

Rockaway Parks Conceptual Plan



NYC Parks



Aerial Photo of the Rockaway Peninsula
Beach 84th-94th Streets, December 2013



Table of Contents

Spring 2014

Foreword	1
Introduction	2
The Peninsula and its Assets	9
Plan Proposals	18
Appendix	54

Rendering of Proposed Bay Side Nature Trail



Foreword

Spring 2014

Dear Friends,

The City of New York is pleased to present the *Rockaway Parks Conceptual Plan*. This plan highlights our park and open space goals in the wake of Hurricane Sandy: to replace facilities lost in the storm, improve existing parks across the Rockaway Peninsula and Broad Channel, and create a long-term vision that integrates resiliency and enhances community protection.

We are deeply committed to creating a more resilient New York City—as outlined in the *One City, Rebuilding Together* report and *PlaNYC Progress Report 2014*, both released earlier this year—with a long-term focus on preparing for and protecting against the impacts of climate change. On the peninsula, we are currently constructing a new Rockaway boardwalk—elevated above the 100-year floodplain, built from steel-reinforced concrete and bolstered with multiple layers of protection, including approximately six miles of retaining walls and planted dunes. The *Rockaway Parks Conceptual Plan* will complement this boardwalk reconstruction by integrating recreational facilities adjacent to the boardwalk and providing a broader vision for resilient parks and open space.

The Conceptual Plan reflects extensive community input, including discussions with Rockaway and Broad Channel residents that began in the spring of 2013. We would like to thank these residents for the considerable time and effort they committed to helping us to develop this plan.

Moving forward, the *Rockaway Parks Conceptual Plan* will guide our future planning and funding efforts. We invite you to read through the following pages to take a look at the concept designs and cost estimates for our ten priority projects.

Parks contribute to New Yorkers' overall quality of life by serving as places for recreation and fitness, quiet contemplation, community gathering, and arts and culture. Perhaps most critical in the face of climate change, parks are vital components of resilient planning and infrastructure. These projects will ultimately create a cohesive, resilient and sustainable parks and recreation system across the Rockaway Peninsula and Broad Channel, keeping generations to come active and well protected.

Sincerely,



Mayor Bill de Blasio



NYC Parks Commissioner Mitchell J. Silver

Introduction



Executive Summary

The Rockaway Parks Conceptual Plan is an initiative to establish a planning and urban design framework for the Rockaway's parks and open space. This study establishes a vision for New York City Department of Parks & Recreation (NYC Parks) properties that will provide new recreational opportunities while restoring natural habitats, improving storm resiliency and creating safe and convenient access. Following Hurricane

Sandy, NYC Parks, in partnership with the New York City Economic Development Corporation (EDC), initiated the Conceptual Plan as part of the long-term Rockaway Boardwalk Reconstruction project. As part of the reconstruction, the boardwalk will be elevated above the 100-year floodplain, built from steel-reinforced concrete and bolstered with multiple layers of protection, including approximately six miles of retaining



walls and planted dunes. The Rockaway Parks Conceptual Plan will complement this boardwalk reconstruction by integrating recreational facilities adjacent to the boardwalk and providing a broader vision for resilient parks and open space. The Conceptual Plan includes concept designs and costs for priority projects identified and developed with community residents, stakeholder groups and City agencies in order to guide future planning and funding efforts. The Conceptual Plan also builds off of recommendations outlined in the City’s resiliency plan, “A Stronger, More Resilient New York.”

NYC Parks and EDC commissioned the RBA Group and WXY architecture + urban design, who were working with CH2MHill on the Rockaway Boardwalk Reconstruction project, to collaborate with the City and the Rockaway communities to develop a Conceptual Plan. The plan aims to achieve the following goals:

- Establish a plan for a comprehensive park system in the Rockaways;
- Complement the Rockaway Boardwalk Plan;
- Set investment goals for parks and open space;
- Integrate resiliency into NYC Parks’ plans; and
- Develop specific ideas and designs for particular parks.

The Rockaways has a rich history as a recreational destination for the residents of New York City. Once home to seaside hotels, bungalows and a world-renowned amusement park, it is now famous for the Rockaway Beach Boardwalk, which attracted over seven million annually in recent years. Over the last two centuries, the Rockaways has experienced tremendous change, perhaps as much as any area of New York City. As a whole, the Rockaway peninsula and Jamaica Bay have reshaped over time with the ocean’s changing currents.



Rockaways Community Meeting



Sample Input from a Rockaways Community Meeting

The dynamism of the Rockaway's waterfront and natural ecology made it a draw for people in the early 19th century. In the late 1800's and early 1900's, the Rockways became increasingly popular as a recreation destination for city residents for fishing, the beaches and boardwalk, an amusement park and weekend cottages. Recreational opportunities drove the demand for improved access connections to the peninsula and, in turn, the improved access supported a growing year-round residential population.

As the neighborhoods of the Rockaways continue to rebuild after Hurricane Sandy and the beach continues its growth in popularity, the City must meet the multiple challenges of storm surge protection, climate change adaptation, resilient design and public access to the water. The Conceptual Plan coordinates with and reflects broader efforts, including "A Stronger, More Resilient New York," New York State's "New York Rising" plan and Vision 2020, the City's plan for waterfront access.

The Conceptual Plan study area has been defined as extending from Beach 2nd Street to Beach 149th Street. The Plan focuses on several key opportunity sites and also includes Broad Channel.

The local community has played a central role in shaping the Conceptual Plan, participating in a series of meetings over the course of a seven-month process starting in September 2013 and also incorporating community feedback gathered by NYC Parks in Spring 2013. The process included extensive stakeholder engagement and public consultation, including nine public workshops. Attendees at the public meetings and presentations included elected official and agency representatives neighborhood residents and local community groups.

To assess community priorities and to encourage ongoing participation with citizens and stakeholders throughout the entire planning and design process, NYC Parks also hosted a Rockaway Conceptual Plan website at www.nyc.gov/parks.¹ The website provided information about

the Conceptual Plan through status updates and meeting announcements, and served as a forum for the community to share their opinions and ideas. The final Rockaway Parks Conceptual Plan report is available at this website.

Implementation of the Conceptual Plan will require prioritizing capital projects, identifying a range of capital funding sources and outlining a strategy for project initiation and phasing. The Plan's implementation must address both community needs and environmental resiliency, with funding for flood protection as well as improvements in accessibility and recreational amenities. The following pages will also address the issues of funding, phasing and resiliency for Rockaway parks. This plan takes into account the needs of the surrounding communities and respond to the challenges of extreme weather events and gradual sea level rise. As Hurricane Sandy underscored, developing such a plan is no longer just a matter of improving public access and beautifying the waterfront, it is an urgent matter of coastal community protection with implications for the entire peninsula.

The development of the Conceptual Plan has included three phases of work:

- Existing Conditions, which examined environmental, social and economic conditions associated with Rockaway's parks and adjacent neighborhoods, including an historical overview of the Rockaways;
- Conceptual Plan Diagrams, which presented new opportunity sites to be the focus for new activity areas; and
- Concept Plan Design, which laid out proposals for the opportunity sites, including new facilities, access improvements and where appropriate, resiliency measures to mitigate storm surges and to manage stormwater.

1. The Rockaway Parks Conceptual Plan can be found at www.nyc.gov/parks with the search term: Rockaway Conceptual Plan.

Community Vision and Input

Outreach to the Rockaway community started in September 2013 and spanned seven months. The goals of this process were to:

- Identify the community's desires, concerns and sense of priority regarding key opportunity sites;
- Create consensus around a vision, goals and identity of the parks;
- Foster active participation and feedback in the conceptual design process; and
- Identify potential partners in developing and maintaining the local parks.

The outreach included nine public workshops. Six workshops were held in 2013 on September 23, 24 and 25, November 10 and 25 and December 5. Three workshops were held in 2014 on February 6 and 25 and March 27. The following themes surfaced consistently throughout the outreach regarding the future development of Rockaway Parks.

Desires:

- More recreation opportunities for all ages
- Special event programming
- Incorporating resiliency measures
- Connections to the surrounding neighborhoods
- Continuous public access to waterfront, where applicable

Concerns:

- Timeframe of construction
- On-going maintenance
- Pedestrian safety
- Increased noise in residential areas
- Fulfilling parking needs

Role of Continued Community Engagement

A long-term partnership between City agencies, local officials and community stakeholders will enable the development of parks in the Rockaways. These parks can provide safe access and recreational opportunities for people of all ages, reconnect the community with Jamaica Bay, help restore and create a resilient environment and establish continuity among the Rockaway's open spaces. Continued community involvement is crucial to the success of this park system. NYC Parks and other involved agencies will continue to hold meetings and release project updates with the community and local stakeholders. NYC Parks also looks forward to a continued partnership with the state and federal government, such as through implementation of recommendations through NY Rising.

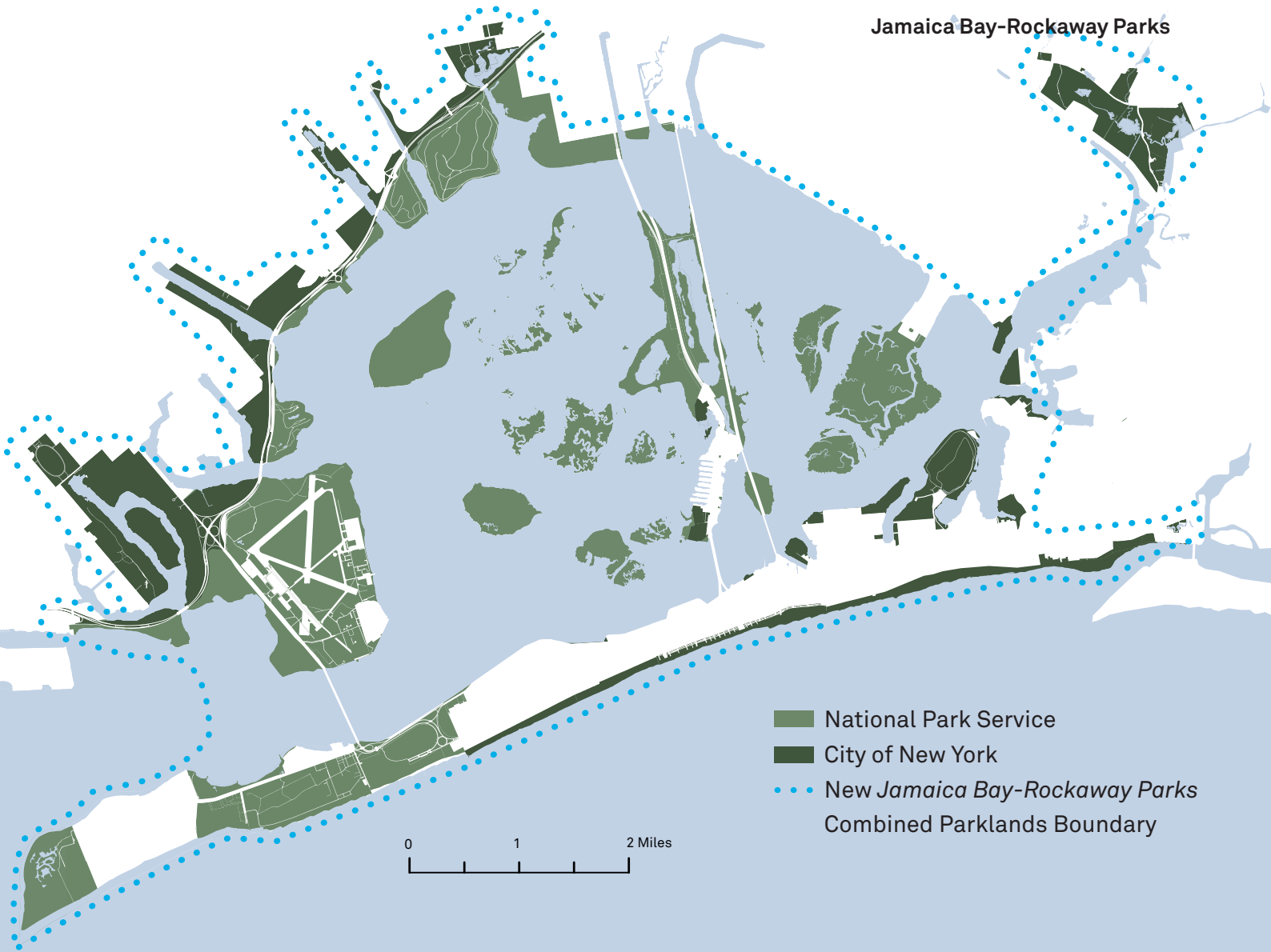
Planning Project Timeline

The next step for the plan will be to secure funding for implementation. The plan will be implemented incrementally, in phases, as funding becomes available.

The Conceptual Plan does not prioritize within the opportunity sites, as each project will require multiple agency approvals and the identification of funding sources. Each project could proceed simultaneously or in phases, based on relevant input from stakeholders, agencies and elected officials. Park designs may be modified to reflect input from additional parties.

The parks were considered from multiple perspectives, including: current availability of land (i.e. land ownership and use), community desires for activities, required shoreline improvements, construction cost and regulatory considerations (i.e. need for environmental permits or mitigations).

Jamaica Bay-Rockaway Parks



Parks Context: Jamaica Bay Partnership

The City of New York, the U.S. Department of the Interior and the National Park Service (NPS) have formed a strategic partnership to cooperatively manage a combined 10,000 acres of City and federal parkland in Jamaica Bay and the Rockaways. The goal of the partnership is to create a great, urban national park destination in New York City, with a cohesive, resilient and accessible park system. The partnership aims to provide safe, enjoyable and educational activities

and programs throughout Jamaica Bay and the Rockaways. Additionally, the partnership is working to build relationships with non-profit organizations and other civic groups to enhance the combined parklands through planning, maintenance and operations, horticulture, natural resource restoration and public programs. The Rockaway Parks Conceptual Plan coordinates with and builds upon initial planning by the Jamaica Bay Partnership, that we hope will flourish as a whole.

Aerial View of Bayswater Park and JFK International Airport



The Peninsula and its Assets

The Rockaways have experienced tremendous change during the last two centuries. Physically, the Rockaway peninsula and Jamaica Bay as a whole have reshaped over time with the ocean's changing currents.

By the 1830's, the Rockaway peninsula was a part of Hempstead, Long Island and it was a popular place for seaside hotels. In the late 1800's and early 1900's, the Rockaways became increasingly popular as a recreation destination for city residents for fishing, the beaches and boardwalk, an amusement park and weekend cottages.

In the summer before Hurricane Sandy, the beach and boardwalk attracted over seven million visitors. In October 2012, Hurricane Sandy devastated the peninsula, damaging thousands of homes and sweeping away the majority of the boardwalk and many of the adjacent recreational areas. Since the storm, the City has worked to get New Yorkers back in homes, rebuild our infrastructure in a more resilient way, clean up the Rockaways, reopen the beach and begin reconstructing the boardwalk and adjoining park space.

This section of the Conceptual Plan briefly describes the peninsula's assets, beginning with a timeline of changes to the Rockaway's natural ecology, recreational opportunities and access. This description is followed by a mapped overview of public property ownership in the Rockaways, with a particular focus on NYC Parks' properties. The relationship of these properties to the transportation network is highlighted. Finally, the ongoing and proposed resiliency efforts are described.

The Rockaways: Changes through Time

- Recreation
- Transportation
- Natural Ecology

1880-1950

Far Rockaway LIRR Operated

In 1880 the Long Island Rail Road constructed the trestle through Jamaica Bay to support a train line to the Rockaways, and LIRR service continued until a trestle fire in 1950. The trestle remained idle until purchased by the City of New York for inclusion in its mass transit system.



1902

Playland Opens

Along Beach 98th Street between Rockaway Beach Boulevard and the beach, William Wainwright opened the world renowned amusement park with a roller coaster, merry-go-round, haunted house, concession stands and more.



1905

Canarsie Ferry Line Closed

In the summer of 1866, there was a ferry service from the end of the Canarsie line to the Rockaway Peninsula. After other modes of transportation developed, the Canarsie line closed down.

1912

Surf Beach Opens

Duke Kahanamoku, known to some as the “father” of modern surfing, came to the Rockaways in 1912 to give a wave-riding demonstration to the locals, which put the Rockaways on the surfing map.



1927-1937

Municipal Ferry

A municipal ferry in Jamaica Bay began in 1927 and ran from Flatbush Avenue to B69th St. until the Marine Parkway Bridge opened in 1937.

1936

Jacob Riis Park Opens

Robert Moses designed the 26,607-acre Jacob Riis Park and Beach, including a remodeling of the historic Bath House, as a more accessible version of Jones Beach.

1930

Boardwalk Connected

The 5.5 mile Boardwalk was fully connected in the 1930's. Additionally, the construction of the Marine Parkway Bridge in 1937 and the Cross Bay Veterans Memorial Bridge in 1939 increased accessibility to the Rockaways and the boardwalk.

1939

Shore Front Parkway Opened

Under the direction of the Parks Commissioner, Robert Moses, Shore Front Parkway was intended as a link in a grand Shorefront drive extending from Brooklyn to the Hamptons.

1938

Beach Acquired by NYC Parks

City Beaches ownership shifts from Borough Presidents to New York City.

