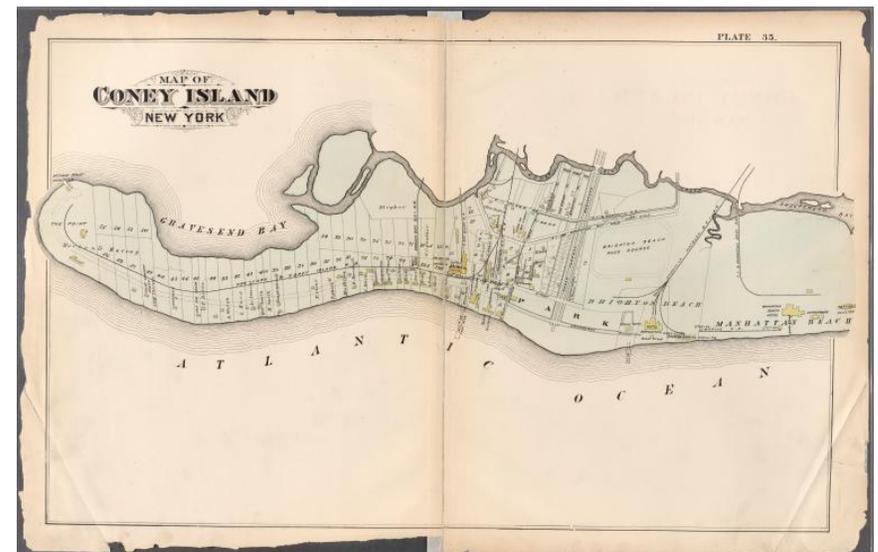
The remaining neighborhood, Brighton Beach, lies on Brooklyn's mainland. It covers the area between Corbin Place and East 12th Street to the east and Ocean Parkway to the west. For the purposes of this NYRCR Plan, the Belt Parkway generally defines the northern land boundary of the Community. However, the Committee elected to expand the geographic scope of the NYRCR Plan to encompass two critical assets north of the Belt Parkway but adjacent to the peninsula.

These two assets are the Metropolitan Transportation Authority (MTA) Coney Island Complex (Complex) and Coney Island Hospital. The Complex is a 75-acre transit facility used for repair, maintenance, inspection, and storage of subway cars. The Complex is responsible for regular maintenance and inspection of trains on six of the city's 22 subway lines. Its yards have the storage capacity to accommodate nearly one-third of the City's 5,800 car fleet.⁶ Because of its proximity to Coney Island Creek and its low elevation, the Complex is highly vulnerable to flood risk. The Committee recognized that major damage to the Complex would have a crippling effect on local and regional transportation and economic activity.

Coney Island Hospital is an equally critical asset. The hospital has 371 beds and serves over 300,000 outpatients annually.⁷ It is also one of the region's largest employers. As of late 2012, it had over 3,000 employees.⁸ The hospital suffered extensive damage as a result of Superstorm Sandy. The Committee recognized that these impacts imperiled Community access to vital health services.

At a Public Engagement Event held on October 22, 2013, the public confirmed the geographic scope for this NYRCR Plan.

The geographic scope of this NYRCR Plan is shown in Figure I-1.



Map of Coney Island, New York (1880)⁹

Despite their geographic proximity, the four neighborhoods that constitute the Community have strikingly different demographic profiles. In general, the Community is lower-income and older than much of the rest of the City of New York. Sea Gate, Coney Island, and Brighton Beach are in Brooklyn Community District 13, which also includes the neighborhoods of Gravesend and Homecrest. In 2012, more than 49% of Community District

Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

Geographic scope of the NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Plan

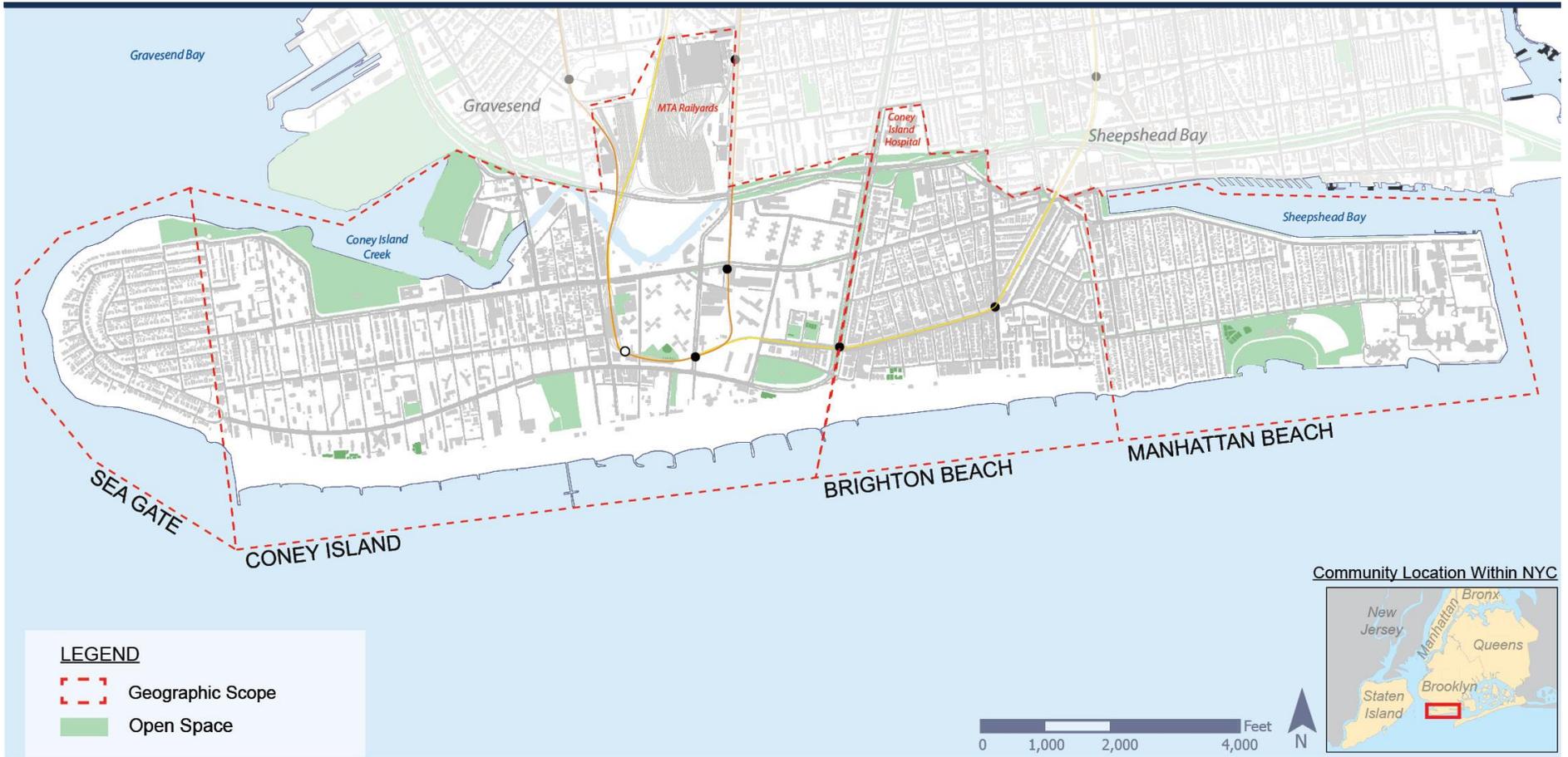


Figure I-1: Geographic scope of the NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Plan



13 residents received income support in the form of cash assistance, Supplemental Security Income, or Medicaid.¹⁰

All four neighborhoods also contain large numbers of non-native English speakers, many of whom have limited English proficiency. Although these general points hint at some of the relevant general planning considerations, each neighborhood requires its own discussion to demonstrate the full scope of the Community's diversity.



Southern Brooklyn Peninsula, looking east¹¹

In addition to the narrative descriptions below, demographic information about all four neighborhoods on the Southern Brooklyn Peninsula is summarized in tabular form in Table V-3.

Brighton Beach

Brighton Beach is often referred to as "Little Odessa" because of the significant immigrant population from the Ukrainian port city on the Black Sea. The neighborhood was developed in the 1860s as a resort community. The eastward extension of the Coney Island boardwalk and the completion of Ocean Parkway facilitated easy access to the neighborhood, and attracted large seasonal crowds.¹²

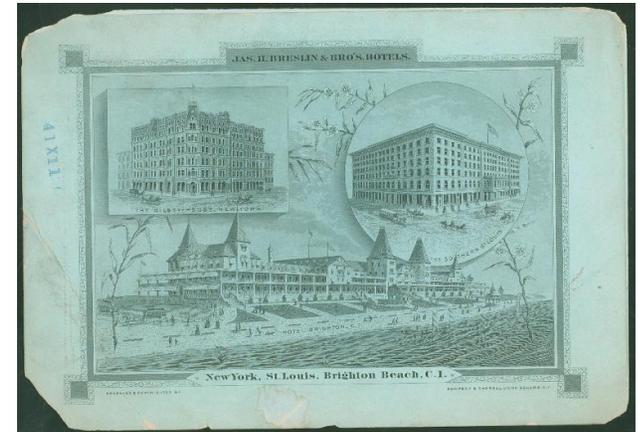
In the early-20th century, a large number of European and Soviet Jewish immigrants from the Ukraine moved to Brighton Beach and established a year-round cultural and religious presence in the neighborhood.

Brighton Beach is densely populated, with 39,584 residents as of 2012.¹³ Like all of the Community's neighborhoods, it features a relatively

older population: the median age in Brighton Beach is 45.0 years, compared with the Citywide figure of 35.5.¹⁴ Unsurprising in this context, more than one-fifth of the neighborhood's residents are senior citizens.¹⁵

The neighborhood's building stock is as diverse as its population. Housing types range from recently built high-rise luxury condominiums along the waterfront to older, relatively dense urban pockets of single- and multi-family housing. The neighborhood also features several subsidized medium- and high-rise Mitchell-Lama developments.

Economic activity in Brighton Beach is concentrated along two primary commercial corridors, Brighton Beach Avenue and Neptune Avenue. Brighton



Daily Menu, JAS. II. BRESLIN & BRO'S. HOTELS "BRIGHTON BEACH, C.I. [New York]" (Resort Hotel) (1882)¹³

Beach Avenue, which runs underneath the elevated subway tracks of two train lines, is the main commercial artery. It features a dense concentration of small businesses, including retail, food, and restaurant establishments at the ground floor level. Most buildings along the avenue feature upper-story apartments or additional retail or professional services.



Neptune Avenue in Brighton Beach¹⁶

Coney Island

Coney Island is perhaps best known as an iconic amusement destination. The neighborhood popularized in the mid-nineteenth century when several

amusement parks and hotels first opened there, including Luna Park, Dreamland, and Steeplechase Park. The neighborhood was a popular resort and amusement destination until World War II. Shortly thereafter, much of the amusement area was rezoned to accommodate dense, low-income housing.¹⁷ Over time, the amusement and entertainment district shrank in size to several blocks, with only seasonal activity, and Steeplechase Park closed in 1964. Amusement and tourism uses are still prominent in the revitalized amusement area, but Coney Island has an equal identity as a year-round residential community.



Bird's eye view of Luna Park, Coney Island N. Y. (early 20th Century)¹⁸

Coney Island is even more densely populated than Brighton Beach, with 47,154 residents as of 2012.¹⁹ Like its neighbor to the east, Coney Island is a relatively older community, with a median age of 47.0.²⁰ Senior citizens constitute almost one-quarter of the neighborhood's total population.²¹

Coney Island has numerous high-rise residential towers,²² including public housing and Mitchell-Lama developments. The presence of a high number of subsidized housing units coincides with incidences of extreme localized poverty. For example, New York Census Block Group 360470342.004 had a median household income of \$9,736 in 2012. This Block Group is bordered to

the west by a Block Group that had a median household income of \$45,492 that same year.²³



Coney Island Boardwalk – New York Aquarium mural²⁴

In 2012, Coney Island had a total of 21,531 housing units.²⁵ Of these, 81% were multiple-home dwellings.²⁶ The presence of these dwellings is a stark contrast to many other Southern Brooklyn neighborhoods, including Sea Gate and Manhattan Beach, which feature primarily single-family and two-family homes.

In addition to its many largely residential blocks, Coney Island features a variety of commercial, institutional, and industrial uses. Industrial and manufacturing uses tend to be clustered along the banks of Coney Island Creek. The neighborhood's primary commercial thoroughfares are its east-west avenues. From north to south, these are Neptune, Mermaid, and Surf Avenues.

The implementation of the Coney Island Revitalization Plan and a neighborhood rezoning in 2009, which covered the amusement area and

adjacent blocks, stimulated an economic resurgence in parts of the neighborhood, including expansion of the amusement attractions and new establishments along the adjacent business corridors.

Manhattan Beach

In the 1870s, Manhattan Beach was a bustling tourism and resort destination. The neighborhood featured the Manhattan Beach Hotel, built by Austin Corbin in 1877, a railway station, a bathing pavilion, and the Oriental Hotel.²⁷ Much of this seasonal use declined during the 1910s, and passenger railway service was discontinued in 1924. The neighborhood was increasingly developed for residential use during that period.



Manhattan Beach Hotel & Promenade, Manhattan Beach, N. Y. (1899-1901)²⁸

Today, Manhattan Beach is almost exclusively residential between Corbin Place and Pembroke Street. The neighborhood features mostly detached single-family homes on relatively large lots. Like Coney Island and Brighton



Manhattan Beach Footbridge²⁹

Beach, Manhattan Beach is an older neighborhood, with a median age of 48.0. Senior citizens constitute roughly one-quarter of the total neighborhood population.³⁰

Manhattan Beach is not nearly as densely populated as Brighton Beach or Coney Island. The neighborhood's population was 4,613 in 2012.³¹ The neighborhood's median household income exceeds \$100,000.

Aside from its residential areas, Manhattan Beach also contains notable assets, including the 70-acre Kingsborough Community College (KCC) campus, which is part of The City University of New York (CUNY) system. KCC occupies the eastern end of the neighborhood. Other non-residential assets include Leon Goldstein High School; Manhattan Beach Park, which contains the Manhattan Beach Bathhouse; and the Manhattan Beach Footbridge, which allows pedestrians to walk from the Sheepshead Bay neighborhood to Manhattan Beach, facilitating public waterfront use and access opportunities.

Commercial uses in Manhattan Beach are limited, with small, neighborhood retail uses mostly at the eastern end of Oriental Boulevard, near the entrance to KCC.

Sea Gate

Sea Gate is a private, planned community that was first developed in the early 1890s.³² The Sea Gate Association, incorporated in 1899, installed several entrances and a fence around the perimeter of the community, making it the first gated community in the City of New York.



Sea Gate Casino & Kalina's Baths buildings: Surf Av - W. 33rd St., Brooklyn, 1934³³

In terms of physical characteristics and land use mix, Sea Gate is most similar to the Community's other bookend neighborhood, Manhattan Beach. Nearly the entire neighborhood's building stock consists of detached single-family homes. Current land use analysis by the New York City Department of City Planning shows only one commercial parcel in the entire neighborhood.³⁴

Sea Gate is both the smallest and youngest neighborhood in the Community: the neighborhood's population was 4,609 in 2012,³⁵ while the median age was 41.³⁶ Senior citizens constituted only 15% of the resident population.



Sea Gate entrance³⁷

As in Manhattan Beach, non-residential uses are relatively limited. Sea Gate has its own police force, which is wholly separate from the New York City Police Department. Other non-residential uses include a beach club, park, and the Sea Gate Association building. Coney Island Light, an 1890 lighthouse at the western tip of the Southern Brooklyn Peninsula and a former chapel now used as a community gathering place and polling station, are two prominent neighborhood landmarks.

Although Sea Gate is a private community, the community is unusual in that the streets and some of the utility infrastructure are co-owned by the residents and the City of New York.

B. Description of storm damages

Superstorm Sandy made landfall in the City of New York on October 29, 2012; it was one of the largest storms in New York's recorded history and the effect was devastating, causing widespread damage to people's lives,

their homes, businesses, core infrastructure, government property, and an economy just beginning to recover from a financial crisis.

Statewide, the storm caused 53 fatalities,³⁸ destroyed an estimated 305,000 homes,³⁹ affected more than 2,000 miles of roads,⁴⁰ produced catastrophic flooding in subways and tunnels, and damaged major power transmission systems.

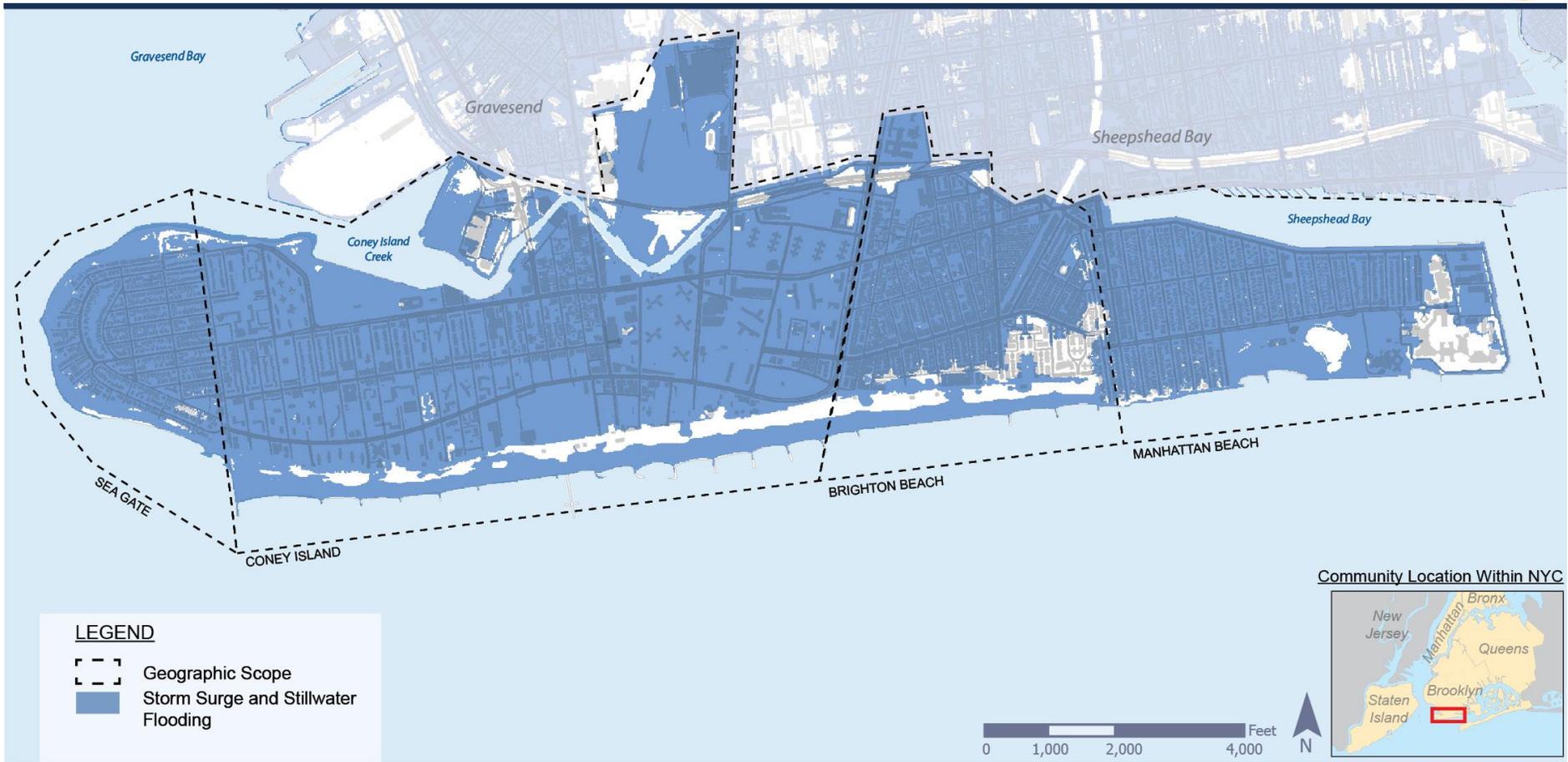
The New York City Office of Management and Budget estimated the total damage to the City to be \$19 billion,⁴¹ inclusive of all private, public, and indirect costs. About one-quarter of that—\$4.5 billion—was damage sustained to City agencies, such as the NYCHA and the Health and Hospitals Corporation. The MTA suffered extensive damage, estimated at \$5 billion, as a result of storm-surge flooding that inundated eight tunnels Citywide.⁴²

Superstorm Sandy coincided with a high tide, exacerbating flooding in Southern Brooklyn. Flood levels averaged three to five feet throughout the Community. In some areas, such as along Neptune Avenue, where floodwaters reached a height of 10 feet, homes and businesses were inundated with over five feet of floodwater. Backwater inundation, or flooding from creeks and inlets, also flooded communities from Gravesend Bay by way of Coney Island Creek and Rockaway Inlet by way of Sheepshead Bay (Figure I-2).

Saltwater inundation and other flood-related damage caused major disruptions to critical building systems, including power, heat, hot-water, and elevator services in nearly all high-rise buildings. These damages required extensive replacement of wiring and electrical systems and repair or replacement of boilers, elevators, and generators.⁴³ Affected buildings included all nine of the Community's NYCHA developments, which encompass 40 medium- and high-rise buildings and have a resident population of over 9,200.⁴⁴ Service outages persisted for weeks—and in some cases even months—after Superstorm Sandy. More than two weeks after the storm, NYCHA reported that it had yet to restore heat and hot water to nearly 6,200 public housing residents in 22 buildings.⁴⁵ These outages not only inconvenienced all NYCHA residents in the Community, but also endangered the health and safety of residents with access and functional needs, including the elderly and the handicapped.

Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

Southern Brooklyn Peninsula flood inundation map



Source: Federal Emergency Management Agency (FEMA), NYC Department of City Planning, MapPLUTO

Figure I-2: Southern Brooklyn Peninsula Flood Inundation Map



Coney Island Hospital, a major regional medical service provider, sustained devastating flood damage. The storm destroyed the hospital's electrical systems, necessitated hasty patient evacuations, and ultimately forced the total suspension of emergency services for several months. The hospital's prolonged closure compromised Community access to vital health services and disrupted employment patterns for over 3,000 hospital employees.⁴⁶



Federal Emergency Management Agency (FEMA) Administrator William Craig Fugate, center, gets a tour of Coney Island Hospital from Director of Facilities Daniel Collins, right, along with FEMA Federal Coordinating Officer Michael Byrne.⁴⁷

The coastal areas of Sea Gate took a direct hit from wave action when Superstorm Sandy made landfall. The Sea Gate Association police department and community association buildings sustained significant damage, and both remain closed today. According to HUD, more than 80% of non-seasonal housing units in some Census Block Groups in Coney Island and Sea Gate incurred some degree of damage from Superstorm Sandy.⁴⁸



Sea Gate bulkhead and beach front damage⁴⁹

Several adult-care and nursing-home facilities were damaged and lost functionality after Superstorm Sandy, including the Mermaid Manor Home for Adults, on Mermaid Avenue in Coney Island, where storm-surge flooding breached the front doors in a manner that observers described as being "like a tsunami." In Manhattan Beach, the Menorah Center for Rehabilitation and Nursing Care sustained significant damage to its waterfront facility serving seniors, including first-floor wind and water damage.⁵⁰

Superstorm Sandy damaged more than 12 public schools across the Southern Brooklyn Peninsula, and some buildings sustained significant damage. The Coney Island Library also sustained significant damage, including destruction of the building's electrical systems, many of its computers, and more than 35,000 books and DVDs. The library did not reopen until nearly a year after the storm, in October 2013.

The Coney Island Complex also sustained significant damage during Superstorm Sandy. The rail yard is mostly located in the 100-year floodplain, and is vulnerable to flooding from nearby bodies of water, including Coney Island Creek. The rail yard was quickly inundated with water and debris, and tracks, switches, motors, and signal equipment were damaged. Throughout the 75-acre complex, more than 190 individual switches were flooded. A

combined workforce of in-house personnel and contractors washed saltwater and sand from the switches and replaced switch motors where required.

Business activity along many of the commercial thoroughfares in the Southern Brooklyn Peninsula, including Mermaid, Surf, Brighton, and Neptune Avenues and Ocean Parkway, was hampered by flood damage and the displacement of customers, even months after the storm. “I don’t know of one business not affected by the hurricane,” said Yelena Makhnin, Executive Director of the Brighton Beach Business Improvement District.⁵¹ That neighborhood’s main commercial corridor, Brighton Beach Avenue, was inundated by storm surge, including mud and debris, of up to 5 feet.⁵² Only 40% of its businesses were open a week after Superstorm Sandy.⁵³ Shortly after the storm, the City of New York offered low-interest emergency loans with matching grants to businesses. Fifty-six loans were approved in Brighton Beach and Manhattan Beach, totaling more than \$1.2 million.”⁵⁴

Superstorm Sandy caused significant damage to the New York Aquarium, which sits on the boardwalk at West 8th Street and Surf Avenue.⁵⁵ Before the storm, the aquarium attracted more than 750,000 visitors annually. Flood damage and interruptions to the aquarium’s life support systems caused damage estimated at approximately \$65 million.⁵⁶ The aquarium partially reopened in May 2013, but will not be fully reopened until 2016. The Coney Island amusement and entertainment district—a major economic driver for the community—incurred significant damage to rides and electrical systems.⁵⁷

C. Critical issues

The impacts from Superstorm Sandy exposed numerous issues within the Southern Brooklyn Peninsula related to coastal protection, emergency preparedness, government and non-profit coordination, and the ability of homeowners and businesses to bounce back quickly after a storm. Superstorm Sandy also highlighted the vulnerabilities of key assets, including homes, schools, and cultural and civic structures. Community and Committee feedback make clear that many assets are ill-equipped to handle severe flooding and storm surge in the future. Therefore, increasing the resiliency of these assets is an important issue for all four neighborhoods in the Community.

This NYRCR Plan aims to respond to these critical issues as part of the recovery from Superstorm Sandy and the longer-term effort to make the area more resilient to future storms.

Critical issues surrounding Superstorm Sandy were identified during meetings and discussions, including 11 Planning Committee Meetings, which were open and accessible to the public; three Public Engagement Events; and interviews with City, State, and Federal agencies, business owners, and residents.

Community planning and capacity building

One of the most critical issues communicated through the public engagement process was the lack of a comprehensive Community response to the storm. Planning Committee Members and the public reported that the storm response was inadequate. They stated that preparation and implementation of plans to protect vulnerable populations, evacuation protocols, and disaster relief would need to be improved for future disasters.

Civic groups and other non-governmental organizations provide vital social and informational services to local residents, including vulnerable populations. The damage that these local organizations suffered from Superstorm Sandy compromised their ability to provide vital services and to communicate important information to constituents in the weeks and months after the storm.⁵⁸ For instance, Urban Neighborhood Services, Inc., on Mermaid Avenue in Coney Island was displaced from its offices for seven months, though it was able to secure temporary space with the Amethyst Women’s Project. The facilities of the Jewish Community Council of Greater Coney Island (JCCGI) were flooded by 6 feet of water, which caused over \$1 million in damages. The JCCGI resumed providing services several weeks after Superstorm Sandy, but some staff members were displaced for over a year.⁵⁹

Economic development

Local businesses suffered flooding damage from Superstorm Sandy, including inventory loss, building damage, and ruined equipment. Because of Community-wide power outages, most businesses were forced to close at least temporarily. The combined effects of building damage, inventory loss, temporary displacement of customer base, and loss of income caused many

of these businesses to close permanently. In the months following Superstorm Sandy, many businesses remained closed on Mermaid and Surf Avenues in Coney Island and on Neptune and Brighton Beach Avenues in Brighton Beach and Coney Island.



Coney Island Amusement Area from the Ocean⁶⁰

Precise local figures are not readily available, but the New York City Department of Small Business Services estimated that 20% of impacted businesses Citywide remained closed as of March 2013.⁶¹ The New York City Economic Development Corporation calculated that roughly 5,000 businesses in Southern Brooklyn, a broader area that includes the neighborhoods of Gravesend, Gerritsen Beach, and Sheepshead Bay, were affected.⁶² According to the same source, a 1,000-square-foot retailer forced to close for two weeks because of Superstorm Sandy would typically incur total damages of more than \$100,000.

Health and social services

Superstorm Sandy impacted essential health and social service organizations. As discussed in the “Description of storm damages” section above, Coney Island Hospital was severely damaged by Superstorm Sandy. The impact on the hospital not only affected medical services for the Southern Brooklyn Peninsula but also the employees of the hospital. Several adult-care and

nursing-home facilities were also damaged by the storm and lost functionality.

The storm damaged more than a dozen public schools across the Southern Brooklyn Peninsula. Damage was catastrophic at many buildings. For instance, Public School 288 in Coney Island was unable to reopen at its original location until January 2013. This damage displaced students and staff members, and caused crowding at school facilities where these students were temporarily relocated.

Backwater inundation caused significant damage to a New York City Police Department Housing Bureau on West 23rd Street, forcing relocation of services outside the neighborhood.



Shorefront Jewish Geriatric Center Nursing Home⁶³

Housing

Resilient and affordable housing was a critical issue for the Southern Brooklyn Peninsula after Superstorm Sandy. Disruptions to heat and electrical systems in the peninsula's many NYCHA and Mitchell-Lama high-rise buildings persisted for weeks—and in some cases months—after the storm. Many of these public housing developments lacked adequate emergency backup power systems.

Flooding that overtopped the peninsula's creeks, referred to as "backwater" or "backdoor" flooding (i.e., not associated with storm surge), flooded ground floors and basement spaces, causing disruption to power service and destroying critical building systems. Thousands of local residents were displaced.



Homeowner and Sea Gate resident Angelo DeAngelis stands in the doorway of what was once his living room.⁶⁴

The critical issues related to housing are the needs for resilient construction methods, emergency practices, and recovery programs to reduce damage to homes, increase safety, and get people back into their homes sooner after future flooding events.

Faced with the cost of flood insurance and home repairs, some Community residents have put their homes on the market.



Debris from housing damage⁶⁵

Infrastructure

Infrastructure damage on the Southern Brooklyn Peninsula from Superstorm Sandy was considerable and caused hardship to residents and business owners. Flood damage to transportation, sewer, and power infrastructure created several issues for the Community, including blackouts, lack of clean water, and an inability to communicate with emergency personnel. Even before the peak storm surge associated with Superstorm Sandy, water from Coney Island Creek inundated Sea Gate and Coney Island, eventually merging with storm surge from the oceanfront of the peninsula, damaging public and private electrical systems and storm drainage systems. In addition to inundation from storm surge and creek flooding, many residents and business owners experienced flooding from sewer backflow.

This flooding caused Community-wide power outages. Sections of the Community were without power, including streetlights, for weeks after the storm. The sewer line network in Sea Gate sustained extensive damage from saltwater intrusion, resulting in a lack of clean running water and creating potentially dangerous health issues.

The Community and the Committee have stated that investment in infrastructure, including roads and sewers, is a top priority for residents.



Damage in Manhattan Beach at Sheepshead Bay following Superstorm Sandy⁶⁶

Natural and cultural resources

Superstorm Sandy caused major damage to natural and cultural resources on the Southern Brooklyn Peninsula. Damage to area beaches, the Coney Island amusement and entertainment district, and the New York Aquarium negatively affected the local economy and compromised quality of life for Community residents.

The beach bordering Coney Island and Brighton Beach is not only a major recreational amenity, it is also critical for storm protection. The U.S. Army Corps of Engineers (USACE) implemented a beach replenishment project in the mid-1990s that changed the profile of the beach, helping to attenuate waves and protect adjacent land uses. However, even with this project in place, there was substantial damage to waterfront facilities, especially in the Coney Island amusement and entertainment district and adjacent low-lying neighborhoods. USACE will be constructing a series of T-groins west of West 37th Street to mitigate long-term beach erosion and sand accumulation issues. Although this project, which is scheduled to begin in the summer of

2014, will alleviate many coastal protection issues, additional protective measures are needed throughout the Community.⁶⁷

Damage to cultural resources, such as places of worship, senior centers, and social meeting spaces, restricted residents' use of these resources. The basement of the Mesivta of Sea Gate was destroyed, but the small community room attached to the main building was spared and continues to be used as a community resource center for clothes and other personal necessities.

D. Community vision statement

The Committee collaborated with the larger Community to develop a vision statement that meets the unique needs and opportunities of the Southern Brooklyn Peninsula.



Vision statement working group during Public Engagement Event held at Abraham Lincoln High School on October 22, 2013⁶⁸

The Committee developed a draft Community vision statement using a visioning exercise during a Planning Committee Meeting. The exercise involved brainstorming key words for inclusion in the statement. The draft vision statement was first presented to the public at the October 22, 2013, Public Engagement Event, held at Abraham Lincoln High School. At this event, public attendees visited stations representing the six Recovery Support Functions and were asked for their comments. At the second Public Engagement Event, held on November 12, 2013, the public had the opportunity to review a revised version of the vision statement and offer additional suggestions. Many attendees offered their ideas by describing their experiences after Superstorm Sandy. For instance, the Committee heard stories about carrying water up multiple flights of stairs to disabled or elderly residents in high-rise buildings and the need to include diverse communities in the vision statement. In light of these shared experiences, the Committee drafted the following vision statement:





“Our vision is to **empower** and **rebuild** the diverse communities of the Southern Brooklyn Peninsula to be **prepared, vibrant, unified,** and **resilient** in facing the common economic, social, physical, and environmental challenges in our coastal neighborhoods.”

E. Relationship to regional plans

City and regional planning documents were reviewed to avoid duplicating ongoing planning efforts and to identify how the NYRCR Plan could best fill gaps in the planning literature. These City and regional plans include resiliency and storm-recovery plans as well as comprehensive hazard mitigation, waterfront, and sustainability plans. The analysis and recommendations included in these plans contributed valuable information and ideas to the NYRCR planning process.

Some of the plans were more than 4 years old, meaning that they did not address either the lingering financial effects of the recession that began in 2008 or the impacts of Hurricane Irene in 2011 and Superstorm Sandy in 2012. Although some of the plans referenced below are older, significant work related to planning since Superstorm Sandy has been completed, and the City has developed several documents related to the storm and post-storm recovery.

The most relevant existing plans, studies, and projects are summarized below, including the key analyses and lessons learned.

NYRCR Jamaica Bay Regional Working Group

From Sea Gate on the western edge of the Southern Brooklyn Peninsula to South Valley Stream at the headwaters of Jamaica Bay in Nassau County, communities in and around Jamaica Bay suffered enormous damage from Superstorm Sandy. Jamaica 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 Bay swelled and water surged through a network of creeks and streams to infiltrate neighborhoods and inundate homes, businesses, and roadways.

As described in "Description of storm damages" section of this Plan, Superstorm Sandy had a devastating impact on communities, and the 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 Jamaica 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, as shown on 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.

