

Shoreline Parks Plan for the East Shore of Staten Island



Interim Report June 2017



NYC Parks



NYC Parks

www.nycgovparks.org

© 2017 by NYC Parks

All rights Reserved

Lead Consultant

Landscape Architecture, Urban Design & Planning

Quennell Rothschild & Partners

www.qrpartners.com

Ecological Advisor

eDesign Dynamics

Technical Advisor

McLaren Engineering Group

Cost Estimator

VJ Associates



TABLE OF CONTENTS	1
FOREWORD	3
EXECUTIVE SUMMARY	5
INTRODUCTION	7
BACKGROUND	9
COASTAL PROTECTION	12
SHORELINE PARKS PLAN	14
The Plan	16
Guiding Principles	20
Engineering Considerations	22
Ecological Considerations	26
Community Engagement	30
Four Neighborhood Entrances	32
Cost Estimates & Phasing	56
NEXT STEPS	58



Spring 2017

Dear Friends,

The Shoreline Parks Plan presented in this report is the first comprehensive vision for the waterfront parkland on Staten Island's East Shore. Our primary goal with this plan is to adapt the East Shore parkland to the coastal protection proposed by the US Army Corps of Engineers and maximize opportunities to create an attractive and cohesive shorefront park for New York City.

Aligned with other City initiatives, including projects proposed in NY Rising Community Reconstruction Plan, storm resilience approaches in PlaNYC 2013, economic development strategies in Resilient Neighborhoods and stormwater management plans in the Bluebelt project, this plan reinforces connections between important upland corridors and the shoreline. It also strives to protect and enhance existing natural systems like tidal wetlands, marshes and dune landscapes while providing functional park spaces for all.

The vision for Shoreline Parks Plan strongly reflects the community input gathered through public meetings, surveys and online engagement since summer 2015. We thank the East Shore residents for the considerable time and effort they committed to helping NYC Parks to develop this plan. Moving forward, this plan will guide our future planning and funding efforts. The following pages take you through the conceptual development of the vision for Shoreline Parks.

In addition to serving as neighborhood front yards and recreation centers, waterfront parks in New York City serve as the city's front line of defense during coastal storms, protecting adjacent neighborhoods. This is especially true for Staten Island's East Shore, which has been battered severely by coastal storms and flooding. In this context, the development of a comprehensive vision for the waterfront parkland on Staten Island's East Shore becomes extremely crucial in the overall resiliency planning for the sustainable future of New York City.

Sincerely,



Formerly a destination for beachfront recreation and currently the borough's significant active recreational resource, rich with natural systems like tidal wetlands and marshland, Staten Island's East Shore continues to be an important waterfront resource for New York City. However this shorefront parkland and the adjacent low-lying neighborhoods are extremely vulnerable to coastal flooding. The region suffered significant destruction during hurricane Sandy, taking lives of 23 residents and causing massive damage to homes, utilities, and the local businesses that are a vibrant part of the East Shore economy.

In response to this flood risk, the US Army Corps of Engineers (Army Corps) has proposed shoreline protection measures consisting of a seawall and a series of inland drainage areas to store and detain stormwater. The Shoreline Parks Plan is an initiative of NYC Parks to proactively plan for the integration of the Army Corps' project with existing park uses, and to establish a vision for a beautiful and resilient shoreline park on Staten Island's East Shore.

In spring 2015, NYC Parks commissioned QRP to collaborate with the City and the shoreline communities to develop a vision plan for the East Shore parkland. The need to adapt to the Army Corps' proposed flood protection measures and to coordinate and prioritize NYC Parks investments associated with the seawall construction are the primary drivers of this plan.

The plan identifies community priorities for the open space framework managed by NYC Parks and its relationships to National Parks Service (NPS) and the Department of Environmental Protection's (DEP) open spaces and adjacent neighborhoods within the context of the proposed Army Corps project. The plan reimagines park facilities and proposes conceptual designs throughout the project area and establishes main entrances at four key locations. The plan maximizes opportunities to create a cohesive parkland with strong connections over the seawall. It also presents approaches for natural area restoration and incorporates sustainable design strategies throughout the project site.

The vision for the Shoreline Parks Plan was developed through an intensive public engagement process and a strong effort to reflect community wishes and concerns. With new sports fields, playgrounds, picnic lawns, gathering spaces, natural areas and a 5 mile shorefront promenade, this plan provides a balance between active and passive recreation and strengthens major upland corridors while responding to the environmental challenges faced by one of the most valuable shorelines of New York City.

The Shoreline Parks Plan provides a framework for investments and improvements. In conjunction with the Army Corps' seawall project, the Department of City Planning's (DCP) Resilient Neighborhoods initiative, and the NY Rising Community Reconstruction program, the Shoreline Parks Plan aims to guide the future of parkland development and reinvigorate the East Shore as an important community resource and an exciting shorefront destination for all New Yorkers.

INTRODUCTION

With its extensive beaches, vast parkland and natural habitat, Staten Island's beautiful East Shore will offer exciting opportunities for recreation once the shoreline's vulnerability to coastal storms is addressed.

Why do we need a master plan for the East Shore?

Storm surge inundation and wave action from Hurricane Sandy in October 2012 severely affected Staten Island's East Shore neighborhoods. Storm tides reached 16 feet and waves up to six feet crashed along the shoreline, causing massive flooding and damage in coastal areas¹. The most extensive inundation occurred in low-lying residential neighborhoods including Midland Beach, Ocean Breeze, New Dorp Beach and Oakwood Beach where there was major damage to homes, businesses and parkland.




Two years after hurricane Sandy, the US Army Corps of Engineers (Army Corps) published the 'Interim Feasibility Study for Fort Wadsworth to Oakwood Beach' reporting the extensive damage that occurred during the hurricane². The report details the East Shore's vulnerability to coastal storms and proposes a Line of Protection (LOP), a multi-faceted system for coastal protection that includes interior drainage areas, an armored seawall, a levee, and a floodwall running from Fort Wadsworth in the north-east to Oakwood Beach in the south-east.