1956

NYC Subway extended to the Rockaways

Years after the Long Island Railroad's Rockaway line closed, the NYC subway took over and rebuilt the damaged railway and connected it to the city subway lines. This resulted in a housing boom in the area.



1948 & 1955

Rockaway Community Park Acquired by NYC Parks

Parks acquired Edgemere Park, renamed to Rockaway Community Park in 1971, through assignment of City land and the purchase of privately owned land.

1972

Gateway National Recreation Area Created

The Gateway National Recreation Area is created by the National Park Service and includes Jacob Riis Park, Breezy Point Tip, Ft. Tilden and the Jamaica Wildlife Refuge.

1991
Edgemere Landfill Capped
The Edgemere Landfill, run by the NYC Department of Sanitation (DSNY), served as a dump for approximately 600 tons of City garbage a day. The landfill was closed in 1991.

2006
Shore Front Parkway Bike Lane and Beach Channel Drive Bike Lane Opened
NYC DOT creates bike lane along Shore Front Parkway between Beach 73rd St. and Beach 108th St. and along Beach Channel Dr. between Beach 73rd St. and Mott Ave.

2009–2012
PlaNYC 2030 Park Built
Through the City's PlaNYC 2030 Plan, Rockaway Park was built along the beach between Beach 9th St. and Beach 32nd St. The 27-acre park includes a state of the art skateboard park, handball and basketball courts, playgrounds, climbing wall, performance space, water play area, synthetic turf field and accessible comfort station.

2012
Jamaica Bay Partnership Formed
On July 17th, the City of New York, U.S. Department of Interior and the National Park Service formed a partnership to cooperatively manage the 10,000 acres of federal and City-owned parks in and around Jamaica Bay.

2012
Hurricane Sandy
On October 29, Hurricane Sandy hit the Rockaways, flooding the majority of the peninsula, damaging homes and tearing through the Boardwalk.

2012
Seastreak Ferry Opens
After Hurricane Sandy, the City initiated a temporary ferry from Beach 108th Street to the Brooklyn Army Terminal, Pier 11 and 34th Street in Manhattan.

1985
Playland Closes
Due to increased insurance costs and competition from regional parks, Playland closed and the land was acquired by a housing development.

1996
Arverne Shorebird Preserve Established
Beginning in 1996 an area in Arverne is cordoned off each year as a nesting ground for Piping Plovers.

1999
Restoration of Boardwalk
Multi-million dollar restoration project repaired damaged boardwalk and opens the full extent of the boardwalk to the public for the first time in 25 years.

2009
Jamaica Bay Greenway Underway
A 19-mile loop along waterfront in Brooklyn and Queens was initiated to offer recreational opportunities, vistas of the bay and access to the waterfront.

2011
Increased Visitorship
The number of annual summer visitors to Rockaway Beach reached 7 million as new food options and activities along the beach gained in popularity.

2011
Food Concessions
Food concessions, including Beach Club LLC, which is a partnership that includes Rippers, Low Tide Bar and Caracas (Beach 86th, 97th, 106th Sts.), are a major attraction, offering great food and lively programming.

2013
Sandy Recovery
After Hurricane Sandy devastated most of the Rockaway Boardwalk, more than \$140 million was invested to repair and restore Rockaway Beach. As part of this work, intact sections of the boardwalk were repaired, damaged beach buildings were renovated with new boardwalk islands constructed around them, public restrooms and lifeguard stations were installed to replace destroyed facilities and interim shoreline protection measures were created.

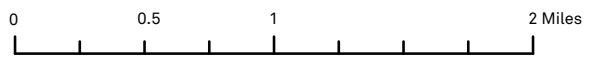
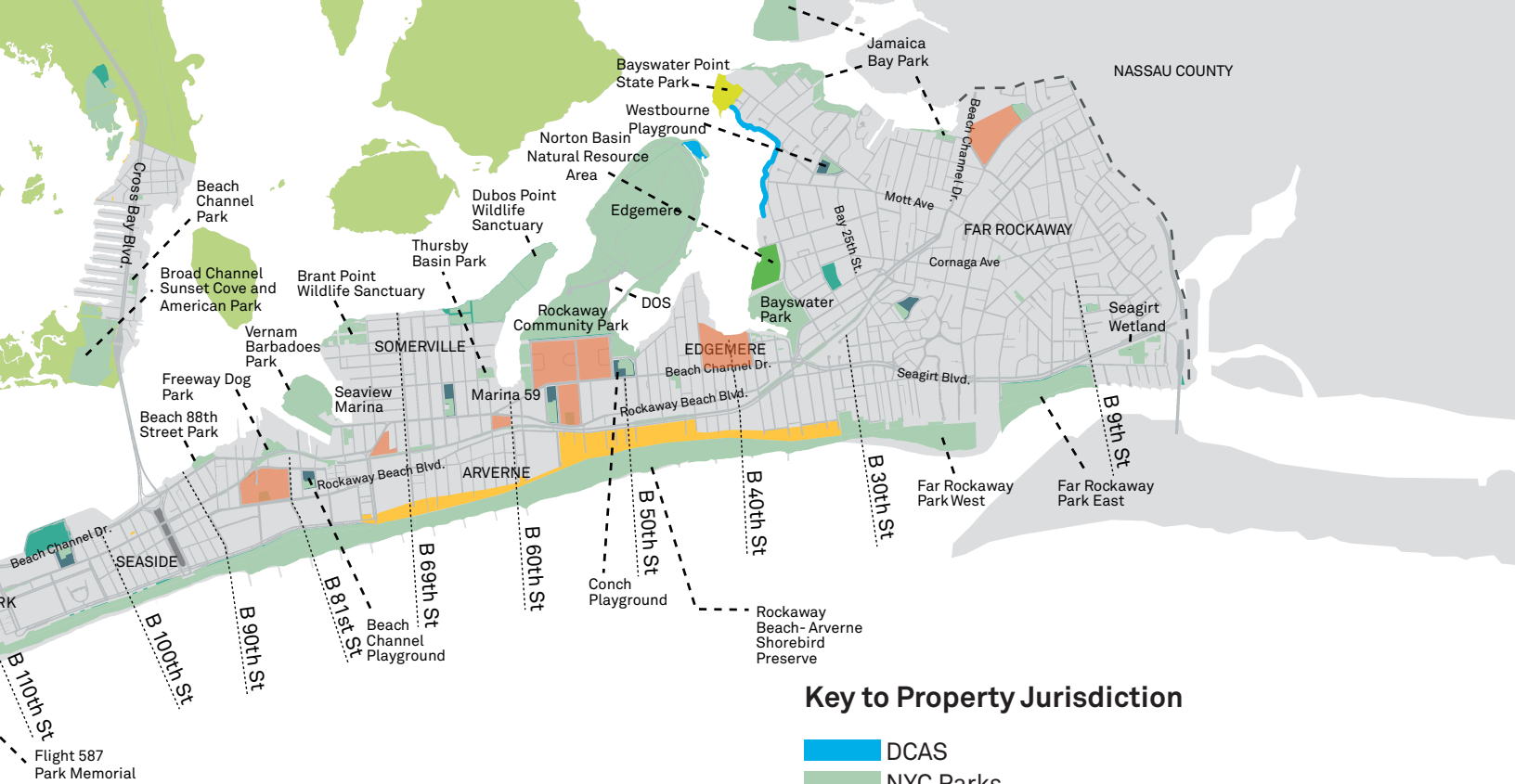


NYC Parks and Other Key Ownership

NYC Parks owns the majority of the beach and land adjacent to the waterfront along the southern side of the Rockaways, with the exception of Jacob Riis Park and Fort Tilden, owned by the National Park Service, and some private property in Far Rockaway.

Of the land directly adjacent to Jamaica Bay, a substantial amount of land is owned by NYC Parks, including Bayswater Park, Rockaway Community Park, Dubos Point and Vernam Barbadoes. Several other City agencies own properties adjacent

to the waterfront along Jamaica Bay, including the Department of Housing Preservation and Development (HPD), the New York City Housing Authority (NYCHA), the Department of Sanitation (DSNY) and the Department of City-wide Administrative Services (DCAS). Additionally, New York State Parks and New York State Department of Environmental Conservation (DEC) own Bayswater Point State Park and Norton Basin Natural Resource Area, respectively. A lesser percentage of the waterfront property on the bay side is privately owned or vacant lots.



Key to Property Jurisdiction

- DCAS
- NYC Parks
- HPD Property with DPR Open Space Components
- DOE and DPR Jointly Operated Playground
- National Park Service
- NYSDEC
- DOE Owned School Fields
- New York State Park (OPRHP)
- NYC Housing Authority (NYCHA)

Role of Waterfront Access

Rockaway is a large peninsula, bounded by the Atlantic Ocean to the south and Jamaica Bay to the north. The waterfront has played a crucial role in shaping its identity, carrying with it many challenges and opportunities.

Rockaway Beach along the southern edge, the most popular waterfront access point on the peninsula, is owned by NYC Parks and has several designated input spots along its extent. Due to the popularity of the beach and of non-motorized water sports, there have been multiple requests from the community for designated non-motorized water sport access areas along the beach, along with equipment storage.

On the bay side, there are several access points to the water throughout City and State park properties, however, they have had lower park visitation than the beach. There are several properties recently acquired by NYC Parks on the bay side that are currently not open to the public but present a great opportunity for waterfront access.

The shoreline conditions along the bay side include rip-rap, bulkheads, beaches and marshland. Some of the infrastructure along the shoreline is in varying degrees of degradation.

Many of the land uses along the bay side are natural areas with minimal use. There are also several private, industrial properties along the waterfront. These conditions can be improved to encourage more public access to the waterfront. Additionally, the high speed of traffic and limited street crossings along Beach Channel Drive currently limit the pedestrian access to many of the bay side parks.

There are many vibrant communities neighboring the bay side parks that would benefit from having a more inviting and accessible waterfront access. There is opportunity to restore waterfront parks along the bay side to allow people to enjoy natural habitats and have greater access to the water's edge.



Transportation

Subway

The Metropolitan Transportation Authority (MTA) “A” subway line is the only subway line that services the Rockaways. It travels between the northern tip of Manhattan and the Rockaways. The A line enters the Rockaways via Broad Channel and continues East along Rockaway Freeway to its terminus at Far Rockaway on Mott Ave. Additionally, the Rockaway Park Shuttle, S line, operates between Broad Channel and Rockaway Park/Beach 116th St.

Buses

The local bus, Q22, travels within the Rockaways between Bayswater and Jacob Riis Park along Rockaway Beach Boulevard, Beach Channel Drive, Seagirt Boulevard and up Beach 20th Street. The four major bus lines that travel in and out of the Rockaways are Q52, Q53, QM16 (express), QM17

(express) via Cross Bay Boulevard (which turns into Woodhaven Boulevard upland) and the Cross Bay Bridge. Additionally, the Q35 travels between Jacob Riis and Flatbush, Brooklyn via the Gil Hodges Bridge. The Nassau Inter-County express bus service has three bus services (N31, N32, N33) between Long Beach, Atlantic Beach and Far Rockaway.

Cars

There are two bridges that cross Jamaica Bay to connect the Rockaways with Queens and Brooklyn, the Cross Bay Bridge and the Marine Parkway Bridge. Both bridges have a toll of \$3.25. However, Rockaway and Broad Channel residents registered with the E-Z Pass Resident Discount Plan pay a toll of \$1.33. Additionally, drivers can enter the Rockaways from the east from the Nassau Expressway.



Bike Paths

Within the Rockaways the primary bike path is along the extent of the boardwalk between Beach 9th Street to Beach 126th Street; however, large sections of the boardwalk were damaged in Hurricane Sandy. Alternately, there is a mixed bike lane/bike route along Rockaway Beach Boulevard, Shore Front Parkway and Beach Channel Drive between Jacob Riis Park and Motts Basin.

The Shore Front Parkway bike lane was enhanced in 2013 with the addition of jersey barriers to separate pedestrians and bicyclists from automobile traffic.














Residents and visitors can also connect to the Jamaica Bay Greenway by the Marine Parkway Bridge and Cross Bay Bridge. The trail is along the northern shores of Jamaica Bay, connecting Rockaway to the Shore Parkway bicycle path through Floyd Bennett Field and Jamaica Bay Wildlife Refuge. The path is 10-miles long on a paved multi-purpose pathway past tidal wetlands, estuarine waters, marshes, meadowlands, beach, dunes and marine forest. The path was organized by the NYC Department of Environmental Conservation and National Park Service and connects to other New York City bike lanes in Queens and Brooklyn.

Ferry

The weekday Seastreak Ferry travels between Beach 108th/Beach Channel Drive, Brooklyn and Manhattan, stopping at the Brooklyn Army Terminal, Pier 11/Wall Street and East 34th St. The ferry takes 55 minutes between Beach 108th and Pier 11 and provides ten trips throughout the morning and early evening. The service started in November 2012 to assist residents impacted by Hurricane Sandy after the superstorm damaged the A train extensively. The ferry was introduced with the intention of being temporary, but due to popularity it was extended past its original end date and is now contracted until August 2014 with potential for future expansion.

During summer weekends and holidays, private operator American Princess Cruises operates the New York Beach Ferry between lower Manhattan and the Rockaway Peninsula. The service is geared towards recreation beachgoers and departs from Pier 11, stopping first at Riis Landing and then continuing to Beach 108th Street. Note: all ferry information is dated as of Spring 2014.

Rockaway Natural Resources and Ecology Map

- | | |
|--|---|
|  Wetlands Transfer Task Force (WTF) |  NYC Parks Property |
|  Existing Wetland |  HPD Property with DPR Open Space Components |
|  Existing Shoreline Foot Trail |  DOE and DPR Jointly Operated Playground (JOP) |
|  Natural Areas |  National Park Service Property |
|  Forever Wild |  NYSDEC Property |
|  Mosquitos |  DOE Owned School Fields |
| |  New York State Property (OPRHP) |

0 0.5 1 2 Miles



Natural Resources and Resiliency Measures

The Rockaway peninsula lies within the highest risk hurricane evacuation zones and the 100-year flood plain. Arriving almost exactly at the moment of high tide, Hurricane Sandy brought a massive storm surge to the neighborhoods of South Queens. The flooding exceeded the 100-year flood plain, inundating nearly 75% of the peninsula in four feet of water and up to 10 feet in some places. This inundation followed three paths. First, areas flooded when waves rose directly up over beaches and broke against the neighborhoods behind them. Second, floodwaters were funneled through

the Rockaway Inlet, throughout Jamaica Bay and then into the tributaries and channels around the circumference of the bay, flooding areas along the back bay of the peninsula. Finally, in some places, inundation entered areas through low-lying drainage infrastructure that never was intended to face flooding of this magnitude. The result of all of this was widespread loss—thousands of buildings damaged, power and transportation outages, disruptions in other services, displacement and financial hardship for many residents, businesses and nonprofits.



Hurricane Sandy was a devastating blow to New York City. The storm crippled the City’s transportation system, directly caused 44 deaths in the City and left New York with damages and economic losses estimated at \$19 billion. The record storm tide, registered at 14 feet at the Battery, swamped subways and tunnels and extended well beyond the 100–year flood plain.

While the City had been planning for climate change for several years, Hurricane Sandy highlighted our vulnerabilities across the city in a direct way. The storm exposed the urgent need to implement a comprehensive plan to reduce risk to the City from sea level rise and future storm events. Working with the New York City Panel on Climate Change and many other partners, the City developed a comprehensive climate resiliency plan to strengthen the coastline, upgrade buildings, protect infrastructure and make neighborhoods safer and more vibrant through 257 initiatives—physical, social and economic—to reduce risk across the city. The plan was released in June 2013 and is called “A Stronger, More Resilient New York” and demonstrates that we can expect an increase in the frequency of extreme storm events, particularly hurricanes, for the North American Atlantic Coast, along with a rise in sea levels by as much as 2.5 feet by the 2050’s.

The Conceptual Plan combines resiliency and livability through several design concepts that will be explored in the next section of the report. On the Jamaica Bay side, several park designs integrate an intermediate zone of saltwater marsh, dunes and other coastal habitat. This wetland construction, which is integrated with a system of seawalls in some areas, can help dissipate wave energy from storm surges as well as reduce the amount of bulkhead, resulting in greater biodiversity and habitat in Jamaica Bay. The size and precise location would need to be considered in relation to emerging plans for other natural and artificial systems throughout Jamaica Bay. A proposed Bay Side Nature Trail could be built on top of a berm that, while not resisting 100-year floods, could mitigate storm surges. This concept could fit well with the “living shoreline” approach that the Army Corps of Engineers is proposing for sites along Jamaica Bay that combines wetlands with berms. The City is working with the State and Army Corps on coastal risk reduction projects that may influence final shoreline designs.

Finally, the Conceptual Plan proposes a layer of secondary protection through the construction of green infrastructure upland from the waterfront. Improvements such as bioswales and rain gardens could decrease the amount of impervious surfaces.

Plan Proposals



Opportunity Sites

The opportunity sites highlighted in the following section were categorized into four different site types to address programmatic needs, context within the larger peninsula and resiliency measures. The categories are as follows:

Shore Front Parkway

The park space adjacent to the boardwalk and Shore Front Parkway between Beach 73rd and Beach 108th Streets is the most visited park in the peninsula. Many of the facilities here were destroyed in Hurricane Sandy and there is high demand to get them rebuilt or refurbished. This

also creates an opportunity to create a new concept design that reflects community input, reorganizes the programmatic layout and adds new facilities that respond to community needs. The project will integrate with the reconstruction of the boardwalk.