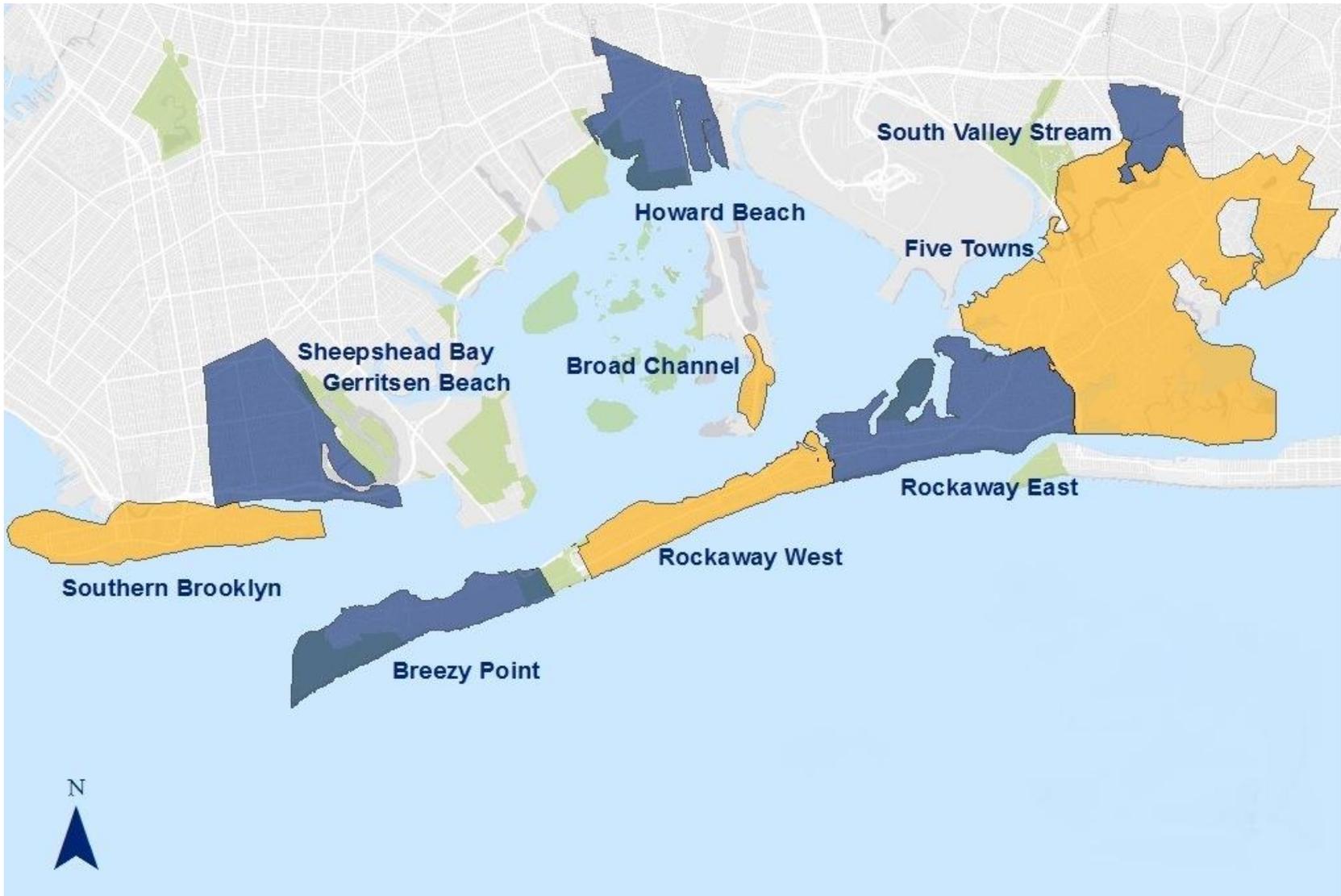


Figure I-3: Communities in the Jamaica Bay Regional Working Group

The JBRWG consists of members from the following NYRCR Committees: Breezy Point/Roxbury, Rockaway West, Rockaway East, Broad Channel, New, Old Howard Beach and Hamilton Beach, Gerritsen Beach and Sheepshead Bay, the Southern Brooklyn Peninsula (which includes Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate), and in Nassau County, the Five Towns (which includes Village of Cedarhurst, Hewlett, Village of Lawrence, Woodmere, Village of Hewlett Neck, Village of Hewlett Harbor, Meadowmere, and Inwood), and South Valley Stream.

The JBRWG believes that collaboration with the agencies active in Jamaica Bay, namely USACE and the National Park Service ([NPS), is paramount. Through various habitat restoration projects and coastal protective measures along the Rockaway Peninsula, USACE has long been a committed partner in promoting 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.

The JBRWG supports the following USACE and NPS projects, which would further protect communities in and around Jamaica Bay from future storm hazards:

- **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 project would include work at the Cove and 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 project plan consists of an ocean-side double dune system and complementary set of bayfront flood and erosion protections that are designed to safeguard the community from future storm events. The State of New York has formally submitted an application for this project to FEMA on March 20, 2014, through FEMA's Hazard Mitigation Grant Program.
- **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 Superstorm Sandy. The NPS property line hugs the campus site and the northwest quadrant of the neighborhood. Interventions here would further protect these community assets.

- **Edge Protection for Upper Jamaica Bay.** The JBRWG supports the inclusion of protective measures for communities in upper Jamaica Bay, including Gerritsen Beach, Sheepshead Bay, and Manhattan Beach, in the USACE East Rockaway Inlet to Rockaway Inlet Reformulation Study. This project 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 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 bayfront 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. Also, 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 the 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.

The JBRWG also supports the Science and Resiliency Institute at Jamaica Bay, a partnership among academic institutions, government agencies, non-

governmental 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, the State University of New York (SUNY) at Stony Brook, Stevens Institute of Technology, Cornell University, CUNY, the National Aeronautics and Space Administration 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 Request for Expression of Interest (RFEI) from the NPS, City of New York, and Trust for Public Land, with grant funding from the Rockefeller Institute.

A Stronger, More Resilient New York (2013)

Mayor Michael Bloomberg created the Special Initiative for Rebuilding and Resiliency (SIRR) in 2012 to identify means to create a more resilient City of New York in the wake of Superstorm Sandy, with a long-term focus on preparing for and protecting against the impacts of climate change. On June 11, 2013, the City released *A Stronger, More Resilient New York*⁶⁹ (SIRR Report), which provides the most detailed analysis of all the documents completed to date. It generally describes damage to the Brooklyn area, risks, initiatives, and priorities.

Priorities discussed in the SIRR Report that are relevant to the Community include:

- Addressing coastal vulnerabilities for residential, commercial, and public properties and civic facilities;
- Providing additional coastal/shoreline protection from wave action, beach erosion, and oceanfront vulnerabilities;
- Adding protection from inundation from backflow that can lead to flooding of inland areas;
- Focusing on infrastructure inadequacy, particularly stormwater drainage, power, and transportation;
- Improving communications during and following emergency situations; and
- Addressing the lagging recovery of housing, social services, and businesses along key commercial corridors.⁷⁰

The plan includes specific rebuilding and resiliency plans for five City regions, including Southern Brooklyn. These initiatives are reflected in the reconstruction strategies and projects for Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate.

Specific project recommendations within the NYRCR Community include a Neighborhood Retail Recovery Program on key commercial corridors such as Mermaid, Surf, and Brighton Beach Avenues; hardening or otherwise modifying shoreline parks to protect adjacent communities; providing technical assistance to support repair of damaged infrastructure in Sea Gate; installing armored revetments in Coney Island; and making recommendations to work with USACE to complete its Sea Gate project and emergency beach replenishment in Coney Island.

New York City Regional Economic Development Council 2011 and 2012 Plans and 2013 Project Report

<http://regionalcouncils.ny.gov/content/new-york-city>

The New York City Regional Economic Development Council (REDC) has a five-borough strategy that encourages partnerships between government, business, labor, academia, and civic organizations as well as inter-regional cooperation to maximize the benefits of economic growth and job creation for the entire state. This report acknowledges the serious blow that Superstorm Sandy dealt to the New York metropolitan area. The NYRCR effort follows a similar process as the REDC in terms of project identification and public engagement.

REDC priorities for bolstering the local economy that are germane to Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate include:

- The revitalization of the Coney Island waterfront to include 5,000 new housing units, 25 acres of entertainment attractions, more than 25,000 construction jobs, and 6,000 permanent jobs;
- The opening of Steeplechase Plaza, a 2.2-acre public open space that is the western entryway to the revitalized amusement district;
- Construction of a new state-of-the-art 44,000-square-foot YMCA in Coney Island (which recently opened); and



- The City's HireNYC Program, which listed 500 open positions and filled 400 new hires for the summer of 2013 from the surrounding neighborhood.

Sustainable Communities: Climate Resilience Studies: Urban Waterfront Adaptive Strategies (2011)

http://www.nyc.gov/html/dcp/html/sustainable_communities/sustain_com7.shtml

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 the City faces. The UWAS lays out a risk-based, flexible process for identifying, evaluating, and implementing potential coastal protection strategies. The UWAS 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 its ability to protect waterfront communities.

The report identifies a range of potential adaptive strategies that are applicable to the Community, including:

- Interventions inland, at the shoreline, and in the water. Each type was analyzed for its ability to protect waterfront communities by reducing flooding from storm surge and high tides or absorbing destructive wave forces.

The Committee considered this information for the development of natural resource projects for flood reduction.

Sustainable Communities: Climate Resilience Studies: Designing for Flood Risk (2013)

http://www.nyc.gov/html/dcp/html/sustainable_communities/sustain_com6.shtml

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 that the City Council adopted in 2013.

This report identifies key design principles to guide flood-resistant construction in urban areas that are applicable to the Community. These design principles include:

- An overview of National Flood Insurance Program regulatory requirements for construction in flood zones;
- The effects of flood-resistant construction standards;
- The creation of a vibrant streetscape and public realm; and
- Recommendations for how zoning can incorporate these principles to enable more versatile and desirable design solutions for flood-resistant construction.

The Committee considered this information for the development of housing and infrastructure projects.

New York City Natural Hazard Mitigation Plan (2009) and Draft Amendment (2014)

http://www.nyc.gov/html/oem/html/planning_response/planning_hazard_mitigation_2014.shtml

The Hazard Mitigation Plan (HMP) provides hazard risk-reduction strategies and projects that are based on risk analyses and developed through a community-wide planning process. The HMP includes the following elements that were considered during the development of the NYRCR Plan:

- Natural hazards risk assessment;
- Mitigation strategy;
- Hazard mitigation projects; and
- Potential funding sources for projects.

The Committee reviewed the City Mitigation Plan—specifically, the Section IV Mitigation Strategy, which includes programs, plans, projects, and policies to decrease or eliminate potential losses from hazards identified in the Risk Assessment section. Overarching mitigation strategies pertain to the Planning Area, but no specific projects were listed for the Community.

The goals in the HMP coincide with the Community vision developed for this NYRCR Plan and mention the economy, public safety, property protection, and the need to be prepared and resilient. Many of the objectives in the HMP coincide with strategies and projects in this document.

PlaNYC 2030 (2007) and PlaNYC Full Report (2011)

<http://www.nyc.gov/html/planyc2030/html/theplan/the-plan.shtml>

This report documented a range of programs, proposed regulatory changes, and specific recommendations for the South Brooklyn region. The 2011 PlaNYC provided valuable background information on the extent of damages and, most important, provided an initial set of recommendations for the Committee to consider in generating and refining project proposals throughout the NYRCR planning process for the Southern Brooklyn Peninsula.

NYC Hurricane Sandy After Action Report (May 2013)

http://www.nyc.gov/html/recovery/downloads/pdf/sandy_aar_5.2.13.pdf

The Committee reviewed the 59 recommendations in this report and developed several project ideas based on these recommendations. For instance, one of the after-action items in the report included standardizing communications in the City of New York. The Committee discussed the potential for a project that would refine New York City Office of Emergency Management preparedness materials for use in the Community that reflected local conditions and the five most common languages spoken in the diverse neighborhoods.

Vision 2020: New York Comprehensive Waterfront Plan (2011)

http://www.nyc.gov/html/dcp/html/cwp/cwp_2.shtml

The Comprehensive Waterfront Plan is an analysis and overall vision for the City of New York's 520 miles of shoreline. This plan includes a strategic framework for the City's waterfront and 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 with respect to climate change and sea-level rise.

Plan recommendations relevant to the Community are in the sections describing Brooklyn Reach 15, 3.b for Calvert Vaux Park and Reach 16 for Coney Island to Sheepshead Bay. Reaches refer to specific segments along the shoreline and are described on page 150 of the plan.

Recommended actions for the Community include:

Coney Island

- Complete a new Steeplechase Plaza, including performance space, retail development, and water features;
- Complete development of an amusement park;
- Begin construction of the first phase of separate sanitary and storm sewer upgrades to improve local water quality;
- Complete construction of a pump station and force main along Coney Island Creek;
- Complete a feasibility study regarding the viability of local ferry service;
- Support continued restoration of the boardwalk;
- Promote the New York Aquarium and other programs to educate the public about local waterfront opportunities and resources; and
- Enhance, manage, and restore salt marshes and ecologically sensitive or valuable areas along Coney Island Creek.

Brighton Beach

- Promote contextual redevelopment of the Brighton Beach Municipal Parking Field, between Brighton 2nd and Brighton 4th Streets on Brightwater Court to support public waterfront use and access opportunities.

New York City Waterfront Revitalization Program

<http://www.nyc.gov/html/dcp/html/wrp/wrp.shtml>

The Waterfront Revitalization Program is the City's principal coastal management tool and implements the Comprehensive Waterfront Plan. This program 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 City, State, or Federal discretionary action, a determination of the project's consistency with the policies and intent of the Waterfront Revitalization Program must be made before the project may move forward.

Coney Island Comprehensive Rezoning Plan, New York City Department of City Planning (June 2009)

http://www.nyc.gov/html/dcp/html/coney_island/coneyisland4.shtml

The *Coney Island Comprehensive Rezoning Plan* establishes a framework for the revitalization of the Coney Island amusement area and the surrounding blocks. The plan builds on the few remaining amusements to create a 27-acre amusement and entertainment district that will reestablish Coney Island as a year-round, open, and accessible amusement destination. Outside of the amusement area, the plan provides new housing opportunities, including affordable housing, and neighborhood services. On July 29, 2009, the City Council adopted the Coney Island rezoning with modifications. The zoning text and map amendments are now in effect.

The *Coney Island Comprehensive Rezoning Plan* and the more recent efforts of the Coney Island Alliance to build on that planning framework stimulated much discussion in the Committee. Although Planning Committee Members saw the broader economic development benefits of a revitalized amusement and entertainment district, the consensus was to focus attention and the NYRCR Plan on the surrounding residential neighborhoods.





Section II: Assessment of risk and needs

Section II: Assessment of risk and needs

This section identifies community assets in the NY Rising Community Reconstruction (NYRCR) Southern Brooklyn Peninsula Community (Community) and describes the risk assessment process for those assets. Conducting an assessment of risk and needs is an objective means to support decision-making for asset reconstruction and implementing projects to reduce risk and increase resiliency to future storms.

A risk analysis was performed to calculate risk to current assets, the impact of future weather events on those assets, and the reduction in risk after future goals and strategies are implemented. This process helped the Committee document methods to mitigate future risk.

A. Description of community assets and assessment of risk

The Community Asset Inventory highlights the Community assets (including critical facilities) that, if impaired by extreme weather events, would compromise the essential social, economic, or environmental functions of the Community. These impairments could adversely affect short- and long-term recovery efforts. This risk assessment depicts the assets in the Southern Brooklyn Peninsula (Peninsula), including those damaged by Superstorm Sandy, and describes their vulnerability to future flood and storm-surge events.

Each Community asset was categorized by its location in a moderate, high, or extreme risk area. Risk areas were conceptualized by the New York State Department of State (NYS DOS) and developed in partnership with the National Oceanic and Atmospheric Administration Coastal Services Center. The NYRCR Southern Brooklyn Peninsula Planning Committee (Committee) categorized community assets into low, medium, or high Community values.

Critical facilities are assets that are crucial to the health and welfare of the entire population, emergency response, and recovery functions following extreme weather events. Critical facilities include health-care facilities, police and fire stations, emergency operations centers, public works facilities,

evacuation shelters, schools, day-care centers, and facilities that serve and house special-needs populations.

The asset inventory also includes vital infrastructure systems, such as water, wastewater, and stormwater systems; electrical systems; and transportation networks.

The Committee identified a list of Community assets that fell into one of the six Recovery Support Functions: community and capacity building, economic development, health and social services, housing, infrastructure, and natural and cultural resources. However, no physical assets fell into the community and capacity building Recovery Support Function. Asset locations were mapped based on this information. The resulting asset inventory and associated maps were further modified and confirmed based on the public input captured at the first Public Engagement Event, which was held on October 22, 2013.

Asset Inventory Maps, showing a list of Community assets and their corresponding locations, are provided in the sections that follow for the five of the six Recovery Support Functions that had physical assets.

Economic development

The amusement and entertainment district in Coney Island houses many of the Southern Brooklyn Peninsula's major economic assets.

In 2010, 12.8 million people visited the public beaches and amusement parks in Coney Island and Brighton Beach. Other major tourist attractions in the area include Luna Park, an amusement park in Coney Island that opened in 2010; the New York Aquarium, which has approximately 750,000 annual visitors;⁷¹ and the Brooklyn Cyclones, a minor league baseball team that brings almost 250,000 fans to MCU Park every summer.⁷²

Although these large-scale amenities provide local jobs and generate significant economic activity, most local businesses are small. Over 70% of the businesses in the 11224 and 11235 zip codes (the zip codes covering Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate) have fewer than five employees.⁷³ Major employers include health and social services

institutions, such as Coney Island Hospital, Shorefront Jewish Geriatric Center, Sea Crest Health Care Center, and Saints Joachim and Anne Nursing and Rehabilitation Center.⁷⁴ Of the 17,833 primary jobs in the Community, 60.1% are in the Health Care and Social Assistance sector.⁷⁵

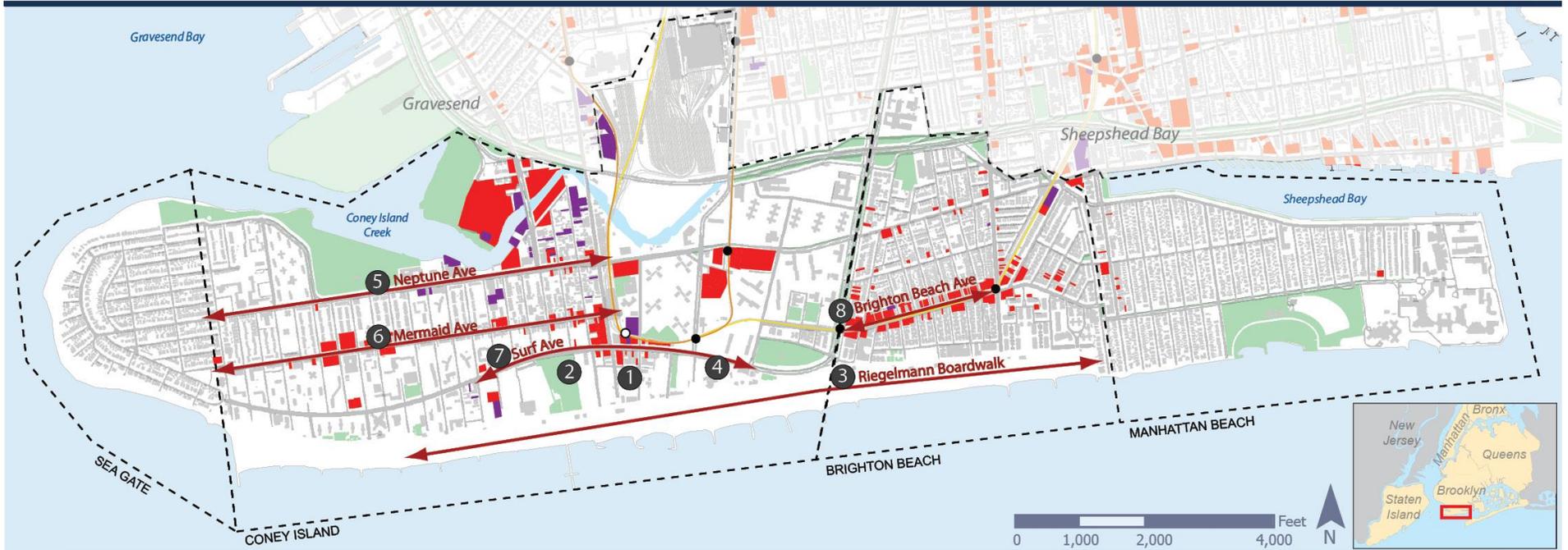
The Southern Brooklyn Peninsula's principal commercial corridors are Surf and Mermaid Avenues in Coney Island, Neptune Avenue in Coney Island and Brighton Beach, and Brighton Beach Avenue in Brighton Beach. Riegelmann Boardwalk in Coney Island and Brighton Beach also houses a variety of oceanfront uses, which include amusements, retail shopping outlets, bars, and restaurants. Figure II-1 shows the economic assets in the Community.



Brighton Beach Avenue⁷⁶

Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

Asset inventory: Economic assets by land use category



LEGEND

- Geographic Scope
- Economic Asset Locator
- Open Space
- Land Use: Commercial/Office
- Land Use: Industrial Manufacturing
- Commercial Corridors

Tourism Destination

- 1 Luna Park (Entertainment Facilities)
- 2 MCU Park
- 3 Riegelmann Boardwalk
- 4 NY Aquarium

Downtown Center

- 5 Neptune Ave Commercial Corridor
- 6 Mermaid Ave Commercial Corridor
- 7 Surf Ave Commercial Corridor
- 8 Brighton Beach Ave Commercial Corridor

Source: NYC Department of City Planning, MapPLUTO

Figure II-1: Economic Assets by Land Use Category



Health and social services

The Southern Brooklyn Peninsula houses a diverse array of health and social services organizations that serve the Community and the region. Coney Island Hospital is the largest medical service provider in Southern Brooklyn. The facility, which has approximately 2,900 employees and 371 beds, serves more than 300,000 outpatients annually.⁷⁷ The Community is also home to six senior centers, five residential health care facilities, five residential adult care facilities, and three community residences for people with developmental disabilities. Several non-profit organizations also provide health and social services to the Southern Brooklyn Peninsula communities. The Committee also identified the Ida G. Israel Medical Center as a key asset. It was closed as a result of the devastating damage it suffered during Superstorm Sandy. The City of New York is currently working with the Federal Emergency Management Agency (FEMA) on a temporary location for the center.

The 17 public schools in the Community, which include one charter school, serve over 12,200 pupils. These schools include five high schools and two other schools that serve high school students. Nearly 20,000 students attend the Kingsborough Community College.⁷⁸

The 60th Police Precinct, Police Transit District 34, and Mounted Troop E are headquartered in Coney Island. The Sea Gate Police Department is headquartered at the Surf Avenue entrance to the neighborhood. The Community is also home to two City fire stations and one emergency medical services station.

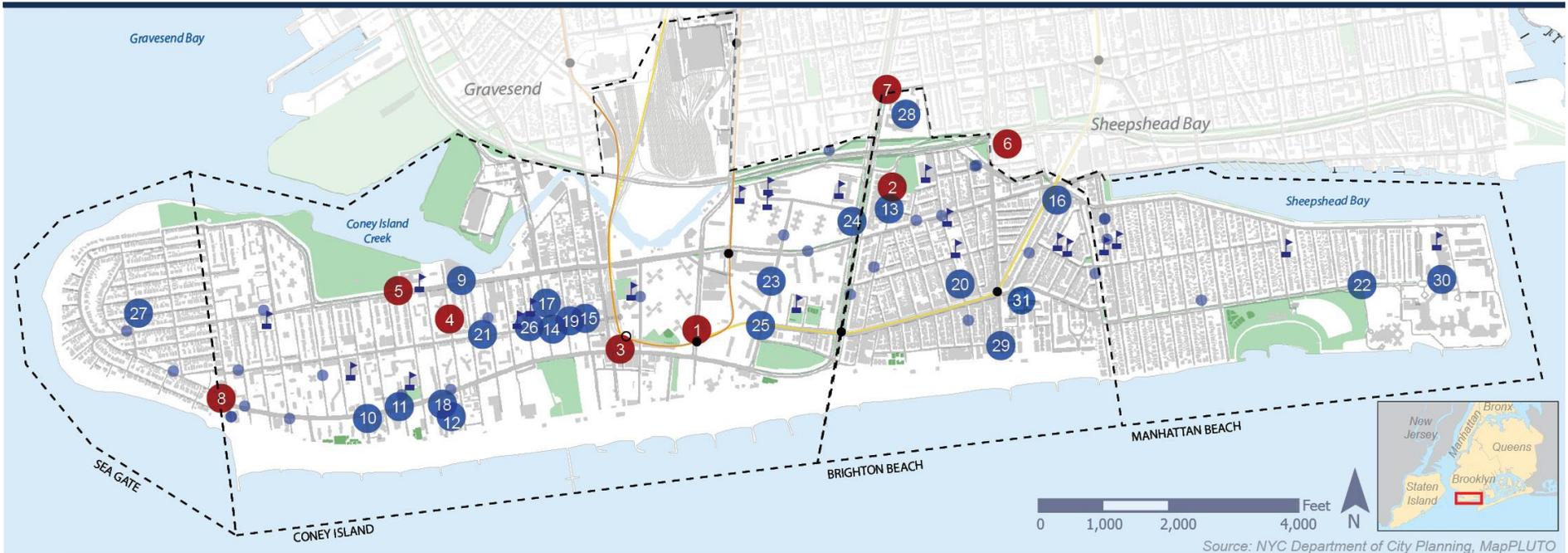
Figure II-2 details the health and social services assets in the Community.



Coney Island Hospital⁷⁹

Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

Asset inventory: Health and social services



Source: NYC Department of City Planning, MapPLUTO

LEGEND

- Geographic Scope
- Health and Social Services Asset Locator
- Emergency Operations/Response
- Daycare and Eldercare
- Schools (Elementary, Middle, High)

Emergency Operation/Response

- 1 NYPD 60 Precinct
- 2 Mounted Troop E
- 3 Transit District #34
- 4 Housing Bureau Police Service Area #1
- 5 Engine 318, Ladder 166
- 6 Engine 246, Ladder 169
- 7 EMS Station 43
- 8 Sea Gate Police Department

Healthcare/Social Facilities

- 9 Ida G Israel Community Health Ctr (permanently closed)
- 10 Shorefront Jewish Geriatric Ctr
- 11 Saints Joachim & Anne Nursing And Rehabilitation Ctr
- 12 Sea-Crest Health Care Ctr
- 13 Shoreview Nursing Home
- 14 Mermaid Health Center
- 15 Comprehensive Care Mgmt D&TC
- 16 Sheepshead Bay Renal Care Ctr
- 17 Catholic Charities
- 18 Haber House Senior Center
- 19 Salt And Sea Mission Church, Inc
- 20 Shorefront Jewish Community Council
- 21 Acts Community Dev Corp
- 22 Menorah Home & Hospital For Aged & Infirm
- 23 JASA Trump Outreach
- 24 JASA Warbasse Cares Norc
- 25 Trump Village Norc
- 26 Urban Neighborhood Services Inc.
- 27 The Friendship Circle
- 28 Coney Island Hospital
- 29 Shorefront Ym-Ywha Of Brighton-Manhattan Beach, Inc.
- 30 Kingsborough Community College
- 31 Brighton Beach Neighborhood Association

Figure II-2: Health and Social Services Assets



Housing

Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate differ significantly in terms of their housing types. There are 40,462 housing units⁸⁰ in the four communities that constitute the Southern Brooklyn Peninsula. Coney Island contains 53% of these units⁸¹ in predominately mid-rise and high-rise multi-family buildings, many of which were built in the 1970s and include high-density subsidized housing. Brighton Beach, which contains 38% of the Community's housing units,⁸² consists primarily of rental apartments in mid-rise multi-family buildings of 20 units or more. Manhattan Beach housing units consist predominately of single-family detached homes and contain 4% of the housing units⁸³ in the Community. Sea Gate contains a mix of single-family, two-family, and small multi-family homes and constitutes 5% of the housing units⁸⁴ in the Community.

The housing units in the Community include a high density of public and subsidized housing, particularly in Coney Island.⁸⁵ The subsidized housing units include nine New York City Housing Authority (NYCHA) developments, which encompass 40 medium- and high-rise buildings that house 9,254 residents. There are also three Mitchell-Lama co-op developments and a number of privately managed high-rise apartment or condominium developments.

Many Community housing units were built before the enactment of contemporary building codes and standards. These pre-Flood Insurance Rate Map (FIRM) and pre-modern-code structures are at risk to flooding and storm surge damage due to construction below the base flood elevation (BFE), and non-compliance with modern flood-damage-resistant building materials, design, and construction standards.



Coney Island Houses NYCHA Development⁸⁶



Two-family homes in Sea Gate⁸⁷

Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

Asset Inventory: Housing (Significant Assets Identified as of Jan 2014)



Source: NYC Department of City Planning, MapPLUTO

LEGEND

- Geographic Scope
- Affordable Housing Asset Locator
- One- and Two-Family Residences
- Multi-Family Residences (3 or more dwelling units)

AFFORDABLE HOUSING / ASSISTED LIVING

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> 1 NYCHA, Gravesend 2 NYCHA, Surfside Gardens 3 NYCHA, O'Dwyer Gardens I 4 NYCHA, O'Dwyer Gardens II 5 NYCHA, Coney Island 6 NYCHA, Coney Island (Site 1b) 7 NYCHA, Coney Island (Site 4 & 5) 8 NYCHA, Coney Island (Site 8) 9 NYCHA, Carey Gardens I 10 NYCHA, Carey Gardens II 11 NYCHA, Carey Gardens III | <ul style="list-style-type: none"> 12 NYCHA, Haber 13 Mitchell-Lama, Luna Park Co-Ops 14 Mitchell-Lama, Brighton House 15 Mitchell-Lama, Sam Burt House 16 Mitchell-Lama, Harbor View 17 Mitchell-Lama, Northbay Estates 18 Mitchell-Lama, Sea Rise I 19 Mitchell-Lama, Sea Rise II 20 Mitchell-Lama, Warbasse Houses 21 Mitchell-Lama, Scheuer House 22 Shorefront Towers | <ul style="list-style-type: none"> 23 Surf Gardens 24 Friendset Apartments 25 Scheuer House of Manhattan Beach 26 Scheuer House of Brighton Beach 27 Coney Island Site 4A1 28 Abraham Residence I 29 Abraham Residence II 30 Garden of Eden Home 31 Oceanview Manor Home for Adults 32 Surf Manor Home for Adults 33 Mermaid Manor Home for Adults |
|---|---|---|

Figure II-3: Housing Assets





Coney Island – Stillwell Avenue Station⁸⁸

Infrastructure

The Committee has identified investments in infrastructure as a priority. These investments would take the form of repair, hardening, or new construction. Examples of infrastructure include roads, transit, electrical, and sewer systems.

Eight local buses, two express buses, and five subway lines serve the Community. There are five elevated subway stations along the Peninsula. The busiest of these stations, Coney Island – Stillwell Avenue, handled 4.7 million riders in 2012.⁸⁹ The Coney Island Complex is the largest transit yard in the Metropolitan Transportation Authority system, handling regular maintenance operations for a fleet of nearly 800 subway cars.

Ocean Parkway is the major artery in and out of the Community. The limited access highway at the northern end of the Community, the Belt Parkway, carries approximately 140,000 private vehicles per day.⁹⁰ Main arterials running east and west that connect the four neighborhoods include Surf and Neptune Avenues.

The Committee has also identified stormwater and power systems as key assets, as depicted on Figure II-4, Infrastructure Systems Assets.

Brighton Beach | Coney Island | Manhattan Beach | Sea Gate
Asset inventory: Infrastructure systems



LEGEND

- Geographic Scope
- Infrastructure Asset Locator
- Bus Transportation Systems
- Railroad
- MTA Subway Stop
- Parking Lot
- Bus Route

1 Coney Island Rail Yard	Transportation	Manhattan Beach Stormwater Facilities	Stormwater
2 District Facility Sanitation Garage	Hazardous/Solid Water		
3 Water Discharge Site			
<u>Other Infrastructure Systems</u>		Sea Gate Power Supply	Power Supply
Communications Facilities - Community Wide	Telecommunications	Coney Island Power Supply	Power Supply
Sea Gate Stormwater Facilities	Stormwater	Brighton Beach Power Supply	Power Supply
Coney Island Stormwater Facilities	Stormwater	Manhattan Beach Power Supply	Power Supply
Brighton Beach Stormwater Facilities	Stormwater	Liquid Fuel Stations - Community Wide	Liquid Fuels

Source: NYC Department of City Planning, MapPLUTO

Figure II-4 Infrastructure Systems Assets



Natural and cultural resources

Natural and cultural resources are important to the Community, both as economic drivers and recreational amenities. The Community was historically characterized by marshlands and wetlands, but development significantly degraded these natural assets. Though the local topography and environment have been substantially altered, many natural assets still exist. These remaining natural resources often serve a protective function.

The Committee identified over a dozen critical natural and cultural resource assets. These assets include Coney Island Creek and the Coney Island beaches and boardwalk. The beaches and boardwalk serve important mitigation and storm surge attenuation functions, but are themselves highly vulnerable. Along Coney Island and Brighton Beach's coast, natural features are supplemented by a variety of structural features, including berms, jetties, sea walls, and bulkheads. In Manhattan Beach, the Manhattan Beach Bathhouse and its adjacent recreational waterfront area are considered a key asset to the Community.

The New York Aquarium is an important local cultural institution. Before sustaining major damage during Superstorm Sandy, the aquarium hosted roughly 750,000 annual visitors.

Kingsborough Community College in Manhattan Beach also draws large numbers of non-local students and visitors. It hosts cultural events, including concerts and theatrical productions.

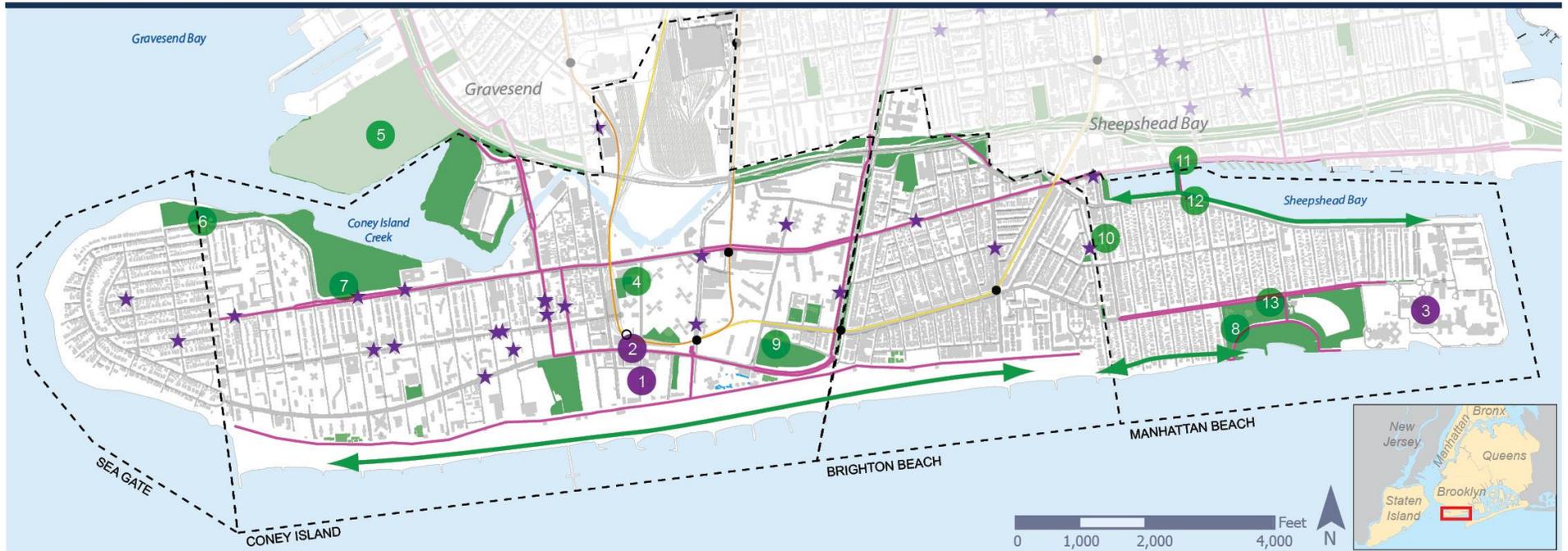
The Southern Brooklyn Peninsula has two branch libraries; one of them, the Coney Island Library, was closed for almost a year because of damage suffered from Superstorm Sandy. Cultural memorials damaged during Superstorm Sandy include the 9-11 Memorial Wall and the 9-11 Memorial Square in Asser Levy Park and the Holocaust Memorial Park overlooking Sheepshead Bay.



Coney Island Light House, established in 1890⁹¹

Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

Asset inventory: Natural and cultural resources



LEGEND

- Geographic Scope
- Parks
- Bike Lane
- Public Beach
- Places of Worship
- Natural Asset Locator
- Cultural Asset Locator

Museum and Performing Arts Centers

- 1 Coney Island History Project
- 2 Coney Island USA
- 3 Leon M Goldstein Performing Arts Center

Parks and Recreation

- 4 Neptune Playground
- 5 Calvert Vaux Park
- 6 Coney Island Creek Park
- 7 Kaiser Park
- 8 Manhattan Beach Park
- 9 Asser Levy Park
- 10 Holocaust Memorial Park
- 11 Sheepshead Bay Footbridge
- 12 Public Promenade
- 13 Manhattan Beach Bathhouse

Source: NYC Department of City Planning, MapPLUTO

Figure II-5 Natural and Cultural Resources Assets



Assessment of risk to assets and systems

The NYS DOS risk areas defined in Table II-1 were used to evaluate risk to assets in the Community. The 2012 Superstorm Sandy Risk Assessment Map (Figure II-6) shows that most of the Southern Brooklyn Peninsula is in a high risk or extreme risk flooding area. Many high and extreme risk areas on the Southern Brooklyn Peninsula are vulnerable to storm surge, backwater inundation, and damaging wave action.