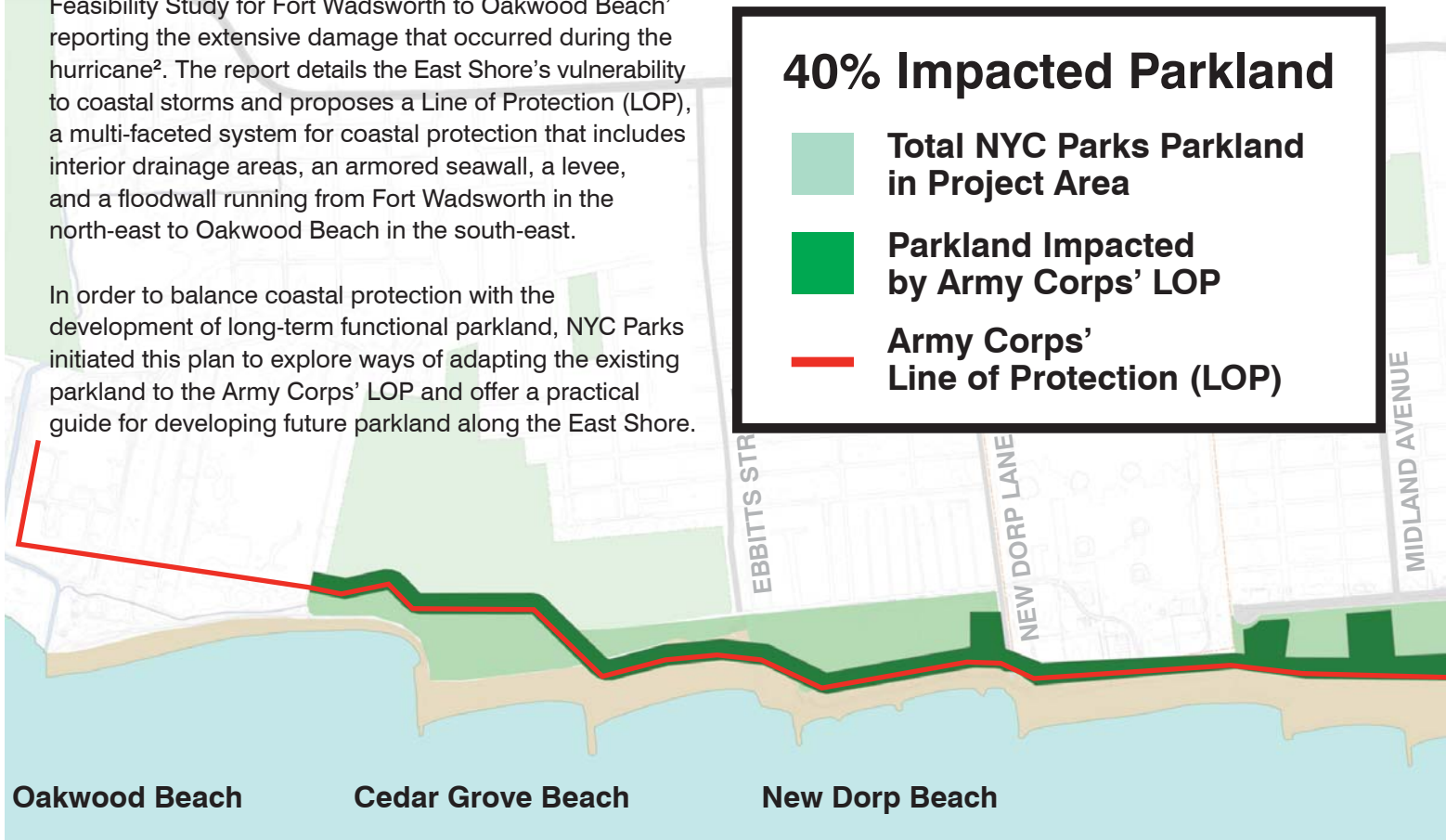
In order to balance coastal protection with the development of long-term functional parkland, NYC Parks initiated this plan to explore ways of adapting the existing parkland to the Army Corps' LOP and offer a practical guide for developing future parkland along the East Shore.

What is NYC Parks' role?

NYC Department of Parks and Recreation (NYC Parks) owns and manages the shoreline parkland on Staten Island's East Shore. The Army Corps' LOP, which is largely sited on NYC Parks property, will displace many park elements and change the visual character of the shoreline. While the construction of the coastal protection is extremely important to protect against future storms, it is also critical to maintain the parkland for the East Shore community who benefits from recreational spaces: sports fields and playgrounds, beaches and natural landscapes. NYC Parks engaged the East Shore community to help envision the exciting opportunities for future park development included in this plan which also offers a practical guide for implementation.

40% Impacted Parkland

-  **Total NYC Parks Parkland in Project Area**
-  **Parkland Impacted by Army Corps' LOP**
-  **Army Corps' Line of Protection (LOP)**



Existing Assets

1. Continuous public beachfront, 2.5 miles of waterfront boardwalk and promenade
2. Significant natural resource provides attractive linear parkland
3. Numerous active recreational resources
4. Historically and culturally important waterfront
5. Part of an extensive bikeway system with potential for bike and pedestrian access to the rest of the island
6. Thousands of trees, both coastal forest and landscape trees, that provide shade and other amenities
7. Use of parks and open spaces for sustainable stormwater management
8. Active and engaged community with numerous civic associations and "Friends of" groups

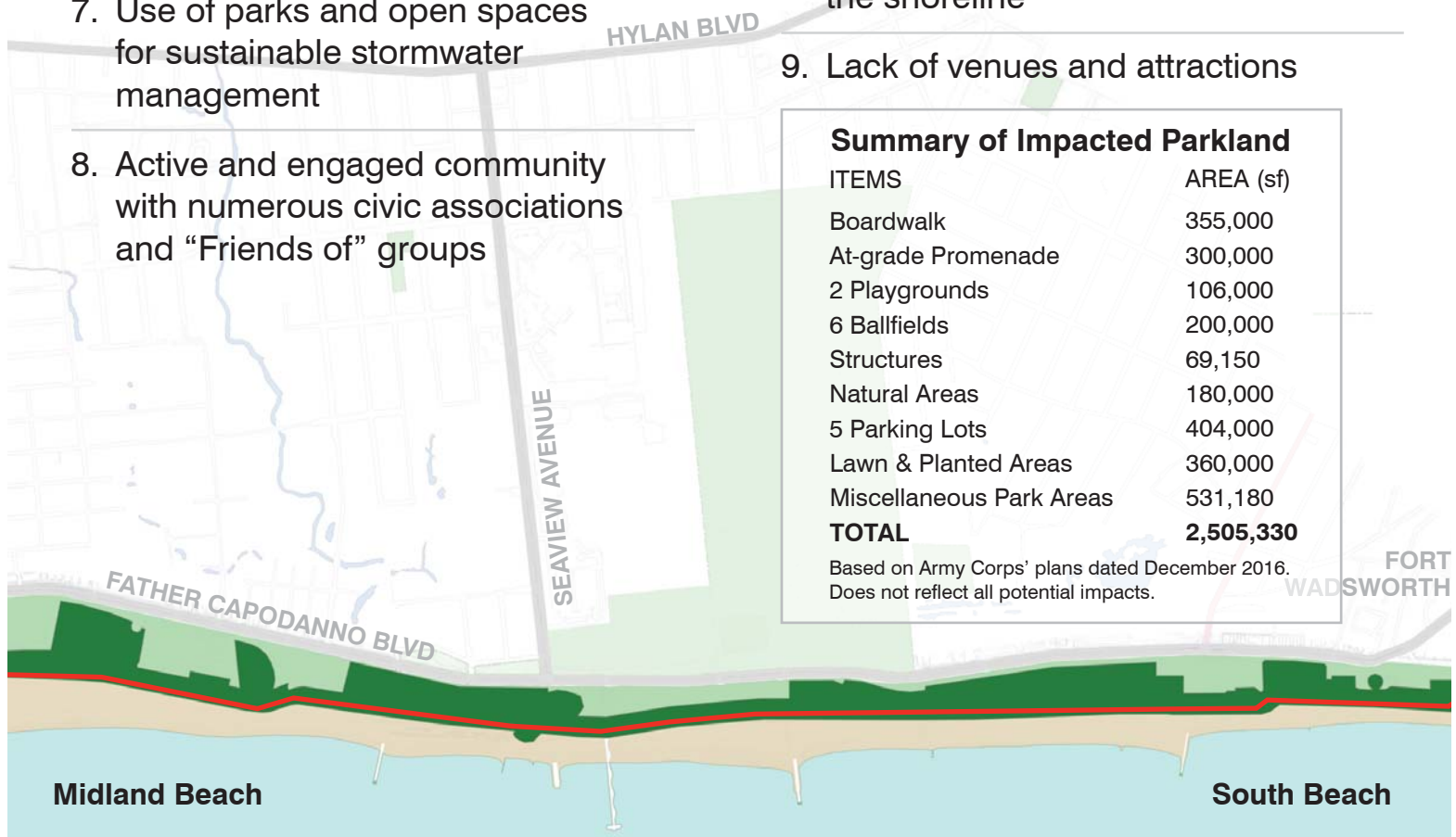
Existing Challenges

1. The lack of a comprehensive plan for the parkland has resulted in ad hoc development of resources
2. Discontinuous circulation system of pedestrian pathways and bikeways
3. Some neighborhoods lack attractive park entrances
4. Insufficient concessions and comfort stations
5. Insufficient recreational activities for all age groups
6. Extreme vulnerability to coastal flooding
7. Lack of year-round activities
8. Lack of active commercial area along the shoreline
9. Lack of venues and attractions

Summary of Impacted Parkland

ITEMS	AREA (sf)
Boardwalk	355,000
At-grade Promenade	300,000
2 Playgrounds	106,000
6 Ballfields	200,000
Structures	69,150
Natural Areas	180,000
5 Parking Lots	404,000
Lawn & Planted Areas	360,000
Miscellaneous Park Areas	531,180
TOTAL	2,505,330

Based on Army Corps' plans dated December 2016.
Does not reflect all potential impacts.