Bay Side Parks

There are several city parks along Jamaica Bay. The parks vary in size and present opportunities to create both small neighborhood parks and regional attractions. There is also an opportunity to incorporate the restoration of natural habitat

Rockaway Opportunity Sites Map



- 1 Shore Front Parkway (B 73rd- B 108th Streets)
- 2 Bayswater Park
- 3 Rockaway Community Park / Edgemere
- 4 Thursby Basin Park
- 5 B 88th Street Park
- 6 B 108th Esplanade
- 7 B 94th & 95th Street Corridor
- 8 Broad Channel - Sunset Cove and American Park
- 9 Bay Side Nature Trail
- 10 B 9th-B126th Boardwalk-Adjacent Area
 - a. B 26th-27th Park Area (Unbuilt PlaNYC)
 - b. B 20th Overlook (Unbuilt PlaNYC)
 - c. B 9th Seating Area (Unbuilt PlaNYC)

to increase biodiversity and to improve resiliency along the bay. The bay side parks include Bayswater Park, Rockaway Community Park, Thursby Basin Park, Beach 88th Street Park and the Beach 108th Street Esplanade.

Bay to Beach Connection

With the majority of visitors to the Rockaways traveling through Jamaica Bay headed to the beach, thousands of people travel the streets that connect the bay to the beach. Several of the larger cross-bay streets are also commercial corridors with numerous local businesses. The report identifies one major cross-bay connection at Beach 94th and 95th Streets as an important opportunity to create a flexible space for local residents and to attract visitors to support local businesses.

Large Regional Opportunities

Both Rockaway Beach and Jamaica Bay are large regional attractions that draw residents from all over New York. Through the development and refurbishment of parks, there is not only an opportunity to create a coherent identity for Rockaway parks but also to create a physical link between parks on the bay side through a continuous trail or path. This plan also describes the sequence of passive and active recreational activities for the boardwalk, which is an important amenity for residents and a destination for visitors to the peninsula.

Resiliency and Open Space Framework

The following concept designs lay out a vision for the identified opportunity sites. This section sets out distinct design proposals based on the project's five goals:

- Establish a plan for a comprehensive park system in the Rockaways;
- Complement the Rockaway Boardwalk Plan;
- Set investment goals for parks and open space;
- Integrate resiliency into Parks' plans; and
- Develop specific ideas and designs for particular parks.

In addition to proposing specific capital projects, the Conceptual Plan addresses shared challenges that unify the community vision for the Rockaways. Some of the main challenges are: improving access to parks and open space, addressing green infrastructure (GI) and landscaping, and educating the public about the Rockaways and its environment.

Community members showed overwhelming support for initiatives that would address climate change and resiliency, and for initiatives that would increase public awareness of environment and water quality issues. For sites within the conceptual plan, designing a sustainable landscape includes the following tactics:

- Implementation of green infrastructure, where deemed to be effective, by creating rain gardens and bioswales upland from the water's edge;
- Softening of the water's edge, where applicable, by constructing freshwater wetlands, salt marshes and riprap edges in order to increase aquatic habitat and minimize wave and water impacts; and
- Constructing bulkheads and storm berms to decrease the destruction of future storm surges.

Resiliency strategies often have multiple impacts. Landscape initiatives contribute to environmental benefits that will, in the long-term, help reduce the heat island effect and in the short-term, improve air quality and attenuate automobile and urban noise. Additional shade and seating areas also have positive social impacts on the health and well-

being of neighborhood residents. Softened edges, riverfront and riprap also increase the potential for recreational uses.

Landscape elements such as furniture, plants, bioswales and materials play a role in the resiliency of parks. Furniture must be sufficiently robust to withstand storm events. Plants and trees should be tolerant to water stresses including saltwater and drought. Bioswales and materials such as permeable pavers help to mitigate flooding. Sports fields and large open lawns have the capacity to receive, store and infiltrate stormwater.

To meet the goals of creating better access to parks, the Conceptual Plan proposes a variety of design solutions to the physical and perceived barriers experienced by residents and visitors that were identified in the community workshops. These solutions include creating more inviting entrances into parks and improving pathways and wayfinding systems from nearby transit stops and attractions.

There was also significant community interest in embedding wayfinding signage and design that reflect local context and history. Information about environmental conditions could be shared through art, lighting and new approaches to information signage. The signage could work on three levels, including:

- Wayfinding signage, which helps guide people to the waterfront and specific access points;
- Continuity signage, which creates a consistent identity for Rockaway parks and helps orient people using maps that show the extent of the Rockaways, specific destinations and important markers; and
- Interpretive signage, which raises awareness about the area's history and environmental issues.

The following descriptions of the Conceptual Design provide a combination of recommended approaches, such as street crossing improvements and GI insertions, and specific design proposals that have been developed to create a dynamic and coherent vision across the Rockaways. The vision for each of the ten sites utilize the five conceptual goals to structure the description of proposed projects and guidelines.

Precedent Images



NYC DEP Bioswale



Salt Marsh Example



Storm Berm Example

1 Shore Front Parkway: B73rd - B108th Streets

Context

The park area between Shore Front Parkway and the boardwalk has been the main community park and source of recreation facilities for the peninsula as well as the main access to the boardwalk.

Many facilities were destroyed or severely damaged by Hurricane Sandy, including Sandpiper Playground, a skate park, hockey rink, handball courts, basketball courts, picnic tables and more, between B86th and B108th Streets.

The area was well-known before Hurricane Sandy for its many handball and basketball courts that were lined up in a row along much of the boardwalk. In addition to an abundance of courts, there were a few playground spaces or sitting areas. The previous design was paved and laid out in functional, rectilinear fashion.

This concept design complements and builds off of the boardwalk reconstruction currently progressing. The concept design will ultimately coordinate with the final boardwalk design.

Opportunities

Recreation

The destruction caused by Hurricane Sandy has allowed the community to consider ways in which the area between Beach 73rd Street and Beach 108th Street could be updated for increased resiliency and community protection. There was a strong response from residents to provide fewer concrete and asphalt sports courts, more playgrounds, a state of the art skate park, a multi-athletic space and areas for games. In addition, there was a desire for shaded and planted areas and small informal gathering spaces near the boardwalk access points where people could sit and read or picnic. Finally, there was strong community interest in incorporating a new, flexible performance space at a major entryway to the boardwalk, both to create a sense of arrival for visitors and to provide an outdoor community events space. The specific design of a performance space will be determined in further consultation with the community pending available funding for project implementation.

Plan of Proposed Shore Front Parkway Recreation Area and Precedent Images



Key Park Improvements by Park Area

Park Area A: Total \$9.3M

- 1 Shore Front Parkway Median Bioswales & Bike Lane

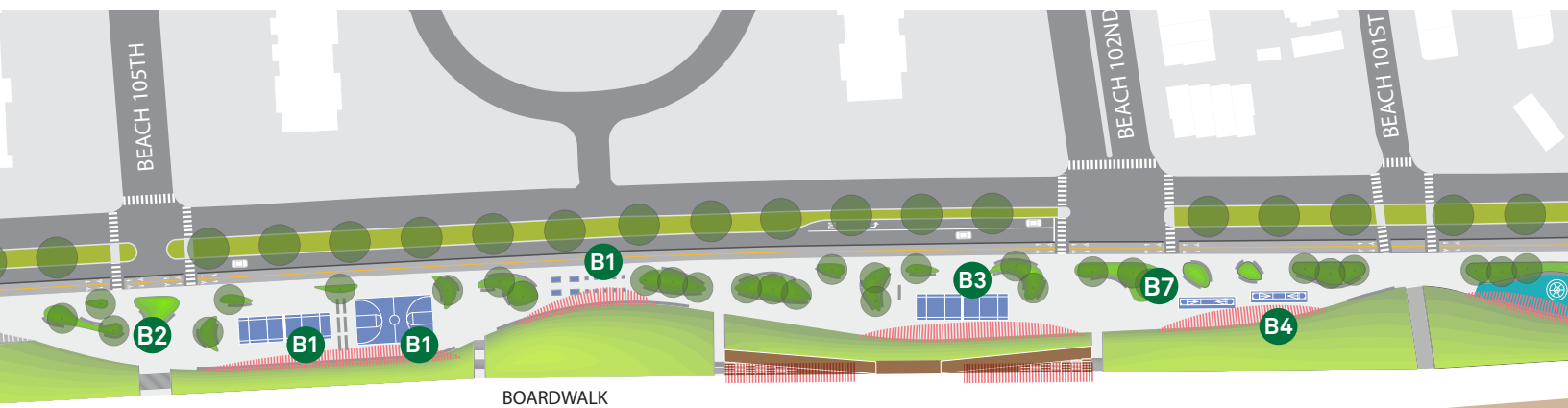
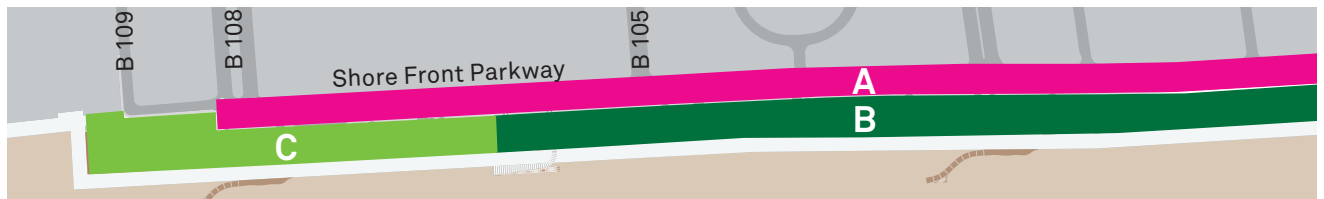
Park Area B: Total \$18.74M

- 1 New Handball Courts (2), New Basketball Court & Game Tables \$3.45M
- 2 Arrival Plaza at B105th \$2.43M
- 3 Handball Courts (2) \$2.87M
- 4 Shade Structures
- 5 Arrival Plaza at B98th \$2.51M
- 6 Tot Lot & Seating Area \$4.28M
- 7 Arrival Plaza & Shuffleboard Courts \$3.21M

Park Area C: Total \$13.25M

- 1 Wooden Bleachers at Hockey Rink,
- 2 Hockey Rink (\$900K) &
- 3 Arrival Plaza \$7.59M
- 4 New Playground with Spray Shower \$5.66M
- 5 Shade Structure

Shore Front Parkway: Park Area Legend



Notes: Boardwalk access points are illustrative and all access points will be determined in alignment with the final boardwalk design.

All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

In addition, this Conceptual Plan leaves open the possibility of a dog run, which would be located and designed subject to approval. Through NYC Parks' experience, dog runs in parks owe their success to the commitment of organized, dedicated volunteer groups that assume responsibility and a proactive role for maintenance, security and fostering a positive park environment. The proposed design for shorefront parks has set out a unique public open-space environment that flows unbroken in a dynamic way from end to end, and with recreational facilities and amenities carefully situated in relationship to boardwalk access points and landscaped areas.

Natural Resources and Resiliency

The proposed design has dramatically decreased the amount of pavement. In its place is a continuous undulating landscape berm, placed up against the north side of the boardwalk. The landscape berm will be planted with a mix of plant species native to the maritime environment. The berm serves many purposes beyond increasing the amount of greenery: it will mediate the transition between the ground elevation of the park space and the new elevated boardwalk, conceal the baffle wall underneath the boardwalk and shape programmable areas along the park area for events and activities.

The addition of new planted areas will also increase pervious surfaces and decrease storm water runoff. The planting of trees and vegetation will improve air quality and reduce the heat island effect. There may also be an opportunity to introduce bioswales along street medians, as has been done in parts of the Rockaways, while accommodating desired recreational programs.

Access

Current access to Shore Front Parkway is good, with crosswalks and access points to the park and boardwalk. The concept plan will maintain safe pedestrian crossings along Shore Front Parkway and coordinate the crossings with access points to the park, while also exploring two new crosswalks at Beach 81st Street and Beach 77th Street with DOT. The plan will also coordinate with the development of the boardwalk and other USACE beach improvements to provide easy access onto the boardwalk and seamless connections between the boardwalk and the park. The design proposes that Shore Front Parkway itself be redesigned to create a more continuous median and a two-way bike path within the existing Shore Front Parkway right-of-way. The need for a bikeway along Shore Front Parkway can be further examined in the future, once the boardwalk construction is complete.



Plan of Proposed Shore Front Parkway Recreation Area and Precedent Images

Cost

The entire plan for Shore Front Parks has been divided into several areas that could guide how

the park improvements are constructed. These amenities range in cost though all are estimated to be between \$2 million and \$10 million.

Key Park Improvements by Park Area

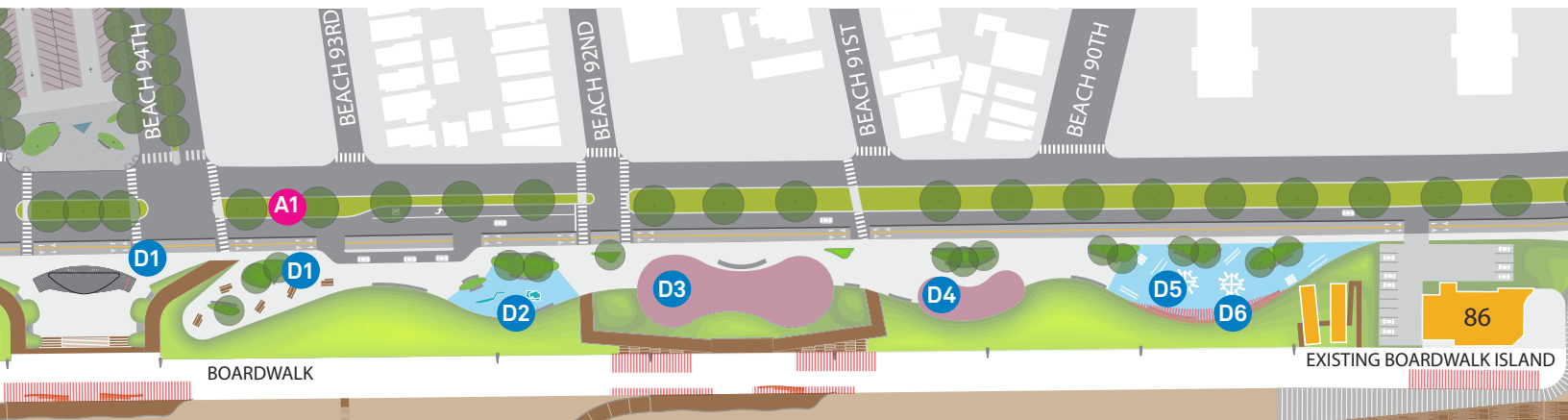
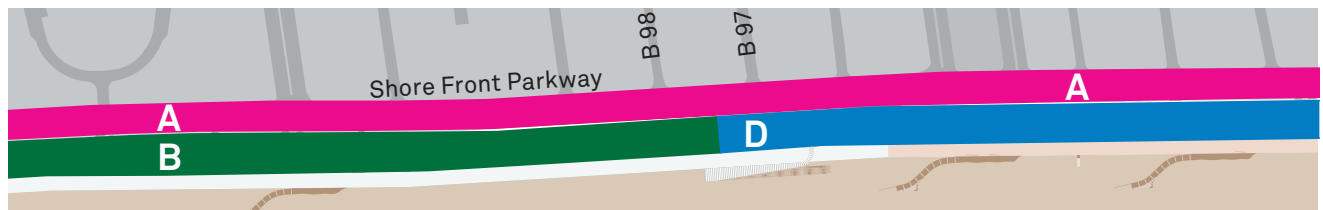
Park Area B: Total \$18.74M

- 1 New Handball Courts (2), New Basketball Court & Game Tables \$3.45M
- 2 Arrival Plaza at B105th \$2.43M
- 3 Handball Courts (2) \$2.87M
- 4 Shade Structures
- 5 Arrival Plaza at B98th \$2.51M
- 6 Tot Lot & Seating Area \$4.28M
- 7 Arrival Plaza & Shuffleboard Courts \$3.21M

Park Area D: Total \$15.06M

- 1 Arrival Plaza & Picnic Area \$4.32M
- 2 New Rock Climbing Area \$2.1M
- 3 New Concrete Skate Park \$2.36M
- 4 New Jr. Concrete Skate Park \$2.10M
- 5 New Adult Fitness Area \$4.19M
- 6 Shade Structures

Shore Front Parkway: Park Area Legend



Notes: Boardwalk access points are illustrative and all access points will be determined in alignment with the final boardwalk design.

All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

The costs presented here are based on the construction of multiple independent capital projects. Combining the many smaller discrete capital projects presented herein into fewer larger capital projects would lead to lower overall total project cost by realizing savings attributable to economies of scale. Cost estimates for concepts are based on best available information of the site at the time of publication; estimates are subject to change based on the final capital project design. The costs indicated for each of the plan components identified includes the component itself as well as reconstruction of a significant portion of the surrounding park landscape including park paths, plantings and amenities like benches, drinking fountains and lighting. All costs are in 2014 dollars and are subject to adjustment based on final design and field conditions.