A risk assessment was conducted to determine the potential impact of extreme weather events on Community assets. This assessment helped the Community choose mitigation options to reduce future risk. The Committee selected proposed strategies, such as infrastructure improvements and changes in the building environment. Many of these general strategies were refined into project ideas, which were then subjected to a cost-benefit analysis.

Throughout the planning process, input from the Committee and the general public on areas with the highest risk of flooding was used to refine the identified at-risk areas, along with the NYS DOS risk assessment tool.

Risk assessment methods

The risk assessment tool developed by NYS DOS was used to quantify the risk faced by vulnerable physical assets after Superstorm Sandy. The three factors used to assess risk were hazards, exposure, and vulnerability. A detailed description of the methods the tool uses can be found in the NYS DOS manual titled *Guidance for Community Reconstruction Zone Plans*. The risk assessment tool is available at:

<http://stormrecovery.ny.gov/resources-0>.

Hazards include flood and storm surge. Hazards scores were calculated by evaluating risk from a range of storm events, from frequent, low-intensity events to infrequent, high-intensity events. Assets in extreme risk areas experience hazards more frequently and with greater impact than those in high or moderate risk areas.

Exposure refers to the location of an asset. Exposure scores were calculated as an expression of the local topographic and shoreline conditions that tend

to increase or decrease the effects of coastal hazards on assets. Exposure is generally a better predictor of damage than elevation alone.

A series of landscape attributes was also used to calculate a total landscape attribute score. The following landscape characteristics would each raise the total score, signifying a more vulnerable asset:

- Erosion rate ≥ 1 foot per year or unknown;
- Waterline frequently at shore defense or upland vegetation;
- Shore defenses absent, not constructed to anticipated conditions, or deteriorating;
- Protective vegetation between asset and flood source absent;
- Dunes absent, below BFE, eroding, little vegetation; bluff slope unstable, little vegetation; and
- Asset on coastal barrier island or filled wetland.

Vulnerability pertains to the capacity of an asset to be operational after a storm. Vulnerability scores are an expression of the capacity of an asset to return to service after a storm. Assets that can quickly recover or that experience limited interruption to their delivery of core Community services have a low vulnerability index.

The risk assessment tool calculated a risk score using the following formula:

Hazards x Exposure x Vulnerability = Risk

The risk score represents the risk of Community assets relative to one another. The scores range from 1.5 (negligible) to 75 (severe).

The Community contains a large number of assets, many of which share functional commonalities that put them into the same risk categories. Housing and infrastructure system assets, such as stormwater and electrical networks, were grouped together to simplify the assessment process.

Table II-1: New York State Department of State Risk Areas

Extreme Risk Area	High Risk Area	Moderate Risk Area
<ul style="list-style-type: none"> • Federal Emergency Management Agency (FEMA) Coastal V Zones • National Weather Service (NWS) advisory thresholds for shallow coastal flooding • Areas within 3 feet of elevation of mean higher high water shoreline as defined by the National Oceanic and Atmospheric Administration • Areas prone to erosion 	<ul style="list-style-type: none"> • FEMA 1% (100-year) annual flood risk (FEMA Zone V and Zone A) • Areas within 3 feet of elevation of NWS advisory thresholds for shallow coastal flooding 	<ul style="list-style-type: none"> • FEMA 0.2% (500-year) annual flood risk • Areas within 3 feet of elevation of FEMA 1% annual flood risk (base flood elevations) • Area bounded by National Hurricane Center’s Sea, Lake, and Overland Surges from Hurricanes (SLOSH) Category 3 hurricane storm surge inundation zone

Source: New York State Department of State

Risk assessment of risk to assets: results

A risk assessment was completed for the at-risk assets identified during the asset inventory (Figures II-7 through II-11). Using the risk assessment tool, risk scores were calculated for each of the assets. Risk scores for assets on the Southern Brooklyn Peninsula ranged from a relatively low 9 for a food pantry on Mermaid Avenue to a very high 53 for the Ida G. Israel Medical Center and an extreme 54 for the Coney Island Gospel Assembly. The disparity between these scores is largely the result of the facilities’ different outage times: whereas the food pantry was able to resume its primary functions almost immediately after Superstorm Sandy, the medical center remains closed pending relocation to a temporary modular facility. Indeed, most variation in final risk scores was driven by the vulnerability score component. The assets are almost all located on a dense, heavily urbanized barrier island whose natural systems are either no longer extant or seriously degraded. Most assets, therefore, have similar, or identical, landscape attributes.

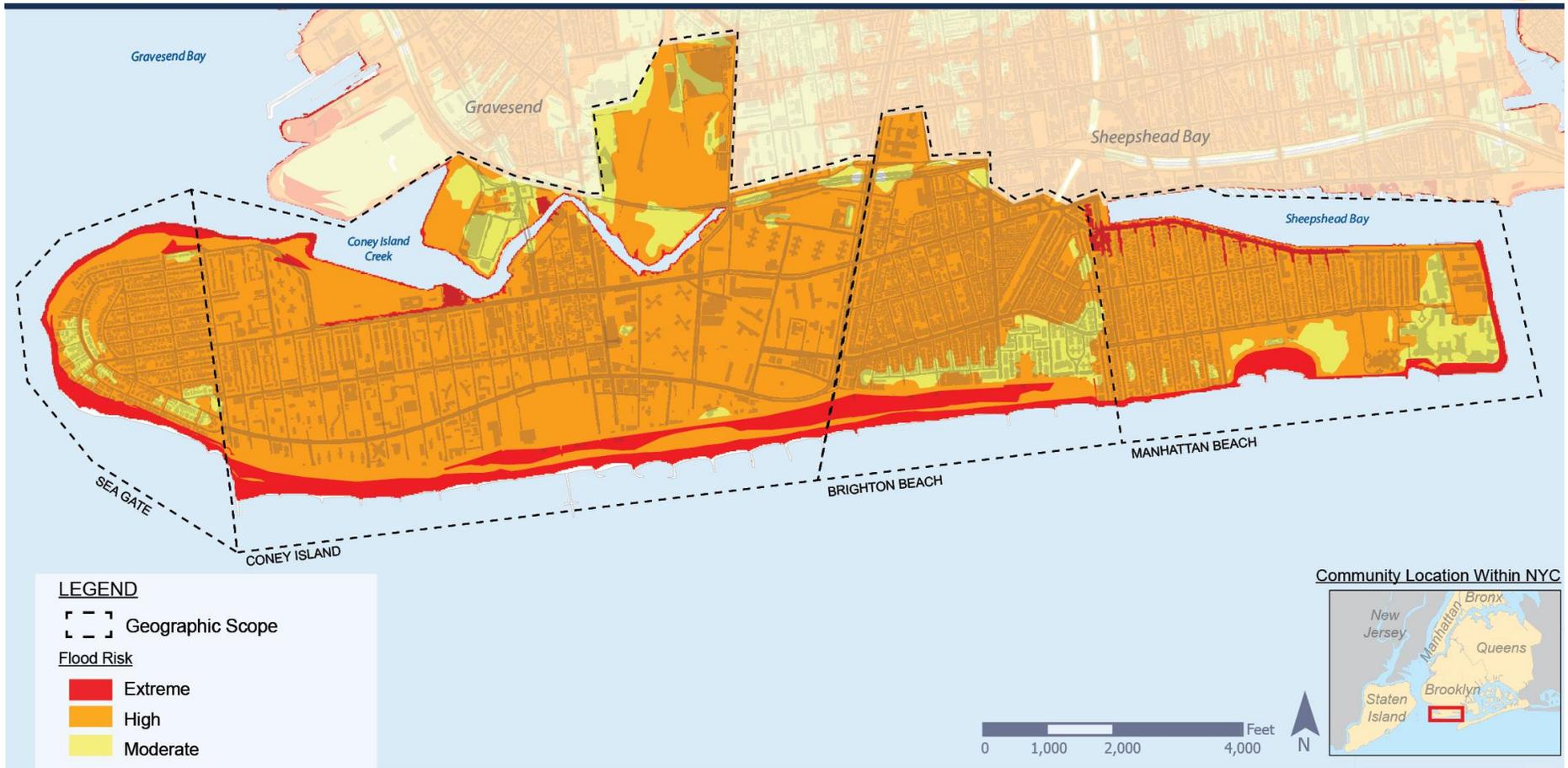
Section V.D contains tables that show the individual results of the assets from the risk assessment by Recovery Support Function. Assets with a risk score greater than 53 are highlighted in red (extreme), assets with a risk score of 24 to 53 are highlighted in orange (high), and assets with a risk score of 6 to 23 are highlighted in yellow (moderate). Assets with high or severe risk scores are highlighted in red in Figures II-7 through II-11.

The assessment of risk to systems is discussed following Figure II-11.



Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

2012 Superstorm Sandy risk assessment map

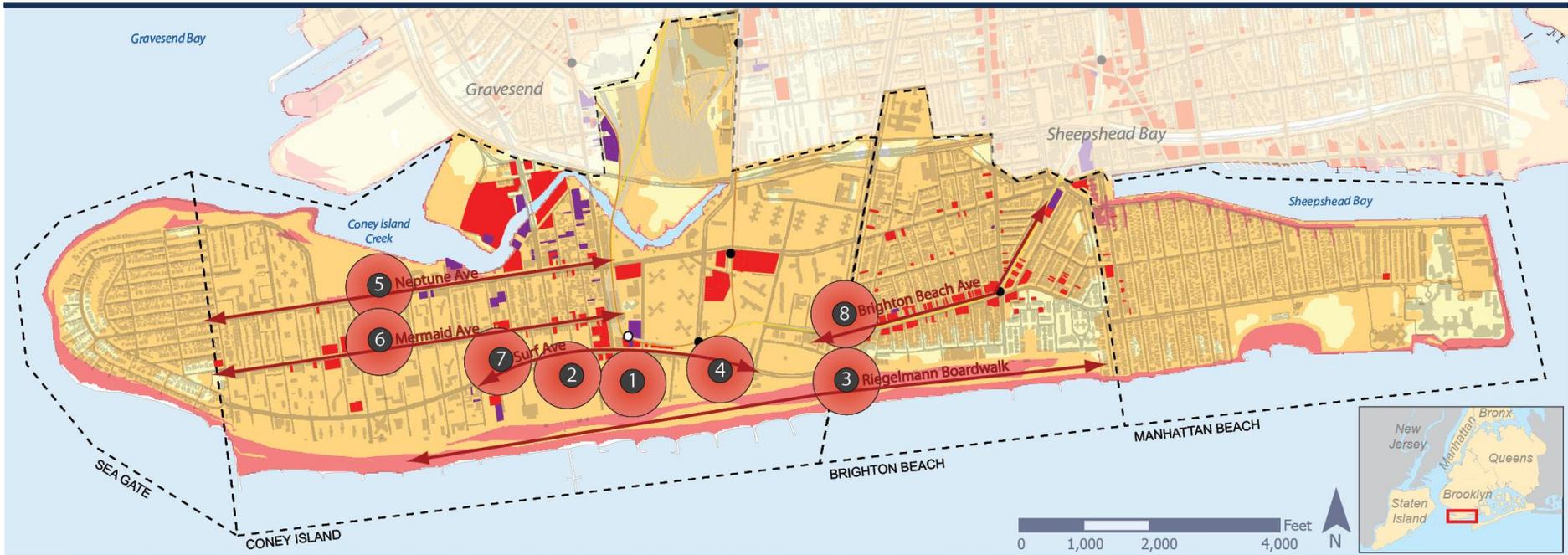


Source: Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Coastal Services Center (CSC), MapPLUTO

Figure II-6: 2012 Superstorm Sandy Risk Assessment Map



Brighton Beach | Coney Island | Manhattan Beach | Sea Gate
Economic asset risk assessment map



LEGEND

- Economic Asset Locator
 - Land Use: Commercial/Office
 - Land Use: Industrial Manufacturing
 - ↔ Commercial Corridors
- | | | |
|--|--|--|
| ● Asset with highest risk score | | |
| Extreme | High | Moderate |

- Tourism Destination**
- 1 Luna Park (Entertainment Facilities)
 - 2 MCU Park
 - 3 Riegelmann Boardwalk
 - 4 NY Aquarium

- Downtown Center**
- 5 Neptune Ave Commercial Corridor
 - 6 Mermaid Ave Commercial Corridor
 - 7 Surf Ave Commercial Corridor
 - 8 Brighton Beach Ave Commercial Corridor

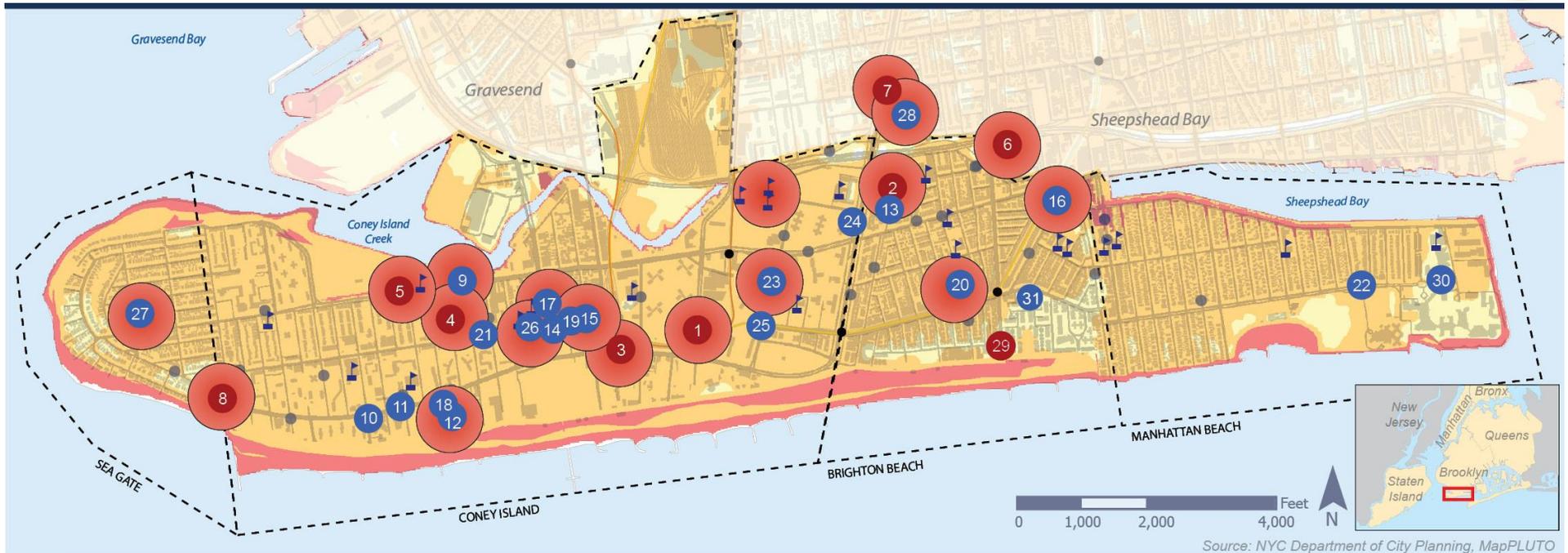
Source: NYC Department of City Planning, MapPLUTO

Figure II-7: Economic Asset Risk Assessment Map



Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

Health and social services asset risk assessment map



Source: NYC Department of City Planning, MapPLUTO

LEGEND

- Health and Social Services Asset Locator
- Emergency Operations/Response
- Daycare and Eldercare
- ▲ Schools (Elementary, Middle, High)

● Asset with highest risk score		
 Extreme	 High	 Moderate

Emergency Operation/Response

- 1 NYPD 60 Precinct
- 2 Mounted Troop E
- 3 Transit District #34
- 4 Housing Bureau Police Service Area #1
- 5 Engine 318, Ladder 166
- 6 Engine 246, Ladder 169
- 7 EMS Station 43
- 8 Sea Gate Police Department

Healthcare/Social Facilities

- 9 Ida G Israel Community Health Ctr (permanently closed)
- 10 Shorefront Jewish Geriatric Ctr
- 11 Saints Joachim & Anne Nursing And Rehabilitation Ctr
- 12 Sea-Crest Health Care Ctr
- 13 Shoreview Nursing Home
- 14 Mermaid Health Center
- 15 Comprehensive Care Mgmt D&TC
- 16 Sheepshead Bay Renal Care Ctr
- 17 Catholic Charities
- 18 Haber House Senior Center
- 19 Salt And Sea Mission Church, Inc

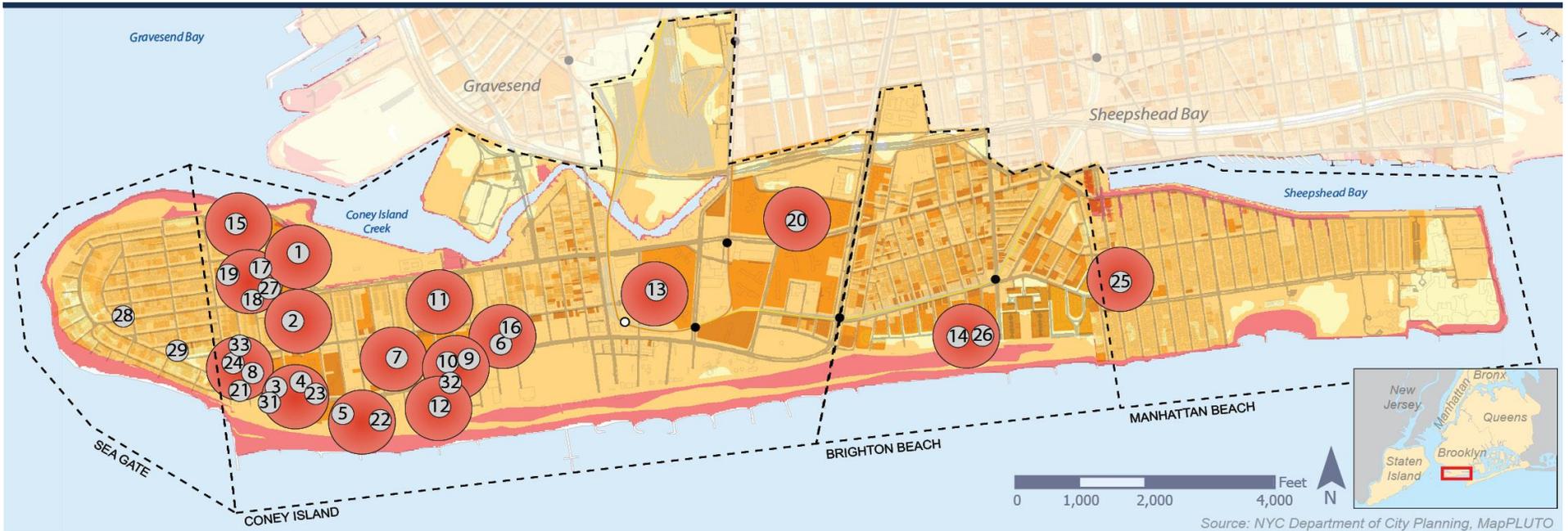
- 20 Shorefront Jewish Community Council
- 21 Acts Community Dev Corp
- 22 Menorah Home & Hospital For Aged & Infirm
- 23 JASA Trump Outreach
- 24 JASA Warbasse Cares Norc
- 25 Trump Village Norc
- 26 Urban Neighborhood Services Inc.
- 27 The Friendship Circle
- 28 Coney Island Hospital
- 29 Shorefront Ym-Ywha Of Brighton-Manhattan Beach, Inc.
- 30 Kingsborough Community College
- 31 Brighton Beach Neighborhood Association

Figure II-8: Health and Social Services Asset Risk Assessment Map



Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

Housing asset risk map - Significant Assets Identified as of Jan 2014



LEGEND

- Affordable Housing Asset Locator
- One- and Two-Family Residences
- Multi-Family Residences (3 or more dwelling units)
- Asset with highest risk score
- Extreme
- High
- Moderate

AFFORDABLE HOUSING / ASSISTED LIVING

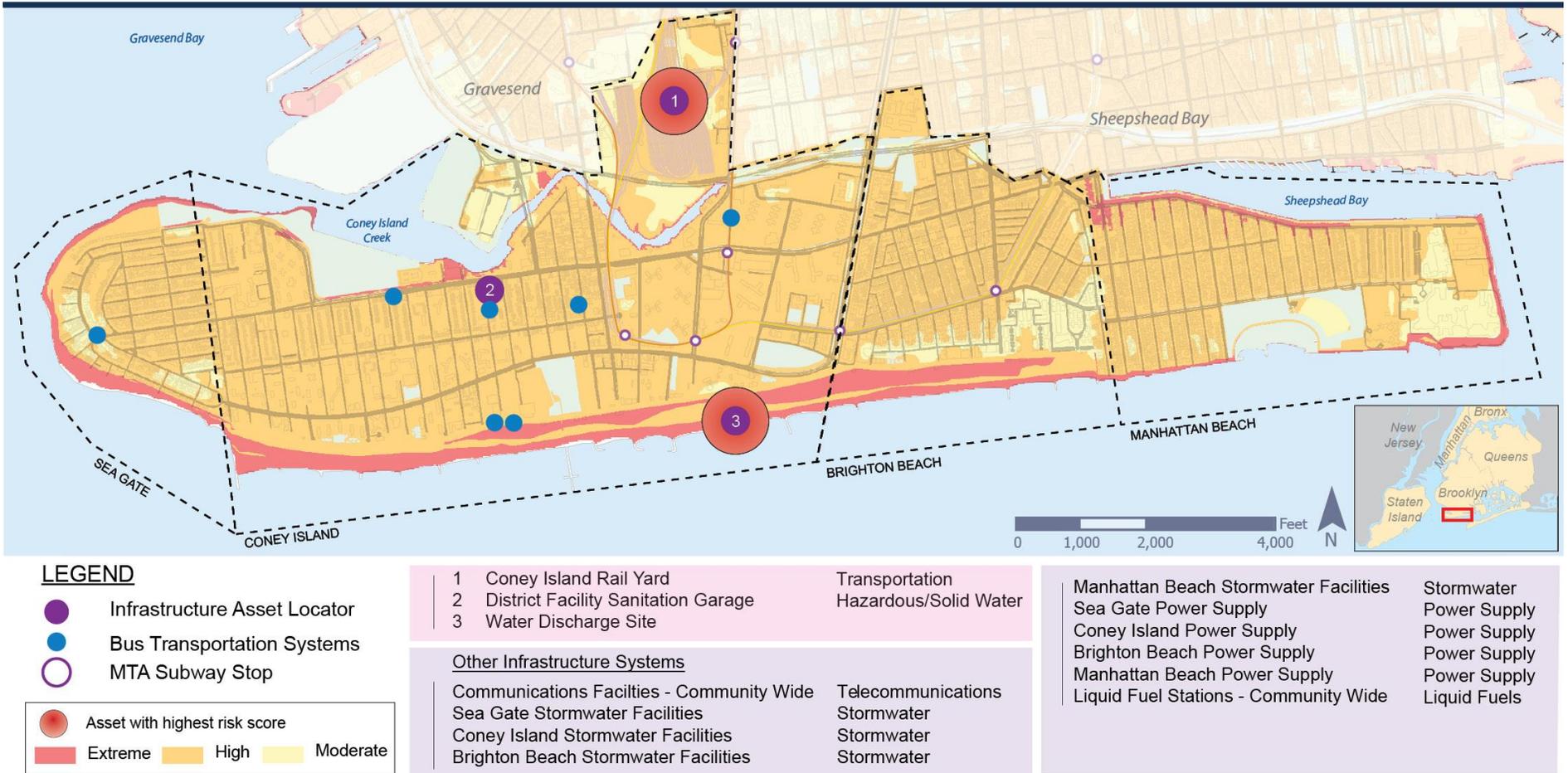
- | | | |
|------------------------------------|------------------------------------|-------------------------------------|
| 1 NYCHA, Gravesend | 12 NYCHA, Haber | 23 Surf Gardens |
| 2 NYCHA, Surfside Gardens | 13 Mitchell-Lama, Luna Park Co-Ops | 24 Friendset Apartments |
| 3 NYCHA, O'Dwyer Gardens I | 14 Mitchell-Lama, Brighton House | 25 Scheuer House of Manhattan Beach |
| 4 NYCHA, O'Dwyer Gardens II | 15 Mitchell-Lama, Sam Burt House | 26 Scheuer House of Brighton Beach |
| 5 NYCHA, Coney Island | 16 Mitchell-Lama, Harbor View | 27 Coney Island Site 4A1 |
| 6 NYCHA, Coney Island (Site 1b) | 17 Mitchell-Lama, Northbay Estates | 28 Abraham Residence I |
| 7 NYCHA, Coney Island (Site 4 & 5) | 18 Mitchell-Lama, Sea Rise I | 29 Abraham Residence II |
| 8 NYCHA, Coney Island (Site 8) | 19 Mitchell-Lama, Sea Rise II | 30 Garden of Eden Home |
| 9 NYCHA, Carey Gardens I | 20 Mitchell-Lama, Warbasse Houses | 31 Oceanview Manor Home for Adults |
| 10 NYCHA, Carey Gardens II | 21 Mitchell-Lama, Scheuer House | 32 Surf Manor Home for Adults |
| 11 NYCHA, Carey Gardens III | 22 Shorefront Towers | 33 Mermaid Manor Home for Adults |

Figure II-9: Housing Asset Risk Map



Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

Infrastructure asset risk assessment map



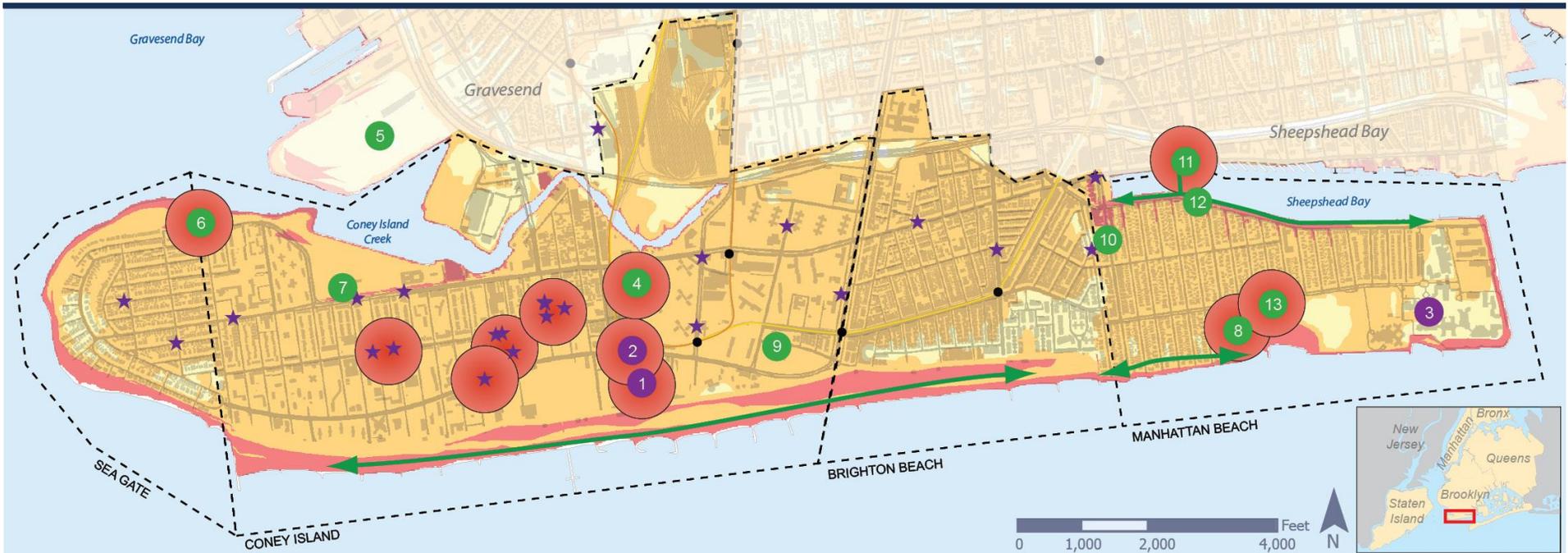
Source: NYC Department of City Planning, MapPLUTO

Figure II-10: Infrastructure Asset Risk Assessment Map



Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

Natural and cultural asset risk assessment map



LEGEND

- Natural Asset Locator
- Cultural Asset Locator
- ★ Places of Worship

- Asset with highest risk score
- Extreme
- High
- Moderate

Museum and Performing Arts Centers

1	Coney Island History Project
2	Coney Island USA
3	Leon M Goldstein Performing Arts Center

Parks and Recreation

4	Neptune Playground	9	Asser Levy Park
5	Calvert Vaux Park	10	Holocaust Memorial Park
6	Coney Island Creek Park	11	Sheepshead Bay Footbridge
7	Kaiser Park	12	Public Promenade
8	Manhattan Beach Park	13	Manhattan Beach Bathhouse

Source: NYC Department of City Planning, MapPLUTO

Figure II-11: Natural and Cultural Asset Risk Assessment Map



Assessment of risk to systems

This assessment of risk to systems highlights the initial risk assessment results for system asset groups (i.e., infrastructure, public services) that do not lend themselves to assessment as individual point assets. The risk assessment methods and risk assessment results described in the previous subsection were utilized to determine the risk score of systems. Results are shown in Section V-D.

Systems risk scores are more narrowly concentrated in the moderate and high categories. The higher risk scores associated with systems assets in the Sea Gate neighborhood are generally reflective of longer outages and greater service interruption in that neighborhood. Generally, however, because infrastructure systems are administered at a Citywide or regional level, performance tends to be similar among adjacent neighborhoods. In general, the scores reflect that power, stormwater, and communications systems are at considerable risk of interruption during future storm events.



Sea Gate beachfront damage⁹²

B. Assessment of needs and opportunities

The Committee and the public identified the needs and opportunities following Superstorm Sandy based on the six Recovery Support Functions.

When reviewing this section, it will become apparent that one of the needs that cuts across a number of Recovery Support Functions is to protect vulnerable populations, who include the elderly and individuals with physical and mobility challenges. Fortunately there are a number of opportunities to address that need through a range of public and non-governmental initiatives, that could be augmented by NYRCR Community Development Block Grant–Disaster Recovery (CDBG-DR) funding support.

Community planning and capacity building

This Recovery Support Function relates to how the community will restore or enhance its ability to organize, plan, and manage its recovery. This Recovery Support Function involves the community engagement of a wide range of public, private, and non-governmental organization stakeholders.

Needs

The Committee identified an overarching need to increase the general disaster preparedness of all Community residents by developing community-based emergency response and recovery strategies. The Community contains high concentrations of vulnerable populations and individuals with access and functional needs. Specifically, the Community includes the following populations:

- 21,489 Community members⁹³ (24% of the population⁹⁴) are over 65 years old, a number that is expected to increase by 15% by 2020.⁹⁵
- 16,989 Community members⁹⁶ (19% of the population⁹⁷) are disabled. Of this population, 68%⁹⁸ are 65 years or older.
- 56,733 (64%) of people in the Community speak a language other than English at home⁹⁹ and 44% of foreign-language speakers report that they speak English “less than very well.”¹⁰⁰

For the purposes of this NYRCR Plan, vulnerable populations are defined as individuals with physical or mental challenges, limited mobility, or no or limited English proficiency; individuals who are homeless or near homeless, households with young children or elderly residents, and households of low or moderate income.



These vulnerable populations require special consideration in emergency preparedness planning and during the emergency response and recovery phases after disasters. In the case of individuals with limited English proficiency, many of whom reported not receiving or understanding evacuation instructions, interpreters may be needed. Similarly, the inconsistent evacuation of nursing, elder-care, and assisted-living facilities points to the need to ensure that evacuation protocols and methods are tailored to accommodate individuals with limited mobility.

A number of civic groups and other non-governmental organizations provide vital services to these vulnerable populations. These groups and organizations include nursing, elder-care, and assisted-living facilities; religious institutions providing social services, such as hot meals; and local chapters of national and international fraternal and social organizations.



Coney Island YMCA¹⁰¹

Even short power and other utility outages can compromise the ability of these groups and organizations to provide vital services. In the weeks after Superstorm Sandy, many of these facilities were unable to communicate important information to residents and constituents because of power and

communication outages. Moreover, many local service providers and non-profit organizations are neighborhood-focused groups that lack significant resources or connections to a broader network of service providers. Although these providers are an essential component of the everyday social fabric, most local non-profit organizations were stretched beyond their capacity by the extraordinary events of Superstorm Sandy. Because these organizations traditionally focused on local constituencies, many had limited experience in collaborating across neighborhood lines and other boundaries.

The Brooklyn Community District 13 and 15 Community Emergency Response Teams (CERTs) are active, for instance. However, the Committee recommends that these CERTs be expanded throughout the Community so that they can better serve vulnerable populations and immigrant communities. This need is particularly acute given Committee and public reports that the Community was underserved before, during, and after Superstorm Sandy.

Even as these organizational capacity shortfalls are addressed, additional physical evacuation planning will be needed for future disasters and emergencies. The limited number of ingress and egress routes to the Southern Brooklyn Peninsula is a primary concern, and a more detailed review of evacuation planning for the Community is needed. Compounding the need for enhanced evacuation planning, many Community residents either do not have access to cars or rely on public transportation as their primary means of transportation.

Finally, the Committee identified a need for community response and recovery centers in response to the large number of residents who were unable to return to their homes immediately after the storm, or who reported difficulty accessing useful information about recovery activities for Superstorm Sandy. Residents who sheltered in place or who returned to their homes after Superstorm Sandy encountered sustained cell phone or Internet outages. The lack of reliability of local communication networks was not only inconvenient, but also potentially dangerous in the days immediately after the storm. Many individuals were unable to access communications from relief agencies. The Committee identified this issue during its first Planning Committee Meeting and continued to explore ways to develop and refine potential project ideas related to this need for the duration of the NYRCR planning process.

Opportunities

The following are opportunities related to community planning and capacity building:

- The Committee identified a number of civic groups and non-governmental organizations that were active in addressing the needs of vulnerable populations and immigrant communities after Superstorm Sandy and who would be interested in building capacity to better respond to future disasters. As one example, the Mesivta of Sea Gate became a hub for clothing and other essential items following Superstorm Sandy.
- The Committee identified sites in the Community that could potentially serve as community emergency response and recovery centers and that are affiliated with existing community service providers.
- Community interest in localized emergency preparedness and response planning is high. Many Community members have specific local knowledge that could be incorporated into emergency planning for the City of New York and non-profit organizations.
- Community-based organizations (CBOs) are in a unique position to understand the needs of the community on a micro level, including needs based on religion, language, or vulnerability. Enhancing the capabilities of CBOs to provide services and information to residents before, during, and after disasters is a priority for the Committee.
- The Committee identified an opportunity to foster collaboration between the local CBOs, first responders, and City agencies for a more effective emergency response and recovery. The Committee saw an opportunity to organize local CBOs, through a non-profit network, to better understand the lessons learned from Superstorm Sandy and be better prepared for future disaster events. There is an opportunity, for instance, for local CERTs and the New York City Office of Emergency Management to undertake additional targeted outreach to grow the ranks of the teams to ensure that they reflect the diversity and character of the Community.



Mesivta of Sea Gate¹⁰²

Economic development

This Recovery Support Function addresses how the Community will restore economic and business activities and develop new economic opportunities, provide goods and services, resume commerce and employment, and generate revenue. Residents of this Community feel that economic development is an important aspect of recovering from Superstorm Sandy, and have suggested many needs and opportunities for the Southern Brooklyn Peninsula.

Needs

Community risk assessment maps show that all of the four communities that constitute the Southern Brooklyn Peninsula are at extreme or high risk of flooding.

Key economic drivers in the Community include the New York Aquarium, the Coney Island amusement and entertainment district, Coney Island Hospital, and Kingsborough Community College. All of these institutions directly benefit the local economy, as do many small businesses. Damages from Superstorm Sandy to these institutions ranged from moderate to severe. Considerable funding has been allocated and considerable efforts have been underway since the storm to bring these facilities back to their pre-disaster conditions or to improve them beyond their pre-disaster conditions. Given their importance to the local economy, there is a need to ensure that resiliency is incorporated as a key component of the long-term recovery of these facilities.

Micro and small local businesses that suffered severe impacts as a result of Superstorm Sandy have not benefited from the same level of institutional support as the key economic institutions. Businesses that were not directly affected by the storm surge or backwater flooding still had to contend with power outages, intermittent heat and hot-water service, and limited access to retail delivery. According to the City of New York's Special Initiative for Rebuilding and Resiliency (SIRR Report), 5,000 businesses¹⁰³ employing over 30,000 people¹⁰⁴ in Southern Brooklyn (figures include Gerritsen Beach and Sheepshead Bay) were directly impacted by Superstorm Sandy. Coney Island was affected severely by business interruption, making it difficult for residents to buy groceries after Superstorm Sandy.¹⁰⁵

Analyses by the City of New York, FEMA, and the Brooklyn Chamber of Commerce suggest that the goal of business resilience is often undercut by a lack of coordination among area merchants on key commercial corridors. The diverse language backgrounds and English-proficiency levels of many area property owners and merchants complicate prospects for merchant organization. In this context, it is understandable that many business owners reported relatively limited understanding of disaster-funding sources or business resiliency strategies even several months after Superstorm Sandy.