BACKGROUND

Context

The East Shore of Staten Island stretches over 5 miles from Fort Wadsworth in the north-east to Great Kills Park in the south-west, and is comprised of the neighborhoods of South Beach, Midland Beach, New Dorp Beach, and Oakwood Beach. The area is characterized by low-rise, low-density residential neighborhoods with several local commercial corridors between Father Capodanno Boulevard and Hylan Boulevard, one of the two major arterial roads on the island. The project area for the Shoreline Parks Plan covers NYC Parks properties along this stretch, following the alignment of the seawall by the Army Corps.

Historically a beach resort destination, many of the area's homes were built as seasonal cottages in the early 20th century when the shoreline was lined with amusements and resorts. Eventually the summer cottages were converted into year-round residences and bungalow

style detached houses became characteristic of the area. The East Shore today has a slightly higher residential density (16 people per acre) than Staten Island overall (11 people per acre)³.

Beaches & Parkland

Some of the East Shore's defining characteristics are its beaches and shoreline parks, which include the Franklin D. Roosevelt (FDR) Boardwalk, a paved pathway and bicycle path; the Ocean Breeze fishing pier, three swimming beaches, and other recreational spaces along the shoreline. The Ocean Breeze Athletic Complex in Ocean Breeze Park is a recreation center and track facility that attracts many athletes, year-round.

Local Businesses

The 2.5-mile long FDR Boardwalk and promenade (owned by NYC Parks) is an important economic driver for the area along with the retail and commercial

Shoreline Park Historic Timeline

1700's-1800's



Pre-Urban Landscape

The pre-urban landscape of Staten Island included vast stretches of marshes, creeks and forested hilltops with a variety of flora and fauna.

The island was crisscrossed by numerous creeks and streams and was characterized by upland oak forests and glacial ponds. As European settlers came in, the island gradually changed to stretches of pastoral landscape with fields and hedgerows along the shoreline⁵.

1892



First Boardwalk Opens

The first boardwalk was constructed along South and Midland Beaches. Hotels, bathing pavilions, theaters, beer gardens, carousels and Ferris wheels transformed the beachfront property, and Staten Island's East Shore began to emerge as a resort town.

1906



Happyland Park Opens & Resort Town Thrives

Happyland Amusement Park opened at South Beach. Happyland's amusements, stage productions and vaudeville shows attracted 30,000 visitors on opening day. The park thrived until 1927.

1935



New York City Acquires Beachfront Properties

The City of New York acquired beachfront properties on the East Shore. Significant renovations were made under the Works Progress Administration (WPA).

Deteriorating music halls, carousels and shooting galleries were removed and a 2.5-mile long boardwalk was laid down, along which new playgrounds, baseball fields, handball, and shuffleboard courts were constructed.

corridors along Sand Lane, Seaview Avenue, Midland Avenue and New Dorp Lane⁴. Staten Island University Hospital and the South Beach Psychiatric Center located on Seaview Avenue are the main employers for the area. Oakwood Beach Water Pollution Control Plant (WPCP) is a key piece of infrastructure that serves nearly half of the population of Staten Island⁴.

Transportation

Car-oriented, 61% of East Shore residents drive to work. MTA-operated express and select buses, the Staten Island Railway, and the Staten Island Ferry are some of the public transportation options. The bicycle network along the shoreline and the bike path on top of the FDR Boardwalk provide additional commuter routes to and from transit stations. Hylan Boulevard and Father Capodanno Boulevard (located adjacent to the waterfront) are major vehicular corridors with bus stops and a sizeable park and ride lot located on NYC Parks property.

Physical Landscape

The topography of the East Shore ranges from higher elevations near Fort Wadsworth, low-lying residential areas at Midland Beach and Ocean Breeze to narrow beaches, creeks and tidal wetlands in Oakwood Beach.

The majority of the shoreline is characterized by wide beaches intersected by drainage outfalls. Pockets of dense native dune plantings can be found at the northern end of the boardwalk near Fort Wadsworth, Ocean Breeze fishing pier and the New Dorp Beach neighborhood.

The area between New Dorp Lane and Ebbitts Street is a largely natural landscape. Natural areas with low, medium and high ecological values are present throughout the shoreline parkland. Low value areas are dominated by invasive plant species while high value areas have significant native plant diversity and/or state-listed threatened or endangered species.

1949



Great Kills Park Opens

580 acres of salt marsh, beach and woodlands stretching 2 miles along the South Shore were converted into Great Kills Park.

1972



National Park Service (NPS) acquires Miller Field

Miller Field became part of the NPS Gateway National Recreation Area. 187 acres of open space of the Miller grass field was converted into fields for cricket, soccer, baseball and softball as well as bocce courts, playgrounds, picnic and nature areas. Today more than 80 leagues and 2,000 teams enjoy its sports facilities annually.

1984



The Greenbelt Opens

NYC approved a system of continuous public parkland and nature areas in the central hills of Staten Island known as the Greenbelt. The Greenbelt covers 3,000 acres of land dedicated to a range of passive and active recreational activities.

2012



Hurricane Sandy

Hurricane Sandy hit, with peak storm tides of 16 feet, and waves up to 6 feet that devastated the shoreline. Massive flooding caused extensive damage to the island's coastal areas and valuable recreational destinations, which in turn severely impacted local businesses⁶.

On the East Shore, the most extensive inundation occurred in the low-lying residential neighborhoods of South Beach, Oakwood Beach, New Dorp Beach, and in what is commonly referred to as "the bowl" in Midland Beach and Ocean Breeze.