Key Park Improvements by Park Area

- Park Area E: Total \$21.83M**
- 1 New Large Playground \$4.53M
 - 2 New Small Playground at B73-B74 & 3 Arrival Plaza at B73-B74 \$3.83M
 - 4 Handball Courts (16) & 5 Basketball Courts (3) \$6.21M
 - 6 Shade Structures
 - 7 New Multi-purpose Field \$4.73M
 - 8 Arrival Plaza at B84-B86 \$2.49M

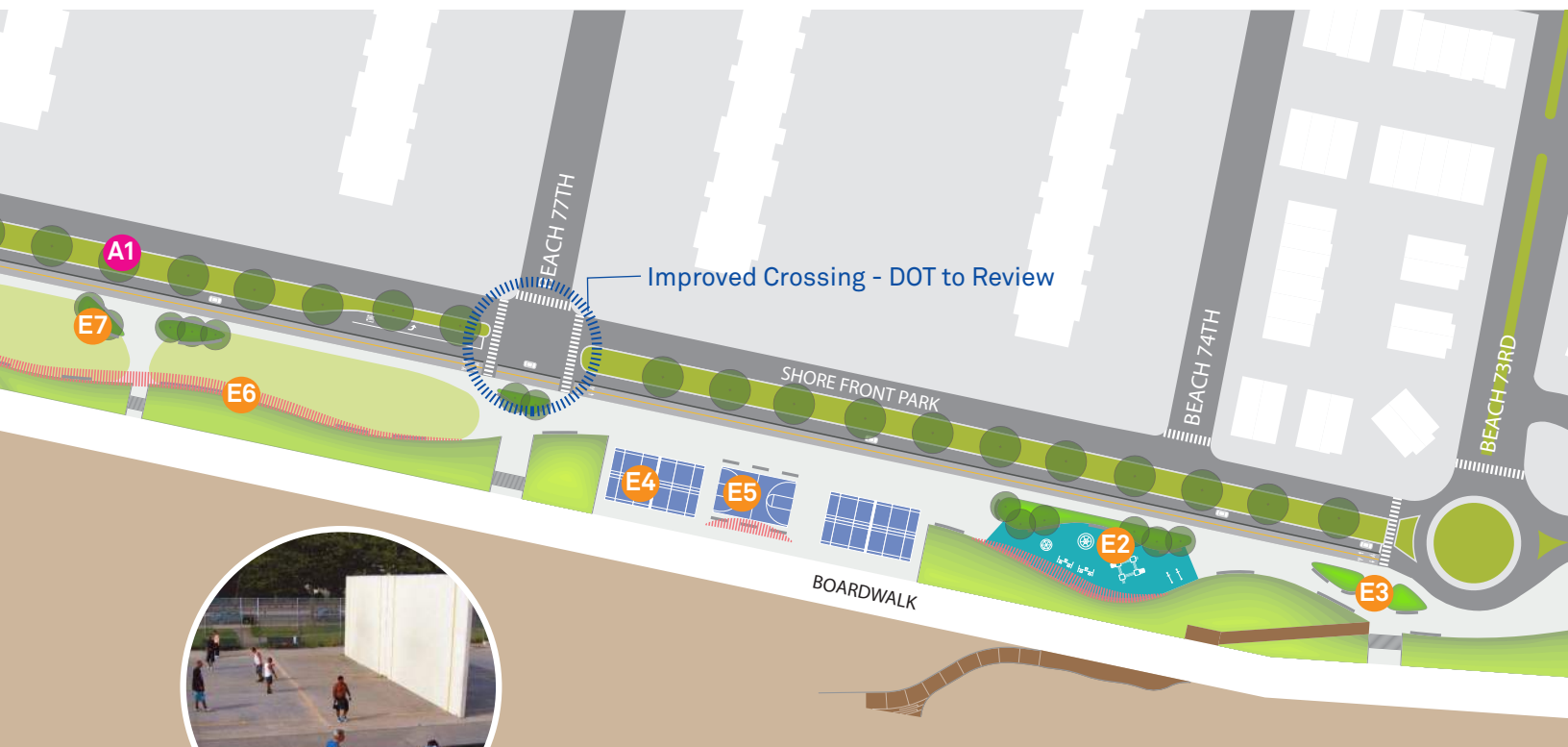
Shore Front Parkway: Park Area Legend



Plan of Proposed Shore Front Parkway Recreation Area and Precedent Images



Shore Front Parkway. Photomontage of Boardwalk Access and Skate Park. View is from the boardwalk between Beach 90th Street and Beach 91st Street looking west.



Notes: Boardwalk access points are illustrative and all access points will be determined in alignment with the final boardwalk design.

All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

2 Bayswater Park

Context

Bayswater Park is the main community park for the peninsula aside from the beach boardwalk and areas adjacent to the boardwalk. It lies between Beach 32nd Street and the Norton Bay tributary of Jamaica Bay, north of Beach Channel Drive and south of Norton Basin Natural Resource Area. The surrounding context, which includes single family housing, apartment buildings and public housing, draws people from many different neighboring communities for active and passive recreation. Additionally, the park hosts an annual festival in the fall that draws thousands of people.

Though the Beach 36th Street A train subway stop is approximately three blocks away, the street crossings to the main entry point on Beach Channel Drive can be challenging. There are additional entry points on Beach 32nd Street, but these openings into the park are not accompanied by crosswalks and require crossing a sandy area used for parking along the park's edge.

The park currently supports a mix of active and passive recreation uses. The playground, picnic and seating areas are contained within an area partly blocked from street view by long concrete walls. There is an old fountain area that is no longer functioning. Courts and fields are in need of upgrade and repair. Continuous movement along the water's edge is made challenging by the tennis courts which are built up to the edge of the inlet.

Existing Facilities

- Comfort station
- Natural turf baseball field
- Tennis courts (6), basketball courts (2) and handball courts (6)
- Playground
- Former hockey rink
- Small picnicking and grilling area
- Small boat launch location

Opportunities

Throughout the community workshops, residents consistently indicated a strong desire for playing field space that would include a soccer field, cricket pitch and a stage area to accommodate events such as the fall festival. In addition, other requests included a jogging path that would circumnavigate the park. There is an opportunity to open up the playground and seating space to make the area more welcoming, as well as providing an additional picnic and grilling area. Finally, there is an opportunity to improve layout, circulation and access to Jamaica Bay, as well as provide new activity spaces for boating and picnicking by the inlet.

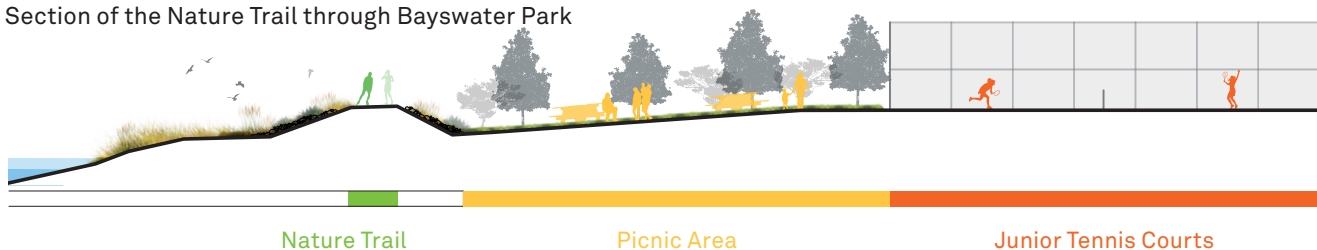
Recreation

The Conceptual Design has opened up the inlet by removing three of the old tennis courts and replacing them with two youth-sized tennis courts. This would allow for a new picnic/grilling area along the water next to a permanent stage area. The area along the inlet would have a boat storage shed and a boat launch. The design also proposes a new skate plaza in an underused area of the park, an artificial turf soccer field and a combined baseball field/cricket pitch.



View of Bayswater Park Today

Section of the Nature Trail through Bayswater Park



Precedent Images



Junior Tennis Courts



Waterfront Picnic Areas



Amphitheatre



Artificial Turf Soccer Field



Bayswater Park. Rendering of Proposed Bayswater Park Boat Storage and Boat Launch. View is from the southeastern section of the inlet at Beach 37th Street looking northeast.

Natural Resources and Resiliency

The redesign of Bayswater Park proposes natural habitat such as wetlands and upland forest along the shoreline. The proposal addresses strategic resiliency efforts such as including bioswales along newly constructed sidewalks and parking area. The Rockaways have a number of existing bioswales planted by NYC Greenstreets. Finally, the development of a Bay Side Nature Trail that would be integrated into the edge of Bayswater Park could be raised up on a berm that would mitigate storm surge effects. The height of this berm would need to be modeled further to determine the right height that supports public access while contributing to storm resiliency. The final trail design would reflect and complement the current understanding of other coastal risk reduction strategies to be deployed in Jamaica Bay, such as any pending work by the Army Corps of Engineers.

There is also the possibility of raising the perimeter running track one or two feet to reduce the risk of potential future flooding from inundating Beach 32nd Street and the homes beyond the street.

Access

The concept design adds access points to the park in addition to reconstructing the existing entrance. A critical improvement to the park's access will be the redesign of the park's edge along Beach 32nd Street, which currently allows perpendicular parking on a sand border. The new plan proposes an entry plaza that extends across to Beach 35th Street. This focal point will draw people to the park from the subway and elsewhere in the Rockaways.

Cost

The total estimated Bayswater Park improvement costs, which includes soft costs and contingencies, is approximately \$28 million. Because of the size of this estimate, the plan has been divided into four areas that could guide how the park improvements are constructed. The adjacent diagram highlights the four areas and to the right are listed the proposed key improvements and costs for each respective area. The four areas were determined by the corresponding program elements and means of construction.

Cost estimates for concepts are based on best available information of the site at the time of publication; estimates are subject to change based on the final capital project design. The costs presented here are based on the construction of

multiple independent capital projects. Combining the many smaller discrete capital projects presented herein into fewer larger capital projects would lead to lower overall total project cost by realizing savings attributable to economies of scale. The costs indicated for each of the plan components identified includes the component itself as well as reconstruction of a significant portion of the surrounding park landscape including park paths, plantings and amenities like benches, drinking fountains and lighting. All costs are in 2014 dollars and are subject to adjustment based on final design and field conditions.

Key Park Improvements by Area

Park Area A: Total \$13.58M

- 1 5 to 12-year-old Playground \$1.56M
- 2 Water Feature \$1.56M
- 3 Toddler Playground \$888K
- 4 New Park Building and Kayak Storage \$3.44M
- 5 Public Art Plaza \$2.31M
- 6 Improved Crossing (DOT to review)
- 7 Kayak Launch
- 8 Bioswale Guardrail Sidewalk Pavement \$3.81M

Park Area B(i): Total \$5.7M

- 1 Synthetic Turf Soccer Field (1) \$1.5M
- 2 Running Track \$750K
- 3 Baseball Field (1) & 4 Cricket Field (1) \$1.5M
- 5 Permanent Event Stage \$150K
- 6 BBQ and Picnic Area \$1.8M

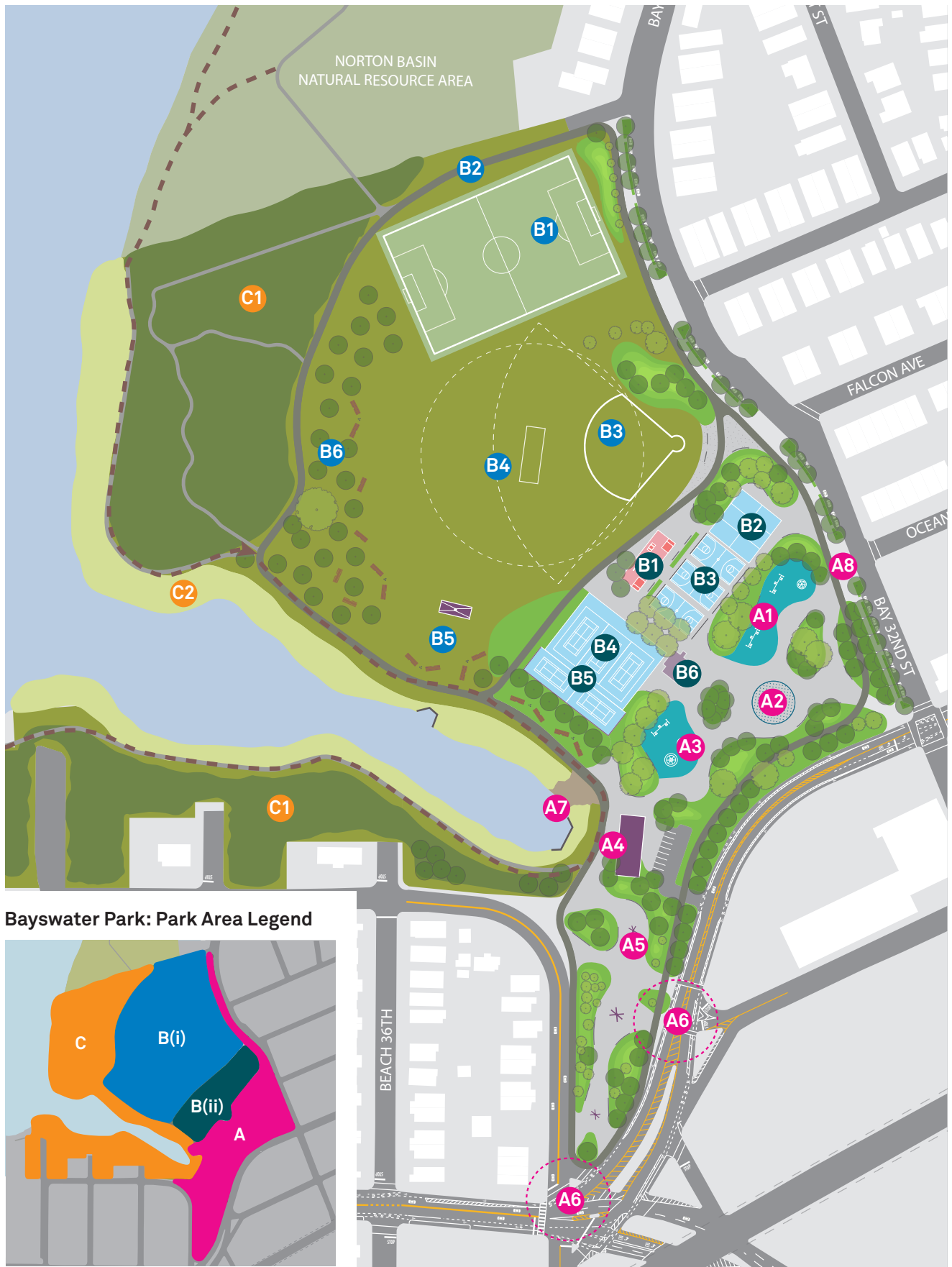
Park Area B(ii): Total \$5.56M

- 1 Prefabricated Skate Park \$1.31M
- 2 Handball Courts (6), 3 Basketball Courts (3), 4 Tennis Courts (3) & 5 Jr. Tennis Courts (2) \$2.13M
- 6 Refurbished Comfort Station \$2.13M

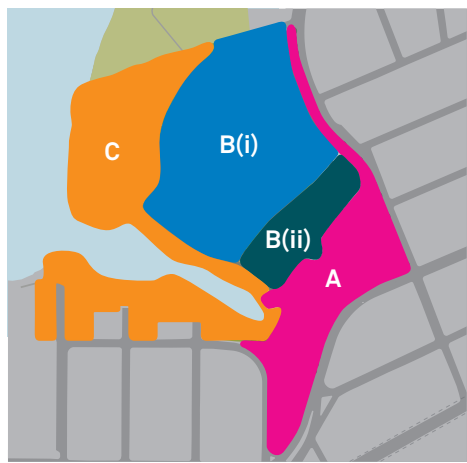
Park Area C: Total \$2.48M

- 1 Upland Restoration \$360K
- 2 Wetland Restoration \$2.1M
- 3 Signage, Mosquito Magnets & Minor Pathway Repairs (not labeled but throughout park concept plan) \$15K

Plan of the Proposed Bayswater Park



Bayswater Park: Park Area Legend



Note: All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

3 Rockaway Community Park

Context

Rockaway Community Park is located north of Alameda Avenue and the New York City Housing Authority’s Ocean Bay Apartments, which stretch between Beach 51st Street and Beach 58th Street.

The park has historically been less utilized than other parks due to a number of reasons, including the heavy presence of mosquitoes in the summer months, the park’s lack of visibility and challenging connectivity due to few through streets.

Located only blocks from the Beach 60th Street A subway station and within walking distance from several schools and apartment buildings, the park could become a more attractive and accessible neighborhood asset. Additionally, the closed and capped Edgemere Landfill that is north of Rockaway Community Park will, over time, offer additional recreational opportunities. This area consists mainly of grassland cover over former landfill areas with existing roads created by DSNY around the perimeter and over the top of the landfill. It offers scenic views across Jamaica Bay and some access to the water.

To the south of the landfill, a large area of the extracted park had invasive species and was planted with native coastal forest as part of MillionTreesNYC.