Even with improved business continuity planning, local enterprises will remain vulnerable to physical risk. With so much of the Community susceptible to storm surge, backwater inundation, or both, improved building practices and technologies are needed to limit the damages associated with flooding.



A market on Brighton Beach Avenue¹⁰⁶

Most retail activity benefits from an attractive physical environment. Although the City has increasingly focused on street-tree planting and streetscape design in Southern Brooklyn in recent years, Superstorm Sandy reversed some of this progress by killing or damaging trees and plantings on many streets, including along major commercial corridors. This landscape damage, combined with the extreme hardships imposed on local merchants by Sandy, has exacerbated the issue of commercial vacancy rates that were already high before the storm.

Opportunities

The following opportunities were identified for economic development:

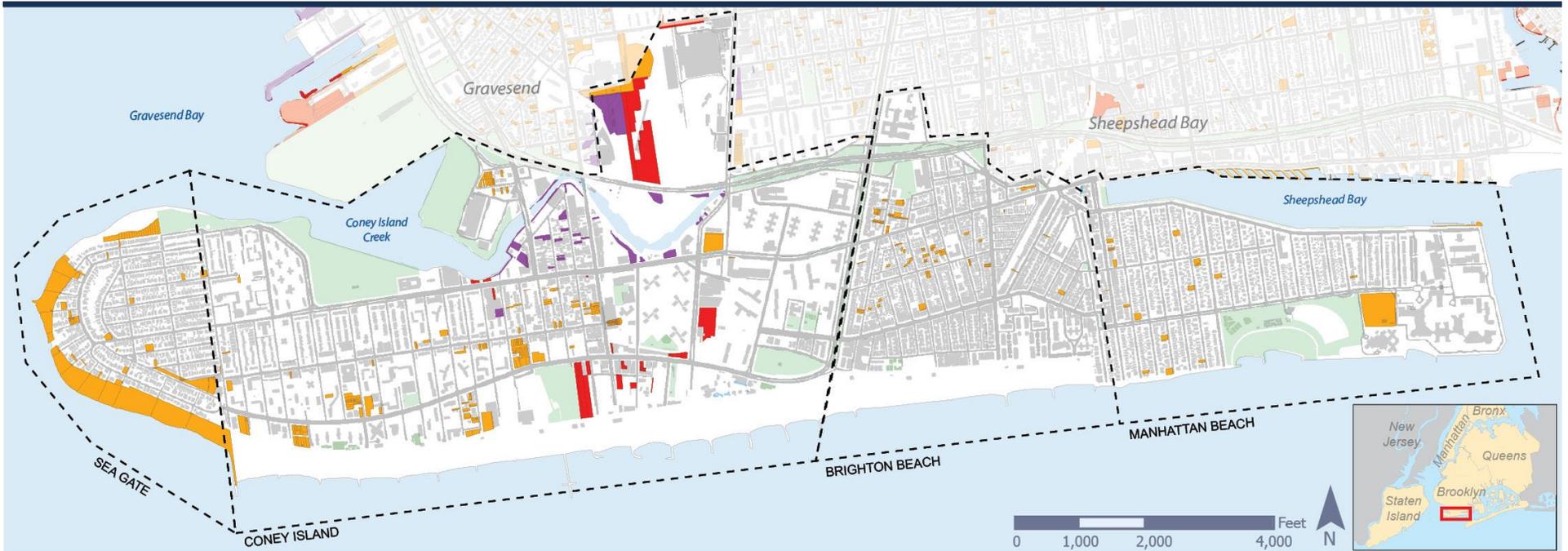
- The Community offers an attractive mix of commercial and recreational amenities that are accessible to major public transportation lines and the local highway network.
- The Community has extensive waterfront access, boardwalks, a unique history associated with the Coney Island amusement area, and tourist amenities such as the New York Aquarium and Manhattan Beach, which provide recreational and educational opportunities that can draw visitors and support the local economy.
- The City of New York, through a number of initiatives that both pre-date and post-date Superstorm Sandy (e.g., the Coney Island Revitalization Plan, rezoning of the Amusement District in 2009) and through specific economic development detailed in the 2013 SIRR Report, has created significant opportunities to revitalize the Coney Island district. This local revitalization will provide economic benefits to the broader Community.
- The New York City Department of Small Business Services is in the process of establishing the Business Resiliency Investment Program (BRIP), which is expected to provide \$110 million in funding to tenants and owners of businesses to implement flood protection measures, such as elevating mechanical and electrical systems.
- The Brighton Beach Business Investment District and the Brooklyn Chamber of Commerce have both been actively engaged in supporting small businesses in the recovery from Superstorm Sandy.



Damage after Superstorm Sandy¹⁰⁷

Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

Vacant land map by zoning



LEGEND

- Geographic Scope
- Open Space
- Commercial
C3; C4-2; C7; C8-1; C8-2
- Industrial/Manufacturing
M1-1; M1-2; M2-1; M3-1
- Residential
R2X; R3-1; R3-2; R4; R4-1; R4B; R5; R5B;
R6; R6A; R7-2; R7-3; R7A; R7D; R7X

BRIGHTON BEACH		CONEY ISLAND		MANHATTAN BEACH		SEA GATE	
ZONING	# TOTAL	ZONING	# TOTAL	ZONING	# TOTAL	ZONING	# TOTAL
Residential	62 Lots	Residential	170 Lots	Residential	19 Lots	Residential	61 Lots
Commercial	2 Lots	Commercial	26 Lots	Commercial	1 Lot		
		Industrial	52 Lots				

Source: NYC Department of City Planning, MapPLUTO

Figure II-12: Vacant Land Map



Housing

This Recovery Support Function relates to meeting the demand for affordable housing (and promotion of affordable housing), addressing post-disaster housing needs, and encouraging disaster-resistant housing for all income groups.



Brighton 10th Court¹⁰⁸

Needs

Over 77% of the housing stock in the Community was built before 1960.¹⁰⁹ The City of New York implemented a modern building code in 1968¹¹⁰ and made additional enhancements to these regulations to improve flood resiliency in 1983.¹¹¹ Therefore, most housing units in the Community pre-date modern building codes. Not surprisingly, an analysis by the Furman Center¹¹² found that housing damages from Superstorm Sandy were more severe for buildings constructed before the introduction of modern building codes. According to the SIRR Report, bungalows and other one-story combustible buildings constructed before 1961 were most vulnerable and sustained the most damage from Superstorm Sandy.¹¹³ These types of buildings make up only 18%¹¹⁴ of buildings in inundated areas of the City, but represent 73%¹¹⁵ of the buildings destroyed or with structural damage.

Housing affordability is another topic that was frequently mentioned during the planning process. Nearly 39%¹¹⁶ of homeowners in the Community have mortgage costs that exceed 35%¹¹⁷ of their household income. According to the U.S. Department of Housing and Urban Development (HUD) definition of housing affordability, homeowners who pay more than 30% of their income for housing may have trouble affording other necessities, such as food, clothing, medical care, and transportation.¹¹⁸

Owners who must dedicate large portions of their incomes to basic housing costs tend not to have funds available for repairs and upgrades that can improve the basic conditions and resiliency of their homes. This concern is particularly acute in the context of the uncertainty surrounding flood insurance rates. Many Public Engagement Event participants had expressed particular concern that with flood insurance premiums set to rise dramatically, the cost of basic repairs or floodproofing would force them from their homes. President Obama signed the Homeowner Flood Insurance Affordability Act of 2014 into law in March 2014, limiting annual premium increases and insulating homes that complied with previous flood maps from major increases. The National Flood Insurance Program remains deeply indebted, though, meaning that long-term uncertainty about the affordability of flood insurance persists.

The damages that Superstorm Sandy created continue to impact residents, homeowners, and renters, especially those in vulnerable populations, including low- and moderate-income families, seniors, and the disabled. Committee Members and attendees at Public Engagement Event stated that the slow pace of housing recovery underlined the need for greater homeowner education to increase resiliency after future storm events. Indeed, at the first and second Public Engagement Events, both held over a year after the storm, many attendees expressed a lack of awareness of funding and technical assistance programs relevant to their needs.

Opportunities

The following opportunities were identified for Housing:

- Homeowners appear to be receptive to implementing floodproofing measures if they have the financial means to implement them.

- The City and the State have introduced a variety of housing-assistance programs for which many Community residents are eligible.
- The NYCHA and Mitchell-Lama management are open to pursuing opportunities and funding to incorporate solar-power, micro-grid, and cogeneration initiatives to provide more sustainable and resilient electrical power to their housing projects.
- A large number of non-profit and social-service organizations have developed educational and assistance programs to meet the needs of homeowners, both locally, citywide, and regionally.

Health and social services

This Recovery Support Function addresses how the Community will restore and improve essential health and social services, including services for vulnerable populations.

Superstorm Sandy severely damaged facilities at Coney Island Hospital, forced the closure of the Ida G. Israel Medical Center, and affected other health and social service providers throughout the Peninsula. At Coney Island Hospital, floodwaters inundated the basement and entered the first floor, damaging the hospital's emergency department, imaging services, and public and administrative areas. Electrical and mechanical systems were hardest hit. It took 8 months to restore service to all hospital units. The affiliated Ida G. Israel Medical Center on Neptune Avenue was severely damaged by floodwaters. Given its vulnerable location, the decision was made to provide those services in a more resilient facility.

Needs

Many of the general needs related to health and social services and socially vulnerable populations that arose during this planning process are discussed in previous sections, notably in the sections on community planning and capacity building and housing.

The disruption in health and social services impacted service recipients and employees, whose work was scaled back due to the limited services that were provided during closure. The resilience of organizations that serve the Community's medical and social service needs is a priority for the Committee

so that the needs of the Community, especially those of vulnerable populations who rely on these services more frequently, are met.

Many of the nursing homes, assisted-living facilities, and eldercare facilities in the Community still need to elevate their mechanical systems and are in need of reliable sources of backup power.

Opportunities

The following opportunities were identified for health and social services:

- As discussed in the section on Community Planning and Capacity Building, the Community's CERTs could be expanded to better serve vulnerable populations, including seniors and people with mobility impairments.
- Coney Island Hospital will receive FEMA Public Assistance funding to improve the resiliency of the hospital and to find both interim and permanent solutions to replacing the important medical services provided by the Ida G. Israel Medical Center.
- A number of public and non-profit organizations in the Peninsula are willing to network and collaborate in strengthening the provision of health and social services with the goal of making the Community more resilient to natural disasters.

Infrastructure

This Recovery Support Function relates to how the community will restore, repair, and manage essential infrastructure services.

Needs

Superstorm Sandy caused significant damage to many of the Community's infrastructure assets and systems. The Community faces severe risk not just from direct storm surge but also from backflow inundation. Stormwater and sewage backflow flooded homes and businesses during Superstorm Sandy, causing building damage and potential human exposure to toxic materials. Many neighborhoods throughout the Peninsula remain highly vulnerable to this type of inundation in future storm events, including less severe storms than Superstorm Sandy. Throughout the planning process, the Committee

and attendees at Public Engagement Events strongly expressed the need to upgrade stormwater and wastewater conveyance systems to handle current flow volumes.

The aging and vulnerable infrastructure in the Planning Area must be rehabilitated for the area to be resilient to future storms. Flooding damages from Superstorm Sandy had a significant impact on the Communities' sewer, communications, and power infrastructure. In Sea Gate, there was extensive damage from the storm to the network of sewer lines throughout the community, leading to deterioration of pipes and subsidence of the pavement. Electrical systems for street utilities were damaged by saltwater intrusion. Private-sector communications infrastructure for cell phone coverage was disrupted and is still problematic throughout the Peninsula.

Opportunities

The following opportunities were identified for infrastructure:

- Relatively inexpensive, cost-effective methods of backflow prevention exist and have been employed successfully in the City of New York.
- Improved storm drainage in areas impacted by storm surge and more frequent flooding events would reduce the risk to infrastructure, housing, natural resources, businesses, and essential facilities in the Community. Infrastructure improvements would form the basis for increased resilience throughout the area.
- At each Public Engagement Event, the infrastructure "station" was the busiest, with many people expressing the need to stop or prevent the water from flooding their community. This level of public interest may translate into public support for infrastructure improvements, such as improved storm drains and methods to alleviate flooding in the neighborhoods and along the major thoroughfares.
- Committee Members and the public were strongly supportive of opportunities for solar-power, micro-grid, and smart-grid technologies that could provide more sustainable and resilient power options for specific facilities and neighborhoods. There are a number

of potential City and State programs and incentives that can be pursued throughout the Peninsula.

- The Committee, together with the Gerritsen Beach/Sheepshead Bay Planning Committee, identified storm surge reduction as a top priority. To ensure consistency of approach and to address the problem on a regional level, the NYRCR Committees have included in their final list of Proposed Projects a reconnaissance study to evaluate methods for flood risk reduction in Manhattan Beach, Sheepshead Bay, and Gerritsen Beach. Both Committees would share the cost of the study.

Natural and cultural resources

This Recovery Support Function relates to natural and cultural resource management from a risk reduction and economic development context.

The Committee and members of the public identified a number of natural and cultural Community assets. Most of the needs and opportunities statements developed in relation to these assets were framed in the context of infrastructure.



Shore Boulevard, Manhattan Beach¹¹⁹

Needs

In defining its Community asset inventory, the Committee distinguished between natural assets (e.g., beaches) and cultural resources (e.g., houses of worship). Natural assets serve dual functions in the area: they may provide protective barriers from flooding to economic and housing assets and they draw people to the area for recreation and entertainment. Cultural resources enhance both the diversity and resiliency of the Community. The Committee felt the distinction was relevant because each asset type benefits the Community in a distinct way. The cultural resources functioned as distribution centers for both information and supplies after Superstorm Sandy. Both need to be preserved for the Community to be resilient to future storms.



Sand movement at the border of Sea Gate and Coney Island after Superstorm Sandy¹²⁰

The impacts associated with Superstorm Sandy emphasized the need for the beach areas and the boardwalk to be resilient to large coastal storms. These areas provide a natural barrier to many homes in the area. The Community

relies on its natural and cultural resources for its economic livelihood and the personal enjoyment of its inhabitants

Opportunities

The following opportunities were identified for natural and cultural resources:

- The City of New York (City) has committed to work with State and Federal partners to restore City beaches, including Plumb Beach. The SIRR Report specifically identifies Plumb Beach as a location where the City intends to improve and restore recreational infrastructure.
- The City has committed to work with State and Federal partners to restore City beaches, make the boardwalk more resilient and attractive to residents and visitors, and evaluate opportunities to implement regional coastal protection measures.
- Beaches damaged and trees lost during Superstorm Sandy present an opportunity for the Community to rebuild to a higher level of resilience. For instance, the devastation of trees presents an opportunity to replant trees that may be more resilient to coastal storms. It also presents an opportunity to create more permeable surfaces to improve stormwater management.
- In the aftermath of Superstorm Sandy, civic groups and non-governmental and religious organizations on the Peninsula assumed responsibility for local residents and assisted them in ways beyond the scope of their organizational missions. The strength and presence of these organizations provide an opportunity to enhance their capacity to support the Community after future disaster events.

Natural areas, including Coney Island Creek and the beaches, provide the opportunity to build cost-effective storm surge protection measures that can protect the communities of the Southern Brooklyn Peninsula, while enhancing their resilience.



Section III: Reconstruction and resiliency strategies

Section III: Reconstruction and resiliency strategies

The NY Rising Community Reconstruction (NYRCR) Planning Committee (Committee) developed the Reconstruction and Resiliency Strategies described in this section on the basis of knowledge gained from the visioning process and information gathered through the needs and opportunities assessment and the risk assessment processes. The Committee prioritized potential strategies according to metrics that include their relationship to the disaster and the manner in which they address opportunities. These strategies were used as a framework for developing specific projects, policy decisions, or other actions. The strategies represent the Committee's general recommendations for achieving rebuilding, resilience, and economic growth.

The Committee initially discussed key strategies at a meeting on September 30, 2013. They developed and refined these strategies at subsequent meetings, incorporating public input from the second Public Engagement Event, which was held on November 20, 2013.

Taking existing City, State, and regional plans into consideration, the Committee discussed strategies in terms of their anticipated Community benefit and their potential development into defined project proposals that respond to Community needs exposed or exacerbated by Superstorm Sandy. The resulting list of projects, investments, and initiatives, which includes detailed project descriptions and cost estimates, is included in Section IV of this plan. This section lists the Reconstruction and Resiliency Strategies and, where applicable, introduces resulting Proposed and Featured Project concepts in general terms. Additional Resiliency Recommendations are included in Section V of this plan.

Given the magnitude of the storm surge and flooding associated with Superstorm Sandy, substantial storm-related damage to coastal communities such as Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate was inevitable. Still, the Committee recognized that the failure or underperformance of key infrastructure systems magnified this damage. The impacts of direct storm surge were made more severe, for instance, by the failure of water and wastewater conveyance systems to prevent backflow inundation. Similarly, the effects of prolonged, regional power outages were compounded by a lack of redundancy and power generation capacity at the building level.

In addition to focusing on hard infrastructure systems, the Committee identified specific natural and cultural resources that required specific protection or enhancement strategies. The Committee focused, for instance, on ways to improve the resource values of Brighton Beach and Coney Island Beach while improving those assets' ability to withstand risk.

The Committee and Community members worked to identify solutions to protect housing assets for extreme weather events. A variety of residential building types are located in high and extreme risk areas, ranging from single-family homes in Manhattan Beach to high-rise apartment co-ops and public housing towers, and supportive housing and assisted-living facilities in Coney Island. Collectively, housing units suffered tremendous damage due to Superstorm Sandy. As the Committee devised strategies to mitigate housing damage by improving infrastructure systems, it also developed strategies to protect individual homes and homeowners.

The Committee also recognized that a disaster of Superstorm Sandy's magnitude demonstrated the need for better Community-level planning. Although structural solutions are required to safeguard the Community's physical assets, community planning and capacity building strategies are needed to protect the residents who utilize these assets. Based on their personal experience with inefficient or inadequate emergency preparedness and response procedures during and after Superstorm Sandy, the Committee worked collectively to generate a range of strategies to improve planning processes and build the capacity of local organizations, including civic groups and locally based non-profit organizations. Although preparedness and response procedures are relevant and important for all Community members, the Committee was particularly determined to generate strategies that specifically addressed the needs of socially vulnerable populations.

Even as the Committee defined better protection of infrastructure, homes, and residents as its most immediate priorities, Committee Members recognized that the Community's long-term sustainability is predicated on economic wellbeing. Many residents rely directly on local businesses and commercial corridors for employment, retail services, restaurants, groceries, and personal services. The health of a neighborhood's economic assets is typically a good indicator of that neighborhood's overall condition. With this



consideration in mind, the Committee collaborated to develop strategies to protect and strengthen economic assets along the Peninsula.

A. Reconstruction and resiliency strategies

This section lists and describes the specific strategies that the Committee drafted to enhance the Community's ability to organize, plan, manage, and implement recovery. The Committee relied on individual members' specific local knowledge of, and personal experience with, the impacts of Superstorm Sandy. In many cases, the perspective of community groups, non-profit organizations, municipal agencies, and elected officials supplemented this knowledge.

The highlighted boxes below each strategy description provide examples of Proposed or Featured Projects that evolved during the planning process to address each strategy developed by the Committee.



Members of the Planning Committee discussing resiliency strategies¹²¹

Proposed and Featured Projects

Every proposed and featured project is linked to one or more strategies.

Proposed Projects are projects the Committee has proposed to be fully funded through the Committee CDBG-DR allocation.

Featured Projects are projects where cost is beyond the Committee CDBG-DR allocation and/or their implementation will require a combination of CDBG-DR funding and other sources. These projects may include the funding of a Proposed Project, as the first phase, and the Featured Project as the second phase.

Enable more effective response to natural disasters by enhancing emergency response protocols and communication

The Committee recognized that vulnerable populations require special consideration in emergency preparedness planning and during post-disaster emergency response and recovery phases. For example, many residents, particularly the elderly and those with limited English proficiency, were not aware of emergency response messaging and faced the difficult question of whether to shelter in place or evacuate during the storm. Also, the inconsistent evacuation of nursing, elder-care, and assisted-living facilities illustrates the need to ensure that evacuation protocols and methods are tailored to accommodate individuals with limited mobility. The Committee determined that greater coordination and communication between the Community and first responders is essential. The strategy of enhancing emergency response protocols and communications for Peninsula residents directly responds to this need.



National Guard responding to Superstorm Sandy along the Southern Brooklyn Peninsula¹²²

Enable more effective response to natural disasters by enhancing emergency response protocols and communication				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Public Emergency Preparedness Outreach Campaign	Create a local public outreach campaign that uses multiple forms of media to provide targeted and specific disaster preparedness, response, and recovery information to Community residents.	\$160,000	Proposed	Y



Improve facilities, infrastructure, information sharing, and emergency capacity of social service organizations and health/mental health service providers

Committee members and Community residents reported having limited access to municipal services and storm-related information immediately after Superstorm Sandy. This feeling of being disconnected was also a prominent and recurring theme at Planning Committee Meetings, at which representatives reported difficulty accessing municipal agencies to address constituent concerns in the storm’s immediate aftermath. The locally based civic groups and non-profit organizations acted as “first responders” following Superstorm Sandy, and worked diligently to meet the needs of residents, particularly vulnerable populations in the Planning Area. These representatives also reported that their organizations’ facilities suffered from storm-related damage. To address this need, the Committee developed a strategy to improve the facilities and capabilities of these organizations throughout the Peninsula.



Waiting in line for supplies in Coney Island¹²³

Improve facilities, infrastructure, information sharing, and emergency capacity of social service organizations and health/mental health service providers				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Designation of Emergency Response and Recovery Centers	Perform a location and feasibility analysis to designate emergency response and recovery centers in each neighborhood in the Community. Also create a fund to develop continuity plans and assess facility vulnerabilities for civic groups and non-profit organizations.	\$980,000	Proposed	Y



Support local businesses to fully recover from Superstorm Sandy

Superstorm Sandy caused moderate to severe damage to a number of institutions critical to the local economy. Although some key institutions rebounded reasonably quickly after Superstorm Sandy, many local small businesses and microenterprises were slower to recover, and some have yet to return. In its 2013 Action Plan, the City of New York reported that as many as 30% of businesses in storm-affected neighborhoods in Southern Brooklyn remained closed up to five months after the storm.¹²⁴ Many of these businesses are also located in high or extreme risk areas.

Committee Members saw opportunities to catalyze economic activity in all Community neighborhoods through potential expansion of the Coney Island amusement district. Although the Committee voiced considerable support for similar efforts that the Alliance for Coney Island is coordinating, the majority of Committee Members also wanted to support economic development opportunities beyond the boundaries of the amusement area.

The most pressing need for small businesses, and especially micro-businesses, is their continuing instability following Superstorm Sandy. Although many businesses did not suffer substantial structural damage, inventory was lost and flooding damaged interior spaces. The need to provide adequate technical assistance and funding for low-cost flood mitigation measures is reflected in the strategy to support local businesses.



Commercial retail along Brighton Beach Avenue¹²⁵

Support local businesses to fully recover from Superstorm Sandy				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Increase Resiliency of Small Businesses Throughout the Peninsula	Establish a small business support office; offer direct assistance to merchants for floodproofing their businesses; implement Peninsula-wide streetscape enhancements, including replacing trees, installing stormwater attenuation measures, and making landscaping improvements along business corridors.	\$1,960,000	Proposed	N



Expand workforce development opportunities in the Southern Brooklyn Peninsula that would enhance regional resiliency and recovery

The Committee viewed the Community’s high rates of unemployment and under-employment as critical concerns. Committee members and Community residents reported that employment opportunities and job and skills training services are badly needed in the Community. These reports are supplemented by empirical data. In 2012, for instance, the Furman Center at New York University estimated Community District 13’s unemployment rate at 12.8%, higher than the citywide rate of 11.2%. Nearly 30% of all Community District residents lived in poverty that year.¹²⁶ Equally telling is the educational attainment profile of the Community. A 2012 analysis by the Institute for Children, Poverty and Homelessness found that the most common educational attainment level among adults 25 and over in many Census Block Groups in Coney Island and Brighton Beach was “less than high school.”¹²⁷ This attainment profile signals a dire need for improved workforce training and preparation to serve the high number of Community residents with limited job skills. It also demonstrates the need for educational curricula that are more responsive to local needs, and more likely to engage local youth. These considerations are reflected in the Committee’s workforce development strategy, which seeks to augment City workforce initiatives on the Peninsula.



Solar Sandy project facilitated by Solar One¹²⁸

Expand workforce development opportunities in the Southern Brooklyn Peninsula that would enhance regional resiliency and recovery				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Vocational Training Program	Expand vocational training programs at a high school on the Southern Brooklyn Peninsula to include green and resilient building and emergency preparedness curricula.	\$680,000	Proposed	Y



Explore opportunities to expand economic activities throughout the Peninsula

The Committee identified a strong need for restored and enhanced economic and business activity in the Community. To address this need, they sought to develop a strategy that would catalyze new economic opportunities, provide more goods and services locally, resume commerce and employment, and generate revenue in the Community. Recent City and State planning activities have largely focused on revitalization of the amusement area as a means to stimulate Community-wide development. These efforts have been reasonably successful. A 2011 report by the Office of the New York State Comptroller found that private sector employment had grown steadily in Coney Island and Brighton Beach in recent years.¹²⁹ That progress notwithstanding, development and economic revitalization have not been distributed evenly across the Community.

Mermaid Avenue, for instance, is a key commercial corridor and one of the primary entry points into the Coney Island community. Many small businesses and non-profit service providers along this corridor were flooded as a result of Superstorm Sandy, resulting in major losses of equipment and inventory, as well as extended closures. This damage compounded the problem of commercial vacancy rates that were already relatively high. New York City Department of City Planning data from the summer of 2013 showed 28 vacant lots in an eight-block stretch of Mermaid Avenue between West 16th and West 25th Streets.¹³⁰ The Committee felt a strong need to



Commercial retail on Mermaid Avenue in Coney Island¹³¹

provide immediate support to help existing businesses and support new business development along Mermaid Avenue, in particular. The following strategy and Featured project addresses this need.

Explore opportunities to expand economic activities throughout the Peninsula				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Mermaid Avenue Corridor Improvements	Revitalize the Mermaid Avenue commercial corridor through streetscape and landscape improvements that would incorporate stormwater attenuation measures.	\$7,635,000	Featured	N



Protect existing housing stock by making it more flood resilient

Throughout the planning process, the Committee emphasized the need to protect homes from future extreme weather and flooding as perhaps the Community’s greatest need. A number of Peninsula homeowners in all four Community neighborhoods are still not back in their homes. This problem is most acute in the community of Sea Gate, where dozens of homeowners are either still making extensive repairs to homes severely damaged by storm surge, or evaluating other logistically difficult or expensive repair or relocation options. Many homeowners in Manhattan Beach face similar challenges.

Most housing units on the Peninsula, from single-family residences or high-rise co-op or public housing towers, are located in moderate to high flood zones. Many Public Engagement Event participants expressed particular concern that particularly given uncertainty surrounding potential dramatic increases to flood insurance premiums, the cost of basic repairs or floodproofing might force them from their homes.

The damages that Superstorm Sandy created continue to impact homeowners, but also renters, and especially vulnerable populations. These impacts are particularly acute for the thousands of residents of NYCHA and Mitchell-Lama developments, who experienced major inconvenience or hazard due to the prolonged failure of key building systems, including power, heat, hot water, and elevators. The slow pace of housing recovery underlines the need for greater support to homeowners to increase resiliency after future storm events, as reflected in the following strategy:

Protect existing housing stock by making it more flood resilient				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Sewer Connection Cut-Off Valves for Owners of One- and Two-Family Homes	Provide financial assistance to homeowners for installation of sewer connection cut-off valves, as well as education and public outreach related to proper operation and maintenance of these devices.	\$2,640,000	Proposed	N
Feasibility Study for Energy Resiliency for NYCHA And Mitchell-Lama Properties	Conduct a feasibility study on developing microgrid, smartgrid, and/or cogeneration solutions to ensure that NYCHA and Mitchell-Lama properties maintain power in storm-related events.	\$340,000	Proposed/Featured	N



Protect the shoreline and coastal communities through structural shoreline protection enhancements

Community infrastructure and systems experienced significant damage from Superstorm Sandy. Direct storm surge, as well as backwater flooding from Coney Island Creek and Sheepshead Bay caused flood-related damage throughout the Peninsula. The Committee agreed unanimously very early in the planning process to develop a strategy that would address these primary sources of Community property damage. The strategy below led the Committee to identify and consider a variety of potential flood control measures that could include building and refurbishing dunes, creating or enhancing wetlands, strengthening or constructing bulkheads, constructing flood walls and levees, installing breakwaters or jetties, or constructing flood gates.

The Committee realized that no infrastructure solution can wholly prevent flood risk, and that any infrastructure project developed on the basis of this

strategy would take time to implement, and likely exceed the Committee’s funding allocation. With those considerations in mind, Committee Members collaborated to draft a strategy that accounted for the certainty of future flooding and sought to minimize associated impacts, while targeting the most cost-effective projects the Committee could fund.

The Committee supports a New York City Economic Development Commission proposal to evaluate the feasibility of protection measures at Coney Island Creek, as reflected in the Additional Resiliency Recommendations of this plan. This could include wetlands enhancement and additional recreational opportunities for Gravesend and Peninsula residents.

Protect the shoreline and coastal communities through structural shoreline protection enhancements				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Bulkhead Replacement at Sea Gate	Replace the bulkhead on Sea Gate Association property and along some private residential properties.	\$3,000,000	Proposed	N
Implementation of Cost-Effective Storm Surge Protection for Ocean Parkway and W. 25th Street	Install a flood barrier to protect against flooding at primary under-boardwalk access points.	\$700,000	Proposed	N
Reconnaissance Study of Storm Surge Protection for Sheepshead Bay	Evaluate a range of options to mitigate future flood events caused by flooding and storm surge in Manhattan Beach and Sheepshead Bay.	\$100,000	Proposed	Y



Replace, repair, and upgrade existing infrastructure to improve its resilience to future storm events

The Committee recognized that rehabilitating infrastructure throughout the four Community neighborhoods is a long-term effort, but one that must be accomplished to make the Community truly resilient to future storm events. Flooding damages to infrastructure from Superstorm Sandy had a significant impact on the storm drain and sewer systems. In Sea Gate, extensive damage from the storm to the network of sewer lines led to deterioration of pipes and subsidence of the road pavement. Deterioration of streets is common throughout the four communities along the Peninsula. Electrical systems for street utilities were damaged by saltwater intrusion throughout the Peninsula. Private-sector communications infrastructure for cell phone coverage was disrupted and is still problematic throughout the Peninsula. Infrastructure improvements would form the basis for increased resilience that would benefit all six Recovery Support Functions. To account for these diverse needs, the Community developed the broadest possible strategy to address the Community’s aging and vulnerable infrastructure. As listed in the table below, this strategy statement led to two discrete Proposed Projects.



Damaged streetlight after Superstorm Sandy¹³²

Replace, repair, and upgrade existing infrastructure to improve its resilience to future storm events				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Installation of Resilient Streetlights	Install resilient streetlights along key business corridors and road intersections, evacuation routes, and high-density housing areas throughout the Southern Brooklyn Peninsula.	\$3,500,000	Proposed	N
Pilot Small-Scale Renewable Power Project	Create a small-scale renewable power project for a small- to mid-sized senior-housing or nursing home facility.	\$900,000	Proposed	N



Repair and make more resilient damaged and/or underutilized natural and cultural resources

The Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate neighborhoods rely on their natural resources for both economic livelihood and personal enjoyment. Coastal resources like parks, beaches, dunes provide physical protection to other Community assets, for example, while simultaneously promoting public waterfront use and access. In 2010 alone, over 12.8 million people visited Coney Island’s beaches, providing a customer base for small businesses along Riegelmann Boardwalk and beyond.¹³³ Manhattan Beach Park serves fewer annual visitors, because of its more limited size and its relative physical isolation. The Committee also stated that the Park’s visual appeal and attractiveness to visitors is marred by current state of the Manhattan Beach Bathhouse, which is underutilized.

Even small-scale features like street trees serve vital environmental and economic functions. One 2005 study found that shoppers in large cities will spend 12% more in visually attractive shopping districts that feature high tree canopies.¹³⁴ Many trees were damaged or destroyed during Sandy, either by wind damage or by saltwater flooding. In Sea Gate alone, over 80 trees still have yet to be replaced. In response to this need, the Committee drafted a strategy that seeks to enhance protection for small-scale and large-scale natural resources and related cultural amenities.



Downed trees in Brighton Beach as a result of Superstorm Sandy¹³⁵

Repair and make more resilient damaged and/or underutilized natural and cultural resources				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Increase Resiliency of Small Businesses Throughout the Peninsula	Establish a small business support office; offer direct assistance to merchants for floodproofing their businesses; implement Peninsula-wide streetscape enhancements, including replacing trees, installing stormwater attenuation measures, and making landscaping improvements along business corridors.	\$1,960,000	Proposed	N
Resiliency Upgrades for Manhattan Beach Bathhouse	Upgrade the Manhattan Beach Bathhouse by enhancing resiliency and utilities.	\$4,000,000	Proposed/Featured	N



Repair and make more resilient damaged and/or underutilized natural and cultural resources				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Community Streetscape Enhancements	Provide funds for peninsula-wide streetscape enhancements, including replacement of trees on public property that were destroyed or damaged by Sandy, implementation of storm water attenuation measures, and landscape enhancements along selected business corridors.	\$3,900,000	Proposed	N

Evaluate opportunities for creating or enhancing natural shoreline protection measures

Superstorm Sandy revealed the extent to which boardwalk and beach areas need to be made resilient to future storm events. Although Riegelmann Boardwalk escaped the type of major structural damage that occurred on other boardwalks in Staten Island, Queens, and Long Island, Sandy blew several feet of sand over the boardwalk and onto local streets. A large volume of storm surge flooded the Community through openings in the boardwalk at Ocean Parkway and West 25th Street. While the Committee is also promoting structural upgrades that would mitigate this exposure to flood risk, members realized that a suite of protective measures would offer better comprehensive protection than a unitary infrastructure upgrade. This strategy along with its related projects is intended to improve the resource values of Coney Island Beach and to address the need to enhance the beach’s protective function.



Volunteers cleaning up the Riegelmann Boardwalk after Superstorm Sandy¹³⁶

Evaluate opportunities for creating or enhancing natural shoreline protection measures				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Beach Grass Planting and Infrastructure Improvements	Plant beach grass along the boardwalk in Brighton Beach and Coney Island at six locations; relocate of six water utility valves from under the ocean side of the boardwalk to a less vulnerable location on the inland side of the boardwalk, and install two beach access mats.	\$800,000	Proposed	N



Enhance coordination between civic groups and non-profit organizations with local government agencies to make the Southern Brooklyn Peninsula better prepared for future emergencies

Although some confusion is understandable and expected in the context of an extreme weather event of Superstorm Sandy’s magnitude, Committee Members and attendees Public Engagement Events reported that emergency response protocols appeared to break down at the local level immediately after Superstorm Sandy. The Committee also recognized the critical role that civic groups and non-profit organizations provided after Superstorm Sandy and the need for enhanced collaboration between public agencies and community-based organizations both pre- and post-disaster events. This need and opportunity is reflected in the following strategy.

Enhance coordination between civic groups and non-profit organizations with local government agencies to make the Southern Brooklyn Peninsula better prepared for future emergencies				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Southern Brooklyn Emergency Response Plan	Create a Southern Brooklyn Emergency Response Plan to provide specific information targeted to local neighborhoods and incorporate lessons learned from Superstorm Sandy.	\$640,000	Proposed	Y

Educate residents and visitors about the importance of natural and cultural resources

Community residents believe that the natural and cultural resources of the Southern Brooklyn Peninsula are its greatest assets, and should be protected and respected. Educating residents and visitors about the importance of these resources, therefore, is an important strategy of the Committee. The Committee also believes the Community youth are an important part in forwarding this message, and that environmental programs would instill a sense of stewardship of these resources at a young age.