1964

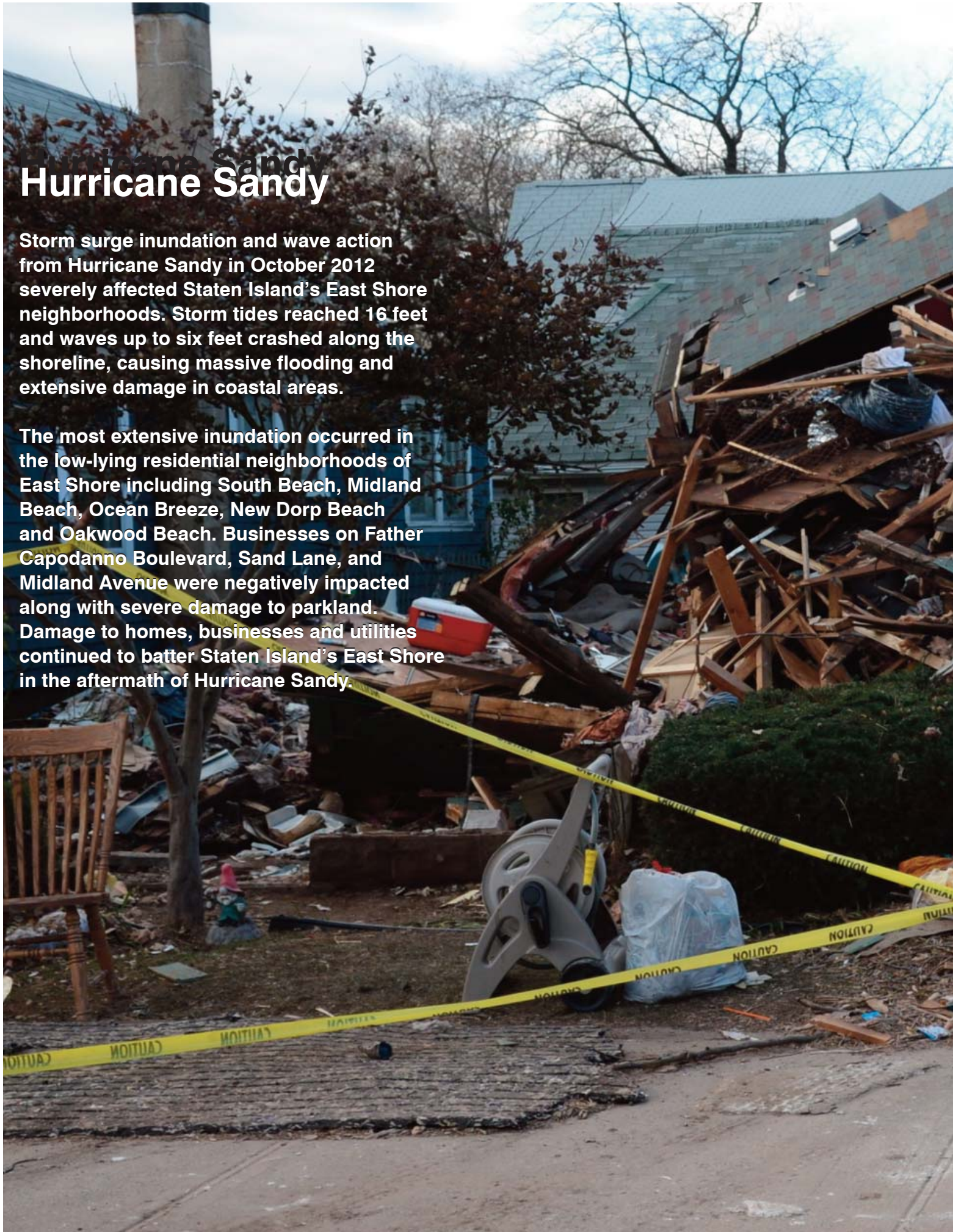
Verrazano-Narrows Bridge Opens

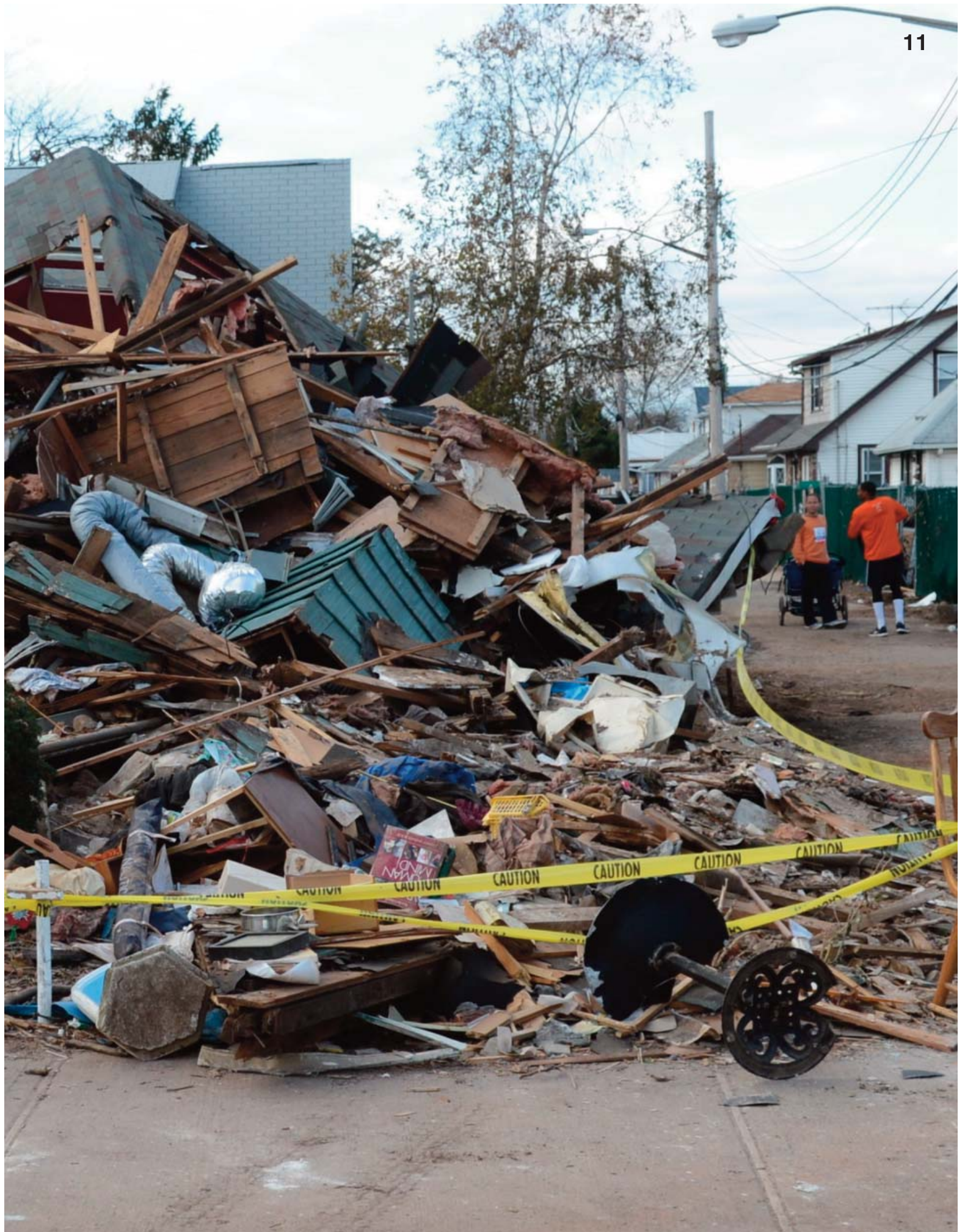
The Verrazano-Narrows bridge connecting Staten Island and Brooklyn was opened. The bridge launched a massive building and population boom on Staten Island.