It is important to note that NYC Parks has ownership of lands running both west of Beach 58th Street and east of Beach 51st Street (south of Rockaway Community Park) that have not been developed as active open space. The parkland along Beach 58th Street abuts an inlet with an active marina and extends down to Beach Channel Drive. A parcel of this land has been appropriated

for a community garden. The land along Beach 51st Street includes a triangular parcel and demapped street that establishes a new waterfront edge and a connection to Conch Playground, which is between Beach 51st Street and Beach 49th Street to the east and down to Beach Channel Drive to the south.

There is ample opportunity to refurbish existing amenities and create new ones within Rockaway Community Park. There is also an opportunity to improve site conditions to minimize mosquito presence and make the park more inviting. One of the main attractions is the cricket field, since it is the only cricket field located in the Rockaways.

Existing Facilities

- Baseball and cricket field
- Basketball, tennis and handball courts
- Playground
- Walking trail
- Unused park house
- Informal small boating put-in location
- Two fishing piers



Existing View of the Bay Side Shore Line

Section of the Bay Side Nature Trail through Rockaway Community Park



Fishing Pier

Nature Trail

Rockaway Community Park

Existing Conditions Images



Fishing Piers



Mosquito Magnet

Precedent Images



Skate Park



Handball Courts



Rockaway Community Park Comfort Station and Park Kiosk. Photomontage looking northwest at proposed new section of Rockaway Community Park. View taken from intersection of Beach 49th Street and Norton Avenue.

Opportunities

Recreation

Rockaway Community Park has the opportunity to provide recreational facilities for local residents, including those in Ocean Bay Apartments and those who live farther away. The current fields in the southern section of the park can be refurbished and slightly reorganized to provide a multipurpose field with soccer, football, cricket and baseball, multiple hard courts for basketball, handball and tennis and a gaming area for ping-pong and shuffleboard. The acquisition of parkland north of Conch Playground creates an opportunity to provide play facilities close to PS 105, such as a skatepark and a picnic area with grills along the water. Future potential programmatic uses for former Edgemere landfill include a sledding hill, kite-flying space, birding, observation decks and educational nature walks, which, pending regulatory requirements, NYC Parks can explore in conjunction with DSNY and DEC.

Natural Resources and Resiliency

The plan for Rockaway Community Park will include restoration of marshland, upland forest and meadow land creating new habitat and contributing to stormwater management efforts. The plan also includes mosquito magnets, which attract and capture mosquitoes over a wide radius, to help mitigate the concentration of mosquitoes in the park. In addition, the plan suggests that the upland forest restoration should be extended to the northern section of the park.

Access

The current entrance to Rockaway Community Park is behind Ocean Bay Apartments and the park receives relatively low visitorship. The new plan extends Rockaway Community Park to Conch Playground and Beach Channel Drive, providing an important new gateway with high visibility. This plan includes a new park kiosk and comfort station at the junction of Norton Avenue, Beach 49th Street and Conch Place that could become the focal point to draw people into the park.

Cost

The total estimated Rockaway Community Park improvement costs are approximately \$26 million. The plan has been divided into three areas that could guide the park improvements process. The adjacent diagram highlights the four areas and below are listed the proposed key improvements and costs

for each area. The four areas were determined by the corresponding program elements and means of construction.

Cost estimates for concepts are based on best available information of the site at the time of publication; estimates are subject to change based on the final capital project design. The costs presented here are based on the construction of multiple independent capital projects. Combining the many smaller discrete capital projects presented herein into fewer larger capital projects would lead to lower overall total project cost by realizing savings attributable to economies of scale. The costs indicated for each of the plan components identified includes the component itself as well as reconstruction of a significant portion of the surrounding park landscape including park paths, plantings and amenities like benches, drinking fountains and lighting. All costs are in 2014 dollars and are subject to adjustment based on final design and field conditions.

Key Park Improvements by Park Area

Park Area A: \$8.25M

- 1 Skatepark \$2.63M
- 2 Comfort Station and Park Kiosk \$2.25M
- 3 Athletic Field in School Yard \$1.5M
- 4 Refurbished Existing Playground \$375K
- 5 BBQ, Picnic Tables and Lawn Area \$1.5M

Park Area B: Total \$13.2M

- 1 Cricket Field (1) & 2 Soccer Field (1) \$3.51M
- 3 Gaming Area: Ping Pong, Shuffleboard (1), 4 Handball Courts (2), 5 Basketball Courts (3), & 6 Tennis Courts (4) \$3.98M
- 7 Refurbished Comfort Station \$1.73M
- 8 BBQ, Picnic and Landscape Areas \$3.98M

Park Area C: Total \$5.7M

- 1 Wetland Restoration \$2.25M
- 2 Pier
- 3 Proposed Boardwalk and Site Amenities \$1.5M
- 4 Paved Path
- 5 Kayak Landing Point
- 6 Upland Restoration \$1.95M

Plan of Proposed Rockaway Community Park



Rockaway Community Park: Park Area Legend



Note: All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

4 Thursby Basin Park

Context

Thursby Basin Park is a small, flat, rectangular lot within the Somerville neighborhood, a quiet residential area. The lot is currently undeveloped with single family homes on three sides and Somerville Basin. The site is part of an HPD urban renewal area and is identified to receive mitigation funding by the developer of Arverne-by-the-Sea.

Existing Conditions

Thursby Basin Park was recently acquired by NYC Parks and is not yet open to the public. The parcel is currently vacant.

Existing Facilities

- None

Opportunities

Recreation

With homes on three sides of the lot, the open space is ideally placed to become an important neighborhood amenity. Situated across the inlet from Rockaway Community Park and Marina 59, and south of Dubos Point Park, the park also has an opportunity to become a link and stopping point along the Bay Side Nature Trail.

The small neighborhood park could offer something for all ages: adult fitness equipment, playground, lawn area and shade structures. The park can be incorporated into the Bay Side Nature Trail with

a waterfront esplanade area. This area can allow residents and bay side trail walkers to stop and access the water, overlook the marina and picnic with grill areas.

Natural Resources and Resiliency

The removal of invasive species and planting of trees and native plants will contribute to habitat restoration and can decrease stormwater runoff and heat island effect. The waterfront will also be planted with riparian plantings to help soften the water's edge.

Access

There could be entrance points from the corners of the neighborhood park. No additional street parking will be added to keep noise to a minimum. Design of the park would be developed to allow for the potential of the Bay Side Nature Trail to run through it.

Cost

The total estimated Thursby Basin Park improvement costs, which includes soft costs and contingencies, is \$8-10 million.

Cost estimates for concepts are based on best available information of the site at the time of publication; estimates are subject to change based on the final capital project design. All costs are in 2014 dollars and are subject to adjustment based on final design and field conditions.

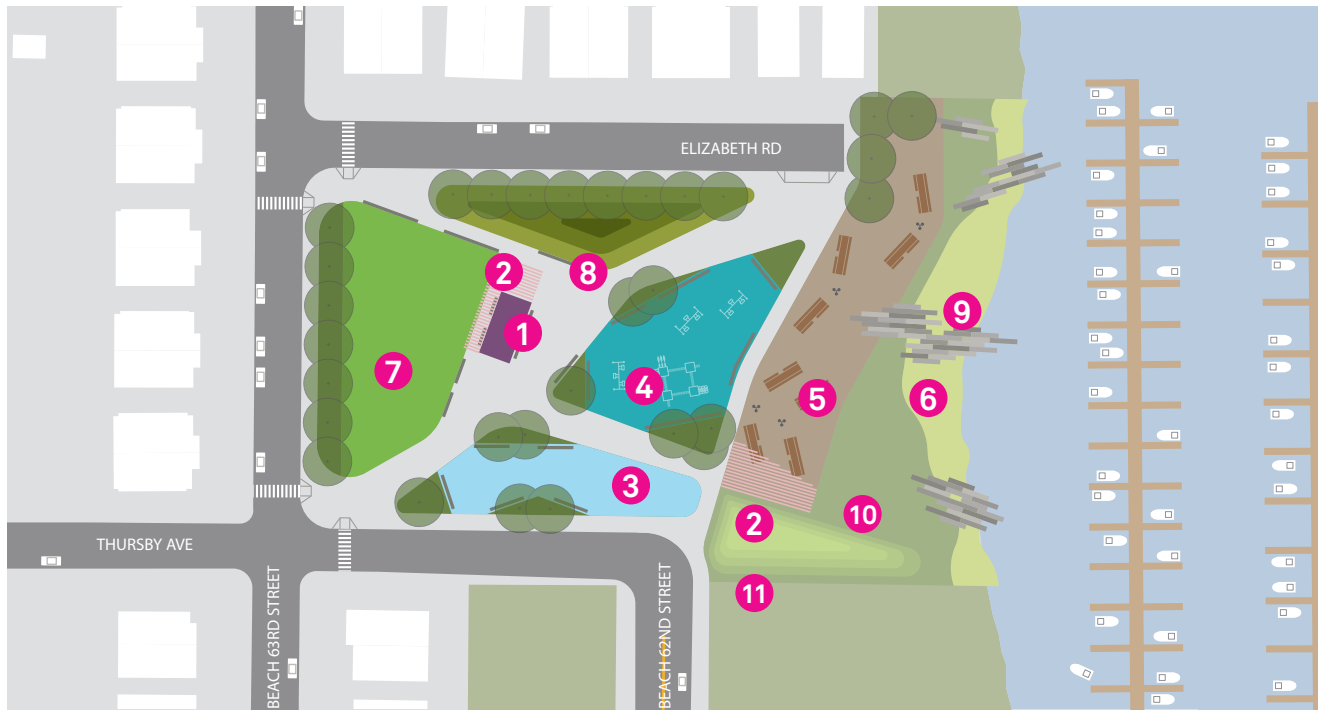
Precedent Images



Picnic and BBQ Area



Waterfront



Plan of Proposed Thursby Basin Park

Key Park Improvements

- 1 Comfort Station
- 2 Shade Structures
- 3 Adult Fitness Area
- 4 Playground
- 5 BBQ Area
- 6 Waterfront Seating
- 7 Open Lawn
- 8 Rain Garden
- 9 Riparian Planting/Riprap
- 10 Lawn
- 11 Bermed Lawn



Existing View of the Current Lot for the Proposed Thursby Basin Park



Proposed Thursby Basin Park. Photomontage view is from the west side of the inlet close to the intersection between Thursby Avenue and Beach 62nd Street looking west towards the marina and the Ocean Bay Apartments.

Note: All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

5 Beach 88th Street Park

Context

Beach 88th Street Park site runs between Beach Channel Drive and Jamaica Bay to the south and north and between Old Beach 88th Street and Beach 89th Street to the east and west. Currently there are no street crossings along this section of Beach Channel Drive, a high traffic street, making it difficult to access. The Beach 90th Street A subway stop is only one block away and the Cross Bay Bridge lies four blocks west of the park.

Beach 88th Street Park was recently acquired by NYC Parks and is not yet open to the public. Currently, it is the site of a DEP sewer outfall construction project. The photomontage of the Proposed Beach 88th Street Park does not reflect DEP infrastructure which is not yet complete. The site consists of grassy areas and a gravel beach along the perimeter.

Existing Facilities

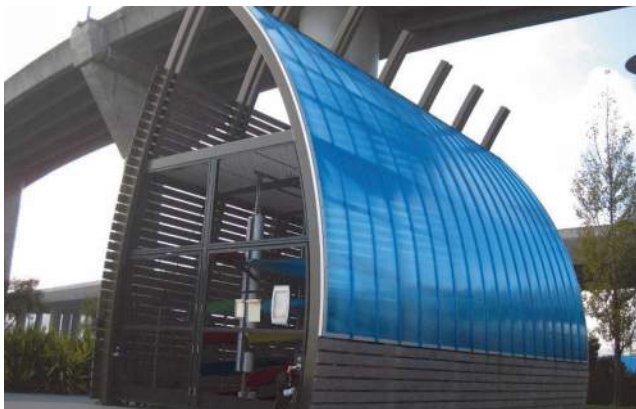
- None

Opportunities

Recreation

There is a tremendous opportunity for Beach 88th Street Park to become a beautiful neighborhood park. Community residents provided several ideas, including a new pier and kayaking into Jamaica Bay. The comfort station and kayak storage could be used by local community groups. The playground, picnic and BBQ area, open lawn and shade structures would offer a range of activities for people of ages and families.

Precedent Images



Kayak Storage

Natural Resources and Resiliency

The design for Beach 88th Street Park includes removal of invasive species and introduction of native plantings, serving to restore natural habitat and decrease stormwater runoff and heat island effect. There is an opportunity to introduce an oyster bed and saltwater marsh along the shoreline. This will help to revive native habitat in Jamaica Bay.

Access

Current access to the site is limited because of the high traffic along Beach Channel Drive. The plan for Beach 88th Street Park could include a designated crossing for safer pedestrian access. Any new crossings would require further review by DOT. The plan also includes a drop off area to allow for the unloading of kayaks and on-street parking for vehicle access.

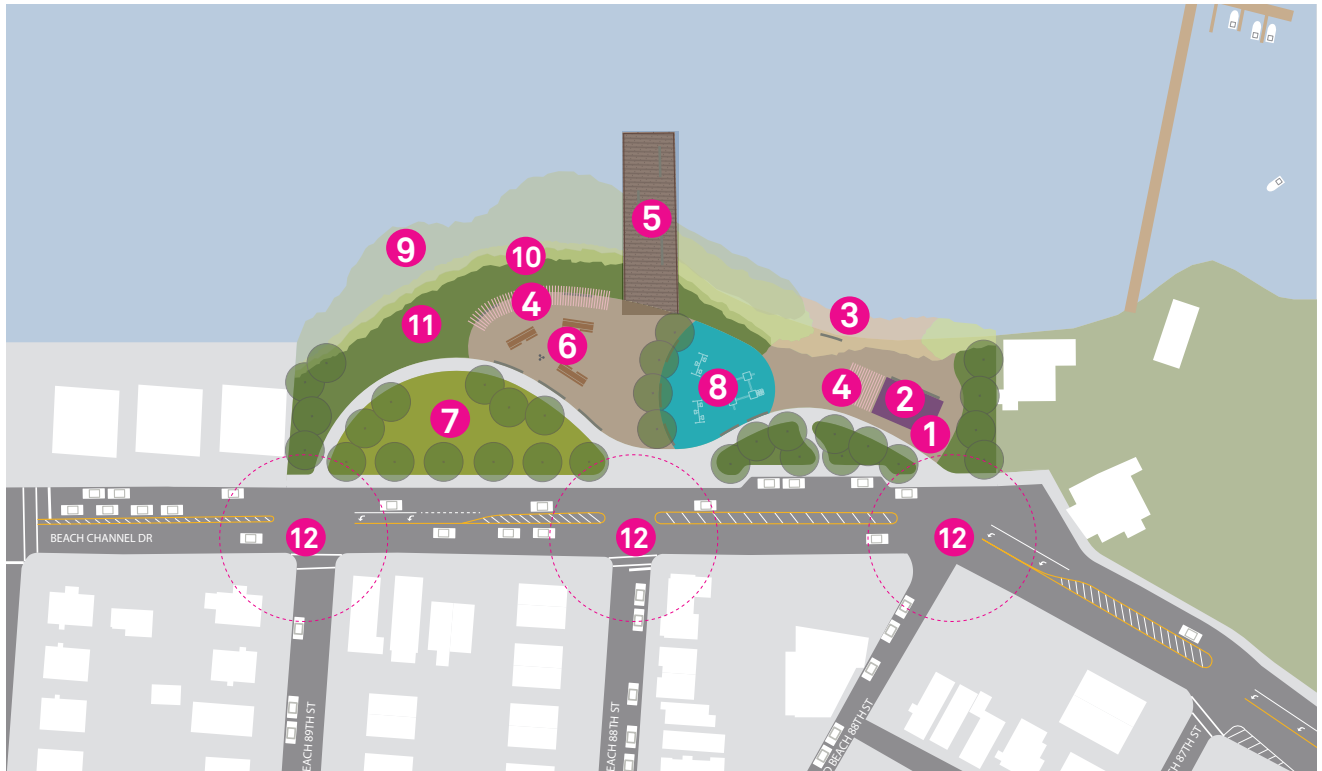
Cost

The total estimated Beach 88th Street Park improvement costs, which includes soft costs and contingencies, is \$7-8 million.

Cost estimates for concepts are based on best available information of the site at the time of publication; estimates are subject to change based on the final capital project design. All costs are in 2014 dollars and are subject to adjustment based on final design and field conditions.



Kayak and Canoe Launch



Plan of Proposed Beach 88th St. Park



Existing View at B88th Street



Proposed Beach 88th Street Park. Photomontage view is from the comfort station looking west to the pier and the Cross Bay Bridge in the distance.

Key Park Improvements

- 1 Comfort Station
- 2 Kayak Storage
- 3 Beach with Kayak Launch
- 4 Shade Structures
- 5 Pier
- 6 Picnic and BBQ
- 7 Open Lawn
- 8 Playground
- 9 Oyster Reef
- 10 Restored Wetlands
- 11 Upland Riparian Zone
- 12 Improved Crossing
(DOT to review)

Note: All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

6 Beach 108th Street Esplanade

Context

The site of the proposed Beach 108th Esplanade is a linear rectangular lot that runs between Beach Channel Drive and Jamaica Bay to the south and north, and Beach 108th Street and Wainwright Court to the east and west. The site was recently acquired by NYC Parks and is not yet open to the public. The narrow, grass and concrete strip is bordered by a large fence along Beach Channel and a bulkhead along Jamaica Bay. There are plans underway to rebuild the bulkhead and the esplanade. The site currently slopes down from Beach Channel Drive to the existing bulkhead.