Educate residents and visitors about the importance of natural and cultural resources				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Environmental Youth Education Program	Partner with local non-profit organizations to provide educational materials and mini-courses for Community youth on natural and cultural resources.	\$140,000	Featured	N





Section IV: Implementation – project profiles

Section IV: Implementation – Project Profiles

A. Introduction

The NY Rising Community Reconstruction (NYRCR) Program has allocated up to \$19.3 million to the Southern Brooklyn Peninsula in U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant–Disaster Recovery (CDBG-DR) funding. While developing projects and actions for inclusion in the NYRCR Plan, the NYRCR Southern Brooklyn Peninsula Planning Committee (the Committee) 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. The projects and actions set forth in the NYRCR Plan are divided into three categories:

- **Proposed Projects** are projects proposed for funding through the 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** (see Section V) are projects and actions that the Planning Committee would like to highlight but that are not categorized as Proposed Projects or Featured Projects.

This section provides a complete project profile for each of the Proposed and Featured Projects identified and approved by the Committee. The Committee identified, selected, and advanced the Proposed and Featured Projects in response to the risks, needs, and opportunities described in Section II of the NYRCR Plan. The Proposed and Featured Projects reflect the implementation mechanisms for the Reconstruction and Resiliency Strategies, described in Section III. These projects represent actions that are expected to be implemented in the near future to build resiliency and fulfill other important goals for the neighborhoods of Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate, referred to as the Southern Brooklyn Peninsula throughout the NYRCR Plan. Several Featured Projects are exceptions to the

near-term project time frame; these projects will require a longer time frame for implementation. If projects are of regional significance, this wider level of significance is noted in the project profile. Regional significance means that the Proposed or Featured Project benefits more than one community.

Projects were first categorized by Recovery Support Function. The beneficiaries of each project (i.e., public/private, local/regional beneficiaries) were identified and preliminary cost estimates provided. Each project underwent an initial feasibility and funding evaluation that explored various sources of funding for the project. The Committee used the input from Public Engagement Events, including online surveys, to make decisions about which projects to select as proposed and which to select as featured. The outcomes of the Public Engagement Events for the Southern Brooklyn Peninsula are documented in more detail in Section VI, but the overall outcomes were generally consistent with the Committee’s selection of projects.

In addition to providing a detailed description of each project, the project profiles include information on two important elements that the Committee used to evaluate the value of each project: cost-benefit analysis and risk-reduction analysis. The benefits were presented with qualitative descriptions that demonstrate how the projects assist the community in economic, environmental, and health and social services terms.

B. Cost-benefit analysis

Cost-benefit analysis (CBA) is a tool used to calculate and compare the costs and benefits associated with a project. The CBA provides decision-makers with a framework for comparing different projects (i.e., anticipated costs of implementation against total expected benefits) and determining whether the benefits of a particular project outweigh the costs.

Because the NYRCR Program is a community-driven process, the CBA has focused on identifying project costs and benefits that easily relate to the communities that the Committee represents. Community and Committee input, informed by an understanding of local conditions, needs, and community values, plays a crucial role in the development of projects. The risk-reduction benefits are described in terms of how much each Proposed or Featured Project would lower the vulnerability of the Community’s assets.



The additional benefits of the projects are provided in qualitative terms that explain how these projects bring additional value to the Community. The CBA provides the Community with a practical understanding of the potential estimated costs of project implementation and the potential benefits accrued to the Community with the particular project in place.

Project costs

Each project profile includes a preliminary estimated cost for implementing the project. Factors contributing to the overall life-cycle costs of the project are described in general terms at this phase of the planning process.

The cost of implementing a Proposed or Featured Project is just one aspect of the justification for funding the project. Another important variable is the future costs of not implementing the project. Such opportunity costs have the potential to negatively impact the long-term viability of the Community. Although these lost opportunity costs of not implementing the projects do not always lend themselves to quantification, they are no less important to our analysis and are therefore addressed qualitatively. These costs include:

- Economic loss to residents and to local and regional employers as a result of the inability to work;
- Hindrance in the provision of life-safety and emergency services resulting from repeated inability to access vast areas of the Community; and
- Extensive, repetitive damage to personal property (e.g., vehicles, residences) and public infrastructure resulting from frequent recurring flooding and future storm events.

Project benefits

The types of benefits considered in the CBA include:

- **Risk reduction:** The extent to which a project reduces the risk of damage to a community asset from a future storm event (discussed further below under "Risk-reduction analysis").¹³⁷

- **Economic:** The project's potential to help minimize economic costs and reduce the time it takes for the Community economy to rebound from a storm event. Economic data included, where applicable, an estimate of permanent jobs secured/added, potential for additional economic activity, and the net effect on City of New York expenditures.¹³⁸
- **Health and social services:** Qualitative information was provided on the overall population benefits of improved access to health and social service facilities, including public safety services, and the degree to which essential health and social service facilities are able to provide services to a community during a future storm or weather event as a result of the project.
- **Environmental protection:** Benefits include the protection of crucial environmental assets or high-priority habitat, threatened and endangered species, migration or habitat connectivity, any cleanup resulting from the project; and creation of open space or a new recreational asset

C. Risk-reduction analysis

The risk-reduction analysis estimates the extent to which each Proposed and Featured Project will lower the flood risk to the Community's critical assets and population when the project is in place. The risk-reduction analysis uses information from the risk assessment in Section II to determine the risk of an asset before the project implementation. The analysis estimates how the risk will be lowered by showing how much the Proposed or Featured Project would lower the vulnerability score.

Bulkhead Replacement at Sea Gate

Sea Gate's location makes it particularly susceptible to storm surge and flooding damage, and during Superstorm Sandy surges of up to 10 feet destroyed or damaged hundreds of homes in the community. Bulkheads, which have provided protection from flooding and inundation in previous storms, were destroyed during Superstorm Sandy, leaving the community increasingly exposed to storm surge and inundation risk. The massive amount of water that entered Sea Gate also pushed its way through Coney Island, severely damaging homes and businesses in that community as well.

This project would involve the replacement of the bulkhead in Sea Gate that Superstorm Sandy destroyed. The replacement of the bulkhead would help address shoreline erosion and provide limited storm surge protection to Sea Gate and the communities to the east. Over 1,850 feet of linear bulkhead would be constructed along the property line during the first phase of this project.

Cost estimate:

The Sea Gate Association acquired an initial cost estimate for construction of the first 1,850 feet. On the basis of this estimate, the anticipated project cost is \$3,000,000. This total estimate covers removal and disposal of old bulkheads in addition to construction of new bulkheads.

Project benefits:

Health and social services: Bulkhead replacement would provide some level of protection to essential health and social services facilities to help keep them operational to assist them to recover quickly from storm events.

Environmental protection: This project would protect Sea Gate parkland. The bulkhead project would also reduce flooding into homes and buildings and the contamination associated with buildings being flooded and the chemicals that often end up in floodwaters.



Portion of the damaged bulkhead in Sea Gate, Brooklyn¹³⁹

Cost benefit analysis

The project would derive a significant return on the initial investment of \$3,000,000 by protecting assets in Sea Gate and western Coney Island from the damaging effects of storm surge and repetitive loss during regular storm events. The Sea Gate Association is encouraging property owners along the shoreline to participate in the project. If these homeowners participate, the

Bulkhead replacement at Sea Gate

length of contiguous bulkhead will be extended, transferring risk mitigation benefits to a larger number of assets.

Bulkheads generally have a long useful life with proper maintenance. The proposed bulkhead materials would be of a composite design and have a much longer useful life than more traditional bulkhead designs. The project would offer significant benefit to the Community for the duration of the bulkhead's useful life.

If the project were not implemented, a large number of assets in Sea Gate and surrounding neighborhoods would be subject to increased risk.

Reduction of risk anticipated:

The project would reduce the physical risk to assets in the Sea Gate community. Although the bulkhead replacement project would still not eliminate all risk associated with storm surge and flooding, the project, especially if the shoreline property owners participate, would mitigate the type of widespread and catastrophic damage that was observed in the Sea Gate neighborhood after Superstorm Sandy. Because the project would limit storm surge from entering Coney Island, benefits would also accrue to assets in the western half of Coney Island.

Time frame for implementation:

The project could be completed within two years, depending on the Association's success in encouraging participation by private homeowners.

Local, State, and Federal regulatory requirements:

The following is a non-exhaustive list of applicable requirements: NYC Zoning Resolution, including the 2013 Flood Resiliency Zoning Text Amendment; NYC Mechanical Code; 2008 NYC Construction Code and all subsequent amendments; 1968 NYC Building Code and all subsequent amendments; NYC Fire Code; and the International Building Code, if applicable.

Project jurisdiction:

The project would be located in Brooklyn Community District 13, in Kings County in the City of New York.



Extent of proposed bulkheading (red outline) with elevation contours¹⁴⁰

Designation of Emergency Response and Recovery Centers

At the two initial Public Engagement Events, Community residents reported having limited access to City services and storm-related information immediately after Superstorm Sandy. This feeling of being disconnected from services and information was also a prominent and recurring theme at Planning Committee Meetings, at which Community Board and non-profit representatives reported difficulty in accessing City agencies to address constituent concerns in the storm's immediate aftermath. This lack of access was compounded by the temporary closure or inaccessibility of many of the social service organizations that would ordinarily fill this need. Many de facto response and recovery centers evolved organically in all four communities in response to this need, typically thanks to efforts from non-profits and community groups, like the Shorefront YM-YWHA in Brighton Beach. These centers offered supplies, food, information, and comfort to residents.

The project is intended to formalize and better organize this strong Community response to post-disaster needs. The response and recovery centers would provide local residents and business owners with a primary meeting space to obtain information, seek support, and receive services after a disaster. The project would develop siting criteria and perform feasibility analyses to designate potential center locations across the Peninsula. Subsequent project phases would include determining building retrofitting needs, hardening designated buildings to increase their resiliency, and training staff to work at these facilities in post-emergency situations.

Cost estimate:

The estimated cost of this project is \$980,000. This figure includes expenditures for siting and feasibility analyses, as well as installation of necessary equipment and operational features. Engineering, design, and construction management costs are included in the total estimate.



Toy distribution for local children impacted by Superstorm Sandy, Shorefront YM-YWHA¹⁴¹

Designation of emergency response and recovery centers

Project benefits:

Economic: The project would result in more efficient delivery of services and access to information in a post-disaster setting. With more services and supplies available locally, residential displacement may be limited. Therefore, the project would be useful in restoring and maintaining the confidence of local businesses and residents.

Health and social services: The project would benefit socially vulnerable households. These households may include individuals with limited English proficiency, households with children or elderly residents, and households of low or moderate income. The project would also benefit all residents of the Community, especially those within walking distance of the response and recovery centers.

Cost-benefit analysis:

The useful life of the facilities would be limited to the useful life of the host buildings. With regular maintenance, this period would be at least 30 years. If a center is sharing a facility, its activities must not impinge on the regular function of the host space. If the project is not implemented, the Community would remain vulnerable to the real and perceived issues with social service provision and information dissemination that were observed and reported after Superstorm Sandy. The expenditure of \$980,000 to develop response and recovery centers would yield a strong return on this initial investment, as it would allow more Community residents to access post-disaster information and services in an efficient, centralized manner.

Reduction of risk anticipated:

The project would lead to limited risk reduction to assets specifically selected for use as response and recovery centers.

The project would protect socially vulnerable populations by addressing a lack of communications, infrastructure, and localized information about the availability of post-disaster resources and services. Community residents broadly reported feeling disconnected from emergency response services and information during Planning Committee Meetings and Public Engagement Events.

Time frame for implementation:

Siting criteria could be developed and relevant feasibility studies completed within a 12-month timeframe. The timetable for activation of the recovery and response centers would depend on the availability of additional funding.

Local, State, and Federal regulatory requirements:

The following is a non-exhaustive list of applicable regulatory requirements: NYC Zoning Resolution, including the 2013 Flood Resiliency Zoning Text Amendment; NYC Mechanical Code; 2008 NYC Construction Code and all subsequent amendments; 1968 NYC Building Code and all subsequent amendments; NYC Fire Code; and the International Building Code, if applicable. The New York City Office of Emergency Management (NYC OEM) has also produced a list of siting criteria and considerations for Disaster Assistance Service Centers that is relevant to this project.

Project jurisdiction:

The project would be located in Brooklyn Community Districts 13 and 15, in Kings County in the City of New York.



Beach Grass Planting and Infrastructure Improvements

The Southern Brooklyn Peninsula's beaches are the Community's first defense against damaging storm surge during extreme weather events. These beaches absorbed some surge during Superstorm Sandy, but large volumes of seawater still entered the Community from the oceanfront. During the planning process, the Committee sought to identify means of enhancing the beaches' protective function without impairing their quality as recreational assets.

This project would fund beach grass plantings to help minimize the shifting and erosion of sand in six locations along the boardwalk. Beach grass is a hardy plant, which is highly tolerant of direct sun, extreme heat, and high salinity. This project would also fund the installation of "snow fencing" around the planting areas. In addition to the planting component of the project, funding would allow for the relocation of six water utility supply valves from the south side of the boardwalk (i.e., the water side) to the north side (inland). This project would protect the supply valves from vulnerable storm surge and minimize New York City Department of Parks and Recreation (NYC DPR) seasonal maintenance. Finally, this project would fund the installation of two ADA-compliant beach access mats on the beach, from the boardwalk to the water, which would allow seniors, disabled persons, and wheelchair users to access the beach. These locations would be identified in partnership with the Community and the NYC DPR.

Cost estimate:

The anticipated total project cost is \$800,000. This total cost includes funding for plantings, relocation of the six water utility valves, and purchase and installation of two high-impact matting to provide ADA-compliant beach access.

Project benefits:

The project would reduce the annual maintenance costs of removing sand blocking access to the six water supply valves. The project would protect the



A dune grass planting by the U.S. Army Corps of Engineers on Plumb Beach¹⁴²

Beach grass planting and infrastructure improvements

water supply valves from damaging storm surges and reduce the movement of sands by stabilizing the beach in front of the boardwalk at the six proposed locations. These measures would enhance the beach experience for visitors, minimize costly expenditures on structural solutions to mitigate erosion, and provide a more natural beach habitat.

Cost-benefit analysis:

If the project is not implemented, the sands and sand dunes adjoining the boardwalk may shift, especially during storm events. This shifting reduces the resiliency of the boardwalk and compromising shoreline stability. Also, key water supply valves serving the area may be subject to damage during storm surges.

Reduction of risk anticipated:

The project would stabilize the beach at the locations proposed and may reduce future storm surge damage to the boardwalk.

Time frame for implementation:

The time frame for implementation would be subject to coordination with DPR; however, the project could be completed in 1 year.

Local, State, and Federal regulatory requirements:

The following is a non-exhaustive list of applicable requirements: 2012 New York City Department of Environmental Protection (NYC DEP) Standards for Green Infrastructure; Administrative Code of the City of New York; New York City Department of Parks and Recreation (NYC DPR) Division of Forestry requirements; and relevant methodological and process requirements as defined by the U.S. Army Corps of Engineers (USACE).

Project jurisdiction:

The project would be located in Brooklyn Community District 13, in Kings County in the City of New York.



Potential beach grass planting areas and water supply valve locations along the boardwalk in Coney Island and Brighton Beach¹⁴³

Community Streetscape Enhancements

The Planning Committee and residents providing feedback from Public Engagement Events expressed that street trees are important assets to the Community. Their loss or damage during Superstorm Sandy has created an additional challenge for business owners who derive direct economic benefit from attractive streetscapes. Replacing these trees would also improve air quality, help control storm water run-off and retention, provide shade, and add to the quality of life for residents. The project would provide funds for peninsula-wide streetscape enhancements, including replacement of trees on public property that were destroyed or damaged by Sandy, implementation of storm water attenuation measures such as catch basing and bioswales, and landscape enhancements along selected business corridors.

Hundreds of trees were lost in Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate due to storm-related damages; these trees have not been replaced. Tree species selected for replacement of trees damaged or lost by Superstorm Sandy would emphasize salt-tolerant types. The trees would also be planted, where possible, in enhanced tree pits that conform to NYC DEP requirements. A representative tree pit in the City of New York can divert up to 950 gallons of storm water during a 1-inch rain event. The project can also fund the planting of trees lost or damaged by Superstorm Sandy on NYCHA property and within Parks.

Cost estimate:

Cost for this project is estimated to be \$2.5 million - \$3 million. This is a scalable project. The estimated cost for new and replacement trees is \$900,000 with an average cost per tree of \$1,000. The streetscape enhancements, including storm water attenuation measures, are estimated to range from \$1,600,000 to \$3,000,000.



Bioswale example in New York City¹⁴⁴

Community streetscape enhancements

Project benefits:

Economic: Recent research on urban forestry indicates that street trees confer significant economic benefits to communities. One recent analysis from Portland, Oregon, finds that street trees located in front of buildings can increase those properties' sale prices by over \$7,000. Another analysis from Portland determined that walkability in "tree-lined" neighborhoods elevates home values six times more than walkability in treeless neighborhoods does. Based on the results of these analyses, this project should deliver substantial return on investment in the form of increased property values and economic activity.

Environmental: The project would provide significant environmental benefit to the Community. Trees improve air quality, help control storm water run-off, reduce the heat island effect, provide shade and add to the quality of life for residents. Natural landscapes would open up more pervious surface allowing for more natural groundwater recharge. Storm water control measures like bio-swales and connected tree pits provide additional benefits for surface water quality.

Cost-benefit analysis:

Street trees in downtown areas typically live for roughly 25 years, though proper maintenance and care can extend the life of trees considerably longer. Green infrastructure features such as tree pits and storm water attenuation measures can be maintained in perpetuity. Regular upkeep is required to ensure good working order. If the project is not implemented, lack of pervious surfaces and adequate storm water controls would continue to stress the community's storm drain system, lead to frequent flooding events and adversely affect water quality.

Given the quantifiable economic and environmental benefits of street tree restoration, the expenditure of between \$2.5 million and \$3.9 million would be wholly justified.

Reduction of risk anticipated:

The project would lead to a slight reduction of risk to critical assets, and result in an overall cumulative risk reduction to the Community. Through the use of enhanced tree pits, the project would provide storm water control from frequent storm events. The project would reduce the risk of flooding that occurs from more frequent storm events but would have negligible effects in reducing risk from events such as the magnitude of Superstorm Sandy.

Time frame for implementation:

The project could be completed within one year.

Local, State, and Federal regulatory requirements:

The following is a non-exhaustive list of applicable requirements: 2012 NYC DEP Standards for Green Infrastructure; NYC DOT Street Design Manual; Administrative Code of the City of New York; DPR Division of Forestry requirements.

Project jurisdiction:

The project would be located in Brooklyn Community Districts 13 and 15, in Kings County, in the City of New York.



Feasibility Study for Energy Resiliency for NYCHA and Mitchell-Lama Properties

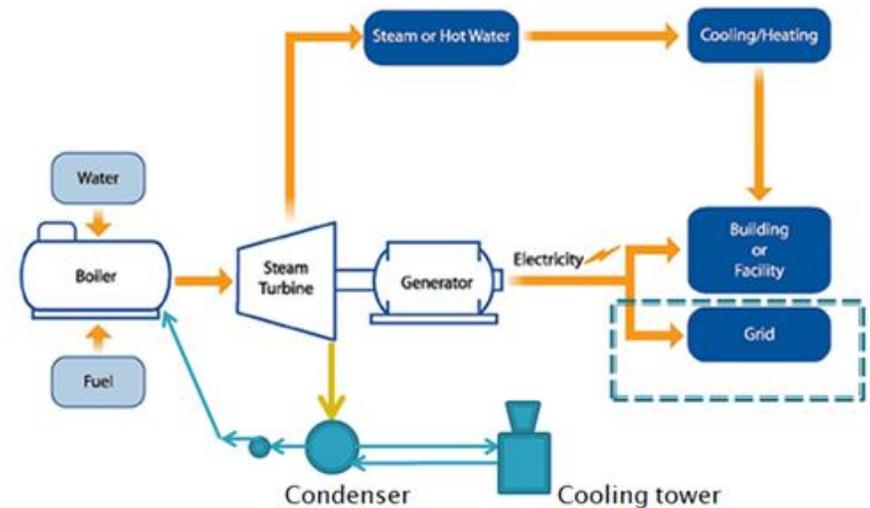
All 40 New York City Housing Authority (NYCHA) residential buildings and 9 Mitchell-Lama developments in the NYRCR Southern Brooklyn Peninsula experienced prolonged power outages after Superstorm Sandy. In many of these high-rise buildings, saltwater inundation caused building power systems to fail. These failures compromised other critical building systems, including elevators, heat, and hot-water service. The outages severely impacted residents' access to basic food, water, medical, and emergency supplies. Heat and hot water were not restored to all NYCHA developments for more than three weeks. Many buildings continue to use temporary boilers.

This project would provide funding for two related studies to determine the feasibility of developing microgrid, smartgrid, and/or cogeneration solutions to ensure that NYCHA and Mitchell-Lama properties maintain power in future storm events. One study would evaluate energy-resilient systems that would benefit multiple NYCHA residential towers. The microgrid project at the Building Performance Lab of the City University of New York (CUNY) is one approach that may be applicable to NYCHA housing projects. The second study would entail assessing the potential for a microgrid powered by the existing power plant at the Amalgamated Warbasse Houses, a Mitchell-Lama cooperative, to provide reliable power to Coney Island Hospital; the Coney Island NYCHA Complex; and nearby schools, businesses, and housing.

The project may offer opportunities to partner with New York State Smart Grid Consortium (NYSSGC) initiatives and the New York Power Authority (NYPA).

Cost estimate:

The cost estimate of \$340,000 for this project includes funding for both studies.



Amalgamated Warbasse Houses Power Plant – Cogeneration¹⁴⁵

Project benefits:

Health and social services: Energy resiliency improvements can enhance safety and accessibility to essential health and social services during and after storm events. The socially vulnerable populations impacted by the project would include low- and moderate-income residents of the developments, children and the elderly, and residents with access and functional needs, who are inconvenienced or imperiled by lack of a dedicated power supply.

Feasibility study for energy resiliency for NYCHA and Mitchell Lama properties

Cost-benefit analysis:

The project would only have a positive benefit-to-cost ratio if an energy resiliency upgrade were implemented based on the results of the study. The Committee recognizes the health and safety concerns related to the loss of power for these residents as a result of a storm and is seeking an innovative and cost-effective method to minimize these issues in the future. Therefore, the project cost of \$340,000 is a reasonable expenditure that may yield identification of broadly applicable solutions that would benefit NYCHA and Mitchell-Lama developments both in the Community and throughout the City of New York.

Reduction of risk anticipated:

As a feasibility study, this project would not reduce risk to Community residents or assets. If a project were implemented on the basis of study results that increased the redundancy and resiliency of power systems at a Mitchell-Lama or NYCHA development, the risk score associated with that asset would decline.

Time frame for implementation:

The studies could both be completed within two years.

Local, State, and Federal regulatory requirements:

The following is a non-exhaustive list of applicable requirements: NYC Zoning Resolution, including the 2013 Flood Resiliency Zoning Text Amendment; NYC Mechanical Code; 2008 NYC Construction Code and all subsequent amendments; 1968 NYC Building Code and all subsequent amendments; NYC Fire Code; and the International Building Code, if applicable.

Project jurisdiction:

The project would be located in Brooklyn Community District 13, in Kings County in the City of New York.



Schematic of proposed microgrid at Amalgamated-Warbase Houses¹⁴⁶

Implementation of Cost-Effective Storm Surge Protection for Ocean Parkway and West 25th Street

During Superstorm Sandy, storm surge from the Atlantic Ocean flooded Ocean Parkway through a breach in Riegelmann Boardwalk (Boardwalk), as far north as Avenue V. Flooding of Ocean Parkway was exacerbated by a lack of obstructing natural or manmade structures. Similarly, surge waters breached the berm system under the Boardwalk at West 25th Street, sending floodwaters into residential communities.

This project would entail a feasibility study and the design and construction of measures to limit inundation at the Boardwalk and Ocean Parkway and at the Boardwalk and West 25th Street. Measures may include reconstruction of the berm in front of the Boardwalk at Ocean Parkway and replacement of the vehicle underpass at the Boardwalk at West 25th Street with drive-over access.

Cost estimate

The expected project cost is \$750,000. This total cost encompasses a wide range of planning, and coordination, and construction activities, including engineering and soil management costs.

Project benefits:

Economic: The project would reduce the vulnerability of commercial assets at the Boardwalk and near the intersections of the Boardwalk, Ocean Parkway, and West 25th Street. By mitigating commercial and residential building exposure to risk, these flood- and storm-surge reduction measures would limit the prospect for extended business closures and residential outages. The combined effect of these improvements would be to increase commercial activity in the immediate aftermath of disasters and to minimize the potential for disaster-related employment loss.



Displacement of sand and debris after Superstorm Sandy, Coney Island¹⁴⁷

Health and social services: The project would provide direct benefits to all socially vulnerable populations whose property would be secured by the project or whose access to vital services would be improved in the aftermath of a disaster.

Cost-benefit analysis:

Depending on the nature of the measures selected after the completion of the feasibility studies, maintenance or storage of protective feature components may be required. These maintenance or storage tasks would entail operating costs above and beyond the initial project costs.

Implementation of cost-effective storm surge protection for Ocean Parkway and W. 25th Street

The primary objective of the Committee is to identify eligible, cost-effective solutions to mitigate or minimize the risks faced by the Community in future disasters. The proposed project cost of \$750,000 would yield high returns related to protection of key recreational, commercial, and residential assets.

Reduction of risk anticipated:

The project would decrease the vulnerability of a large number of Community assets. The project would also mitigate the direct exposure of buildings and other assets to the damaging effects of storm surge.

The project would limit direct risk to the population by limiting the intense and unpredictable flooding associated with storm surge.

Time frame for implementation:

The project could be completed within 12 months, assuming appropriate coordination with relevant partners including NYC DPR.

Local, State, and Federal regulatory requirements:

The following is a non-exhaustive list of applicable requirements: Section 404 of the Federal Clean Water Act; Section 10 of the Federal Rivers and Harbors Act; applicable New York State (NYS) DEC regulations related to tidal wetlands and coastal erosion management; and NYS Coastal Policy, including the provisions of the City Waterfront Management Program.

Project jurisdiction:

The project would be located in Brooklyn Community District 13, in Kings County in the City of New York.



Bench on Ocean Parkway in Brighton Beach after Superstorm Sandy indicating height of floodwaters during storm.¹⁴⁸

Increase Resiliency of Small Businesses Throughout the Peninsula

Superstorm Sandy devastated small businesses in the Southern Brooklyn Peninsula. Commercial corridors, such as Brighton Beach Avenue, Neptune Avenue, and Mermaid Avenue, were overwhelmed by flooding from storm surge and from inundation caused by backflow from sewer lines into buildings. In the aftermath of the storm, some businesses were slower than others to rebound. Some merchants and groups, attributed these problems to a lack of preexisting coordination and resilience among local small businesses.

The project would establish a small business support center to provide technical assistance and paralegal support to small businesses throughout the Peninsula to obtain the grants, loans, and financial planning necessary to fully recover from Superstorm Sandy. The center would lease commercial space and provide in-person assistance to merchants and property owners.

The center could partner with the Business Resiliency Investment Program (BRIP), an initiative of the New York City Economic Development Corporation (NYC EDC) to support business investments to improve resiliency to severe weather events (currently in the implementation design phase). The project would establish a fund for installation of cost-effective flood protection measures, including elevating electrical panels above flood elevations and installing deployable flood barriers and backflow preventers on the sewer lines. These flood protection measures would be made available to micro- and small businesses throughout the Peninsula to augment other funding sources and with a particular emphasis on those businesses not eligible for other City, State, or Federal programs.

The small business support center could also support the establishment of additional merchant associations and business improvement districts, if desired. The project would establish a fund for installation of low-cost floodproofing of micro- and small businesses throughout the Peninsula to augment other funding sources and with a particular emphasis on those businesses not eligible for other City, State, or Federal programs. The project



Business damaged by Superstorm Sandy in Brighton Beach¹⁴⁹

would also include an allocation to fund storefront improvements and streetscape enhancements along Mermaid Avenue.

Cost estimate:

The estimated project cost is \$1,960,000. This estimate encompasses limited streetscape and corridor improvements; establishment of a fund for direct floodproofing assistance; and the establishment of the Southern Brooklyn Small Business Recovery Center, including funding for three full time equivalent staff positions and two years of leased office space

Increase resiliency of small businesses throughout the Peninsula

Project benefits:

Economic: The more than 3,100 businesses in the Community employ over 24,000 people. Superstorm Sandy damaged or destroyed a significant number of small businesses, many of which were not eligible for Small Business Administration or other loan and/or grant programs as a result of cash-flow limitations, credit score requirements, or destroyed documents. Most small businesses were also ineligible for insurance reimbursements. The project seeks to address many of these issues. The project would also potentially increase retail sales for businesses in the Community while decreasing project area commercial vacancy rates. Increased resiliency would lead to greater economic activity, an increased number of jobs, and a more stable local economy.

Health and social services: The small business support center would incorporate multi-language support to reflect the diversity of local businesses. The center would enable businesses to serve and address the needs of the local population in emergency events and post-disaster situations.

Cost-benefit analysis:

The project life is anticipated to be 2 years; any extension of this timeframe would require additional dedicated funding. The Committee has identified means of assisting small business owners that are consistent with City policies and recovery initiatives. The project cost of \$1,960,000 is expected to generate considerable return on investment in the form of greater business sustainability and resilience on the Southern Brooklyn Peninsula. Merchants and business owners would benefit not only from direct funding to implement protective measures against flooding, but from technical assistance to develop capacity and promote business resiliency.

Reduction of risk anticipated:

The project would not initially reduce risk to assets; however, the eventual floodproofing and business continuity plans would contribute to reduced risk and vulnerability scores for small business assets. Therefore, the project would lead to a reduction of vulnerability and risk for assets along commercial corridors in the Community.

Time frame for implementation:

This project is designed to last for two years based on the direct funding allocation.

Local, State, and Federal regulatory requirements:

The project would comply with all New York City Small Business Services programmatic policies and requirements. The project would also be responsive to the guidelines established by NYC EDC.

Project jurisdiction:

The project would be located in Brooklyn Community Districts 13 and 15, in Kings County in the City of New York.



Reopening of Totonno Pizzeria in Coney Island, March 2013¹⁵⁰

Increase resiliency of small businesses throughout the Peninsula



Figure IV-1: Economic Corridors in the Southern Brooklyn Peninsula

Installation of Resilient Streetlights

Power outages during emergency events are a significant problem in the Southern Brooklyn Peninsula. Blackouts and outages impact the ability of residents to safely walk or drive to their homes, evacuate to emergency shelters, and access critical medical services. The loss of street lighting also impacts the ability of small business owners to stay open or re-open after emergencies. Throughout the Peninsula, Superstorm Sandy damaged or destroyed the electrical systems and connections for traditional streetlights. These systems and connections required repair or replacement, resulting in prolonged outages. Streetlights that use stored energy from the sun or other renewable power sources instead of traditional power sources can provide lighting in critical locations during power outages and help retain vital street lighting that might otherwise be knocked out by a storm.

The project would involve funding for new streetlights powered by light-emitting diode (LED) solar-powered lights or other renewable light technologies. The streetlights would be located along key business corridors and road intersections, evacuation routes, and areas of high-density housing throughout the Peninsula. Other project areas could include the installation of resilient lighting on key commercial buildings, elevated train lines, NYCHA property, or parks.



Example of a solar powered street light¹⁵¹

Cost estimate:

For the purposes of estimation, it is assumed that between 500 and 875 lights would be installed, enough to illuminate between seven and 10 miles of local streets. Based on review of a number of solar-powered streetlight designs, the average cost per streetlight, including installation, is estimated to be \$4,000. The estimated project cost would therefore be between \$2,000,000 and \$3,500,000. These costs account for purchase of equipment, delivery, and labor. A cost range of this nature has been provided to allow flexibility within this project and across multiple Proposed Projects.

Project benefits:

Economic: Sustainably-powered street lighting would reduce local government utility costs. Use of renewable power sources for street lighting would also likely reduce local government expenditures by providing emergency lighting during power outages. This benefit would potentially result in a net decrease in costs to the Community because the improved safety conditions would potentially result in fewer accidents.

Installation of resilient streetlights

Health and social services: Improved street lighting along major thoroughfares would enhance safety and accessibility to essential health and social services during and after acute hazard events, including storms and floods. The project would benefit all Community residents, including individuals with access and functional needs, for whom access to emergency services may be critically important.

Environmental protection: The City has established aggressive goals to reduce emissions, improve air quality, and increase use of renewable power sources. Sustainable streetlights are consistent with that broad objective: they use renewable, sustainable green solar power, a low-cost solution that reduces demand on power generation and transmission networks.

Cost-benefit analysis:

Street lighting requires long-term maintenance and operational agreements. The City manages streetlight maintenance through a contractor.

Solar-powered street lights have an extended useful life and provide sustained benefits before, during, and after storm events. Upfront purchase and installation costs are higher for solar-powered streetlights than for traditional streetlights, and more street lights are needed to provide standardized luminosity. However, the long-term maintenance costs associated with street lighting would be minimized for solar-powered street lighting due to the long life of LED lamps. Given the safety risks associated with prolonged streetlight outages and given the Committee's strongly expressed desire for continuous lighting, the benefits of this project would justify its associated expenditures.

Given these considerations, the total project cost of \$2,000,000 to \$3,500,000 is an investment that would yield high returns in terms of residential safety, business confidence, and reductions in government

expenditures for streetlight electrical system repair and replacement after future storm events.

Reduction of risk anticipated:

Implementing sustainably-powered streetlights would reduce risk to critical assets and result in an overall cumulative risk reduction to the Community. Primary risk reductions would occur in the form of reduced traffic safety concerns along key transportation corridors and links to primary evacuation routes.

Time frame for implementation:

The project could be completed in 18 months.

Local, State, and Federal regulatory requirements:

The following is a non-exhaustive list of applicable requirements: NYC Zoning Resolution, including the 2013 Flood Resiliency Zoning Text Amendment; NYC Mechanical Code; 2008 NYC Construction Code and all subsequent amendments; 1968 NYC Building Code and all subsequent amendments; NYC Fire Code; NYC Street Design Manual; and the International Building Code, if applicable.

Project jurisdiction:

The project would be located in Brooklyn Community Districts 13 and 15, in Kings County in the City of New York.



Pilot Small-Scale Renewable Power Project

Superstorm Sandy damaged critical utility networks, resulting in power outages that adversely affected thousands of Community residents and businesses. Elevator, heat, and hot-water systems were damaged or preemptively shut off to prevent fires or other failures at many high-rise buildings. As an alternative to oil-fired backup generators, solar power systems or small-scale microgrids could be designed to use a combination of renewable energy sources, such as solar or wind, to ensure the availability of backup power during and after disaster events that cause the electrical power, transmission, or distribution systems to suffer outages.

The project would involve two phases. First, a siting and feasibility study would be conducted to identify a location for a pilot solar-powered backup system for an existing small- to mid-sized senior or nursing-home facility located in the Community. This initial phase of the project would entail developing a set of criteria for evaluating applications and preparing a Request for Expression of Interest (RFEI) to be sent to potential applicants. The implementation phase of the project would follow.

Cost estimate:

Estimated costs for the initial siting and feasibility study, including project engineering design, would be \$100,000. Anticipated construction costs would be roughly \$800,000, for a total project cost of \$900,000. Solar tax credits and other incentives for installing solar power could be used to defer costs, depending on their availability at the time of project inauguration.

Project benefits:

Economic: Maintaining Community utility services during and after storm events would indirectly benefit the local economy by promoting resident and business confidence. Also, if occupants of housing units are able to return quickly to their homes after a storm event, government and non-profit expenditures for temporary housing would be reduced. The direct benefits of the project would only apply to the building selected for installation.



An example of renewable energy sources in New York City¹⁵²

Although the system would likely not cover all of the electrical cost to the facility, it would greatly reduce the facility's overall utility costs.

Environmental protection: Renewable and sustainable energy practices would minimize adverse impacts on the local environment. As a single pilot project, the direct benefits of the project to the environment would be minimal. However, if the example provided by the pilot project caused other similar projects to come online, benefits to the environment and sustainable development would increase substantially.

Health and social services: The project would provide reliable power during times of power outages to a facility serving vulnerable populations.

Pilot small-scale renewable power project

Cost-benefit analysis:

The investment of \$900,000 represents a reasonable expense given the anticipated benefits of reduced greenhouse gas emissions and greater energy self-sufficiency for the selected facility.

The long-term benefits of the project would be limited to the useful life of the project equipment. With regular maintenance and reasonable usage, the project system would last at least as long as the standard industry period.

Reduction of risk anticipated:

The project would reduce vulnerability at the site chosen for installation by reducing or eliminating anticipated power outages. Improved power stability would promote better performance of all key building systems in the aftermath of a disaster, including heat, hot water, and elevator services. These effects would limit inconvenience to all residents, and potentially major hazards to residents with physical mobility issues.