Hurricane Sandy

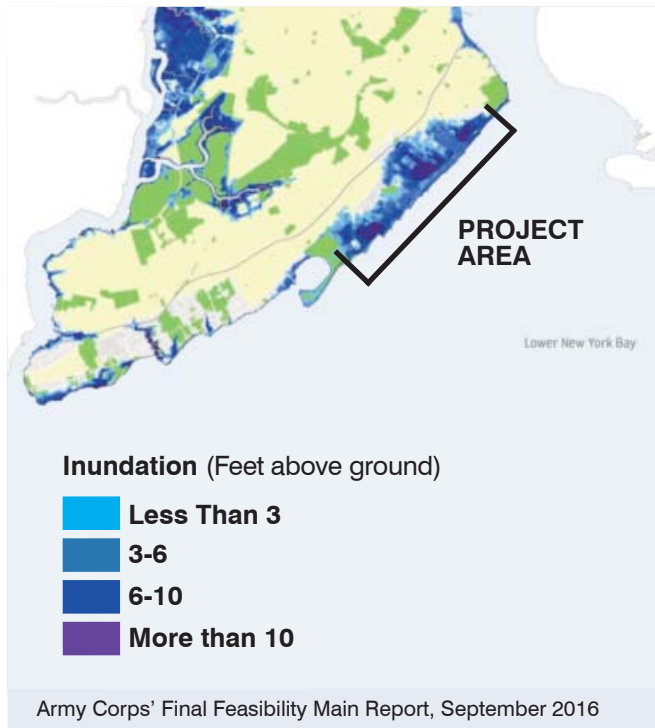
Storm surge inundation and wave action from Hurricane Sandy in October 2012 severely affected Staten Island's East Shore neighborhoods. Storm tides reached 16 feet and waves up to six feet crashed along the shoreline, causing massive flooding and extensive damage in coastal areas.

The most extensive inundation occurred in the low-lying residential neighborhoods of East Shore including South Beach, Midland Beach, Ocean Breeze, New Dorp Beach and Oakwood Beach. Businesses on Father Capodanno Boulevard, Sand Lane, and Midland Avenue were negatively impacted along with severe damage to parkland. Damage to homes, businesses and utilities continued to batter Staten Island's East Shore in the aftermath of Hurricane Sandy.





COASTAL PROTECTION



The inundation during Hurricane Sandy clearly illustrates the need for coastal protection.

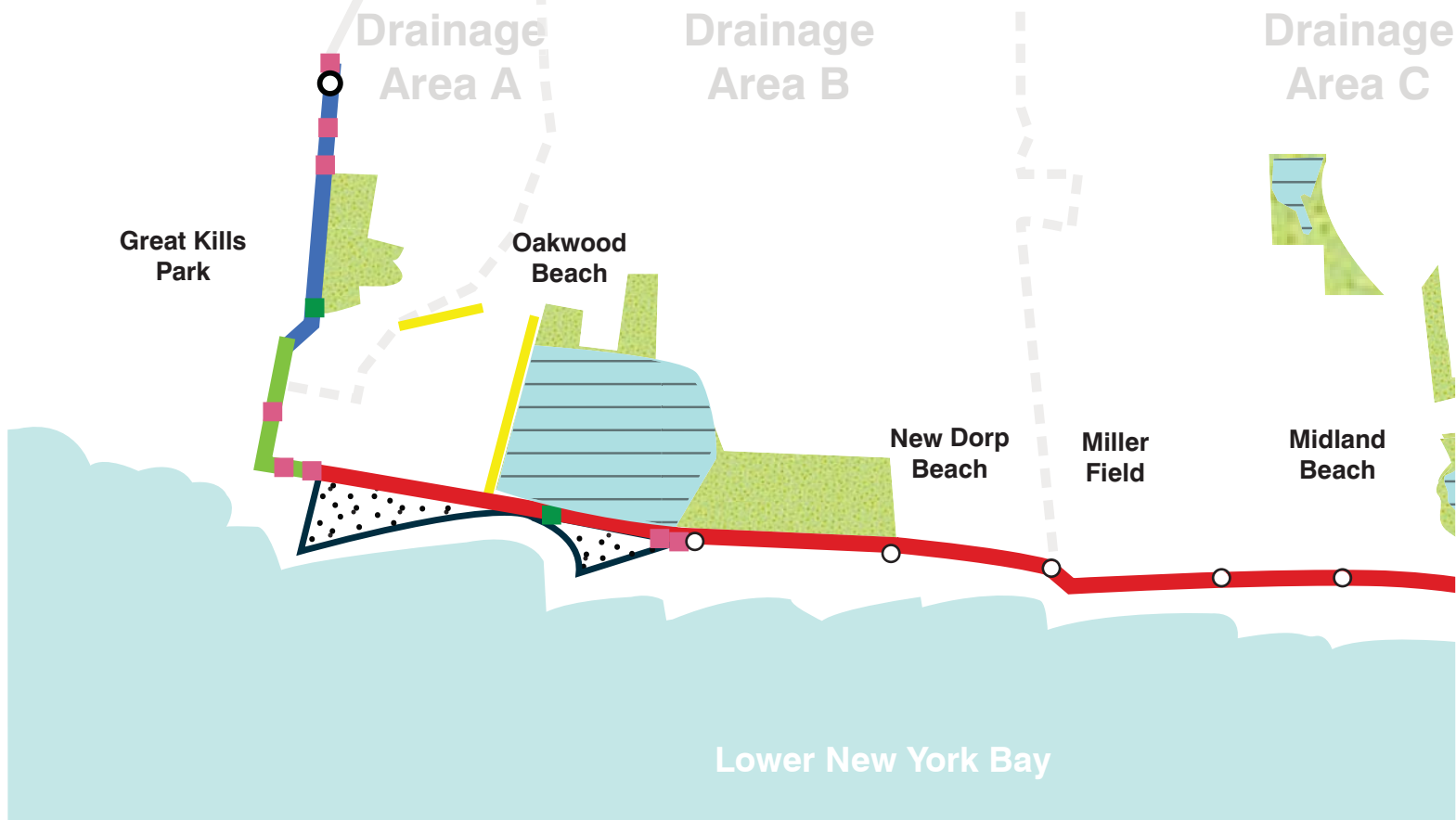
Army Corps' South Shore Feasibility Study

In order to protect the Shoreline Park and the East Shore communities from future coastal flood risk, the Army Corps led the South Shore Feasibility Study focusing on the most vulnerable areas to coastal storms⁷. The study proposes a Line of Protection (LOP) consisting of an armored seawall, a levee and a floodwall along the shoreline from Fort Wadsworth to Great Kills Park, and a series of inland drainage areas serving to detain and store stormwater.

The study also proposes a 38' wide promenade on top of the seawall from Fort Wadsworth to Miller Field and a 17' promenade on top of the seawall and levee from Miller Field to Oakwood Beach. It also lays out easement zones on either side of the seawall and levee, construction limits and construction staging areas⁸ throughout the shoreline.

Impact of the Line of Protection

Much of the Army Corps' LOP will be sited on NYC Parks property, and is expected to have a significant effect on how the shoreline parks function and how they visually and physically relate to the beaches. The impacts of the project on NYC Parks property require relocation, restoration, or replacement of athletic fields, playgrounds, the boardwalk, promenade, natural areas and beaches throughout the East Shore.