Existing Facilities

- None

Opportunities

Recreation

There is an existing plan to create an esplanade with seating and shaded areas along the water's edge.

The new bulkhead will be raised higher than the current one to improve storm surge resiliency and, as a result, the esplanade area would be raised to the level of Beach Channel Drive. The native beach grasses and vegetation between the walkway and Beach Channel Drive will help to reduce traffic noise.

Natural Resources and Resiliency

The design for Beach 108th Street Esplanade will include planting of native vegetation and trees, serving to restore natural habitat and decrease stormwater runoff and heat island effect. The new bulkhead will also reduce the risk of flooding in this area.

Access

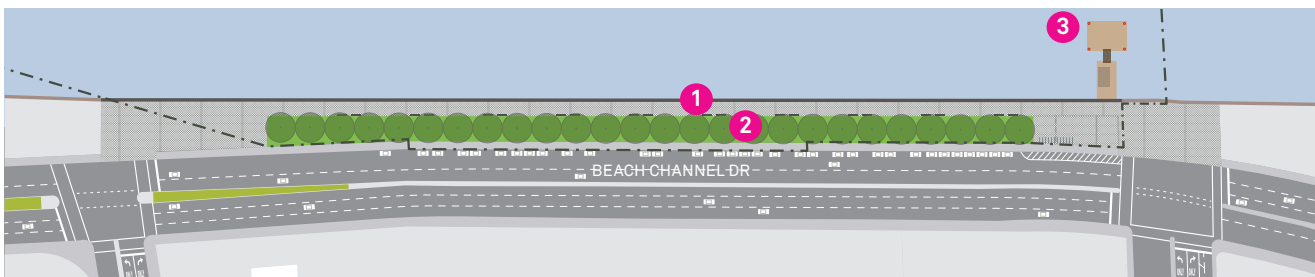
The esplanade can be accessed from both ends at Beach 108th Street and Wainwright Court. There is opportunity for it to be incorporated into a longer greenway being proposed by DOT along Jamaica Bay. There is also the possibility to situate a permanent ferry dock at the end of Beach 108th Street. The current plan creates a large entry area at this end of the park, leaving space for a potential future ferry dock.

Cost

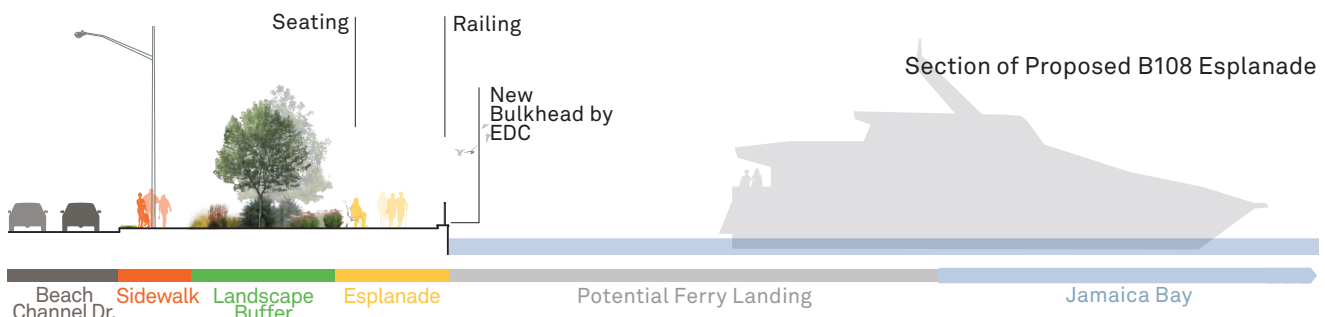
Parks has a commitment from National Grid to fund and construct an esplanade as part of a larger mitigation project. Supplemental funds may be requested to complete project as designed.

Key Streetscape Improvements

- 1 Esplanade
- 2 Landscape Buffer
- 3 Possible Ferry Pier



Plan of Proposed B108 Esplanade



Note: All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

7 Beach 94-95th Street Corridor

Context

The corridor between Beach 94th Street and 95th Street is currently used for public and municipal parking with trees lining the street in a few areas. The corridor is an important gateway to the Rockaway for vehicles entering the peninsula from the Cross Bay Bridge. During the summer, the parking lots tend to be full with beachgoers while in the off season the lots are at lower capacity.

Existing Facilities

- Parking

Opportunities

Recreation

The parking area between Beach 94 Street and 95th Street can be used as a flexible space in the off season, accommodating seasonal markets, a café and temporary stage. To convert the parking lots into multi-functional space, the concept design proposes that the area be lifted to curb height to allow it to be more like a public space that is used for parking during the summer months.

Natural Resources and Resiliency

New street trees and permeable paving will decrease stormwater runoff, improve air quality and reduce heat island effect. There is also an opportunity to introduce bioswales along the medians.

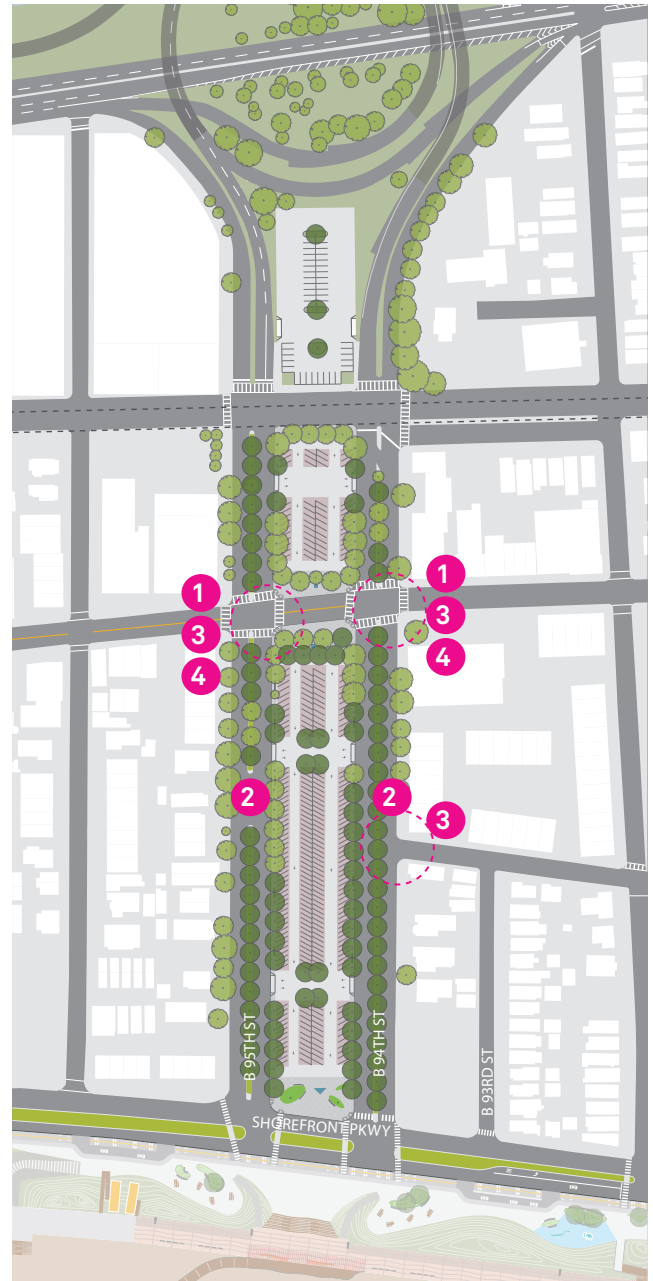
Access

Beach 94th-95th Street Corridor is the primary access to the beach for visitors arriving by car. Additionally, the A and S subway lines arrive in Rockaway near the corridor. Community residents suggested a welcome plaza at the end of the corridor, by the beach, which could incorporate a new landmark as a gateway to Rockaway Beach.

Cost

The total estimated improvement costs for Beach 94th-95th Street Corridor, which includes soft costs and contingencies, is \$12-15 million. Cost estimates for concepts are based on best available information of the site at the time of publication; estimates are subject to change based on the final

capital project design. All costs are in 2014 dollars and are subject to adjustment based on final design and field conditions.



Plan of Proposed B94-95th Corridor

Key Streetscape Improvements

- 1 Visibility Pedestrian Crossings
- 2 Bike Lane
- 3 Curb Extensions
- 4 "Walk" Signal before Green Light

Key Plaza and Green Infrastructure Improvements

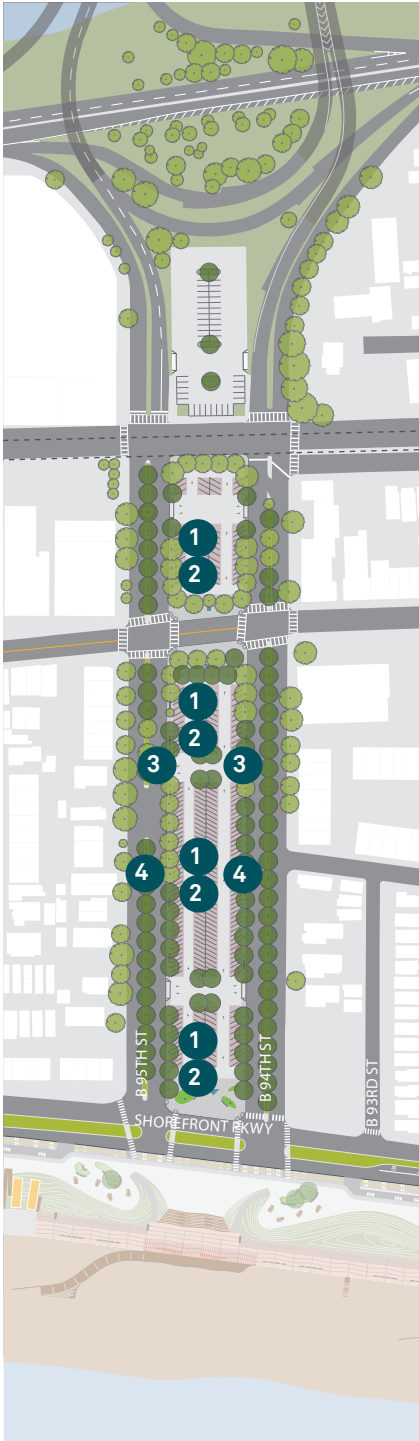
- 1 Shared Space
- 2 Permeable Paving
- 3 Bioswale
- 4 Tree Canopy

Key Improvements: Fall Scenario

- 1 Markets
- 2 Outdoor Cafe / Seating
- 3 Events

Key Improvements: Winter Scenario

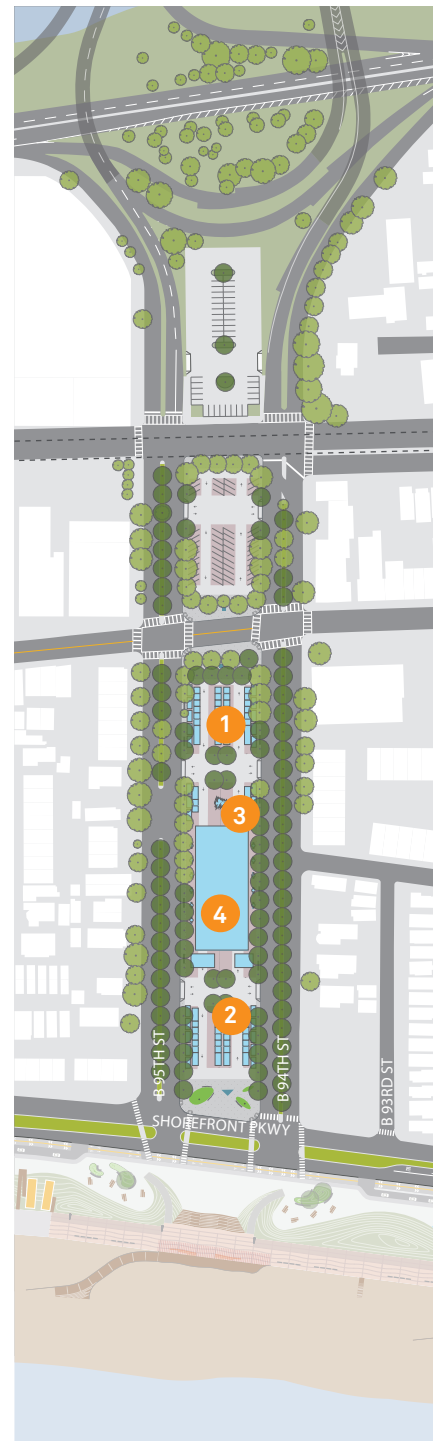
- 1 Markets
- 2 Outdoor Cafe / Seating
- 3 Events
- 4 Winter Festival



Plan of Proposed B94-95 Corridor: Infrastructure Improvements



Plan of Proposed B94-95 Corridor: Fall



Plan of Proposed B94-95 Corridor: Winter

Precedent Images



1 Shared Space



4 Tree Canopy



1 Markets



4 Winter Festival

Existing Condition Image



Existing View at B94-95 and Shore Front Parkway

Rendering Image



Rendering of Proposed Beach 94th Street and 95th Street Corridor. The view is from the Shore Front Parkway at Beach 94th Street looking northwest.

Note: All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

8 Broad Channel - Sunset Cove and American Park

Context

The 18 acres of parkland at the end of Broad Channel Island consists of two adjacent sites: Sunset Cove to the north, a former marina site in need of environmental remediation and American Park to the south, an active ballfield. This parkland is adjacent to Big Egg Marsh, a natural area under the jurisdiction of the National Park Service. The ballfields and parking lots are prone to frequent flooding, and the entire area is at high risk of damage from storms and sea-level rise. The Broad Channel community would like to see more active recreation at the site, improvements to existing amenities and a focus on ecological restoration and resiliency.

Existing Facilities

- None at Sunset Cove
- One asphalt field and two turf fields (American Park)
- A closed comfort station (American Park)

Opportunities

Natural Resources and Resiliency

The proposal forefronts restoration of shoreline habitats and aims to minimize the ecological impact of the site's active uses. There is great opportunity for restoration of the coastal salt marsh and scrub-shrub forest habitats at the Sunset Cove site, which currently contains potentially-contaminated fill and a hard-edge shoreline. New York Rising has proposed an oyster revetment installation along the northern shoreline at Sunset Cove. The installation of stormwater bioswales and permeable pavement will help reduce runoff and address site flooding.

Recreation

The removal of the current asphalt play field and the restoration of two turf play fields are among the community's greatest priorities. American Park would feature new active use amenities: the community mentioned a tot lot, a small skate feature and a primary walking/jogging path as desired additions. A new comfort station, elevated

to reduce possible flood damage, would include a small field house, which could serve as a base for Parks staff. The long-term plan for the site includes a community center, which would house additional active uses.

Access

The new public area at Sunset Cove would share a central parking lot with American Park, which would be accessed from Cross Bay Blvd. A DOT study is recommended to address possible traffic safety measures at the intersection of the park's access road at W. 22nd Road and Cross Bay Boulevard.

Cost

The total estimated improvement costs for Sunset Cove and American Park is \$17-20 million, about \$7 million of which is expected to be used for mitigation and habitat restoration at Sunset Cove.

Cost estimates for concepts are based on best available information of the site at the time of publication; estimates are subject to change based on the final capital project design. All costs are in 2014 dollars and are subject to adjustment based on final design and field conditions.



Aerial of existing site showing park boundary



Key Park Improvements

- ① Oyster Revetment
- ② Scrub-Shrub Forest Trail
- ③ Salt Marsh Habitat Restoration
- ④ Location of Possible Future Community Center
- ⑤ Park Entrance from Cross Bay Blvd.
- ⑥ Skate Features
- ⑦ Upgraded Parking Lot
- ⑧ Bioswales
- ⑨ Elevated Comfort Station and Field House
- ⑩ Tot Lot
- ⑪ Multipurpose Field
- ⑫ Nature Path (Partially extends to NPS Land)
- ⑬ Shade Structure
- ⑭ Upgraded Baseball Fields
- ⑮ Beach Nourishment
- ⑯ Designed Fishing Zone
- ⑰ Access for Canoes and Kayaks

Precedent Images



Skate feature



Shade feature

Note: All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

9 Bay Side Nature Trail

Context

The Jamaica Bay waterfront conditions vary along the peninsula. The waterfront east of the Cross Bay Bridge is predominantly soft edge with a mix of narrow beaches and marshland and some riprap, with several inlets that create a lengthy and dynamic shoreline. The existing marshland is an important bird habitat and many of the inlets have deep water areas that support popular fishing spots from both the shore and boats. While the natural resources of the area draws recreation users to the area, the waterfront on the eastern peninsula is isolated and has been the site of illegal dumping which has negative environmental impacts. Much of the property is public land, including large areas of NYC Parks properties, such as Vernam Barbadoes, Brant Park, Dubos Point, Bayswater Park and Rockaway Community Park. There are also a number of private properties that back into the bay in the area between Vernam Barbadoes to Mott Basin.