Time frame for implementation:

The project would be completed within three years.

Local, State, and Federal regulatory requirements:

The following is a non-exhaustive list of the applicable requirements: NYC Zoning Resolution, including the 2013 Flood Resiliency Zoning Text Amendment; NYC Mechanical Code; 2008 NYC Construction Code and all subsequent amendments; 1968 NYC Building Code and all subsequent amendments; NYC Fire Code; and the International Building Code, if applicable.

Project jurisdiction:

The project would be located in Brooklyn Community Districts 13 and 15, in Kings County in the City of New York.



Public Emergency Preparedness Outreach Campaign

Both the Committee and attendees at Public Engagement Events reported widespread feelings of unpreparedness for Superstorm Sandy. Many residents of the communities of Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate reported that they did not fully understand evacuation procedures before the storm event. These preparedness and communications issues were exacerbated by the high density of vulnerable populations on the peninsula, including individuals with limited English proficiency. For instance, roughly 85% of Brighton Beach residents speak languages other than English at home. Many of these residents are recent immigrants, and they tend to have difficulty accessing information and services related to disaster preparedness and evacuation. Similar planning challenges exist with respect to the roughly one-quarter of Community residents who are 65 and older and who may have less familiarity with many of the City of New York's (City's) electronic emergency communications messaging methods. These populations require targeted outreach strategies for effective emergency preparedness planning.

The project would create a public outreach campaign that uses multiple forms of media to provide targeted and specific disaster preparedness, response, and recovery information to Community residents, with particular emphasis on socially vulnerable populations and taking into account other languages commonly spoken in the Community. Existing preparedness materials from the Federal Emergency Management Agency (FEMA), the New York State Division of Homeland Security and Emergency Services (NYS DHSES), and the NYC OEM would be used and adapted for the project. The initial phase of the project would involve assessing the best way to reach out to target audiences using print, radio, web-based, and local cable/television broadcast media.



Emergency preparedness drill in Coney Island in November 2013 featuring staff from multiple City agencies and members of the Brooklyn Community Board 13 CERT¹⁵³

Public emergency preparedness outreach campaign

Cost estimate:

The estimated implementation cost of this project is \$160,000. This figure includes production of relevant materials, and an assessment of the best means of connecting socially vulnerable populations to important preparedness information.

Project benefits:

Health and social services: The project would create and customize specific services to target socially vulnerable populations to promote a more streamlined and efficient emergency planning and response protocol whose benefits would be felt directly and indirectly by all Community residents. The project would be designed to particularly benefit socially vulnerable residents. The outreach campaign would include targeted information that is relevant and useful to a range of populations, including individuals with limited English proficiency, who may require translated outreach materials; households with children or elderly residents, which may require extra time or consideration in evacuation procedures; and individuals with access and functional needs, who may require tailored information and assistance related to emergency preparation.

Cost-benefit analysis:

This anticipated expenditure to address observed and perceived issues with emergency preparedness would be a worthwhile investment in the long-term resiliency of the Peninsula. If evacuation procedures and directives are communicated more effectively through the project, more residents are likely to evacuate in a timely fashion, limiting public expenditures associated with emergency response and recovery during storm events.

Reduction of risk anticipated:

The project would directly benefit all residents of Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate. The project would reduce risk to socially vulnerable populations by providing services targeted specifically to those populations.

Time frame for implementation:

The planning process associated with the project would take roughly two years to complete.

Local, State, and Federal regulatory requirements:

The project would comply with all requirements of Section 508 of the Rehabilitation Act of 1973 and all policies and requirements of the NYC OEM.

Project jurisdiction:

The project would be located in Brooklyn Community Districts 13 and 15, in Kings County in the City of New York.



Reconnaissance Study of Storm Surge Protection for Sheepshead Bay

During Superstorm Sandy, water surged into Sheepshead Bay, inundating Manhattan Beach and southern sections of the neighborhood of Sheepshead Bay. The Committee understood from the outset of the planning process that no single infrastructure improvement can eliminate all risk associated with storm surge. However, the Committee Members expressed a strong desire to examine potential protection options that could be integrated into the existing and proposed network of flood protection infrastructure in and around the Community.

The project would evaluate a range of options for reducing storm surge and flooding in the neighborhoods of Manhattan Beach and neighboring Sheepshead Bay. Both green (natural) and gray (man-made) infrastructure options would be examined, including structural barriers, such as tide gates, sea walls, and road improvements, and natural solutions, such as dune and wetland enhancements. The study would also determine the potential effectiveness of deployable flood walls and passive flood barrier systems to mitigate flood damage along Shore Boulevard in Manhattan Beach and the Emmons Avenue Corridor in the adjacent neighborhood of Sheepshead Bay (see Figure IV-2 for the area that would be the subject of the study).

If the reconnaissance study identifies viable options, it may warrant U.S. Army Corps of Engineers (USACE) participation in a more detailed engineering phase. USACE describes more intensive investigative work of this nature such as a feasibility study. A construction phase might follow the feasibility study if the feasibility study yielded specific actionable and cost-effective mitigation options. The Gerritsen Beach and Sheepshead Bay NYRCR Planning Committee would share the cost of the project and be a partner in the study.



Sheepshead Bay–Manhattan Beach Pedestrian Bridge¹⁵⁴

Reconnaissance study of storm surge protection for Sheepshead Bay

Cost estimate:

The anticipated project cost is \$100,000. This estimate is based on a review of other similar feasibility studies conducted by USACE and/or by private entities.

Project benefits:

Economic: A 2012 report by the Institute for Social and Environmental Transition found that nearly all structural flood control methods enjoy a positive benefit-cost ratio because of mitigated damage and enhanced economic activity.¹⁵⁵

Mitigation of the risk of flooding and its associated damage would reduce or eliminate business outage times and the displacement of the local population. Local employment patterns would potentially be positively affected by reduced business outage times in post-disaster scenarios and because of minimal disruptions to local residents.

Health and social services: The reconnaissance study could lead to the identification and construction of structural measures that would protect socially vulnerable populations, including children and the elderly, individuals with access and functional needs, and low- and moderate-income households. A large number of essential health and social services are areas of High and Extreme risk, including supportive housing and assisted-living facilities. A structural intervention to mitigate local flood risk might benefit multiple socially vulnerable populations by reducing risk to these assets during and after acute storm events.

Cost-benefit analysis:

This study may identify structural methods to reduce the potential for future flood damage. If likely methods are identified, additional funds would need to be expended to initiate a feasibility study. Construction costs related to a structural intervention would likely be considerable and would include

environmental impact analyses to evaluate any effects of floodgate, seawall, levee, or related measures.

Even taking into account these considerations, there would be no basis for conducting a more in-depth feasibility study if this reconnaissance study is not undertaken. The \$100,000 project cost is a relatively limited expenditure in relation to the potential benefits of the study. Given the catastrophic impact of flood and storm surge damage to Community homeowners, residents, and merchants, the Committee has determined that the long-term benefits of this project more than outweigh the possible drawbacks.

Reduction of risk anticipated:

The study would seek to identify structural interventions that would reduce risk to as broad a range of physical assets and as large a number of Community residents as possible.

Time frame for implementation:

The study would be completed within two years, based on typical timetables for USACE reconnaissance and feasibility studies of similar scope and magnitude. This timetable is applicable regardless of whether the USACE or a different entity undertakes the reconnaissance study.

Local, State, and Federal regulatory requirements:

The study would conform to the relevant methodological and process requirements defined by the USACE.

Project jurisdiction:

The project would be located in Brooklyn Community District 15, in Kings County in the City of New York.





Figure IV-2: Area that would be the subject of the reconnaissance study

Resiliency Upgrades for Manhattan Beach Bathhouse

The Manhattan Beach Bathhouse is a roughly 110,000-square-foot building in Manhattan Beach Park owned by the New York City Department of Parks and Recreation (NYC DPR). The facility is currently not used, but could support a variety of year-round uses for residents and visitors. Plans for uses within the building are under discussion, and it is desired that a portion of the facility might be made available for a community center.

This project would upgrade utilities at the Manhattan Beach Bathhouse to allow for regular use and explore the installation of renewable energy systems and solar panels. The project would also evaluate and implement floodproofing measures and explore potential uses of the facility (e.g., as a community center) with NYC DPR and community representatives.

The Committee has explicitly stated that use of these funds for improvements to the Manhattan Beach Bathhouse would be contingent on an agreement with NYC DPR as to the ultimate uses for the facility.

Cost estimate:

The estimated project cost is \$4,000,000. This estimate could cover a variety of upgrades, including installation of solar panels or other resiliency features.

Project benefits:

Project benefits may include enhancement of economic activity, health and social services, and environmental protection. Depending on the eventual usage of the Manhattan Beach Bathhouse, the recreational amenities, retail concessions, and community services provided by the facility may attract visitors to the park while providing new local jobs. A community center use would benefit Community residents of all ages, including vulnerable populations.



Manhattan Beach Bathhouse¹⁵⁶

Resiliency upgrades for Manhattan Beach Bathhouse

The project may include installation of solar panels or other renewable-energy generation systems to support year-round use. These green additions would reduce emissions and recurring maintenance costs. These lower costs would increase the incentive to continue exploring potential uses for a portion of the building to promote public waterfront access and provide opportunities for other water-related uses.

Cost-benefit analysis:

The project would potentially entail additional staffing and/or maintenance responsibilities for the NYC DPR. Rehabilitation of the building would require additional funds, either from other government grants or private sources, to complete the project.

Reduction of risk anticipated:

The project would not directly reduce risk to the Community.

Time frame for implementation:

The project could begin in 2014, depending on decisions made by NYC DPR and the results of an RFEI process.

Local, State, and Federal regulatory requirements:

The following is a non-exhaustive list of applicable requirements: NYC Zoning Resolution, including the 2013 Flood Resiliency Zoning Text Amendment; NYC Mechanical Code; 2008 NYC Construction Code and all subsequent amendments; 1968 NYC Building Code and all subsequent amendments; NYC Fire Code; and the International Building Code, if applicable.

Project jurisdiction:

The project would be located in Brooklyn Community District 15, in Kings County in the City of New York.



Sewer Connection Cut-Off Valves for Owners of One- and Two-Family Homes

The loss of power that occurred during and after Superstorm Sandy caused many sanitary sewer pump stations to shut down. Without means to remove sanitary waste, sewage backed up into many homes and businesses on the Peninsula. Backflow inundation was not the only cause of building damage in inland neighborhoods, but it did significantly exacerbate damage. Four Census Block Groups in Coney Island and Sea Gate that do not border either the Atlantic Ocean or Coney Island Creek experienced damage to at least 70% of their housing units, according to the U.S. Department of Housing and Urban Development. Also during Superstorm Sandy, floodwaters entered the storm drain system at numerous locations. These floodwaters resulted in significant building damage, high cleanup costs, exposure to noxious waste fumes, and potential exposure to hazardous materials. The project would provide direct financial assistance to homeowners for the installation of sewer connection cut-off valves in residential homes. This program would also provide education and public outreach related to the proper operation and maintenance of these devices.

The cut-off valves would be installed within structures and operated by the building owner or tenant. Installation would require cutting the existing sewer pipe, installing the cut-off valve, resealing the pipe, and creating an access panel for valve clean-out. Limited excavation to access in-ground pipes would be required; structures would have either in-ground or above-ground sewer connections. As part of the project, both self-deploying and manually operated valves would be evaluated for consideration.

A preliminary assessment of the sewer system on the Peninsula would be needed to determine if any adverse impacts would result from implementing this project and if other cost-effective system- or subsystem-level modifications might also mitigate, at least to some extent, the sewer backflow problems at a block or neighborhood level. Additional evaluation would be needed to finalize lists of potential homes or residential blocks that would benefit from the installation of cut-off valves.

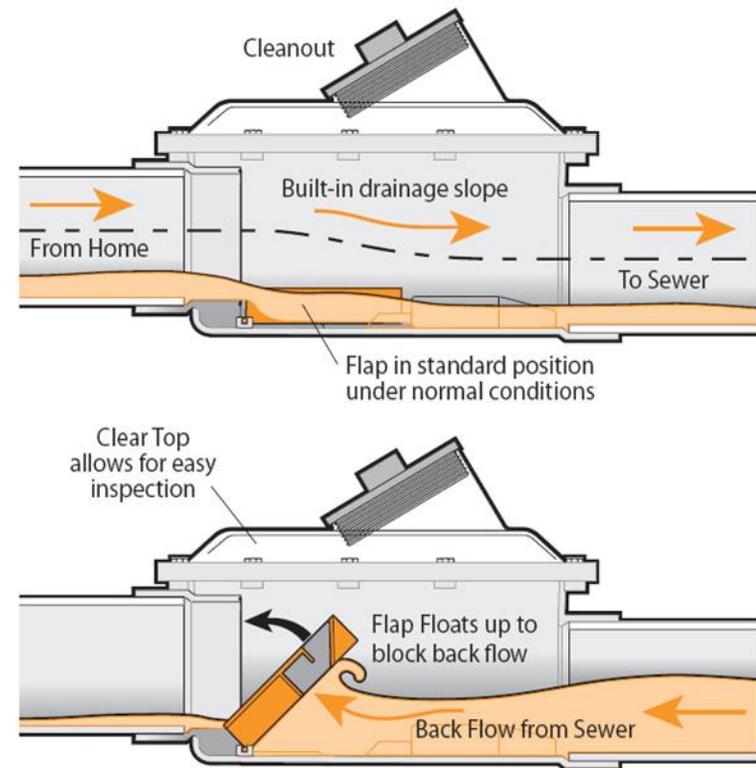


Diagram demonstrating mechanics of sewer connection cut-off valve¹⁵⁷

Sewer connection cut-off valves for owners of one- and two-family homes

Installers could be hired locally and trained. Use of local labor would directly address the workforce development needs identified by the Committee throughout the planning process. If workers were supervised by licensed Master Plumbers, their time spent working on the project would count towards the experience requirements for their own licensure.

The attendees of both Public Engagement Events and Planning Committee Meetings consistently rated this project as a top priority. Committee Members were particularly supportive of the project because of its low unit cost and scalability.

Cost estimate:

This project is scalable, and can be implemented on a per-building basis. Based on research of local unit purchase and installation costs, this project assumes a per unit cost of between \$2,400 and \$3,500. The Committee determined that mitigating risk of backflow to 1,000 homes would constitute a significant benefit to the Community. The anticipated project cost is therefore between \$2,400,000 and \$3,500,000. In some limited instances, an individual home's cost could be higher than the estimate unit cost if the sewer line to the structure is not readily accessible. The total cost estimate provided here accounts for these contingencies by incorporating inspection costs and a slightly higher per unit cost than may be typical.

Project benefits:

Economic: Minimizing sewage backflow into homes during storm events would positively affect the local economy by minimizing building damage and residential displacement times as a result of storm events. The limited available information regarding FEMA registrants indicates that avoidance of building damage to a given housing unit would yield over \$10,000 per housing unit in direct cost savings. An installation program could also create jobs and employ local workers.

Health and social services: Effective backflow prevention systems can reduce risks to public health posed by contamination caused by sewer backups in residential dwellings. Socially vulnerable populations, including children, individuals with disabilities, senior citizens, and low- and moderate-income persons, would benefit from the project.

Environmental protection: Unless the project includes flood protection measures to the overall sewer system, the project would have limited beneficial impacts on water quality in surrounding water bodies.

Cost-benefit analysis:

The useful life of the project is a function of the effective life of individual cut-off valves. Maintenance and replacement of individual components would be required to keep backflow prevention systems operating. Although individual parts would require periodic replacement, the benefits of the project would continue to accrue indefinitely, assuming responsible and proactive maintenance.

If the project is not implemented, the Community's housing assets will remain vulnerable to sewage backups during and after storms and more frequent flooding events. More than 11% of owner-occupied homes damaged by Superstorm Sandy suffered at least \$30,000 of damage.¹⁵⁸ By concentrating assistance in areas where this damage profile was prevalent, this project can deliver an especially high return on investment.

Reduction of risk anticipated:

The project would reduce risk to physical assets by preventing water and/or wastewater backup into homes. Further spatial analysis would be required to determine the optimal locations for installation of cut-off valves. When this analysis is complete, reduction of risk to assets could be quantified more precisely.

Backflow of sewage from sanitary sewer lines into buildings creates health hazards for building occupants. Residents of the communities of Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate would benefit from reduced exposure to these hazards and from the reduced flooding risk associated with sewer backflow conditions.

Time frame for implementation:

The project would take roughly two years to complete, [given the need to finalize criteria for potentially eligible recipients.]



Sewer connection cut-off valves for owners of one- and two-family homes

Local, State, and Federal regulatory requirements:

The following is a non-exhaustive list of applicable requirements: New York State Department of Health Guidelines for Designing Backflow Prevention Assembly Installations and Cross-Connection Control Program and the NYC DEP regulations related to sewer equipment installation.

Project jurisdiction:

The project would be located in Brooklyn Community Districts 13 and 15, in Kings County in the City of New York.



Figure IV-3: Examples of One- and two-family homes in the Southern Brooklyn Peninsula¹⁵⁹

Map data source: New York City Department of City Planning, MapPLUTO

Southern Brooklyn Emergency Response Plan

At Planning Committee Meetings and Public Engagement Events throughout the planning process, attendees reported that emergency response protocols appeared to break down at the local level immediately after Superstorm Sandy. Anecdotal reports suggested that the emergency response efforts were disproportionately concentrated in certain neighborhoods. As such, the Committee suggested that citywide hazard plans and response protocols be supplemented by a Community-driven and Community-produced local emergency response plan to facilitate more effective local response and recovery. Community Boards 13 and 15 and members of the associated Community Emergency Response Teams (CERTs) have both stated that local community members are the best source of relevant information to guide emergency response planning.

There are a number of citywide plans in place related to a variety of natural and man-made hazards. Although the project would not be a formal annex to these plans, it would provide specific information for local neighborhoods and incorporate the lessons learned from Superstorm Sandy. The Southern Brooklyn Emergency Response Plan would integrate the network of local non-profits, religious institutions, and social service organizations, providing a forum for Community representatives to collaborate on response and recovery issues throughout the Community.

A primary focus of this project would be planning to meet the needs of vulnerable populations, including residents in nursing homes and senior centers. The plan would include multilingual resources to address diverse language needs. For the locally prepared plan to provide valuable support to City, State, and other disaster response organizations it would need to be prepared in close collaboration with the NYC OEM.



A New York City CERT preparing for a drill¹⁶⁰

Finally, in recognition of the indispensable role played by community-based organizations (CBOs) in any disaster setting, the project includes funding for as many as 10 locally based civic groups and non-profit organizations to evaluate their vulnerability to natural hazards and to develop business continuity plans to improve the hazard resiliency of their facilities. The Committee agreed that if there was regional interest, the project location could be expanded to the area defined by Community Districts 13 and 15.

Southern Brooklyn emergency response plan

Key project components include:

- Preparing a needs assessment specific to each Peninsula neighborhood for pre- and post-disaster planning and response using “on the ground” information from local non-profit and religious leaders, local elected officials, first responders, and government agencies;
- Convening a task force to better integrate these locally based organizations with first responders and government agencies; and
- Establishing eligibility and siting criteria for selection of civic groups and non-profit organizations to receive funding and preparation of a request for expressions of interest (RFEI) for CBOs to apply for mitigation funds.

Cost estimate:

The estimated project cost is \$640,000. This figure covers the project components described above.

Project benefits:

Economic: Orderly and efficient emergency procedures would limit exigent emergency and recovery costs.

Health and social services: Planning to meet the needs of vulnerable populations, including residents in nursing homes and senior centers, would be a primary focus of the project. The plan would also include multilingual resources to address diverse language needs. All Peninsula residents would benefit from improved emergency response planning.

Cost-benefit analysis:

If the project were not implemented, socially vulnerable populations in the Southern Brooklyn Peninsula would likely continue to perceive localized inadequacies in emergency response. For that reason, and because of the Community’s strongly held position that more locally targeted emergency preparedness planning is required to ensure Community safety in future disasters, the project cost of \$640,000 represents a worthy investment.

As documented above, the Committee reported widespread failure to receive or comprehend relevant information related to preparation and evacuation procedures prior to Superstorm Sandy. This confusion contributed to higher emergency response costs in the storm’s aftermath, as numerous individuals required emergency evacuation. This project would seek to address these issues.

Reduction of risk anticipated:

The planning process would provide direct benefits to the residents of the Southern Brooklyn Peninsula by mitigating risk to the population before, during, and after disaster events. As demonstrated by Superstorm Sandy, Community residents face risk during all phases of disaster events. More efficient and effective evacuation and preparedness procedures would limit risk to residents during acute events. The greater availability of critical information and services in the aftermath of a disaster would limit secondary risk to residents by reducing the demands placed on first responders.

Time frame for implementation:

The planning processes associated with this project are expected to take roughly 2 years to complete under ordinary circumstances.

Local, State, and Federal regulatory requirements:

The project would comply with all requirements of Section 508 of the Rehabilitation Act of 1973 and the policies and requirements of the NYC OEM and the NYS DHSES.

Project jurisdiction

The project would occur in Brooklyn Community Districts 13 and 15, in Kings County in the City of New York.



Vocational Training Program

Even before the disruption to employment and business patterns caused by Superstorm Sandy, job opportunities on the Peninsula were relatively limited. According to Census Bureau Longitudinal Employer-Household Dynamics data, there were fewer than 15,000 primary jobs on the Peninsula in 2011, and roughly 48,000 adults between the ages of 20 and 64.

Vocational training programs provide targeted training, hands-on experience, and career opportunities for high school students and young adults. As the Community recovers from Superstorm Sandy, significant educational and employment opportunities may be created, in the growing fields of resilient construction, renewable energy, and associated manufacturing, as well as emergency preparedness. In this NYRCR Plan alone, there are several projects and programs that will require a well-trained workforce to execute. Careers in these fields have the potential to provide both livable wages and opportunities for career advancement.

This project would pilot a new or adapted vocational high school curriculum focused on developing knowledge and skills in the broadly-defined fields of resiliency, sustainability, and emergency preparedness. This curriculum development process would utilize relevant State and City University of New York (SUNY and CUNY, respectively) curricula and adapt them for use in a high school vocational training program. In particular, the new SUNY College of Emergency Preparedness, Homeland Security, and Cybersecurity presents a unique opportunity for related integration with the program.

The curriculum would also connect students with local internship opportunities. Graduates may directly enter the workforce following graduation, or pursue higher education, especially in subject areas related to sustainability, resiliency, and preparedness

The project would include a parallel workforce training program for unemployed adults. Partnerships with existing workforce development initiatives, such as Workforce One, could be cultivated to support this project objective.



Vocational training focused on renewable energy technologies¹⁶¹

Vocational training program

Cost estimate:

The project should cost between \$500,000 and \$750,000, inclusive of startup and initial administration costs. The cost range reflects the flexibility of the project, and its ability to encompass a wide range of activities and programs.

Project benefits:

Economic: Significant employment opportunities in green infrastructure jobs exist in the wake of the damage and recovery efforts from Superstorm Sandy. These opportunities include jobs in the construction, renewable energy, transportation, and manufacturing industries. These careers can provide livable wages, and a more highly trained and skilled workforce would enhance economic promise and vitality on the Peninsula. The project would also benefit employers, by providing opportunities for public-private partnerships with real estate developers, contractors, and sustainable energy producers in the region.

Health and social services: The project would benefit the overall Community. The program could be a stand-alone program connected to local employers that can provide internships and job opportunities for students.

Environmental protection: The skilled and knowledgeable workers that would result from this project be well positioned to understand environmental issues, especially in terms of development and construction practices.

Cost-benefit analysis:

This pilot project would require a dedicated funding stream if it were to last beyond the project implementation phase of 2 years. The project would provide high school students and young adults looking for a new career with the opportunity to train in a green and resilient building and construction field that would make the Southern Brooklyn Peninsula more resilient to storm and emergency-related conditions that can jeopardize the quality of life and the safety and security of residents, their homes, and businesses.

The project would provide members of the Community with specific local knowledge and skills needed to support reconstruction to make the Peninsula more resilient. The project investment would yield high returns for the quality of life of future generations in the Community. More tangibly, it would equip local residents with the skills required to fill an estimated 138,000 jobs that are expected to be created in the City between 2008 and the 2018 in the fields of green building, construction, and renewable energy thanks to a suite of City, State, and Federal initiatives, including the New York State Energy Research and Development Authority's New York Energy Smart Program, and various City initiatives created as a result of PlaNYC.¹⁶²

Reduction of risk anticipated:

Direct risk reduction related to this project would be fairly limited. However, the project would increase Community resilience by addressing the structural issues related to employment and business development that were exacerbated by Superstorm Sandy.

Time frame for implementation:

The project would take 2 years from start to finish. This timeframe takes into account necessary coordination with the participating schools, as well as time associated with development of curricula.

Local, State, and Federal regulatory requirements:

The project (the curriculum) would require reviews and approvals from the New York City Department of Education and the New York State Education Department. Systematic and thoughtful coordination and development of the curriculum would be required to meet local needs while providing a pilot approach that could be transferred to other areas in the City and throughout the State.



Project jurisdiction:

The project would be located in Brooklyn Community Districts 13 and 15, in Kings County in the City of New York.



Figure IV-4: Potential locations include William E. Grady Technical School, Lafayette High School, Liberation High School, or other schools in the surrounding area.

Environmental Youth Education (Featured Project)

This project would facilitate partnerships between local non-profit organizations to provide educational classes and resources for Community youth. These courses and materials would explain the importance of natural resources like Coney Island Creek and local marshland and wetland habitat to the regional ecosystem. Students would learn about the ways they can encourage protection and enhancement of these resources, which provide vital risk and damage mitigation functions during storms. The classes would encourage safety and well-being in future storm events by linking good stewardship of the urban natural environment with enhanced Community quality of life and security.

Cost estimate:

The estimated project cost of \$140,000 includes monies for curriculum development.

Project benefits:

Health and social services: The project would provide topical and relevant educational outreach to a population that may be unaware of the extent to which everyday actions and behavior can contribute to the health of the urban environment. The project would provide an opportunity to share some of the lessons learned from recent disaster events. The target audience for these educational programs would be Community youth.

Environmental protection: The project would encourage greater Community understanding and interest in habitat and conservation issues. Rooftop gardens not only provide local food, but also absorb stormwater and runoff and mitigate the urban heat-island effect. If courses included cleanup activities, such as beach and wetland garbage pickup, students would contribute directly to the local natural environment.



Volunteers with the Jamaica Bay Ecowatchers work to improve plant life on Rulers Bar Island¹⁶³

Environmental youth education (featured project)

Cost-benefit analysis:

The Committee recognizes the benefit to current and future generations of investing in their future through educational opportunities. This project is intended to address the need to make the Peninsula both more resilient to future storms and educated about the concerns, needs, and opportunities related to storms like Superstorm Sandy. The expenditure of \$140,000 would represent a relatively low-cost means of enhancing the Community's preparedness for future storms and inducing everyday greener behavior among Community residents.

Reduction of risk anticipated:

The project would provide for greater community awareness and understanding of recovery and resiliency issues.

Time frame for implementation:

Development of course materials and identification of host organizations could all be completed within 1 year.

Local, State, and Federal regulatory requirements:

No regulatory requirements would be anticipated for this project.

Project jurisdiction:

The project would be located in Brooklyn Community Districts 13 and 15, in Kings County in the City of New York.



An educator shows a starfish to a child at the New York Aquarium¹⁶⁴

Implementation of a microgrid, smartgrid and/or cogeneration solutions for NYCHA and Mitchell-Lama Properties (Linked Featured Project)

This Featured Project assumes that public, private, or foundation support could be found to fund one or more electric power resiliency projects for New York City Housing Authority (NYCHA) or Mitchell-Lama properties based on the results of the Proposed Project of the same name.

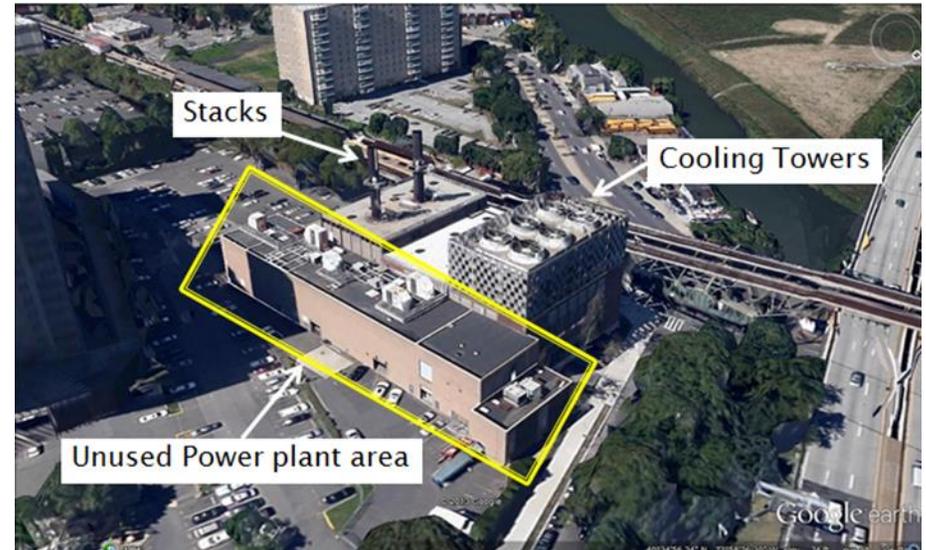
The project would incorporate the results of that Proposed Project for the design and construction of one or more electric power resiliency projects. The implementation phase would involve the construction of microgrid, smartgrid, and/or cogeneration solutions to ensure that NYCHA and Mitchell-Lama properties maintain power in future storm events.

As with the linked Proposed Project, there are opportunities to partner with New York State Smart Grid Consortium (NYSSGC) initiatives and New York Power Authority (NYPA) on this project.

Project benefits:

Economic: Although the project would not likely result in a direct increase in economic activity except in post-disaster scenarios, it would limit residential displacement, which would help maintain the customer base needed for many local businesses. Protection of housing unit energy systems would allow NYCHA residents to return more quickly to their homes. The resulting more rapid recovery would increase the likelihood that these residents would be able to access their daily jobs.

Health and social services: Energy resiliency improvements can enhance safety and accessibility to essential health and social services during and after storm events. The socially vulnerable populations impacted by the project include low- and moderate- income residents of the developments, children and the elderly, and residents with access and functional needs who are inconvenienced or imperiled by lack of a dedicated power supply.



Amalgamated Warbasse Houses Power Plant (Source: Power Pro Consulting, Inc.)

Cost Estimate:

The estimated project costs dependent upon the findings of the feasibility study. \$10,000,000+

Cost-benefit analysis:

A cost-benefit analysis cannot be prepared until the feasibility studies have been completed. If the project were not implemented, NYCHA and Mitchell Lama residents would be as vulnerable in the next major storm event or emergency as they were during and after Superstorm Sandy. If a storm or

Implementation of a microgrid, smartgrid and/or cogeneration solutions for NYCHA and Mitchell-Lama properties (linked featured project)

emergency occurs during colder months, as was the case with Superstorm Sandy, residents could be without heat for prolonged periods, placing them at risk of cold-related emergencies to people and property.

Reduction of risk anticipated:

Barring other damage to buildings and housing units, this project would reduce the vulnerability of the housing assets where the project would be implemented.

Continuous power supply would limit risk to socially vulnerable populations that may rely on dedicated power supplies, including the elderly and individuals with access and functional needs.

Time frame for implementation:

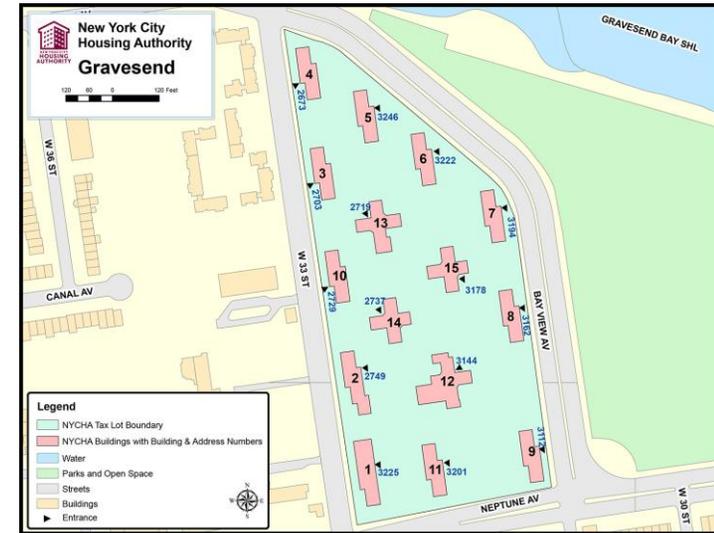
The project could be completed within two years of the completion of the feasibility studies and obtaining adequate funding.

Local, State, and Federal regulatory requirements:

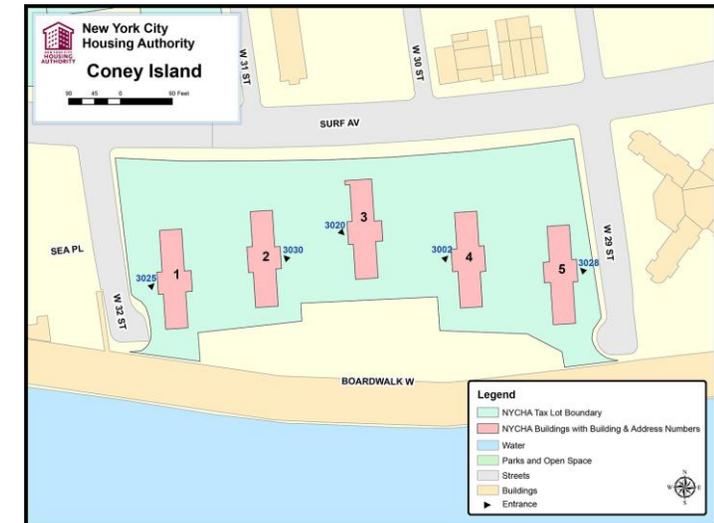
The following is a non-exhaustive list of applicable requirements: NYC Zoning Resolution, including the 2013 Flood Resiliency Zoning Text Amendment; NYC Mechanical Code; 2008 NYC Construction Code and all subsequent amendments; 1968 NYC Building Code and all subsequent amendments; NYC Fire Code; and the International Building Code, if applicable.

Project jurisdiction:

The project would be located in Brooklyn Community District 13, in Kings County in the City of New York.



Potential project location: NYCHA Gravesend Houses¹⁶⁵



Potential project location: NYCHA Coney Island Houses¹⁶⁶

Adaptive Reuse of the Manhattan Beach Bathhouse (Linked Featured Project)

As noted above in the description of the Proposed Project, this linked Featured Project would involve all construction activities needed to complete the adaptive reuse of the Manhattan Beach Bathhouse for year-round community uses. The \$4,000,000 allocated for the Proposed Project would be leveraged to obtain full construction costs, which, depending on the final determination of uses, could range from \$15 to \$20 million.

Cost estimate:

Final project costs would depend on the breadth and type of improvements and construction activities actually scoped. As noted above, and taking into consideration the wide range of uncertainty that characterizes this project, the project is estimated to cost between \$15 and \$20 million

Project benefits:

Project benefits may include enhancement of economic activity, health and social services, and environmental protection. Depending on the eventual usage of the Manhattan Beach Bathhouse, the recreational amenities, retail concessions, and community services provided by the facility may attract visitors to the park while providing new local jobs. A community center use would benefit Community residents of all ages, including vulnerable populations.

The project may include installation of solar panels or other renewable-energy generation systems to support year-round use. These green additions would reduce emissions and recurring maintenance costs. These lower costs would increase the incentive to continue exploring potential uses for a portion of the building to promote public waterfront access and provide opportunities for other water-related uses.



Manhattan Beach Bathhouse¹⁶⁷

Adaptive reuse of the Manhattan Beach Bathhouse (linked featured project)

Cost-benefit analysis:

The project would potentially entail additional staffing and/or maintenance responsibilities for the NYC DPR. Currently, the NYC DPR has not dedicated funding to support this project. Total rehabilitation of the building would require additional funds, either from other government grants or private sources, to complete the project.

Reduction of risk anticipated:

The project would not reduce risk to the Community.

Time frame for implementation:

The project could begin in 2014, depending on decisions made by NYC DPR and the results of an RFEI process.

Local, State, and Federal regulatory requirements:

The following is a non-exhaustive list of applicable requirements: NYC Zoning Resolution, including the 2013 Flood Resiliency Zoning Text Amendment; NYC Mechanical Code; 2008 NYC Construction Code and all subsequent amendments; 1968 NYC Building Code and all subsequent amendments; NYC Fire Code; and the International Building Code, if applicable.