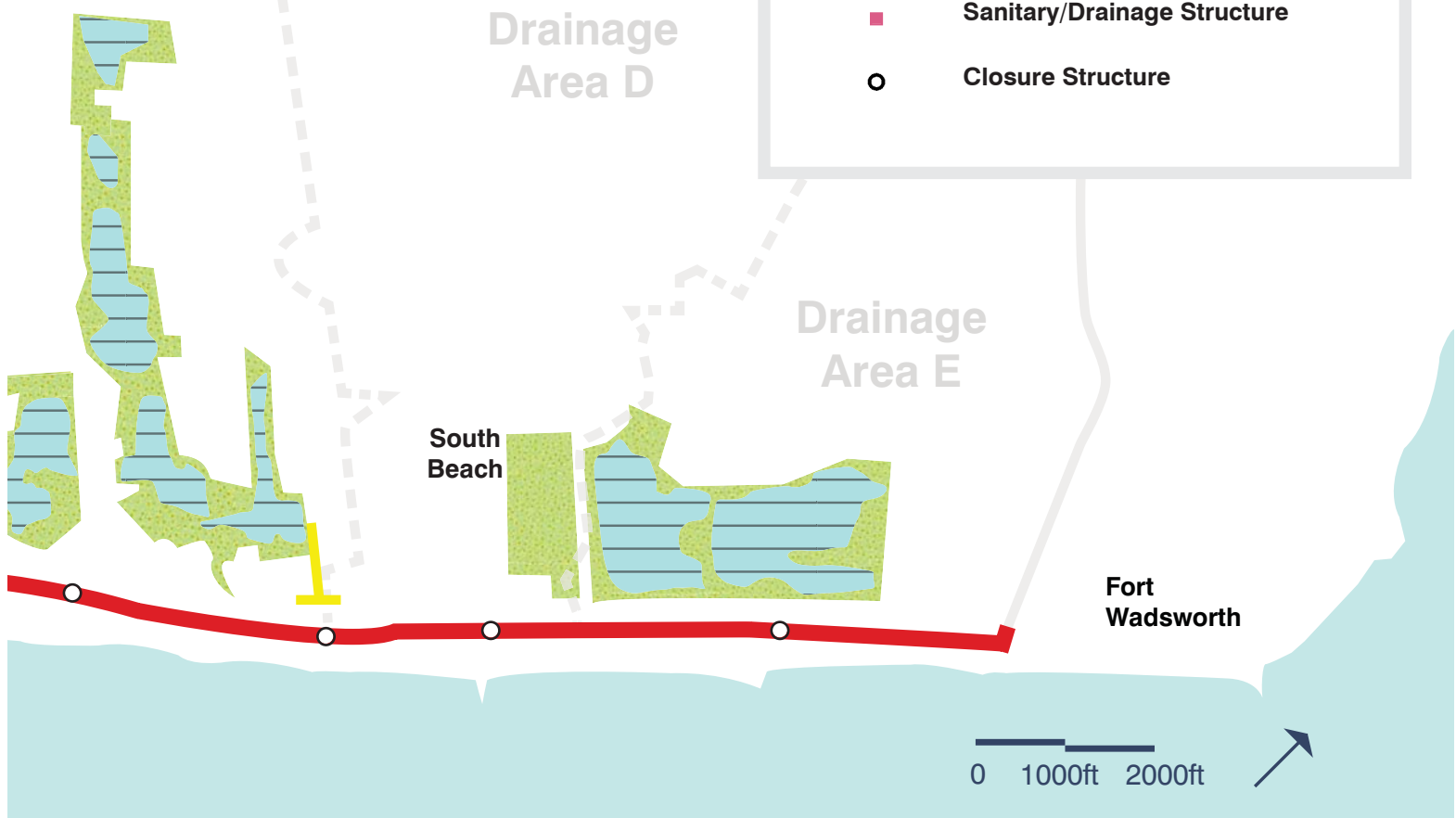
The proposed promenade on top of the seawall will have a direct impact on several NYC Parks owned structures, including comfort stations, shade structures, concessions, lifeguard stations, Parks Enforcement Patrol (PEP) offices, and Maintenance and Operations (M&O) buildings⁹.

The proposed promenade will be approximately 5 feet higher than the existing boardwalk and will be continuous along the length of the shoreline from Fort Wadsworth to Oakwood Beach. While this new promenade is a replacement for the existing FDR boardwalk and will be built by the Army Corps, its higher elevation will obstruct bay views and at-grade beach access at multiple locations on Midland, New Dorp and Cedar Grove beaches. The proposed location of the seawall will also displace local landmarks like Turtle and Splaza fountains. In addition, Army Corps' easement zones and construction staging areas on site will use significant portions of parking lots and natural areas, which will be inaccessible during construction¹⁰.

Many park areas like lawns and natural landscapes along with pedestrian and bicycle paths, playgrounds, fields, parking lots and beach accesses will require partial or complete redesign of landscape and utilities. Overall, the seawall and promenade elevated above the parkland and shoreline beaches will alter the visual character of Staten Island's East Shore.

United States Army Corps of Engineers Line of Protection (LOP)

-  **Levee**
-  **Flood Wall**
-  **Buried Seawall/Armored Levee**
-  **Road Raising Areas**
-  **Pond Excavation Areas**
-  **Drainage Area Boundaries**
-  **Tidal Wetlands**
-  **Natural Flood Storage Preservation Area**
-  **Gate Chamber at Outfall**
-  **Tide Gate**
-  **Sanitary/Drainage Structure**
-  **Closure Structure**



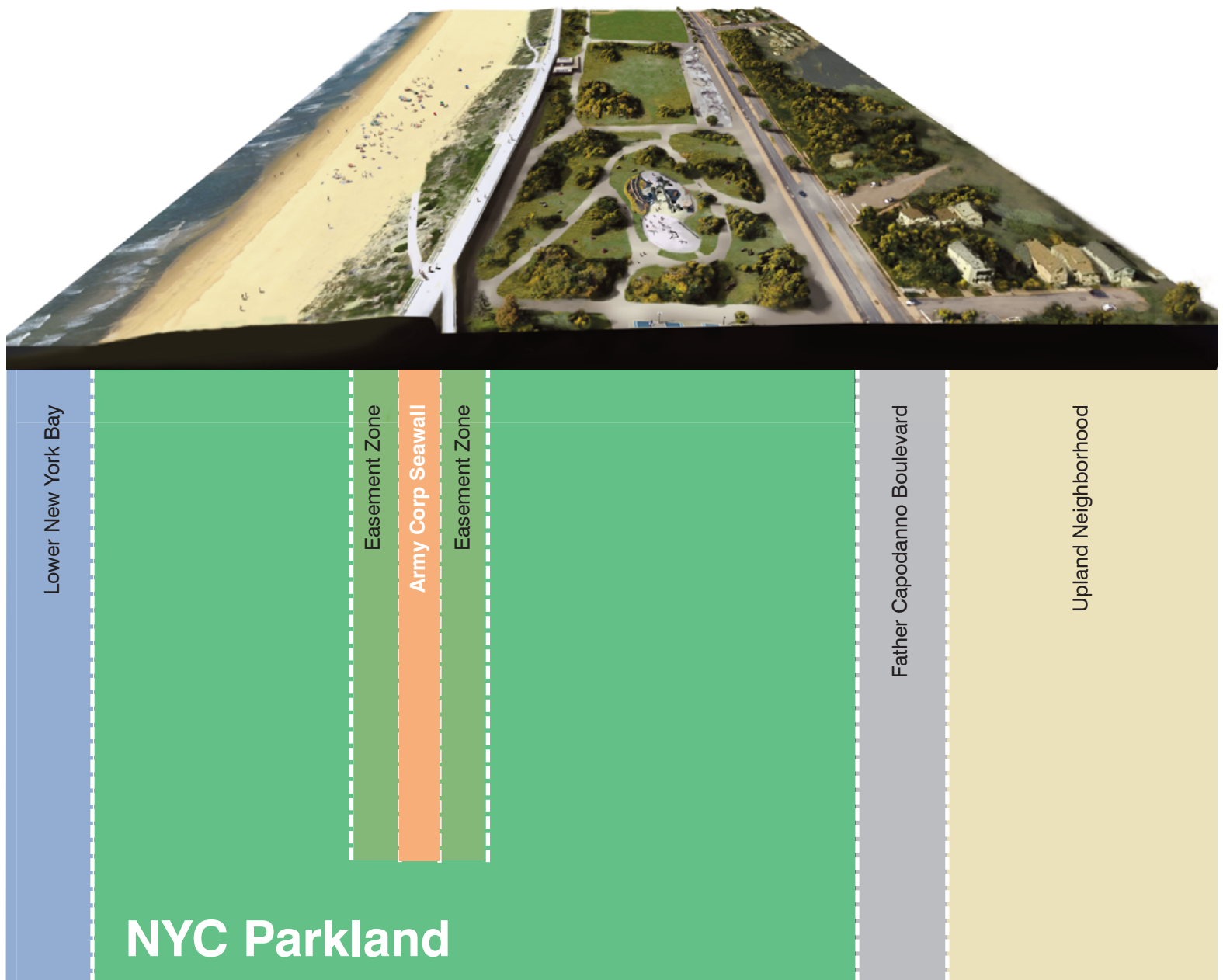
Shoreline Parks Plan

A Long-Term Plan for Improving NYC Parkland
along the East Shore of Staten Island