Existing Facilities

Much of the NYC Parks land, as well as Jamaica Bay State Park and NYSDEC land, has existing trails and paths. Overall, there are more than 3.5 miles of existing trails. These trails have few activity nodes, such as bird blinds or designated boat landing sites.

Precedent Images



Bird Blind

Opportunities

Recreation

The Bay Side Nature Trail will include activity areas along its stretch to attract people to the waterfront. These can range from passive recreation areas (seating and picnic areas) to launch points for kayaks and canoes, bird watching areas, interpretive signage for natural resources and hiking paths.

Access

The Bay Side Nature Trail will help connect the majority of bay side parks through a continuous path along the water's edge and improve access to bay side parks. There is also an opportunity to connect this trail to the Greenway being proposed by DOT along the western section of the peninsula.

Cost

The total estimated Bay Side Nature Trail improvement costs, which includes soft costs and contingencies, is \$5-6 million. This cost does not include raising the trail onto a berm.

Cost estimates for concepts are based on best available information of the site at the time of publication; estimates are subject to change based on the final capital project design. All costs are in 2014 dollars and are subject to adjustment based on final design and field conditions.



Nature Trail as Boardwalk



Photomontage of Proposed Bay Side Nature Trail: The area shown above highlights the Nature Trail traversing parkland that has yet to be developed. The trail could be raised on a berm to provide additional storm surge protection for adjacent neighborhoods. The view is from the inlet looking southeast onto the waterfront running along Beach 58th Street.

Plan of Proposed Bay Side Nature Trail

Note: All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

- Street-End Park
- Kayak/Canoe Launch
- Bird Blind
- Fishing Access
- Existing Path
- Proposed Path on DPR Property
- Potential Path on other Publicly Owned Land
- Potential Path through Streets
- NYC Parks Property
- Other Publicly Owned Land



Natural Resources and Resiliency

The development of a continuous Bay Side Nature Trail would include restoration of natural habitat and wetland, reconstruction of bulkheads and the potential development of trails on raised berms that could help create a resilient waterfront and reduce risk to the surrounding neighborhoods from storm surge. The trail would be designed to work in concert with any applicable Army Corps of Engineers (ACOE) coastal risk reduction projects.

These concepts are in line with the ACOE designs for living shorelines for a number of places within Jamaica Bay, which propose a combination of wetlands and berms to mitigate storm surges. This ACOE study is underway. Much of the damage from Hurricane Sandy was caused by rising water and wave action from the bay side. The damage was particularly intense in the Edgemere peninsula, where there were several destroyed homes.

Whereas the Rockaway beachfront is proposed to be protected through a system of sand dunes, the varied nature of the Rockaways' bay side is more difficult to protect. NYC Parks looks forward to tracking the recommendations expected to emerge from the Science and Resilience Institute at Jamaica Bay and the Army Corps of Engineers studies, among other efforts, to inform the design of project implementation.

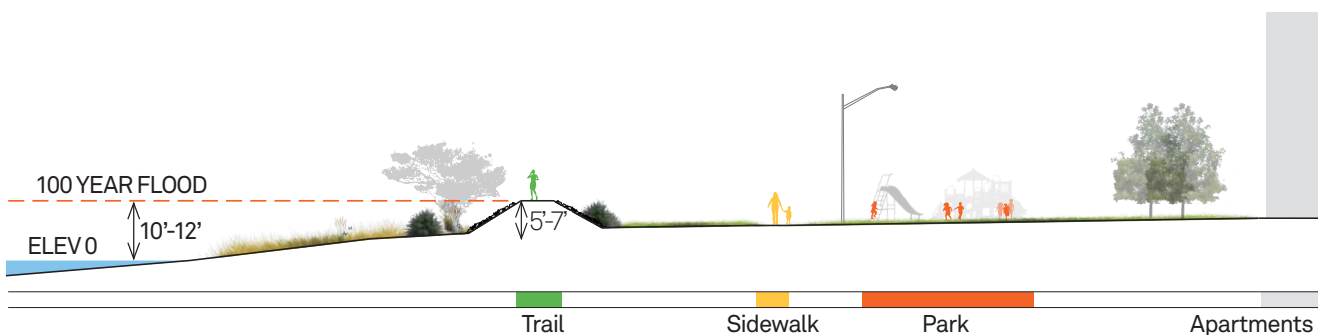
The concept of a Nature Trail on a raised berm could serve the dual function of providing public access along the water's edge, while also providing a level of protection. The map on page 49

highlights the moderate wave action that occurred along Bayswater Park, the Edgemere Peninsula and Rockaway Community Park.

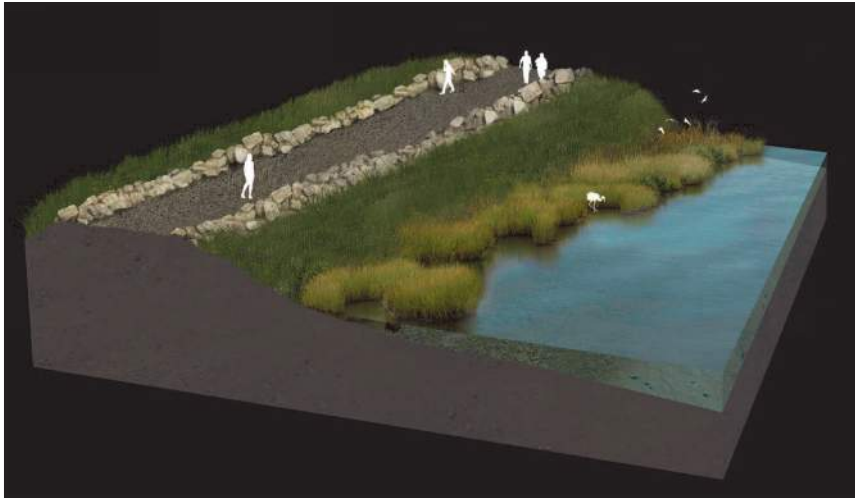
The section below shows how a raised berm of 5' to 7' feet could provide protection to the nearby NYCHA homes from a 100-year flood. A berm of this scale would be expensive to create and would also block visual access to the water. An alternative to this height would be a smaller raised berm (perhaps 3'-4') that could provide a strong level of protection with additional in-water measures that are being considered, while allowing most people to be able to see over the berm to the water.

There are some instances where the proposed Bay Side Nature Trail would be very close to the water's edge, such as at Thursby Basin Park. In instances such as this, the trail could be built on top of a bulkhead, with the potential provision of steps down to the water.

It is important that these measures be considered in conjunction with other ongoing studies of Jamaica Bay to ensure that plans to address storm surge and sea level rise are made hand in hand with public access to the water.



Section through a Raised Portion of the Bay Side Nature Trail



A

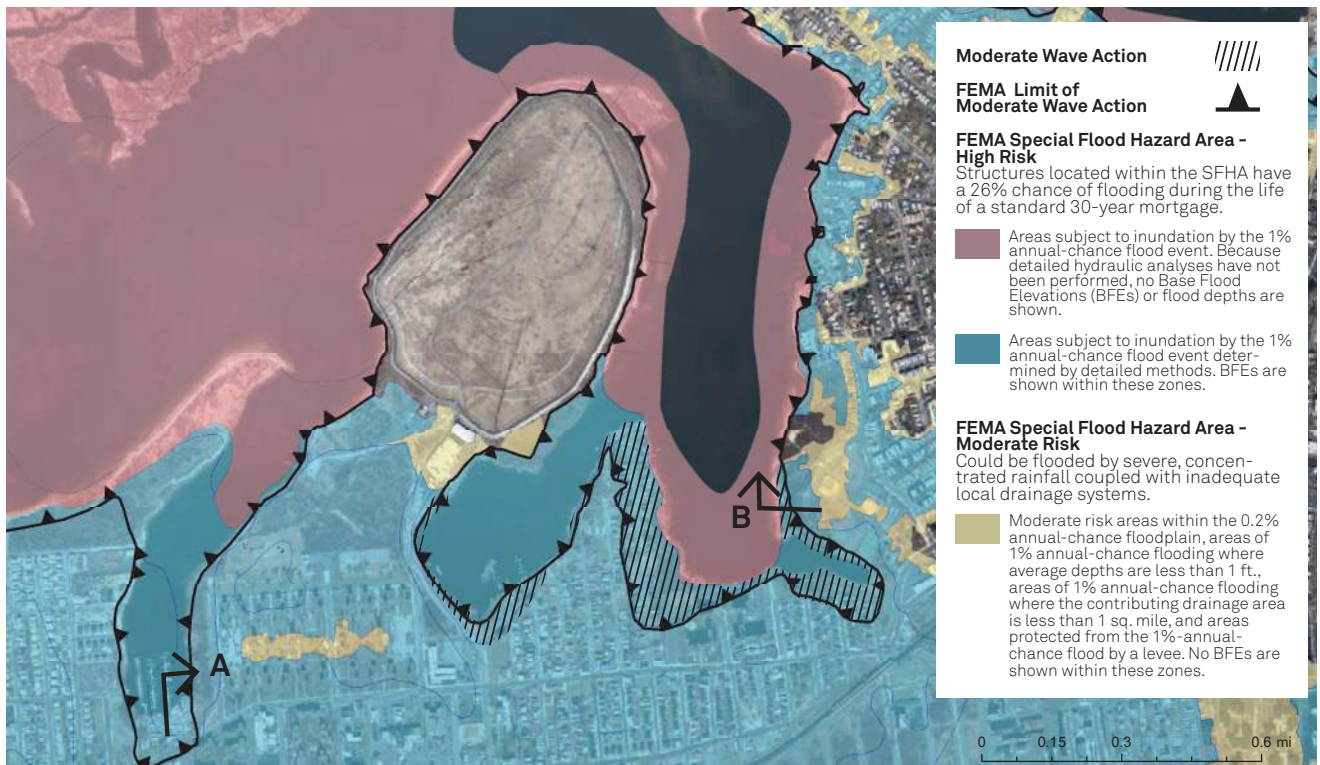
In areas where the Bay Side Nature Trail is set back from the water's edge, the trail can be part of a "living shoreline" condition with saltwater marshland occupying the shoreline and a trail raised up on a berm to offer storm surge protection.



B

In areas where the Bay Side Nature Trail comes close to the water's edge, there is an opportunity to elevate it, with a potential to step down to the water.

Sections through Proposed Nature Trail



Map of 100-Year Flood Zone with Areas of Moderate Wave Action (in blue hatched)

10 Boardwalk-Adjacent Areas

Context

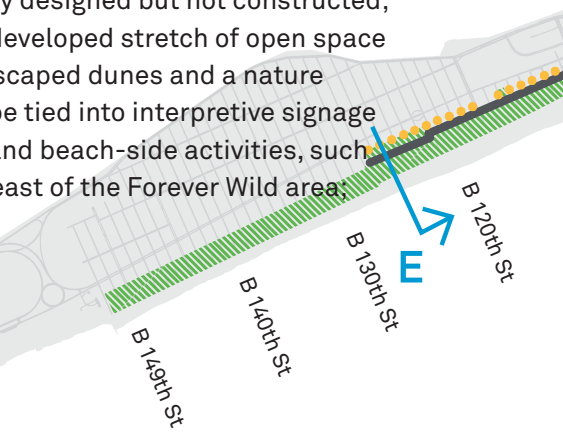
The areas adjacent to the boardwalk can be characterized in the following sections:

- B9 - B32: This area contains a sequence of open spaces built as PlaNYC parks that tie into the boardwalk, which comes back to ground level at B17 Street;
- B32 - B56: This undeveloped stretch of open space includes the future development site of Arverne East and area designated as a nature preserve;
- B56 - B73: Besides a playground, the land between the Arverne-by-the-Sea and Ocean Village areas to the north and the boardwalk is currently undeveloped open space;
- B73 - B108: A wide activity area occupies the space between Shore Front Parkway and the Boardwalk; and
- B108 - B126: Predominantly residential streets, with the exception of B116 Street, which terminates at the boardwalk.

Opportunities

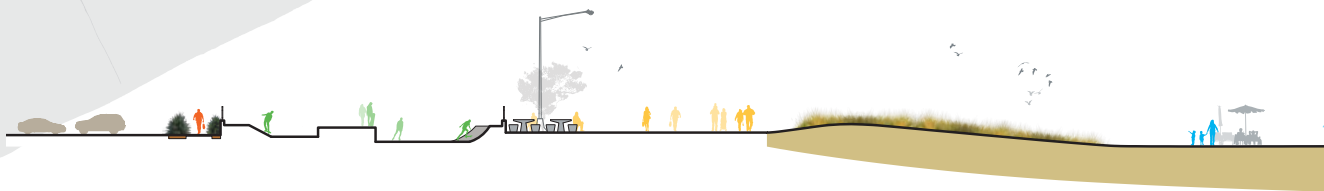
There are opportunities to build off the existing character to create a dynamic sequence of active and passive recreation experiences along the boardwalk that are useful to both residents of the adjacent areas and visitors to the Rockaways:

- B9 - B32: The PlaNYC parks are quickly emerging as an important resource for Rockaway residents. The following pages detail how these parks can be further improved through the completion of elements previously designed but not constructed;
- B32 - B56: This undeveloped stretch of open space could include landscaped dunes and a nature center. This could be tied into interpretive signage on the Boardwalk and beach-side activities, such as a kayak launch east of the Forever Wild area.



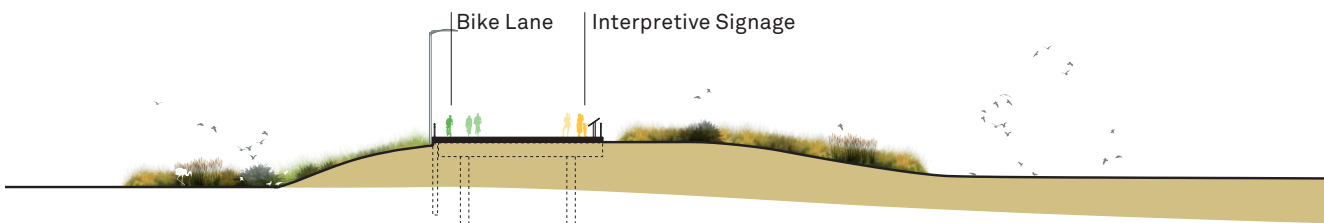
Area A

B9 - B32 (Section through B9)



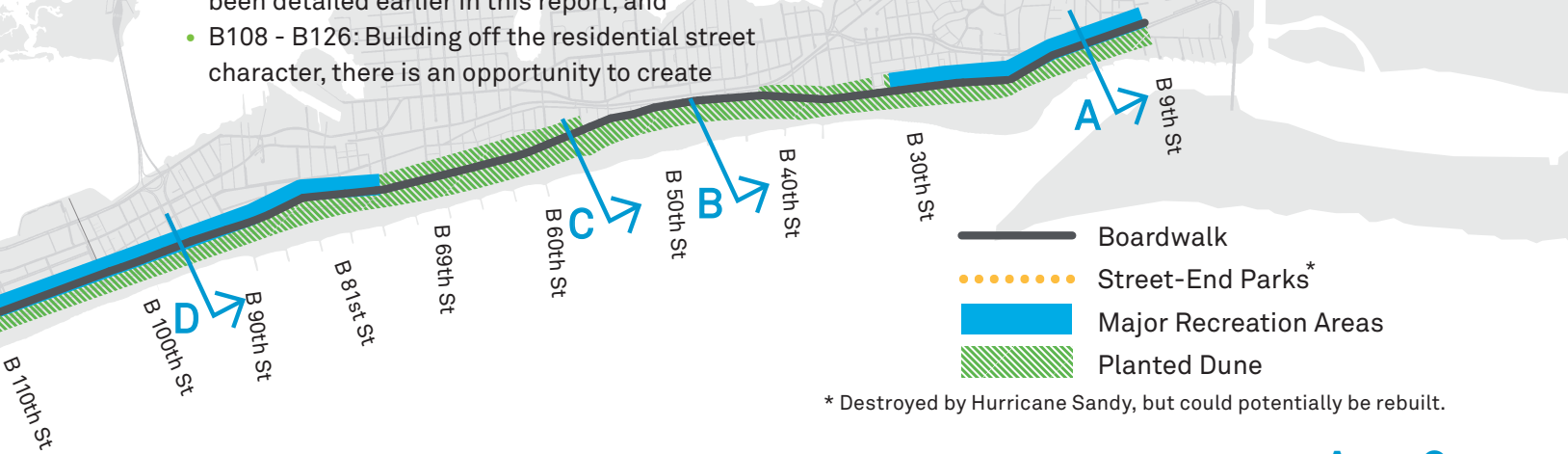
Area B

B32 - B56 (Section through B47)