Project jurisdiction:

The project would be located in Brooklyn Community District 15, in Kings County in the City of New York.



Mermaid Avenue Corridor Improvements (Featured Project)

Mermaid Avenue is a key commercial corridor and one of the primary entry points into the Coney Island community. Many of the small businesses and non-profit service providers along this corridor were flooded as a result of Superstorm Sandy, resulting in major losses of equipment and inventory and extended closures. Most businesses along the corridor were flooded with up to 5 feet of water, causing prolonged or even permanent closures. As discussed earlier, exact local figures are not available, but roughly one-fifth of storm-affected businesses citywide remained closed 6 months after the storm. For a small retailer, even a 2-week closure corresponded to an average loss of upwards of \$100,000.

This project would revitalize the Mermaid Avenue commercial corridor through streetscape and landscape improvements that would incorporate stormwater attenuation measures. The project would seek to address existing infrastructure deficiencies, including issues with underground utilities and stormwater drainage. This Featured Project would build off of the work accomplished through the small business resiliency project discussed earlier.

The Committee elected to include this project as a Featured Project because major infrastructure improvements and utility upgrades may be required along Mermaid Avenue. To avoid waste, investigative work and subsequent upgrades, if required, would have to be completed before implementing streetscape enhancements. It is important to note that the streetscape enhancements described in the related Proposed Project would not be adversely affected by any future utility or infrastructure improvements.



Mermaid Avenue conceptual rendering and Coney Island Comprehensive Plan¹⁶⁸

Mermaid Avenue shopping district (featured project)

Cost estimate:

The projected cost for this project is \$2,200,000. This figure allows for a broad range of stormwater attenuation and streetscaping improvements. It is important to reiterate that that cost estimate carries considerable uncertainty given the infrastructure issues along Mermaid Avenue that have yet to be resolved.

Project benefits:

Economic: The benefits of the project would include limited flood risk reduction, strong economic benefits for Mermaid Avenue businesses, stormwater attenuation would result in reduced runoff and improved surface water quality. Streetscape enhancements would create more pervious surfaces, allowing for natural groundwater recharge.

The project would increase visitor traffic and purchases as well as business investment, leading to more stable employment patterns. An improved retail and economic climate on Mermaid Avenue may lead to development of new permanent jobs. The project would help to ensure business provision and services for Community residents.

Environmental: Stormwater attenuation would result in reduced runoff and improved surface water quality. Streetscape enhancements would create more pervious surfaces, allowing for natural groundwater recharge.

Cost-benefit analysis:

One 2005 study found that shoppers in large cities will spend 12% more in visually attractive shopping districts that feature high tree canopies.¹⁶⁹ More broadly, that research found that shoppers prefer “attractive” retail environments, and will spend considerably more time browsing in areas they perceive to be attractive.

Equally significant, the stormwater retention aspects of this project will reduce the load on municipal drainage systems during all rain events.

If infrastructure deficiencies and storm drainage inadequacies remain unaddressed, key businesses and community facilities will remain highly vulnerable to the types of flood damages that accompanied Superstorm Sandy. This vulnerability could impact the continuous provision and local availability of grocery services, pharmacy services, and other public health necessities.

Reduction of risk anticipated:

If funding is secured, this project would provide limited risk reduction to businesses and community assets along Mermaid Avenue.

Time frame for implementation:

Given the uncertainty related to potentially necessary major improvements along the corridor, it is not yet possible to estimate a meaningful time frame for this project.

Local, State, and Federal regulatory requirements:

The following is a non-exhaustive list of applicable requirements: NYC Zoning Resolution, including the 2013 Flood Resiliency Zoning Text Amendment; NYC Mechanical Code; 2008 NYC Construction Code and all subsequent amendments; 1968 NYC Building Code and all subsequent amendments; NYC Fire Code; and the International Building Code, if applicable.

Project jurisdiction:

The project would be located in Brooklyn Community District 13, in Kings County in the City of New York.



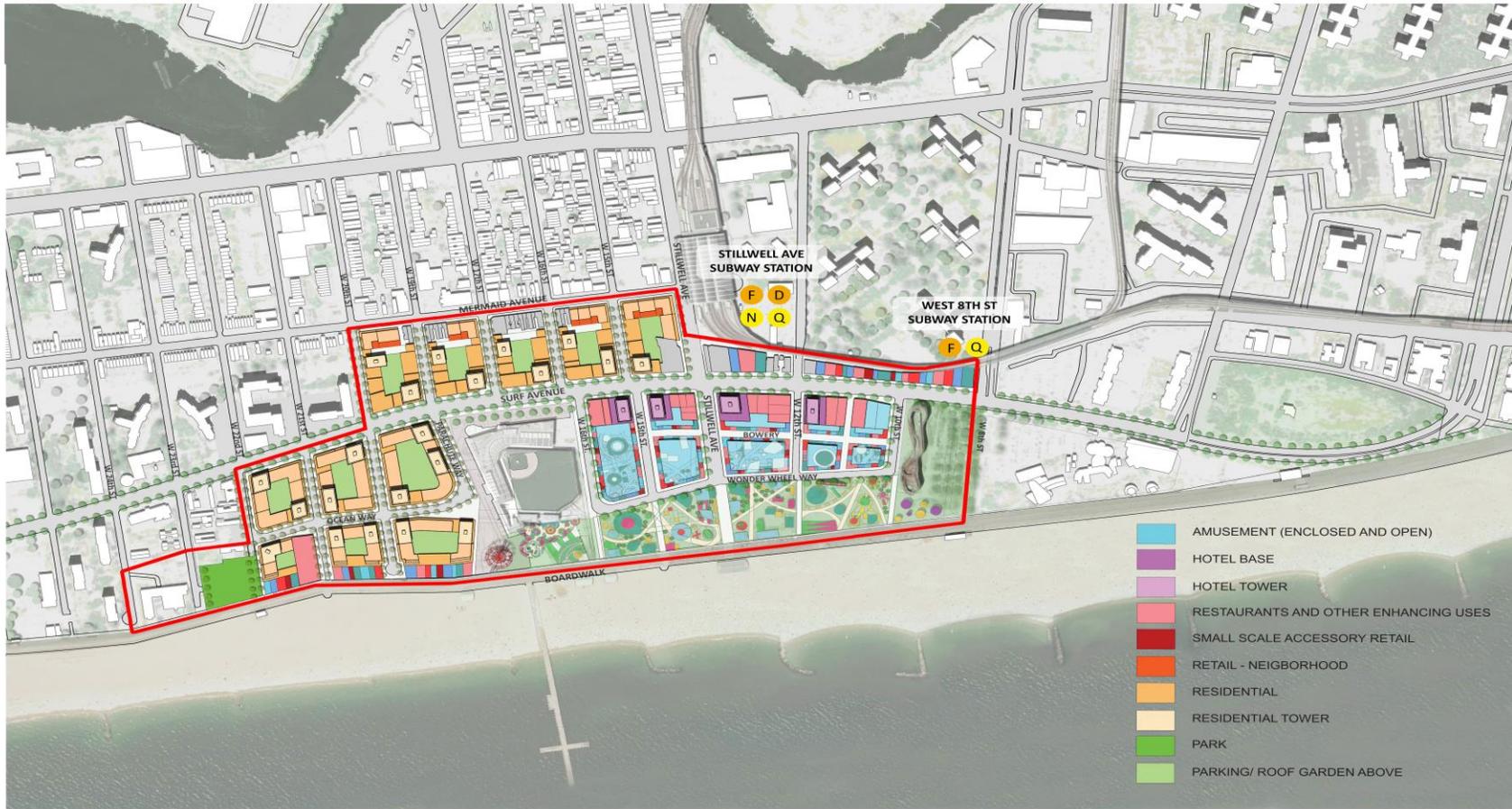


Figure IV-5: Illustrative development site plan for Special Coney Island District¹⁷⁰



Section V: Additional materials

Section V: Additional materials

A. Additional Resiliency Recommendations

Additional Resiliency Recommendations are resiliency projects and actions the NY Rising Community Reconstruction (NYRCR) Southern Brooklyn Peninsula Planning Committee (Committee) would like to highlight but are not categorized as Proposed or Featured Projects. The Additional Resiliency Recommendations are identified in Table V-1; and are categorized by strategy, project name, project description, and estimated and regional scope, if applicable.



Table V-1: Additional Resiliency Recommendations

Strategy	Project Name	Short Description	Cost Estimate	Regional Project (Y/N)
Repair damage to existing natural and cultural resources and incorporate resiliency design elements.	City of New York Coney Island Creek Flood Control and Restoration Project	Support SIRR-recommended City project, currently in feasibility phase. The project would construct revetment(s) and a tidal gate at the mouth of Coney Island Creek to mitigate flood risk to the Sea Gate, Coney Island, and Gravesend neighborhoods. The project may include a pedestrian/roadway link across the revetment and restoration of wetlands and recreational amenities. The Committee has expressed particular support for the goals of enhancing public access and uses that would complement the objective of storm surge mitigation.	N/A	Y
Replace, repair, and upgrade existing infrastructure to improve its resilience to future storm events.	USACE Rockaway Inlet Surge Barrier Feasibility Study	Urge the USACE to initiate an expedited study to examine the feasibility of developing a surge barrier or alternative measures at Rockaway Inlet to protect the communities both near and in Jamaica Bay.	\$8,000,000,000	Y
Protect existing housing stock to make it more resilient	Development of Mixed-Use Building Space	Develop mixed-use building that combines affordable housing units with service and outreach components targeted to specific family structures, including single parent and multi-generational.	\$5,000,000	N
Protect existing housing stock to make it more resilient	Enhancement of Cornerstone Programs at NYCHA Community Centers	Enhance and create additional Cornerstone Programs for youth and adults at New York City Housing Authority (NYCHA) Community Centers.	\$100,000	N
Replace, repair, and upgrade existing infrastructure to improve its resilience to future storm events.	Enhancement of Public Transit Options	Explore ways to improve public transit options to the area for visitors and residents, including express subway service and expanded private and public express bus routes.	\$150,000	Y



Strategy	Project Name	Short Description	Cost Estimate	Regional Project (Y/N)
Implement improvements that will help civic groups and non-governmental organizations function better in a future emergency situation.	Expansion and Enhancement of CERTs	Develop plans to increase membership in, and enhance effectiveness of, Brooklyn Community Districts 13 and 15 Community Emergency Response Teams (CERTs). Plans would include recommendations to ensure that CERTs are adequately staffed in a way that reflects the diversity of the Southern Brooklyn Peninsula's neighborhoods.	\$50,000	Y
Protect existing housing stock to make it more resilient	Resilient Greenthumb Community Gardening Program	Support greening projects at community gardens to grow food and ornamental plants and provide gardening education; implement a Resilient Greenthumb gardening program with multicultural, multigenerational, and resiliency education components; incorporate best practices into the program to mitigate and capture water runoff.	\$20,000	N
Protect existing housing stock to make it more resilient	Site Suitability Analysis and Pilot Construction of Resilient Homes on Vacant or Underutilized Lands	Conduct site suitability analysis of currently vacant and/or underutilized lands and conduct a pilot project to construct resilient housing using mitigation and resiliency best practices.	\$665,000	N
Replace, repair, and upgrade existing infrastructure to improve its resilience to future storm events	Street Repair and Upgrade	Repair sinkholes, repave, and address other deteriorated road conditions along major road corridors. The project would include complete street improvements such as providing dedicated bike lanes and sidewalk repairs to encourage pedestrian and non-motorized transport.	Over \$10,000,000	N
Protect existing housing stock to make it more resilient	Support Project Hope and Common Ground Program	Collaborate with New York State (NYS) Office of Mental Health to expand Project Hope programs to better meet the needs of vulnerable populations in the NYRCR Southern Brooklyn Peninsula Community. Collaborate with Common Ground non-governmental organization to support the homeless or near homeless.	\$100,000	N
Replace, repair, and upgrade existing infrastructure to improve its resilience to future storm events.	Enhancement of Telecommunications	Support the City of New York in advocating for State and Federal regulatory changes, encouraging better alignment in Federal, State, and local approaches to regulation, and push for reporting and resiliency requirements that would lead to better preparation, awareness, and response in the event of extreme weather events.	\$0 (policy recommendation)	Y



B. Master table of projects

The Proposed Projects, Featured Projects, and Additional Resiliency Recommendations identified throughout the NYRCR Southern Brooklyn Peninsula Plan are reflected in Table V-2. These are categorized according to strategy, project name, project description, project category, estimated cost, and regional scope, if applicable. Projects may appear more than once on this table if they are relevant to more than one Community strategy.

Proposed and Featured Projects

Every proposed and featured project is linked to one or more strategies.

Proposed Projects are projects the Committee has proposed to be fully funded through the Committee CDBG-DR allocation.

Featured Projects are projects where cost is beyond the Committee CDBG-DR allocation and/or their implementation will require a combination of CDBG-DR funding and other sources. These projects may include the funding of a Proposed Project, as the first phase, and the Featured Project as the second phase.



Table V-2: Proposed, Featured, and Resiliency Recommendations

Proposed, Featured, and Additional Resiliency Recommendations					
Strategy	Project Name	Short Project Description	Project Category	Estimated Cost	Regional Project (Y/N)
Protect the shoreline and coastal communities through structural shoreline protection enhancements	Bulkhead Replacement at Sea Gate	Replace the bulkhead on Sea Gate Association property and along some private residential properties.	Proposed	\$3,000,000	N
Improve facilities, infrastructure, information sharing, and emergency capacity of social service organizations and health/mental health service providers	Designation of Emergency Response and Recovery Centers	Perform a location and feasibility analysis to designate emergency response and recovery centers in each neighborhood in the Community. Also create a fund to develop continuity plans and assess facility vulnerabilities for civic groups and non-profit organizations.	Proposed	\$980,000	N
Evaluate opportunities for creating or enhancing natural shoreline protection measures	Beach Grass Planting and Infrastructure Improvements	Plant beach grass along the boardwalk in Brighton Beach and Coney Island at six locations; relocate of six water utility valves from under the ocean side of the boardwalk to a less vulnerable location on the inland side of the boardwalk, and install two beach access mats.	Proposed	\$800,000	N
Repair and make more resilient damaged and/or underutilized cultural resources	Community Streetscape Enhancements	Provide funds for peninsula-wide streetscape enhancements, including replacement of trees on public property that were destroyed or damaged by Sandy, implementation of storm water attenuation measures, and landscape enhancements along selected business corridors.	Proposed	\$2,500,000 – \$3,000,000	N
Protect existing housing stock to make it more resilient	Feasibility Study for Energy Resiliency at NYCHA and Mitchell-Lama Properties	Conduct a feasibility study on developing microgrid, smartgrid, and/or cogeneration solutions to ensure that NYCHA and Mitchell-Lama properties maintain power in storm-related events.	Proposed	\$340,000	N



Proposed, Featured, and Additional Resiliency Recommendations					
Strategy	Project Name	Short Project Description	Project Category	Estimated Cost	Regional Project (Y/N)
Replace, repair, and upgrade existing infrastructure to improve its resilience to future storm events	Implementation of Cost-Effective Storm Surge Protection for Ocean Parkway and W. 25th Street	Install a flood barrier to protect against flooding at primary under-boardwalk access points.	Proposed	\$700,000	N
Support local businesses of all sizes in their efforts to fully recover from Superstorm Sandy; Repair and make more resilient damaged and/or underutilized cultural resources	Increase Resiliency of Small Businesses Throughout the Peninsula	Establish a small business support office; offer direct assistance to merchants for floodproofing their businesses; implement Peninsula-wide streetscape enhancements, including replacing trees, installing stormwater attenuation measures, and making landscaping improvements along business corridors.	Proposed	\$1,960,000	N
Replace, repair, and upgrade existing infrastructure to improve its resilience to future storm events	Installation of Resilient Streetlights	Install new streetlights along key business corridors and road intersections, evacuation routes, and high-density housing areas throughout the Southern Brooklyn Peninsula.	Proposed	\$2,000,000–\$3,500,000	N
Create more affordable housing in the Southern Brooklyn Peninsula	Pilot Small-Scale Renewable Power Project	Create a small-scale renewable power project for a small- to mid-sized senior-housing or nursing home facility.	Proposed	\$900,000	N
Enhance coordination between civic groups and non-profit organizations with local government agencies to make the Southern Brooklyn Peninsula better prepared for future emergencies	Public Emergency Preparedness Outreach Campaign	Create a local public outreach campaign that uses multiple forms of media to provide targeted and specific disaster preparedness, response, and recovery information to Community residents.	Proposed	\$160,000	Y
Evaluate opportunities for creating or enhancing natural shoreline protection measures	Reconnaissance Study of Storm Surge Reduction and Flood Barrier Systems	Evaluate a range of options to mitigate future flood events caused by flooding and storm surge in Manhattan Beach and Sheepshead Bay.	Proposed	\$50,000	Y



Proposed, Featured, and Additional Resiliency Recommendations					
Strategy	Project Name	Short Project Description	Project Category	Estimated Cost	Regional Project (Y/N)
Repair and make more resilient damaged and/or underutilized cultural resources	Resiliency Upgrades for Manhattan Beach Bathhouse	Upgrade the Manhattan Beach Bathhouse by multiple methods, potentially installing solar panels, installing other renewable-energy systems, upgrading utilities, and implementing floodproofing methods.	Proposed	\$4,000,000	N
Get residents back into their homes as quickly as possible. Protect existing housing stock by making it more flood resilient; Protect existing housing stock by making it more flood resilient	Sewer Connection Cut-Off Valves for Owners of One- and Two-Family Homes	Provide financial assistance to homeowners for installation of sewer connection cut-off valves, as well as education and public outreach related to proper operation and maintenance of these devices.	Proposed	\$2,400,000–\$3,500,000	N
Enhance response to natural disasters by enhancing emergency response protocols and communication strategies	Southern Brooklyn Emergency Response Plan	Create a Southern Brooklyn Emergency Response Plan to provide specific information targeted to local neighborhoods and incorporate lessons learned from Superstorm Sandy.	Proposed	\$640,000	N
Expand workforce development opportunities in the Southern Brooklyn Peninsula that would enhance regional resiliency and recovery capacity	Vocational Training Program	Expand vocational training programs at a high school on the Southern Brooklyn Peninsula to include green and resilient building and emergency preparedness curricula.	Proposed	\$500,000–\$750,000	Y
Featured Projects					
Educate residents and visitors about the importance of natural and cultural resources for the resiliency of our Community	Environmental Youth Education	Partner with local non-profit organizations to provide educational materials and mini-courses for Community youth on natural and cultural resources.	Featured	\$140,000	N



Proposed, Featured, and Additional Resiliency Recommendations					
Strategy	Project Name	Short Project Description	Project Category	Estimated Cost	Regional Project (Y/N)
Protect existing housing stock to make it more resilient	Implementation of microgrid, smartgrid and/or cogeneration solutions for NYCHA and Mitchell-Lama Properties	Based on results of feasibility study, design and construct one or more electric power resiliency projects.	Featured	Over \$10,000,000	N
Repair and make more resilient damaged and/or underutilized cultural resources	Adaptive Reuse of the Manhattan Beach Bathhouse	Undertake necessary construction to complete the adaptive reuse of the Manhattan Beach Bathhouse for year-round Community uses.	Featured	\$15 to \$20 million	N
Explore opportunities to expand economic activities throughout the Southern Brooklyn Peninsula	Mermaid Avenue Corridor Improvements	Revitalize the Mermaid Avenue commercial corridor through streetscape and landscape improvements that would incorporate stormwater attenuation measures.	Featured	\$2,200,000	N
Additional Resiliency Recommendations					
Repair and make more resilient damaged and/or underutilized cultural resources	City of New York Coney Island Creek Flood Control and Restoration Project	Support SIRR-recommended City project, currently in feasibility phase. The project would construct revetment(s) and a tidal gate at the mouth of Coney Island Creek to mitigate flood risk to the Sea Gate, Coney Island, and Gravesend neighborhoods. The project may include a pedestrian/roadway link across the revetment and restoration of wetlands and recreational amenities. The Committee has expressed particular support for the goals of enhancing public access and uses that would complement the objective of storm surge mitigation	Additional Resiliency Recommendation	N/A	N
Replace, repair, and upgrade existing infrastructure to improve its resilience to future storm events.	USACE Rockaway Inlet Surge Barrier Feasibility Study	Urge the USACE to initiate an expedited study to examine the feasibility of developing a surge barrier or alternative measures at Rockaway Inlet to protect the communities both near and in Jamaica Bay.	Additional Resiliency Recommendation	\$8,000,000,000	Y



Proposed, Featured, and Additional Resiliency Recommendations					
Strategy	Project Name	Short Project Description	Project Category	Estimated Cost	Regional Project (Y/N)
Protect existing housing stock to make it more resilient	Development of Mixed-Use Building Space	Develop mixed-use building that combines affordable housing units with service and outreach components targeted to specific family structures, including single parent and multi-generational.	Additional Resiliency Recommendation	\$5,000,000	N
Protect existing housing stock to make it more resilient	Enhancement of Cornerstone Programs at NYCHA Community Centers	Enhance and create additional Cornerstone Programs for youth and adults at New York City Housing Authority (NYCHA) Community Centers.	Additional Resiliency Recommendation	\$100,000	N
Replace, repair and upgrade existing infrastructure to improve its resilience to future storm events.	Enhancement of Public Transit Options	Explore ways to improve public transit options to the area for visitors and residents, including express subway service and expanded private and public express bus routes.	Additional Resiliency Recommendation	\$150,000	Y
Enhance response to natural disasters by enhancing emergency response protocols and communication strategies	Expansion and Enhancement of CERTs	Develop plans to increase membership in, and enhance effectiveness of, Brooklyn Community Districts 13 and 15 Community Emergency Response Teams (CERTs). Plans would include recommendations to ensure that CERTs are adequately staffed in a way that reflects the diversity of the Southern Brooklyn Peninsula's neighborhoods.	Additional Resiliency Recommendation	\$50,000	N
Protect existing housing stock to make it more resilient	Resilient Greenthumb Community Gardening Program	Support greening projects at community gardens to grow food and ornamental plants and provide gardening education; implement a Resilient Greenthumb gardening program with multicultural, multigenerational, and resiliency education components; incorporate best practices into the program to mitigate and capture water runoff.	Additional Resiliency Recommendation	\$20,000	N



Proposed, Featured, and Additional Resiliency Recommendations					
Strategy	Project Name	Short Project Description	Project Category	Estimated Cost	Regional Project (Y/N)
Protect existing housing stock to make it more resilient	Site Suitability Analysis and Pilot Construction of Resilient Homes on Vacant or Underutilized Lands	Conduct site suitability analysis of currently vacant and/or underutilized lands and conduct a pilot project to construct resilient housing using mitigation and resiliency best practices.	Additional Resiliency Recommendation	\$665,000	N
Replace, repair and upgrade existing infrastructure to improve its resilience to future storm events.	Street Repair and Upgrade	Repair sinkholes, repave, and address other deteriorated road conditions along major road corridors. The project would include complete street improvements such as providing dedicated bike lanes and sidewalk repairs to encourage pedestrian and non-motorized transport.	Additional Resiliency Recommendation	Over \$10,000,000	N
Protect existing housing stock to make it more resilient	Support Project Hope and Common Ground Program	Collaborate with New York State (NYS) Office of Mental Health to expand Project Hope programs to better meet the needs of vulnerable populations in the NYRCR Southern Brooklyn Peninsula Community. Collaborate with Common Ground non-governmental organization to support the homeless or near homeless.	Additional Resiliency Recommendation	\$100,000	N
Replace, repair, and upgrade existing infrastructure to improve its resilience to future storm events.	Enhancement of Telecommunications	Support the City of New York in advocating for State and Federal regulatory changes, encouraging better alignment in Federal, State, and local approaches to regulation, and push for reporting and resiliency requirements that would lead to better preparation, awareness, and response in the event of extreme weather events.	Additional Resiliency Recommendation	N/A (policy recommendation)	Y



C. Public engagement process

To ensure the success of the NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate (i.e., the Southern Brooklyn Peninsula) Plan, a broad-reaching public engagement strategy was established and implemented. The neighborhoods of the Southern Brooklyn Peninsula were provided extensive opportunities for collaboration in three Public Engagement Events and 12 Planning Committee Meetings between September 2013 and March 2014. Also, Committee Members and NYRCR representatives met with numerous Community groups, residents, and business leaders throughout the planning process, including NYCHA tenant association leaders, senior centers, business groups, and civic organizations. The Committee also performed a survey of Community businesses, to assess their recovery and resiliency needs. More than 20 businesses responded, providing valuable input regarding Economic Development needs and opportunities.

The Public Engagement Events were designed to solicit feedback from the Community regarding critical assets, strategies, and potential projects.

Meeting notices for Public Engagement Events were posted in multiple places throughout each neighborhood in multiple languages (English, Russian, Spanish, Mandarin, and Urdu) including, but not limited to:

- *The Brooklyn Paper* (local community newspaper);
- *The Russian Bazaar* (local community newspaper);
- Subway stations, Coney Island Hospital, NYCHA lobbies, and senior centers;
- Email distribution;
- NY Rising website:
<http://stormrecovery.ny.gov/nyrcr/community/brighton-beach-coney-island-manhattan-beach-and-sea-gate>;
- Twitter: @NYStormRecovery; and
- Facebook: NYStormRecovery.

The Committee Members distributed announcements about Public Engagement Events in their neighborhoods and businesses. Flyers and electronic notices were also distributed to the businesses in the Community.

The foundation of the public engagement process was the work of the Committee. The Committee considered local issues, opportunities, and communication strategies and offered the public opportunities to provide comments at the conclusion of each Planning Committee Meeting. Summaries of the 12 Planning Committee Meetings and three Public Engagement Events are provided below.



Third Public Engagement Event, held on February 19, 2014, at MCU Park¹⁷¹

NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meetings

First NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meeting

The first meeting of the Committee was held on September 23, 2013, at the Shorefront YM-YWHA of Brighton-Manhattan Beach. The meeting was open to the public, as were all subsequent Planning Committee Meetings. The meeting opened with introductions of the Committee Members. A presentation was given introducing the NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Plan process, the key elements, and the goals along with the methods for developing a Community vision and conducting outreach.

Discussion topics included:

- Committee Members shared their knowledge, experience, and anecdotal information of the local impacts of Superstorm Sandy;
- Maps showing risk areas and storm surge inundation areas were discussed by the Committee;
- A preliminary discussion on the geographic scope of the plan based on the boundaries of the communities and important community assets took place;
- Coney Island Hospital and the Coney Island Complex were discussed as critical Community assets that warranted their inclusion in the geographic scope of the Community;
- The Committee reviewed the six major Recovery Support Functions;
- Committee Members provided feedback on specifics related to Community impacts in each of the Recovery Support Functions; and
- Preliminary asset maps were reviewed, with a number of additions proposed by Committee Members.

A discussion on public engagement then took place. The diversity of the communities and the need to focus on ensuring that the needs of vulnerable populations were specifically addressed in the final reconstruction plan was an important topic at the meeting. Committee Members provided names of

organizations and groups that were considered important to include in the process, especially as related to the development of a public engagement plan. A preliminary discussion on possible dates and locations for the first Public Engagement Event and the scheduling of the next Committee meeting took place.



Second Public Engagement Event, held on November 12, 2013, at Abraham Lincoln High School¹⁷²

Second NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meeting

The second Planning Committee Meeting was held on September 30, 2013, at the New York Aquarium in Coney Island. At the meeting, the Committee reviewed the key concepts of the NYRCR Plan and the boundaries for the Community. The Committee addressed preparations for the first Public Engagement Event as follows:

- The Committee discussed the format for the event. The Committee evaluated the merits of a public open house with stations, a formal presentation with break-out sessions, and smaller working groups that would review the draft vision statement, the list of Community assets and the Community needs and opportunities identified to date;

- The Committee decided that a formal presentation, to include a background of the program and smaller working group sessions, would be the best approach to promote participation;
- The Committee reviewed and commented on the public engagement contact list, which included non-profit organizations, day cares, schools and parent advocates, religious and cultural institutions, nursing homes, senior centers, and NYCHA tenant associations;
- Outreach methods and a proposed press release and flyer were reviewed and discussed;
- The need for translated outreach material and translator availability at the Public Engagement Event was discussed;
- It was decided that material would be provided in English, Spanish, Mandarin Chinese, Russian, and Urdu; and
- The date and location for the meeting were discussed and determined to be October 22 at Abraham Lincoln High School.

The Committee also participated in a visioning exercise designed to create a draft Community vision for the NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Plan. Committee Members were asked to first propose key words and phrases that they considered to be important elements of a vision. All potential words and phrases were shared among the Committee Members; after the words and phrases were considered, Committee Members were asked to develop a vision statement in groups of two to three members and report back to the larger Committee. Four teams developed individual statements, and as a group, the Committee drew on the four statements to create one vision statement that included aspects of all four. The resulting vision statement was:

"Our vision is to empower and rebuild the diverse communities of the Southern Brooklyn Peninsula to be prepared, vibrant, unified, and resilient in facing the common economic, social, physical, and environmental challenges in our coastal neighborhoods."



Third Public Engagement Event held on February 19, 2014, at MCU Park¹⁷³



纽约社区重建项目 • 社区会议
New York Rising Community Reconstruction Program
Public Meeting

2013年11月12日 (星期二)
下午7:00至下午8:30
Abraham Lincoln High School
亚伯拉罕-林肯高中食堂 (西大道入口)
2800 Ocean Parkway, Brooklyn

您是否遭受到超级飓风桑迪的影响?
请来帮助我们制定一个让您的社区能够更快复原的计划吧

我们需要您的参与, 让Brighton Beach, Coney Island, Manhattan Beach和Sea Gate能够尽快复原!

纽约社区重建项目是由纽约州政府成立的组织, 为那些被飓风桑迪破坏严重的社区提供帮助

请在11月12日来参与会议, 更多的了解纽约重建项目以及我们当前取得的成果和一系列有发展前景的项目计划。同时更重要的是请您和我们分享一下怎样更好的保护南布鲁克林的想法

参与讨论: #NYRising @NYStormRecovery NYStormRecovery

我们的愿景是通过重建拥有多元社区的南布鲁克林半岛, 使这个沿海社区可以在面对经济, 社会, 自然和环境等多方面的挑战时, 更加准备充分, 富有活力, 具有良好的复原能力。

Sea Gate Coney Island Brighton Beach Manhattan Beach

需要更多信息, 请联系: info@stormrecovery.ny.gov
Or visit www.stormrecovery.ny.gov

Chinese-language flyer for Second Public Engagement Event, held on November 12, 2013¹⁷⁴



NEW YORK RISING • Community Reconstruction Program
Brighton Beach | Coney Island | Manhattan Beach | Sea Gate

PUBLIC MEETING
Wednesday, February 19th, 2014
7:00PM – 9:00PM
MCU Park
Surf Avenue and W 19th St
Coney Island, Brooklyn
(Free Parking // Entrance next to Team Store)

Photo credit: Butch Moran

Recover from Yesterday, Plan for Tomorrow!

Your input is needed to make Brighton Beach, Coney Island, Manhattan Beach and Sea Gate more resilient!

During this public meeting community members will be invited to:

- Get an update regarding the Community Reconstruction Program
- Provide feedback on proposed projects, including Priority Projects and Featured Projects
- Learn about the next steps in the process
- Translators available

The NY Rising Community Reconstruction Program is helping communities impacted by Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee to rebuild and become more resilient through innovative community-driven plans. Each NY Rising Community has a Planning Committee that includes, among others, local community members and leaders of organizations and businesses in the community.

Join the conversation: #NYRising @NYStormRecovery NYStormRecovery

For more information, please contact: info@stormrecovery.ny.gov
Or visit www.stormrecovery.ny.gov

Flyer for Third Public Engagement Event, held on February 19, 2014¹⁷⁵



The Committee also approved the addition of the Coney Island Complex and Coney Island Hospital as part of the geographic scope of the plan. Updated asset inventory maps, which included new items from the first Committee meeting, were presented and discussed, and the Committee noted additions and changes. Preliminary discussions on potential strategies and projects in the areas of Community services, economic development, socially vulnerable populations, housing, infrastructure, and natural resources also took place.

Third NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meeting

The third Committee meeting was held on October 9, 2013, at the New York Aquarium in Coney Island. The meeting provided an opportunity for the Committee to review and add to the previously identified assets, examine risk area maps, and discuss resiliency strategies.

Recovery Support Functions and reconstruction strategies were addressed in detail as follows:

- The Committee reviewed the six Recovery Support Functions in preparation for the next step in the planning process: developing reconstruction strategies;
- For some Recovery Support Functions, the Committee broke into smaller working groups according to individual members' areas of interest or expertise;
- The Committee participated in an exercise to identify reconstruction strategies in each of the Recovery Support Functions;
- They considered the community's vision statement, damaged assets, Community needs and opportunities, the needs of vulnerable populations, and community strengths;
- For each of the Recovery Support Functions, the Committee brainstormed elements from the vision statement and needs and opportunities previously identified by the Committee; and
- Each Committee member worked on a different Recovery Support Function and then shared his or her list of proposed strategies with the whole Committee.

All Committee Members then had the opportunity to discuss and add to the strategies developed by the smaller workgroups and prioritize the key strategies.

The strategy exercise was followed by discussions of potential rebuilding and revitalization projects in each of the six Recovery Support Functions. The Committee reviewed a draft list of projects that the City and its agencies were undertaking.

A follow-up discussion and final preparations for the first Public Engagement Event took place. Committee Members reviewed and approved the final flyer and poster that would be used for outreach. The date and location for the second Public Engagement Event was also discussed and decided.

Fourth NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meeting

The fourth Committee meeting was held on October 24, 2013, at the New York Aquarium in Coney Island. The meeting opened with a review of feedback from the first Public Engagement Event. The Committee at this meeting reviewed the draft content of the NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Conceptual Plan. The Committee Members provided comments and feedback, which were incorporated into the NYRCR Brighton Beach, Coney Island, Manhattan Beach and Sea Gate Conceptual Plan.

Preparations for the second Public Engagement Event were also discussed at this Committee meeting.



First Public Engagement Event, held on October 22, 2013¹⁷⁶

Fifth NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meeting

The fifth Committee meeting was held on November 25, 2013, at the New York Aquarium in Coney Island. The meeting opened with a review of the Second Public Engagement Event. Votes tallied from this meeting indicated the public favored addressing infrastructure and housing strategies above all else. The final version of the Community vision statement was also presented.

After reviewing the second Public Engagement Event, the Committee finalized strategies for the Southern Brooklyn Peninsula in an interactive working group session. The Committee Members worked to combine and broaden approximately 32 strategies into 16 strategies. This work represented a shift for the Committee from focusing on assets, risks, and opportunities to focusing on strategies, projects, and risks.

Sixth NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meeting

The sixth Planning Committee Meeting was held on December 10, 2013, at the New York Aquarium in Coney Island. The focus of this meeting was project selection and refinement. Funding sources were briefly discussed in an effort to illustrate that funding sources other than Community Development Block Grant Disaster Recovery (CDBG-DR) funds might be available for projects.

A project inventory list was presented to assist Committee Members with understanding current and planned projects in the area, to avoid duplicative efforts, to identify plans and projects that could be capitalized on, and to identify areas where needs were not being addressed.

The focus of the meeting was on project selection in the Recovery Support Functions of Community Planning and Capacity Building and Housing. For the first function, Community Planning and Capacity Building, the Committee discussed specifically expanding CERTs, disaster planning, and emergency centers. For the second function, Housing, the Committee agreed to examine and evaluate projects to serve vulnerable populations such as the elderly and those with lower income levels.

Seventh NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meeting

The seventh Planning Committee Meeting was held on December 16, 2013, at the New York Aquarium in Coney Island. This meeting was similar to the previous meeting in format and purpose. Its focus was on infrastructure projects, and the meeting included a presentation on a range of infrastructure protection methods, including a large-scale citywide surge barrier, breakwaters to redirect wave energy, floodwalls, and a levee system.



Planning Committee Meeting¹⁷⁷

Eighth NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meeting

The eighth Committee meeting was held on January 9, 2014, at the New York Aquarium in Coney Island. The purpose of this meeting was to further refine the project list for the Recovery Support Functions of Natural and Cultural Resources and Economic Development. For example, the Committee decided to combine three project proposals related to replacing trees, protecting trees, and landscaping on the Oriental Boulevard median. They also decided to tie together workforce development projects with other vocational training programs.