Picnic Lawn at Midland Beach

This plan integrates the Army Corps seawall into NYC parkland and features main entrances at four major upland corridors along the shoreline on the East Shore – Sand Lane, Seaview Avenue, Midland Avenue, & Cedar Grove.



Shoreline Parks Plan

A Long-Term Plan for Improving NYC Parkland along the East Shore of Staten Island



The Shoreline Plan addresses the following goals:

- Adapt to the Army Corps' LOP
- Identify & maximize opportunities to create an attractive & cohesive parkland
- Improve connections over the seawall and at major upland corridors
- Preserve and restore natural area
- Incorporate sustainable strategies

The Purpose of the Plan

This Shoreline Parks Plan integrates the Army Corps' seawall into a new park design that will strengthen the connections to the surrounding community by providing strong park entrances and new activities. The plan recognizes four major upland corridors along the shoreline on the East Shore – Sand Lane, Seaview Avenue, Midland Avenue and Cedar Grove.

NYC Parks initiated the plan as a proactive planning effort to integrate and adapt existing park uses to the construction of the seawall. The plan presents a significant opportunity to reimagine the shoreline landscape and create the first comprehensive vision for a continuous, attractive and resilient shoreline parkland.



The Army Corps' seawall construction will potentially require the reconstruction or relocation of many Park buildings and will significantly impact existing park uses in the project area. The Shoreline Parks Plan prioritizes the replacement of impacted park elements and proposes a plan to carefully coordinate, restore and rebuild park uses directly affected by the seawall and its features. This plan is the first step towards achieving the complete vision of the Shoreline Parks and will be implemented alongside the Army Corps' construction of the seawall.

Park Activities & Programming

Park activities and programming ideas suggested in this plan reflect the desires and concerns gathered throughout the community engagement process. Existing park

elements that will be impacted by the Army Corps seawall construction are prioritized for relocation and rehabilitation. Shoreline Parks Plan minimizes or eliminates any possible damage to important park uses such as athletic fields, playgrounds, parking lots, service yards and at grade walking and bike paths.

Structures

Comfort stations, concessions, shade structures on or near the boardwalk that will be affected by the Army Corps seawall will be reconstructed. New benches, light poles, fences and public access points including staircases, ADA accessible ramps and vehicular access will be constructed alongside the new promenade.








Sustainable Design

All existing and new parking lots will have shade trees, permeable paving and bioswales for stormwater infiltration. Permeable spaces like lawns, passive natural landscapes and tree groves will supplement storm resiliency. To enhance the current ecological value of the project area, the plan will use native plants in all new planted areas.

Maintenance & Operations

Permanent resilient office and storage facilities for NYC Parks M&O, PEP, and lifeguard staff have been strategically located and provided for in this plan. Restricted vehicular access over the seawall is located to supplement daily park operations and emergencies.

-  Promenade
-  Ballfield
-  Multipurpose Fields
-  C.S. Comfort Station
-  NYC Parks Operations
-  Bikeway
-  Area with High Ecological Value
-  Tidal Wetlands (Army Corps)
-  Pond Excavation Areas (Army Corps)
-  Interior Drainage Areas (Army Corps)

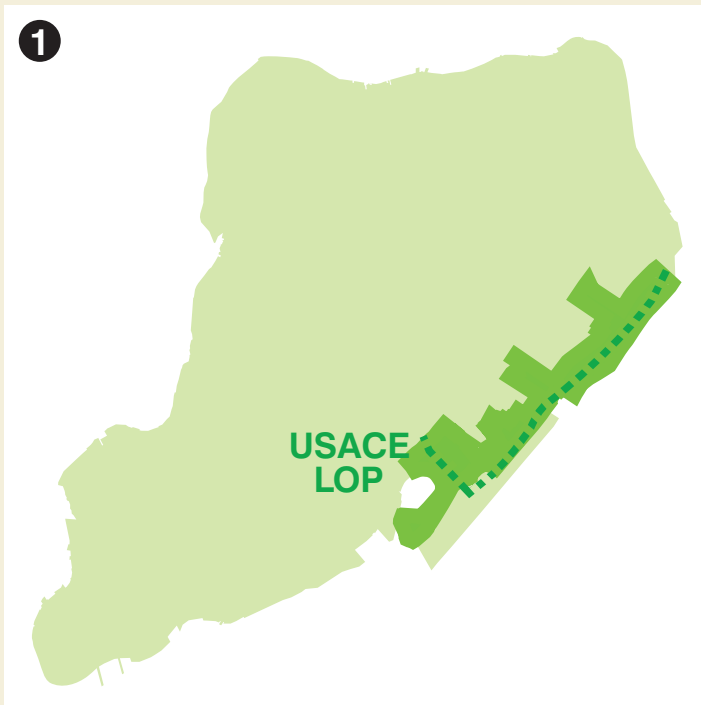


Guiding Principles

The East Shore's 5-mile stretch of coast offers abundant opportunities to create a system of spaces that work together to form a comprehensive, cohesive and protected parkland.

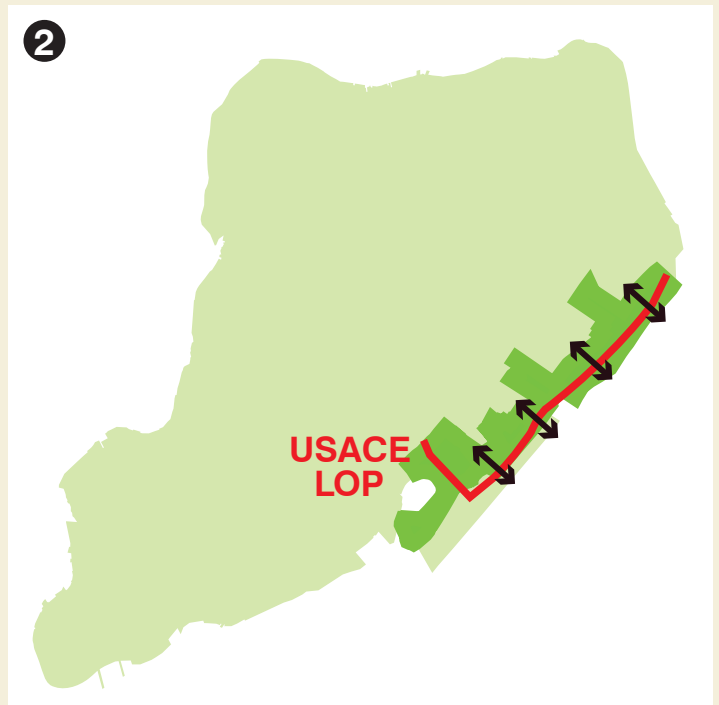
The conceptual design includes many different landscape typologies: tree groves and picnic lawns, dune landscapes, wetlands and nature paths, stepped banks and bleachers, pedestrian plazas, shade structures, green parking lots.