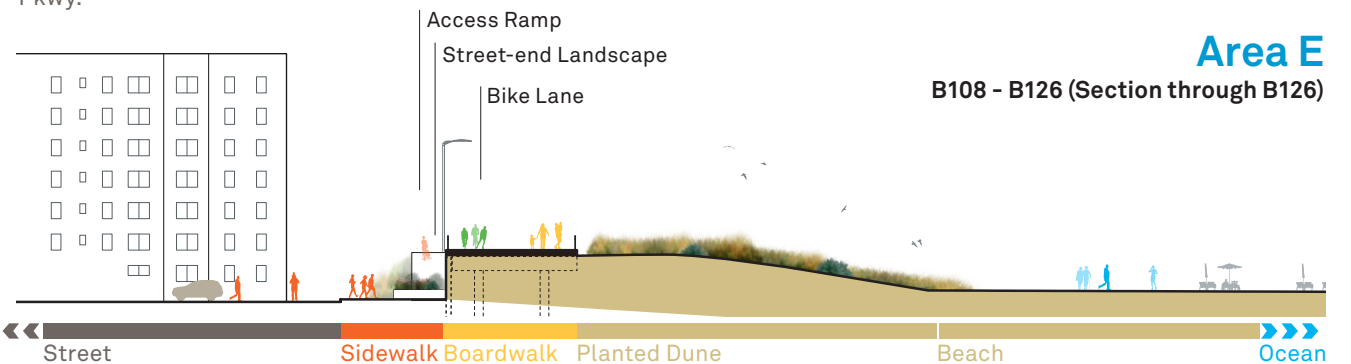
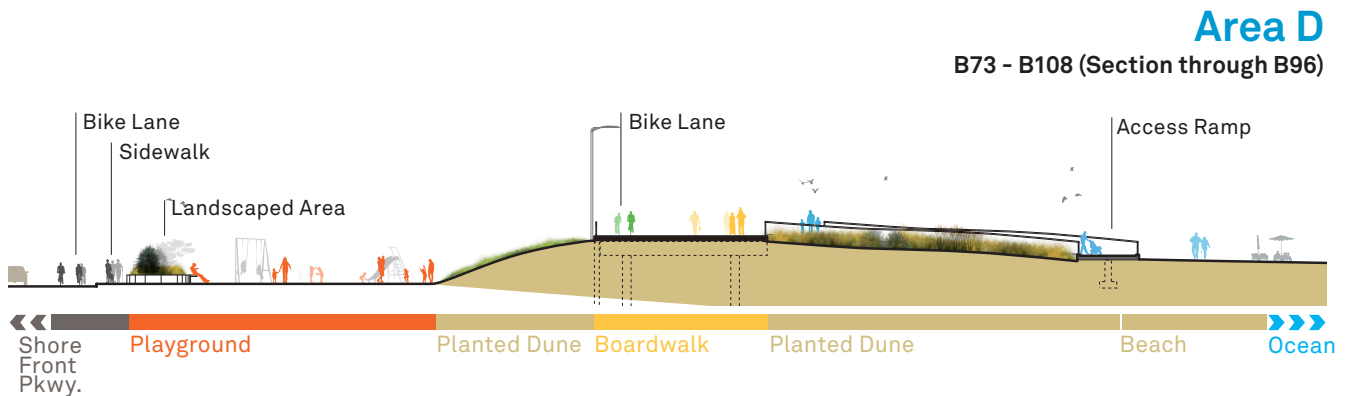
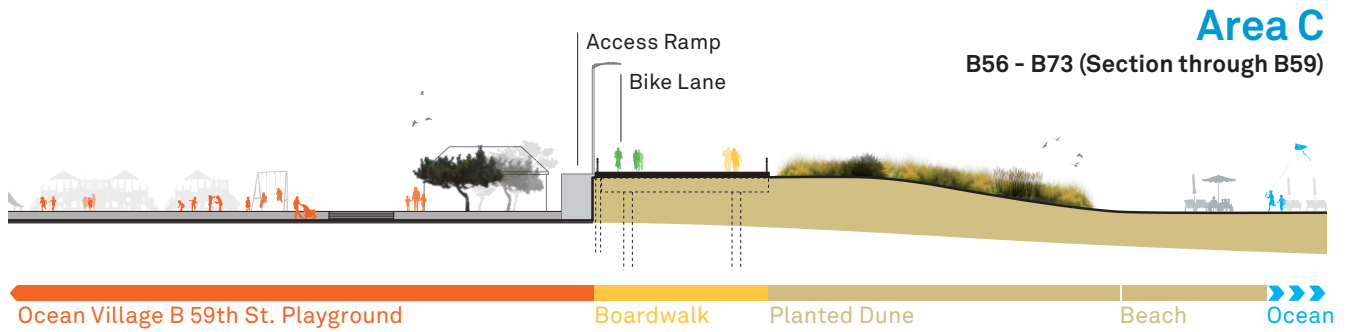


- B56 - B73: The focus of the Boardwalk-adjacent areas will be determined in coordination with the emerging residential developments;
- B73 - B108: The potential for active and passive recreation for residents and visitors alike has been detailed earlier in this report; and
- B108 - B126: Building off the residential street character, there is an opportunity to create

landscaped street-ends. Across from Beach 116th Street on the beach, there is a potential for temporary events such as beach volleyball tournaments.



* Destroyed by Hurricane Sandy, but could potentially be rebuilt.



Note: All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

11 PlaNYC Unbuilt Areas

Context

The PlaNYC initiative set out to provide much needed park facilities for the rapidly growing residential community in eastern Rockaway.

The PlaNYC Park was divided into the East Park, from Beach 9th Street to Beach 17th Street and the West Park, from Beach 28th Street to Beach 32nd Street. In the East Park, a large parking lot was transformed into a rolling lawn for passive recreation and viewing events at a new performance venue. This park included active recreational facilities such as a sports courts, a climbing rock and a skate park, for a range of ages. The West Park included playgrounds, a water play area, synthetic turf field and a comfort station.

There are areas of the PlaNYC park that have been designed but are not yet constructed, and this Conceptual Plan has specified that three of these areas be prioritized with all the opportunity areas cited in this report:

- Beach 9th Street seating area;
- Beach 20th Street overlook shade structure; and
- Beach 26th - 27th Street park area.

Cost

Cost estimates for concepts are based on best available information of the site at the time of publication; estimates are subject to change based on the final capital project design. All costs are in 2014 dollars and are subject to adjustment based on final design and field conditions.

A

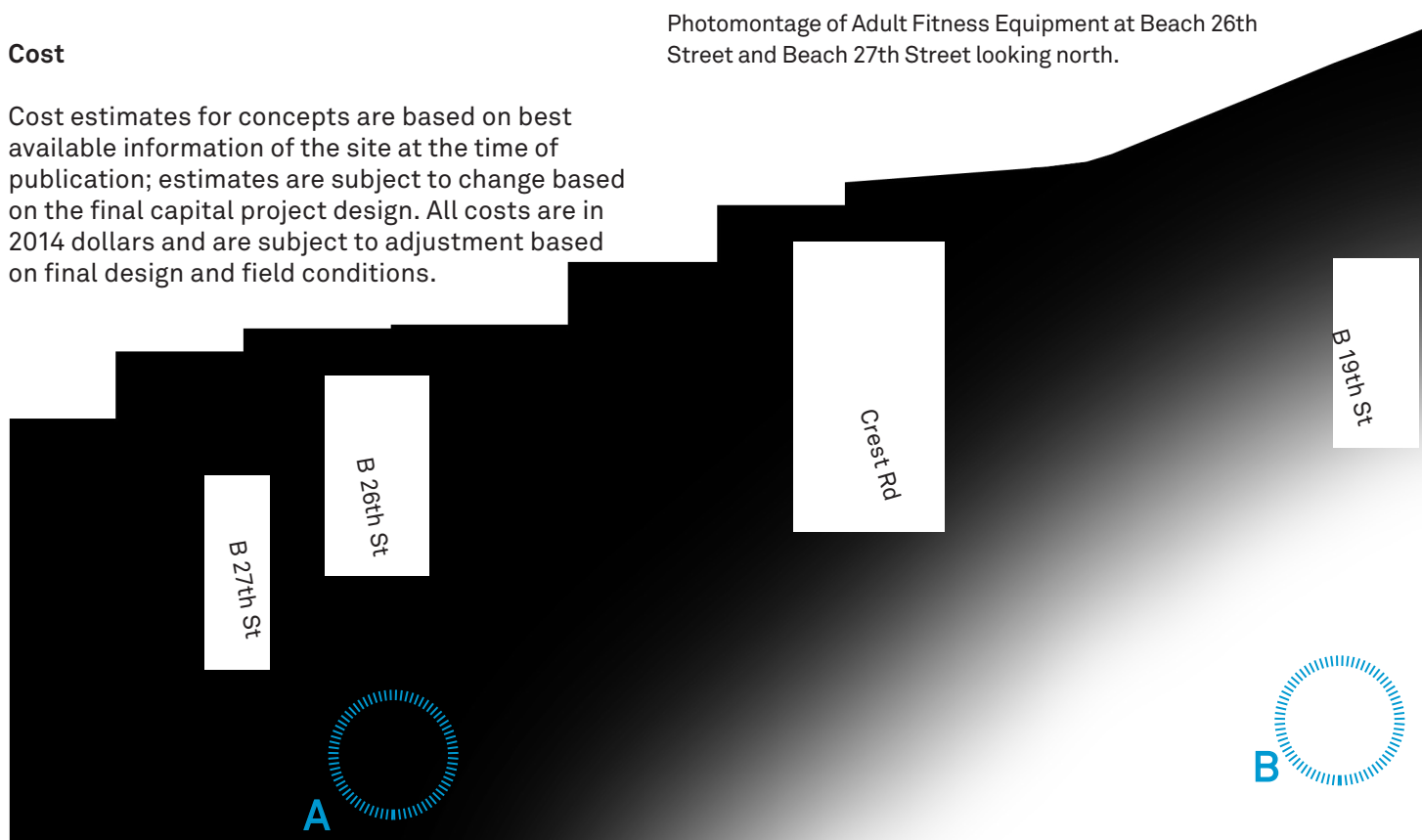
Beach 26th-27th Street

There are currently large empty lots at the end of Beach 26th Street and Beach 27th Street. Plans previously developed showed play areas, adult fitness and shade structures that would tie into the boardwalk.

Cost: \$2.7 million



Photomontage of Adult Fitness Equipment at Beach 26th Street and Beach 27th Street looking north.



B

Beach 20th Street

The Beach 20th Street outlook is a small extension of the boardwalk. Currently, there are several benches and planted pots. There is a plan to build a shade structure, more seating and tables, a small fitness station and better access down to the boardwalk, an ideal stopping point for boardwalk visitors.

Cost: \$2.6 million



Photomontage of Unbuilt PlaNYC Outlook at the boardwalk at Beach 20th Street looking east.

C

Beach 9th Street

The current Beach 9th Street Playground area, which was part of the PlaNYC design, still needs renovating to cohesively blend with the newly created park space immediately to the west.

Cost: \$1.2 million



Photomontage of Unbuilt PlaNYC Plaza just north of the boardwalk at Beach 9th Street looking northeast.

B 17th St

Seagirt Blvd

B 9th St



Aerial of Current Boardwalk Area between B27 - B9

Note: All amenities in the conceptual plan are illustrative in nature and the exact locations of amenities may be subject to change once the sites are fully designed.

Appendix

Image Credits

Page 10:

LIRR Station c. 1941 - Edgemere, NY. http://www.farrockaway.com/carol/morpTrains_and_Subways.html

A Train

David Pirmann, 'R-44 no. 5396 trailing an A train on the IND Fulton Street Line at 80th Street/Hudson Street.' April 2009. http://www.nycsubway.org/wiki/IND_8th_Avenue/Fulton_Street/Rockaway_Line.

Rockaway Playland

Roller Coaster c. 1915 - Rockaway Beach, NY. <http://www.farrockaway.com/carol/morpPlayland2.html>
Photograph: Beach 94th St. c. 1930 - Rockaway Beach, NY. http://www.farrockaway.com/carol/morpRockawayBeach_RockawayPark2.html

Page 21:

Bioswale

Carroll Street Brooklyn Bioswale. <http://www.urban-scouting.com/2012/07/nyc-dep-enhanced-tree-pits.html>

Salt Marsh

Marsh Bride Brook and Coastal Salt Marsh, East Lyme, Connecticut. <http://en.wikipedia.org/wiki/File:Bride-Brook-Salt-Marsh-s.jpg>

Sand Berm

Quinta do Lago beach (Praia da Quinta do Lago). Algarve, Portugal. http://upload.wikimedia.org/wikipedia/commons/b/b4/Quinta_do_Lago_beach_1.jpg

Page 22-27:

Shade Structure

Boston North End Park. Gustafson Guthrie Nichol (GGN). http://www.ggnltd.com/projects_detail.php?id=27

Seating Area

Kurg Martig. Place du Festival Montreal, Daoust Lestage.

Playground

New Hampshire Water Park. <http://www.destination360.com/north-america/us/new-hampshire/water-parks>

Street Scape

Sandy Boulevard Streetscape, Portland, Oregon. Nevue Ngan Associates. <http://nevuengan.com/green-infrastructure/sandy-boulevard-streetscape>

Bike Lane

RBA Group. Sand St from Manhattan Bridge towards Navy Street, Brooklym, NY.

Henge Concrete Table Tennis

Tompkins Square, New York. <http://hengetable.com/>

Planting

Perk Park by Thomas Balsley Associates, Cleveland, OH. <http://www.land-studio.org/events/2011/11/perk-plaza-at-chester-commons-ribbon-cutting>

Shade Structure

Albert Vecerka/Esto. Far Rockaway Park.

Skate Park:

Grindline Skate Park Design. San Antonio Skate Park, San Antonio, TX by Grindline Design.

Climbing Wall

Fabricated Climbing Structure. <http://www.climbingbusinessjournal.com/parks-add-climbing-structures/>

Outdoor Adult Fitness Equipment

Hyde Park, London. <http://www.activecommunities.com/blog/parks-recreation-trends-in-2013/>

BBQ Area

Brooklyn Bridge Park Pier 5 BBQ Area by MVVA. <http://max-carr.blogspot.ca/2013/01/revisiting-brooklyn-bridge-park-pier-5.html>

Playground

Wynyard Play Space – Auckland Waterfront, NZ. <http://blogisthmus.files.wordpress.com/2012/10/wyn.jpg>

Multi-purpose Synthetic Turf

Open Lawn at Railroad Park by Tom Leader Studio. <http://thejenwestquest.files.wordpress.com/2011/07/photo3.jpg>

Handball Court

http://www.adaptiveactions.net/uploadedfiles/images/fullsize/projects_92_Onewall_Handball2.jpg

Page 29:

Tennis Court

<http://sinovainsaat.com/images/%7B2C5D89EB-2DBE-43A0-A2CE-C0B5858CF436%7D.JPG>

Waterfront Picnic Areas

Cama Beach State Park. http://upload.wikimedia.org/wikipedia/commons/7/71/Cama_Beach_Resort_19.jpg

Amphitheatre

Washington Square Park Performance

Space Washington Square Park Blog. http://washingtonsquareparkblog.com/2011/09/18/washington-square-park-folk-festival-interview-with-organizer-eli-smith-photos-from-day-1/east_river_string_band_washington_square_greenwich_village-2/

Artificial Turf Soccer Field

Indoor Soccer, Singapore. http://en.wikipedia.org/wiki/File:Indoor_soccer_singapore_z.JPG**Page 33:**

Mosquito Magnet

Matt Green, RBA Group. Rockaway Community Park Skate Park

Skate Park

Plainpalais, Geneva. http://upload.wikimedia.org/wikipedia/commons/d/d1/Inauguration_du_Skatepark_de_Plainpalais_%C3%A0_Gen%C3%A8ve_02.JPG

Handball Court

<http://en.wikipedia.org/wiki/File:HandballCourtMacDonaldParkTracyCAJuly2010.jpg>**Page 36:**

Picnic and BBQ Area

Kurt Martig, RBA Group. Brooklyn Bridge Park

Waterfront

Kurt Martig, RBA Group. Edge Park

Page 38:

Kayak Storage

Mission Creek Kayak House by MKThink. <http://www.flickr.com/photos/49034813@N04/6251726564/>

Kayak and Canoe Launch

Kayak Launch at Brooklyn Bridge Park by MVVA <http://www.mvvainc.com/project.php?id=91>**Page 43:**

Shared Space

New Road, Brighton, England by Gehl Architects. Civic Engineers. <http://www.civicingengineers.com/our-work/new-road-brighton>

Tree Canopy

Northeast Philadelphia Streetscape. <http://blog.philadelphiarealestate.com/tag/street-trees/>

Market

Brooklyn Flea Philly at The Piazza at Schmidt's. <http://www.uwishunu.com/2013/05/our-guide-to-brooklyn-flea-philly-opening-this-sunday-june-2-at-the-piazza-with-75-superb-vendors-and-tunes-from-questlove/>

Winter Festival

Mark & Emma Hambleton & Dolan, Taebaek Winter Festival. http://commons.wikimedia.org/wiki/File:Taebaek_Winter_Festival_3.jpg**Page 45:**

Skate Feature

NYC Parks Department. Rockaway Park East

Shade Feature

NYC Parks Department. Rockaway Park East.

Page 46:

Bird Blind

Cornell Lab of Ornithology trail . <http://www.allaboutbirds.org/page.aspx?pid=1114#top>

Nature Trail as Boardwalk

Kurt Martig. Mt Pleasant SC Boardwalk.

Page 49:

FEMA Flood Map

<https://msc.fema.gov>**Page 52-53:**

Renderings of PlaNYC unbuilt areas

Base images from Google Street View

Unless listed above, drawings, renderings and maps were created by RBA Group and WXY architecture + urban design.

Aerial photography by Albert Vecerka/Esto on November 2013.



www.nyc.gov