Ninth NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meeting

The ninth Planning Committee Meeting was held on January 22, 2014, at the Shorefront YM-YWHA in Brighton Beach. Committee Members received

packets containing a list of potential projects for the Recovery Support Function of Health and Social Services, a composite ranking of all Proposed Project considerations, and project evaluation and ranking spreadsheets for the Proposed, Featured, and Additional Resiliency Recommendations. After discussing the nine projects for Health and Social Services, the Committee Members participated in an exercise that included a vote on the Proposed Projects from 1 to 13 (13 being the lowest score). The purpose of the voting was to develop a complete list of Proposed Projects. The Committee had a vigorous discussion of the 13 Proposed Projects.

Tenth NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meeting

The tenth Planning Committee Meeting was held on February 12, 2014, at the New York Aquarium in Coney Island. The goal of the meeting was to reach a consensus on the selection of Proposed Projects. The Committee reviewed results of a qualitative analysis that considered feasibility, cost, and funding for the identified projects. The Committee discussed Proposed Projects for potential CDBG-DR eligibility. Three project categories were determined: Proposed Projects, Featured Projects, and Additional Resiliency Recommendations.

The Committee discussed the upcoming Public Engagement Event scheduled for February 12, 2014.

The proposed format for the Public Engagement Event was an open house, with projects presented by Recovery Support Function to members of the Community, who would then have an opportunity to vote on the projects they considered most important to meeting the needs of the Community. A draft flyer was provided for Committee review and approval.

Eleventh NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meeting

The eleventh Planning Committee Meeting was held March 4, 2014, at the New York Aquarium in Coney Island. The Committee was provided a summary of the results of the third Public Engagement Event. The Committee then reviewed each of the Proposed Projects and Featured Projects in preparation for a ballot vote. The Committee discussed all outstanding issues, posed final questions, and reviewed the ballot

collectively. The amended ballot included 15 Proposed and 4 Featured Projects. Each Committee member was then asked to fill out and return his or her ballots indicating a yea, nay, or abstention for each project.

Twelfth NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Meeting

The twelfth Planning Committee Meeting was held on March 25, 2014, at the New York Aquarium in Coney Island. The Committee identified four categories that were most suited for the New York Rising to the Top competition and assigned Committee Members to prepare draft text for the entire Committee to review prior to the Co-chairs submitting it to the State by March 31, 2014. The Committee then reviewed the project profiles from the draft NYRCR Plan to identify any specific concerns of Committee Members.

Public Engagement Events

First Public Engagement Event

The first Public Engagement Event was held on October 22, 2013, at Abraham Lincoln High School in Coney Island; the event had approximately 121 attendees. The Public Engagement Event was designed to provide an overview of the NYRCR Program, while engaging Community members to review and provide feedback on the geographic Community reconstruction boundary, the draft Community vision statement, Community assets and needs, and potential projects. Participants were provided a brochure detailing the background of the NYRCR Program, the evening's agenda and the process for the meeting, and a summary of each station. Participants were also provided a feedback form to encourage their input and participation.

NYRCR Brighton Beach, Coney Island, Manhattan Beach, and Sea Gate Planning Committee Co-Chairs opened the meeting with welcoming remarks and an overview of the process to date. The New York State representative gave a short presentation on the NYRCR Program.

Participants were then asked to go to each station to review material, ask questions, and provide comments, which were noted on chart paper. Participants were given the opportunity to review the draft vision statement

prepared by the Committee and add words or phrases that they considered important. Maps of assets in each Recovery Support Function were made available at stations and Community members were asked to add any institutions, facilities, or other assets that were important to the Community. Participants were also asked to review the preliminary list of projects created by the Committee and add additional project ideas. Information was recorded at stations, but was also collected from participants on comment cards, which were submitted at the end of the evening's event.



Second Public Engagement Meeting, held on November 12, 2013, at Abraham Lincoln High School¹⁷⁸

Second Public Engagement Event

The second Public Engagement Event was held on November 12, 2013, at Abraham Lincoln High School in Coney Island; this event had approximately 65 attendees.

The focus of the second Public Engagement Event was a review of the strategies that the Committee had developed to date. Participants were provided a brochure that detailed the background of the program, the

agenda for the evening, and the strategies in each of the Recovery Support Functions. Participants were also provided feedback forms.

After a brief PowerPoint presentation, participants were asked to rank the top two to three strategies in each Recovery Support Function based on their knowledge of the Community, the Community's assets and needs, and strategies recommended by the Committee or Community to date.

Committee Members were available to discuss each function and the strategies recommended for each. Committee Members also took additional notes on ideas and concepts provided by participants.

Participants provided feedback on the evening's events and ideas on other strategies on comment cards, which were collected at the end of the evening's event.

Third Public Engagement Event

The Third Public Engagement Event was held on February 19, 2014, at MCU Park in Coney Island and had approximately 56 attendees. An open-house

format provided project stations that included project boards and that were staffed by Committee Members to answer questions from the participants. The project boards contained pictures, criteria rankings, maps, and prompts for the public to identify how much they supported a particular Proposed or Featured Project. Participants were handed a Project Evaluation Feedback Form, which listed all the projects and allowed the participant to provide feedback. Forty-three feedback forms were collected at the end of the night, and community members filled out an additional ten surveys online. The Committee Members reviewed the total of 53 responses.

Throughout the conference room, members of the public and the Committee Members held in-depth and passionate conversations. The event lasted for several hours with participants taking the time to study project boards and ask questions.



The demographics of the four communities on the Southern Brooklyn Peninsula are summarized in Table V-3.

Table V-3: Southern Brooklyn Peninsula Demographic Profile

	Brighton Beach		Coney Island		Manhattan Beach		Sea Gate	
	Total	%	Total	%	Total	%	Total	%
Total Population	31,584	100%	47,154	100%	4,613	100%	4,609	100%
Pop. 15 Years and under	4,324	13.7%	5,806	12.3%	769	16.7%	804	17.4%
Pop. 16 Years and over	20,492	64.9%	28,448	60.3%	2,705	58.6%	3,123	67.8%
Pop. 65 and over	6,768	21.4%	12,900	27.4%	1,139	24.7%	682	14.8%
Median Age	44.6		47.3		48.3		40.5	
Number of Households	13,764		20,236		1,580		1,580	
Median Household Income	\$37,912		\$33,263		\$80,961		\$60,255	
Veteran Status								
Civilian Population 18 and over	26,284	100	39,405	100	3,731	100	3,538	100
Civilian Veterans	488	2%	1,648	4%	96	3%	105	3%
Disability Status of the Civilian Non-Institutionalized Population								
Under 18	5,254	17%	7,677	17%	882	19%	1,066	23%
With a disability	107	2%	232	3%	16	2%	94	9%
18-64 Years	19,508	62%	26,422	57%	2,592	57%	2,856	62%
With a disability	1,295	7%	3,280	12%	118	5%	332	12%
65 Years and Over	6,768	21%	12,386	27%	1,072	24%	682	15%
With a disability	4,766	70%	5,989	48%	551	51%	208	30%
Language Spoken At Home								
Population 5 Years & Over	30,018		45,177		4,482		4,528	
English Only	4,508	15%	18,866	42%	1,596	36%	2,502	55%
Language other than English	25,510	85%	26,311	58%	2,886	64%	2,026	45%
Speak English less than "very well"	18,142	60%	18,151	40%	1,304	29%	1,200	27%
Spanish	3,644	12%	5,237	12%	67	1%	256	6%
Speak English less than "very well"	2,672	9%	3,060	7%	43	1%	87	2%



	Brighton Beach		Coney Island		Manhattan Beach		Sea Gate	
	Total	%	Total	%	Total	%	Total	%
Other Indo-European Languages	18,989	63%	16,544	37%	2,681	60%	1,373	30%
Speak English less than "very well"	13,820	46%	11,874	26%	1,220	27%	922	20%
Asian and Pacific Languages	2,204	7%	3,681	8%	17	0%	68	2%
Speak English less than "very well"	1,209	4%	2,790	6%	10	0%	55	1%
Other Languages	673	2%	849	2%	121	3%	329	7%
Speak English less than "very well"	441	1%	427	1%	31	1%	136	3%

Sources: Population Data: American Community Survey <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml> Veteran Status, Disability Status, Language Spoken at Home, & Household Income: American Community Survey <http://factfinder2.census.gov> Table DP02 Selected Social Characteristics in the United States 2008-2012 American Community Survey 5 Year Estimates and Table S1901 Income in the past 12 months (in 2012 inflation adjusted dollars) 2008-2012 American Community Survey 5 Year Estimate. Note: Census tracts for the four CR communities are: 308, 314, 326, 328, 330, 336, 340, 342, 348, 350, 352, 354, 356.01, 356.02, 360.01, 360.02, 362, 364, 366, 610.4, 610.02, 612, 616, and 620.



D. Community asset inventory

This section provides additional detail on the risk assessment process described in Section II. All Community assets are presented in the tables below, along with their landscape attribute scores and final risk scores. These scores were derived using the methodologies described in Section II.

Table V-4 lists the risk scores for the economic assets in the Community, Table V-5 lists the risk scores for health and social services assets in the Community, Table V-6 lists the risk scores for the housing assets in the Community, Table V-7 lists the risk scores for the infrastructure assets in the Community, Table V-8 lists the risk scores for the natural and cultural assets in the Community, Table V-9 lists the risk scores for the systems asset groups, and Table V-10 lists the Asset Inventory for the Community.

PROPOSED PRIORITY PROJECT:
Back Flow Valves for 1- and 2-Family Homes

Description:
 In addition to storm surges, many homes incurred damage to basements and first floor residences as a result of backflows from sewer lines that were overcapacity during and after Superstorm Sandy. These homes remain vulnerable to sewer backflows during other storm events including heavy rains and nor'easters.
 This project would provide financial assistance to homeowners for installation of sewer connection cut-off valves in homes, as well as education and public outreach related to the proper operation and maintenance of these devices.

Highlights:

- Low cost protection measure for frequent storm event.
- Directly improves the resiliency and reduces future damage to one and two family homes.
- Project is scalable. The funding allocation can vary and can be used to supplement other NYC initiatives.

Locations: One and two-family homes throughout the Southern Brooklyn Peninsula.

Technical Feasibility: Low, Medium, High

Cost: Low, Medium, High

Risk Reduction: Low, Medium, High

Public Support: Low, Medium, High

Complete Your Feedback Form
 Your Feedback Will Determine This Measure

Sample project boards used for the third Public Engagement Event, held on February 19, 2014¹⁷⁹



Table V-4: Risk Scores for Economic Assets in the Community

Economic Asset	Risk Area	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
Amusement and Entertainment Facilities (Luna Park , Deno's, etc.)	High	3	3	4	36
MCU Park	High	3	3	4	36
Riegelmann Boardwalk	Extreme	3	4	4	48
Neptune Avenue Commercial Corridor	High	3	3	4	36
Mermaid Avenue Commercial Corridor	High	3	3	4	36
Surf Avenue Commercial Corridor	High	3	3	4	36
Brighton Beach Avenue Commercial Corridor	High	3	3	3	27



Table V-5: Risk Scores for Health and Social Services Assets in Community

Health & Social Services Asset	Risk Area	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
PS 100 The Coney Island School	High	3	3	2	18
PS 188 Michael E Berdy	High	3	3	4	36
PS 225 The Eileen E Zaglin	High	3	3	2	18
PS 253	High	3	3	3	27
PS 288 The Shirley Tanyhill	High	3	3	4	36
PS 329 Surfside	High	3	3	4	36
PS 90 Edna Cohen School	High	3	3	3	27
IS 303 Herbert S Eisenberg	High	3	3	3	27
Mark Twain IS 239-Gifted & Talented	High	3	4	3	32
PS 370	High	3	3	2	18
Abraham Lincoln High School	High	3	3	2	18
Liberation Diploma Plus	High	3	3	4	36
Rachel Carson HS for Coastal Studies	High	3	3	4	36
William E Grady Career and Tech	High	3	3	2	18
PS 771	High	3	3	3	27
Coney Island Prep Public Charter Sch	High	3	3	3	27
Mazel Day School (F.R.E.E.)	High	3	3	4	36
PS 195 Manhattan Beach	High	3	3	2	18
Leon M Goldstein High Sch Sciences	High	3	4	2	21
Mesivta & Yeshiva Gedolah of Mnhttn Bch	High	3	3	3	27
Zvi Dov Roth Academy of Yeshiva Rambam	Extreme	3	4	3	36
NYPD 60 Precinct	High	3	3	4	36



Health & Social Services Asset	Risk Area	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
Mounted Troop E	High	3	3	4	36
Transit District #34	High	3	3	3	27
Housing Bureau Police Service Area #1	High	3	3	4	36
Engine 318, Ladder 166	High	3	4	2	21
Engine 246, Ladder 169	High	3	3	2	18
EMS Station 43	High	3	3	2	18
Sea Gate Police Department	High	3	3	5	45
Ida G Israel Community Health Ctr (permanently closed)	High	3	4	5	53
Shorefront Jewish Geriatric Ctr	High	3	3	2	18
Saints Joachim & Anne Nursing And Rehabilitation Ctr	High	3	3	2	18
Sea Crest Health Care Ctr	High	3	3	4	36
Shore View Nursing Home	High	3	3	4	36
Mermaid Health Center	High	3	3	4	36
CenterLight Healthcare	High	3	3	5	45
Sheepshead Bay Renal Care Ctr	High	3	3	3	27
Catholic Charities	High	3	3	2	18
Haber House Senior Center	High	3	3	4	36
Salt And Sea Mission Church, Inc.	High	3	3	4	36
Shorefront Jewish Community Council	High	3	3	3	27
Acts Community Development Corporation [food pantry location]	High	3	3	3	27
Menorah Home & Hospital for Aged & Infirm	High	3	3	2	18
Trump Outreach Program for Seniors NORC	High	3	3	2	18



Health & Social Services Asset	Risk Area	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
JASA Warbasse Cares NORC	High	3	3	3	27
Trump Village NORC	High	3	3	2	18
Urban Neighborhood Services Inc.	High	3	3	4	36
The Friendship Circle	High	3	3	4	36
Coney Island Hospital	Moderate	3	3	5	38
Coney Island Community Day Care Center	High	3	3	5	45
Police Athletic League, Inc.	High	3	3	4	36
Roberta Bright Child Care Center	High	3	3	4	36
Bam Bam's Playhouse	High	3	3	2	18
Buratino International Day Care Inc.	High	3	3	2	18
Cinderella Day Care Center Inc.	High	3	3	2	18
Congregation Friends Of Refugees Of Eastern Europe	High	3	3	3	27
M.S. Sunshine Day Care Center	High	3	3	3	27
Neshama Preschool	High	3	3	4	36
Kinder Stuff 14	High	3	3	2	18
Sunshine Children's Daycare Llc	High	3	3	2	18
Teremok V Day Care Center	High	3	3	2	18
Warbasse Nursery School	High	3	3	3	27
Madeleine Jones Head Start	High	3	3	3	27
National Association of Family Dev Ctr	High	3	3	3	27
JASA Luna Park Senior Center	High	3	3	2	18
JASA Scheuer House of Coney Isl Sr Ctr	High	3	3	2	18



Health & Social Services Asset	Risk Area	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
JASA Shorefront Senior Center	High	3	3	2	18
Surf Solomon Senior Center	High	3	3	4	36
Mermaid Manor Home for Adults (75 units)	High	3	3	3	27
Ocean View Manor Home for Adults (176 units)	High	3	3	4	36
Surf Manor Home for Adults (200 units)	High	3	3	4	36
Abraham Residence I (75 units)	High	3	3	4	36
Abraham Residence II (Met Council Prj- 41 units)	High	3	3	4	36
Evelin's Wonderland, Inc./ Aka Happy Towers Day Care Ctr	Extreme	3	4	3	36
Fantasm, Inc.	Extreme	3	4	2	24
Kinderstuff 1	High	3	3	3	27
Manhattan Beach Jewish Center	High	3	3	4	36
JASA Manhattan Beach Senior Ctr	High	3	3	2	18
Shorefront YM-YWHA of Brighton-Manhattan Beach, Inc.	High	3	3	2	18
Kingsborough Community College	High	3	4	2	21



Table V-6: Risk Scores for Housing Assets in Community

Housing Asset	Risk Area	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
Sea Gate Single-Family Residences	High	3	3	5	45
Manhattan Beach Single-Family Residences	High	3	3	4	36
Coney Island Single-Family Residences	High	3	3	4	36
Brighton Beach Single-Family Residences	High	3	3	4	36
Sea Gate Multi-Family Residences	High	3	3	5	45
Manhattan Beach Multi-Family Residences	High	3	3	4	36
Coney Island Multi-Family Residences	High	3	3	4	36
Brighton Beach Multi-Family Residences	High	3	3	4	36
Federation Employ. & Guidance Svc	High	3	3	2	18
Lifespire, Inc.	High	3	3	3	27
Program Development Services	High	3	3	3	27
NYCHA, Gravesend	High	3	3	4	36
NYCHA, Surfside Gardens	High	3	3	4	36
NYCHA, O'Dwyer Gardens	High	3	3	4	36
NYCHA, Coney Island	High	3	3	4	36
NYCHA, Coney Island (Site 1B)	High	3	3	4	36
NYCHA, Coney Island (Site 4 & 5)	High	3	3	4	36
NYCHA, Coney Island (Site 8)	High	3	3	4	36
NYCHA, Carey Gardens	High	3	3	4	36
NYCHA, Haber	High	3	3	4	36
Mitchell-Lama, Scheuer House (197 units)	High	3	3	4	36



Housing Asset	Risk Area	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
Mitchell-Lama, Warbasse Houses (2595 units)	High	3	3	4	36
Mitchell-Lama, Sea Rise 2 (338 units)	High	3	3	4	36
Mitchell-Lama, Sea Rise 1 (334 units)	High	3	3	4	36
Mitchell-Lama, Ocean Gate Houses (542 units)	High	2	3	4	24
Mitchell-Lama, Harbor View (244 units)	High	4	3	4	48
Mitchell-Lama, Luna Park Co-Ops (1573 units)	High	3	3	4	36
Mitchell-Lama, Brighton House (191 units)	High	3	3	4	36
Mitchell-Lama, Sam Burt Houses (146 units)	High	3	3	4	36
Shorefront Towers	High	3	3	4	36
Surf Gardens	High	3	3	4	36
Friendset Apartments	High	3	3	4	36
Scheuer House of Manhattan Beach	High	3	3	4	36
Scheuer House of Brighton Beach	High	3	3	4	36
Coney Island Site 4A1	High	3	3	4	36
Oceanview Manor	High	3	3	4	36



Table V-7: Risk Scores for Infrastructure Assets in Community

Infrastructure Asset	Risk Area	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
Coney Island Complex	High	3	3	4	36
Atlantic Express - Cropsey	High	3	3	2	18
Atlantic Express - Surf	High	3	3	2	18
Gotham Transportation, Corp.	High	3	3	2	18
Hoyt Transportation	High	3	4	2	21
MV DBA/ Reliant	High	3	3	2	18
Robin Transportation	High	3	3	2	18
Thomas Buses, Inc.	High	3	3	2	18
Brighton Beach Station	High	3	3	2	18
Ocean Parkway Station	Moderate	3	3	2	15
W 8 Street - NY Aquarium Station	High	3	3	2	18
Coney Island - Stillwell Station	High	3	3	2	18
Neptune Avenue Station	High	3	3	2	18
District Facility Sanitation Garage	High	3	4	2	21
Water Discharge Site	High	3	3	3	27



Table V-8: Risk Scores for Natural and Cultural Features Assets in Community

Natural & Cultural Asset	Risk Area	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
Brighton Beach Library	High	3	3	3	27
Coney Island Library	High	3	3	4	36
Aquarium for Wildlife Conservation	High	3	3	4	36
All Marriages Svc Performed	High	3	3	3	27
Beulah Church of Christ	High	3	3	3	27
Christian Mission of St John	High	3	3	3	27
Comforting United Ch of Christ	High	3	3	3	27
Coney Island Cathedral	High	3	3	5	45
Coney Island Church-Sda	High	3	3	5	45
Coney Island Gospel Assembly	Extreme	3	5	4	54
Congregation Chasidei Bresslov	High	3	3	3	27
Congregation Kneses Israel	High	3	3	3	27
Fellowship Baptist Church	High	3	3	3	27
Greater Eternal Light Church	High	3	3	3	27
Guardian Angel Rc Church	High	3	3	3	27
Horizon Christian Fellowship	Moderate	3	3	3	23
Masjid Bab-Salam	High	3	3	4	36
Naomi Ame Zion Church	High	3	4	4	42
Of Lunar Park Congregation	High	3	3	3	27
Our Lady of Solace Church	High	3	3	3	27
Redeemed Christian Church-God	High	3	3	3	27
St Paul's Evangelical Lutheran	High	3	3	4	36



Natural & Cultural Asset	Risk Area	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
Unbroken Chain Fellowship-Ofc	High	3	3	3	27
United Community Baptist Chr	High	3	3	5	45
Warbasse Synagogue	High	3	3	3	27
Zaltman Efraim Rabbi	High	3	3	3	27
Congregation Meor Hachaim of Luna Park	High	3	3	3	27
Temple Beth El of Manhattan Beach	High	3	3	3	27
St. Margaret Mary R.C. Church	High	3	3	3	27
Torath Israel Sephardic Congregation	High	3	3	3	27
Coney Island History Project	High	3	3	4	36
Coney Island USA	High	3	3	4	36
Leon M Goldstein Performing Arts Center	High	3	3	2	18
Neptune Playground	High	3	3	4	36
Calvert Vaux Park	Moderate	3	3	2	15
Coney Island Creek Park	Extreme	3	4	2	24
Kaiser Park	High	3	4	2	21
Manhattan Beach Park	High	3	4	4	42
Asser Levy Park	High	3	3	2	18
Holocaust Memorial Park	High	3	3	2	18
Sheepshead Bay Footbridge	High	3	4	4	42
Public Promenade	High	3	4	2	21
Manhattan Beach Bathhouse	High	3	3	4	36



Table V-9: Risk Scores for Systems Asset Groups

Asset	System	Risk Score
Communications Facilities	Communication	27
Sea Gate Stormwater Facilities	Stormwater	36
Coney Island Stormwater Facilities	Stormwater	27
Brighton Beach Stormwater Facilities	Stormwater	27
Manhattan Beach Stormwater Facilities	Stormwater	27
Sea Gate Power Supply	Stormwater	30
Coney Island Power Supply	Power Supply	23
Brighton Beach Power Supply	Power Supply	23
Manhattan Beach Power Supply	Power Supply	23
Liquid Fuel Stations	Liquid Fuel	27



Table V-10: Asset Inventory

Asset Information					Landscape Attributes							Risk Assessment			
Asset Name	Risk Area	Asset Class	Critical Facility	Community Value	Erosion Rate ≥1 foot per year or unknown	Waterline frequently at shore defense or upland vegetation	Shore defenses absent, not constructed to anticipated conditions, or deteriorating	Protective vegetation between asset and flood source absent	Dunes absent, below BFE, eroding, little vegetation; Bluff slope unstable, little vegetation	Asset on coastal barrier island or filled wetland	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
Luna Park (amusement and entertainment facilities)	High	Economic	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
MCU Park	High	Economic	No	Low	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Riegelmann Boardwalk	Extreme	Economic	No	High	No	No	Yes	Yes	Yes	Yes	2	3	4.00	4	48
Neptune Avenue Commercial Corridor	High	Economic	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Mermaid Avenue Commercial Corridor	High	Economic	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Surf Avenue Commercial Corridor	High	Economic	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Brighton Beach Avenue Commercial Corridor	High	Economic	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
PS 100 The Coney Island School	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
PS 188 Michael E Berdy	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
PS 225 The Eileen E Zaglin	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
PS 253	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
PS 288 The Shirley Tanyhill	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
PS 329 Surfside	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
PS 90 Edna Cohen School	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
IS 303 Herbert S Eisenberg	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Mark Twain IS 239-Gifted & Talented	High	Health and Social Services	Yes, FEMA	Medium	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
PS 370	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Abraham Lincoln High School	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Liberation Diploma Plus	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Rachel Carson HS for Coastal Studies	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
William E Grady Career and Tech	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
PS 771	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Coney Island Prep Public Charter School	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Mazel Day School (F.R.E.E.)	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
PS 195 Manhattan Beach	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Leon M Goldstein High School Sciences	High	Health and Social Services	Yes, FEMA	Medium	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	2	21
Mesivta & Yeshiva Gedolah of Manhattan Beach	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Zvi Dov Roth Academy of Yeshiva Rambam	Extreme	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	4.00	3	36
NYPD 60 Precinct	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Mounted Troop E	High	Health and Social Services	Yes, FEMA	Low	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Transit District #34	High	Health and Social Services	Yes, FEMA	Low	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Housing Bureau Police Service Area #1	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18



Asset Information					Landscape Attributes							Risk Assessment			
Asset Name	Risk Area	Asset Class	Critical Facility	Community Value	Erosion Rate ≥1 foot per year or unknown	Waterline frequently at shore defense or upland vegetation	Shore defenses absent, not constructed to anticipated conditions, or deteriorating	Protective vegetation between asset and flood source absent	Dunes absent, below BFE, eroding, little vegetation; Bluff slope unstable, little vegetation	Asset on coastal barrier island or filled wetland	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
Engine 318, Ladder 166	High	Health and Social Services	Yes, FEMA	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	2	21
Engine 246, Ladder 169	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
EMS Station 43	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Sea Gate Police Department	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	5	45
Ida G Israel Community Health Center (permanently closed)	High	Health and Social Services	Yes, FEMA	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	5	53
Shorefront Jewish Geriatric Center	High	Health and Social Services	Yes, FEMA	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Saints Joachim & Anne Nursing and Rehabilitation Center	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Sea Crest Health Care Center	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Shore View Nursing Home	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Mermaid Health Center	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
CenterLight Healthcare	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Sheepshead Bay Renal Care Center	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Catholic Charities	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Haber House Senior Center	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Salt and Sea Mission Church, Inc.	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Shorefront Jewish Community Council	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Acts Community Development Corporation (food pantry location)	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	1	9
Menorah Home and Hospital for Aged and Infirm	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Trump Outreach Program for Seniors NORC	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
JASA Warbasse Cares NORC	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Trump Village Norc	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Urban Neighborhood Services, Inc.	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
The Friendship Circle	High	Health and Social Services	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Coney Island Hospital	Moderate	Health and Social Services	Yes, FEMA	High	No	No	Yes	Yes	Yes	Yes	2	3	2.50	5	38
Coney Island Community Day Care Center	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	5	45
Police Athletic League, Inc.	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Roberta Bright Child Care Center	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Bam Bam's Playhouse	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Buratino International Day Care, Inc.	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Cinderella Day Care Center, Inc.	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Congregation Friends of Refugees of Eastern Europe	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
M.S. Sunshine Day Care Center	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27



Asset Information					Landscape Attributes							Risk Assessment			
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Neshama Preschool	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Kinder Stuff 14	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Sunshine Childrens Daycare, LLC	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Teremok V Day Care Center	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Warbasse Nursery School	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Madeleine Jones Head Start	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
National Association of Family Dev Center	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
JASA Luna Park Senior Center	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
JASA Scheuer House of Coney Island Senior Center	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
JASA Shorefront Senior Center	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Surf Solomon Senior Center	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Mermaid Manor Home for Adults (75 units)	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Ocean View Manor Home for Adults (176 units)	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Surf Manor Home for Adults (200 units)	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Abraham Residence I (75 units)	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Abraham Residence II (Met Council Prj- 41 units)	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Evelin's Wonderland, Inc./ aka Happy Towers Day Care Center	Extreme	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	4.00	3	36
Fantasm, Inc.	Extreme	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	4.00	2	24
Kinderstuff 1	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Manhattan Beach Jewish Center	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
JASA Manhattan Beach Senior Center	High	Health and Social Services	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Shorefront YM-YWHA of Brighton-Manhattan Beach, Inc.	High	Health and Social Services	Yes, FEMA	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Kingsborough Community College	High	Health and Social Services	Yes, FEMA	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	2	21
Sea Gate single-family residences	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	5	45
Manhattan Beach single-family residences	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Coney Island single-family residences	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Brighton Beach single-family residences	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Sea Gate multi-family residences	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	5	45
Manhattan Beach multi-family residences	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Coney Island multi-family residences	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Brighton Beach multi-family residences	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Federation Employ. & Guidance Service	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18



Asset Information					Landscape Attributes							Risk Assessment			
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Lifespire, Inc.	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Program Development Services	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
NYCHA, Gravesend	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
NYCHA, Surfside Gardens	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
NYCHA, O'Dwyer Gardens	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
NYCHA, Coney Island	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
NYCHA, Coney Island (Site 1B)	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
NYCHA, Coney Island (Site 4 & 5)	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
NYCHA, Coney Island (Site 8)	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
NYCHA, Carey Gardens	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
NYCHA, Haber	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Mitchell-Lama, Scheuer House (197 units)	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Mitchell-Lama, Warbasse Houses (2,595 units)	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Mitchell-Lama, Sea Rise 2 (338 units)	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Mitchell-Lama, Sea Rise 1 (334 units)	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Mitchell-Lama, Ocean Gate Houses (542 units)	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	2	3.00	4	24
Mitchell-Lama, Harbor View (244 units)	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	4	3.00	4	48
Mitchell-Lama, Luna Park Co-Ops (1,573 units)	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Mitchell-Lama, Brighton House (191 units)	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Mitchell-Lama, Sam Burt Houses (146 units)	High	Housing	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Shorefront Towers	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Surf Gardens	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Friendset Apartments	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Scheuer House of Manhattan Beach	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Scheuer House of Brighton Beach	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Coney Island Site 4A1	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Oceanview Manor	High	Housing	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Coney Island Complex	High	Infrastructure Systems	Yes, FEMA	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Atlantic Express—Cropsey	High	Infrastructure Systems	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Atlantic Express—Surf	High	Infrastructure Systems	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Gotham Transportation, Corp.	High	Infrastructure Systems	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Hoyt Transportation	High	Infrastructure Systems	No	Medium	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	2	21
MV DBA/ Reliant	High	Infrastructure Systems	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18



Asset Information					Landscape Attributes							Risk Assessment			
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Robin Transportation	High	Infrastructure Systems	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Thomas Buses, Inc.	High	Infrastructure Systems	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Brighton Beach Station	High	Infrastructure Systems	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Ocean Parkway Station	Moderate	Infrastructure Systems	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	2.50	2	15
W 8 Street—NY Aquarium Station	High	Infrastructure Systems	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Coney Island—Stillwell Station	High	Infrastructure Systems	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Neptune Avenue Station	High	Infrastructure Systems	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
District Facility Sanitation Garage	High	Infrastructure Systems	No	Medium	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	2	21
Communications Facilities—Community-wide	High	Infrastructure Systems	No, Locally Significant	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Sea Gate stormwater facilities	High	Infrastructure Systems	Yes, FEMA	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Coney Island stormwater facilities	High	Infrastructure Systems	Yes, FEMA	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Water discharge site	High	Infrastructure Systems	No, Locally Significant	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Brighton Beach stormwater facilities	High	Infrastructure Systems	Yes, FEMA	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Manhattan Beach stormwater facilities	High	Infrastructure Systems	Yes, FEMA	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Sea Gate power supply	High	Infrastructure Systems	Yes, FEMA	High	No	No	No	Yes	Yes	Yes	1.5	3	2.50	4	30
Coney Island power supply	High	Infrastructure Systems	Yes, FEMA	High	No	No	No	Yes	Yes	Yes	1.5	3	2.50	3	23
Brighton Beach power supply	High	Infrastructure Systems	Yes, FEMA	High	No	No	No	Yes	Yes	Yes	1.5	3	2.50	3	23
Manhattan Beach power supply	High	Infrastructure Systems	Yes, FEMA	High	No	No	No	Yes	Yes	Yes	1.5	3	2.50	3	23
Liquid fuel stations—Community-wide	High	Infrastructure Systems	No, Locally Significant	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Brighton Beach Library	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Coney Island Library	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Aquarium for Wildlife Conservation	High	Natural and Cultural Resources	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
All Marriages Svc Performed	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Beulah Church of Christ	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Christian Mission of St. John	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Comforting United Church of Christ	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Coney Island Cathedral	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Coney Island Church-Sda	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Coney Island Gospel Assembly	Extreme	Natural and Cultural Resources	No	Medium	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	3	41
Congregation Chasidei Bresslov	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Congregation Kneses Israel	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Fellowship Baptist Church	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Greater Eternal Light Church	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27



Asset Information					Landscape Attributes							Risk Assessment			
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Guardian Angel Rc Church	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Horizon Christian Fellowship	Moderate	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	2.50	3	23
Masjid Bab-Salam	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Naomi Ame Zion Church	High	Natural and Cultural Resources	No	Medium	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	3	32
Of Lunar Park Congregation	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Our Lady of Solace Church	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Redeemed Christian Church-God	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
St. Paul's Evangelical Lutheran	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Unbroken Chain Fellowship-Ofc	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
United Community Baptist Church	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Warbasse Synagogue	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Zaltman Efraim Rabbi	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Congregation Meor Hachaim of Luna Park	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	3	27
Coney Island History Project	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Coney Island USA	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Leon M Goldstein Performing Arts Center	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Neptune Playground	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36
Calvert Vaux Park	Moderate	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	2.50	2	15
Coney Island Creek Park	Extreme	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	4.00	2	24
Kaiser Park	High	Natural and Cultural Resources	No	Medium	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	2	21
Manhattan Beach Park	High	Natural and Cultural Resources	No	Medium	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	4	42
Asser Levy Park	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Holocaust Memorial Park	High	Natural and Cultural Resources	No	Medium	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Sheepshead Bay Footbridge	High	Natural and Cultural Resources	No	Medium	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	4	42
Public promenade	High	Natural and Cultural Resources	No	Medium	No	Yes	Yes	Yes	Yes	Yes	2.5	3	3.50	2	21
Manhattan Beach Bathhouse	High	Natural and Cultural Resources	No	High	No	No	Yes	Yes	Yes	Yes	2	3	3.00	4	36



E. Endnotes

- ¹ U.S. Department of Housing and Urban Development. "Sandy Damage Estimates by Block Group" (n.d.). http://www.huduser.org/maps/map_sandy_blockgroup.html. Accessed October 2013.
- ² Healthcare Finance News. *Nursing Homes and Home Health Agencies Face Unique Challenges during Natural Disasters*. Stephanie Bourchard, November 8, 2012. Accessed March 2014. <http://www.healthcarefinancenews.com/news/nursing-homes-and-home-health-agencies-face-unique-challenges-face-natural-disasters>.
- ³ Amand, Lisa. "A Year After Sandy, Brighton Beach Struggles to Get Back on Feet: Storm and Weak Economy a One-Two Punch." *Forward: The Jewish Daily*. Published October 26, 2013. <http://forward.com/articles/186254/a-year-after-sandy-brighton-beach-struggles-to-get/?p=all#ixzz2vIahZ3XS>
- ⁴ Berke, Ned. "Checking in on Brighton Beach's Businesses, Post Sandy." *Sheepshead Bites*. November 8, 2012. <http://www.sheepsheadbites.com/2012/11/checking-in-on-brighton-beachs-businesses-post-sandy/>
- ⁵ Ibid.
- ⁶ "Coney Island Complex." NYC SUBWAY. N.p., n.d. Web. April 4, 2014. http://www.nycsubway.org/wiki/Coney_Island_Complex.
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F. Glossary

BFE – Base flood elevation

CBA – Cost-benefit analysis

CBO – Community-based organizations

CDBG-DR – Community Development Block Grant – Disaster Recovery

CERT – Community Emergency Response Team

CUNY – City University of New York

FEMA – Federal Emergency Management Agency

FIRM – Flood Insurance Rate Map

HMP – Hazard Mitigation Plan

HUD – U.S. Department of Housing and Urban Development

JBRWG – Jamaica Bay Regional Working Group

JCCGI – Jewish Community Council of Greater Coney Island

KCC – Kingsborough Community College

LED – light-emitting diode

MTA – Metropolitan Transportation Authority

NPS – National Park Service

NWS – National Weather Service

NYCHA – New York City Housing Authority

NYC DPR - New York City Department of Parks and Recreation

NYC DEP – New York City Department of Environmental Protection

NYC OEM – New York City Office of Emergency Management

NYPA – New York Power Authority

NYRCR – NY Rising Community Reconstruction Program

NYS – New York State

NYS DHES – New York State Division of Homeland Security and Emergency Services

NYS DOS – New York State Department of State

NYSSGC – New York State Smart Grid Consortium

REDC – Regional Economic Development Council

RFEI – Request for Expression of Interest

SIRR – Special Initiative for Rebuilding and Resiliency

SLOSH – Sea, Lake, and Overland Surges from Hurricanes

SUNY – State University of New York

USACE – U.S. Army Corps of Engineers

UWAS – Urban Waterfront Adaptive Strategies