The plan envisions safe and attractive pedestrian and bike access over the seawall; meaningful pedestrian entrances with new activity nodes; and connections to the existing greenway system, to create a beautiful and functional park that is seamlessly integrated with the Army Corps' coastal protection.



Integrate the Park into Coastal Protection

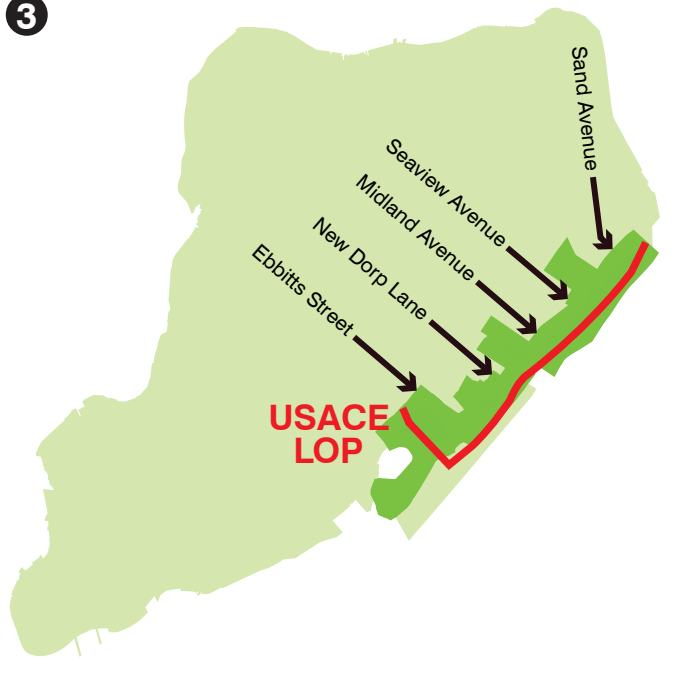
Adapt the parkland to the existing assets and proposed seawall to create a cohesive parkland experience that serves and protects the community.



Access Over Seawall

Maximize the number of access points over the seawall with stairs, ADA accessible ramps and vehicular access.

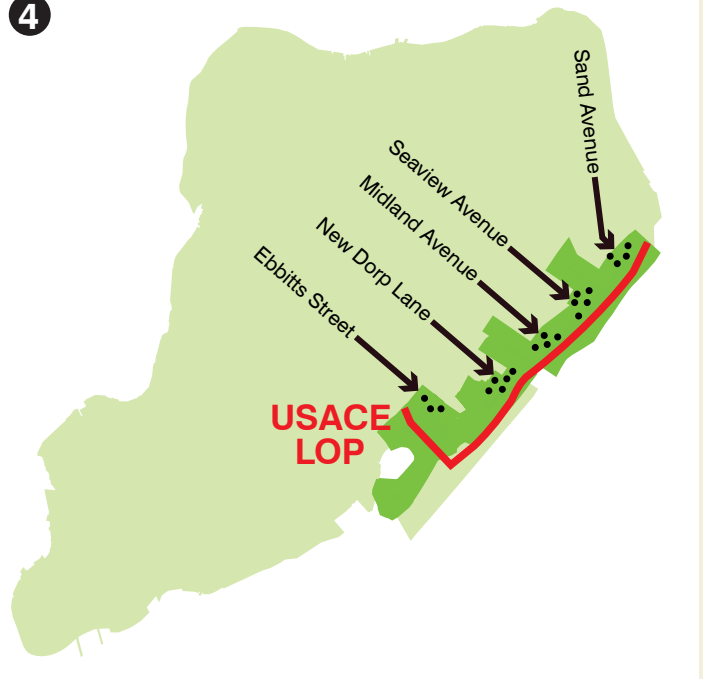
3



Improve Entrances

Create and enhance key park entrances with activity nodes at major upland corridors.

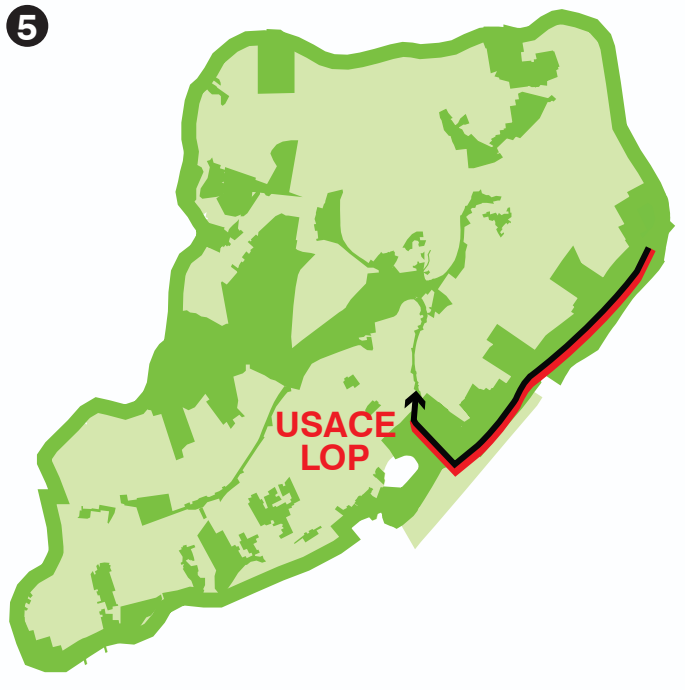
4



Concentrate Activity Nodes

Concentrate active and passive park elements to create nodes of activity at major entrances.

5



Connect to Greenway Network

Contribute to the larger regional pathway system by creating new walking and biking trails that can ultimately connect to the Greenway Network on Staten Island¹¹.



Engineering Considerations

The Army Corps' promenade will be approximately 5 feet higher than the existing boardwalk and will be continuous along the entire length of the shoreline. It will obstruct bay views and at-grade beach access at multiple locations along the East Shore.

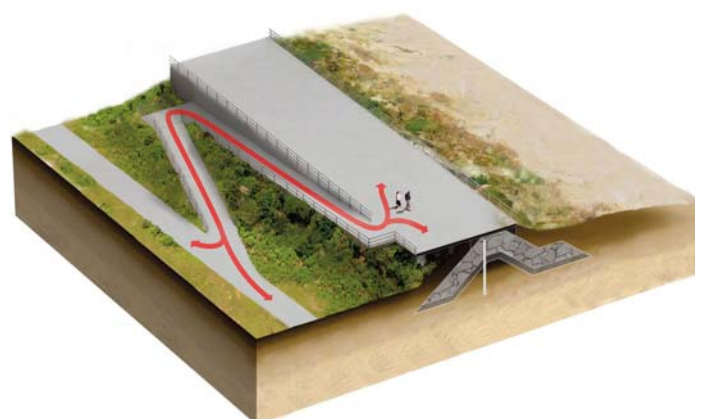
The Army Corps' seawall plans are schematic drawings showing preliminary designs. In order to understand and support the proposed projects in the plan, we have identified the following engineering issues that will need to be further resolved before implementation proceeds.



1. Footings & Foundations

Comfort stations, shade structures, light poles, flag poles, kiosks, etc. will be impacted by the selection of foundation system for the boardwalk. Their footings will need to be integrated with the design and construction of the seawall.

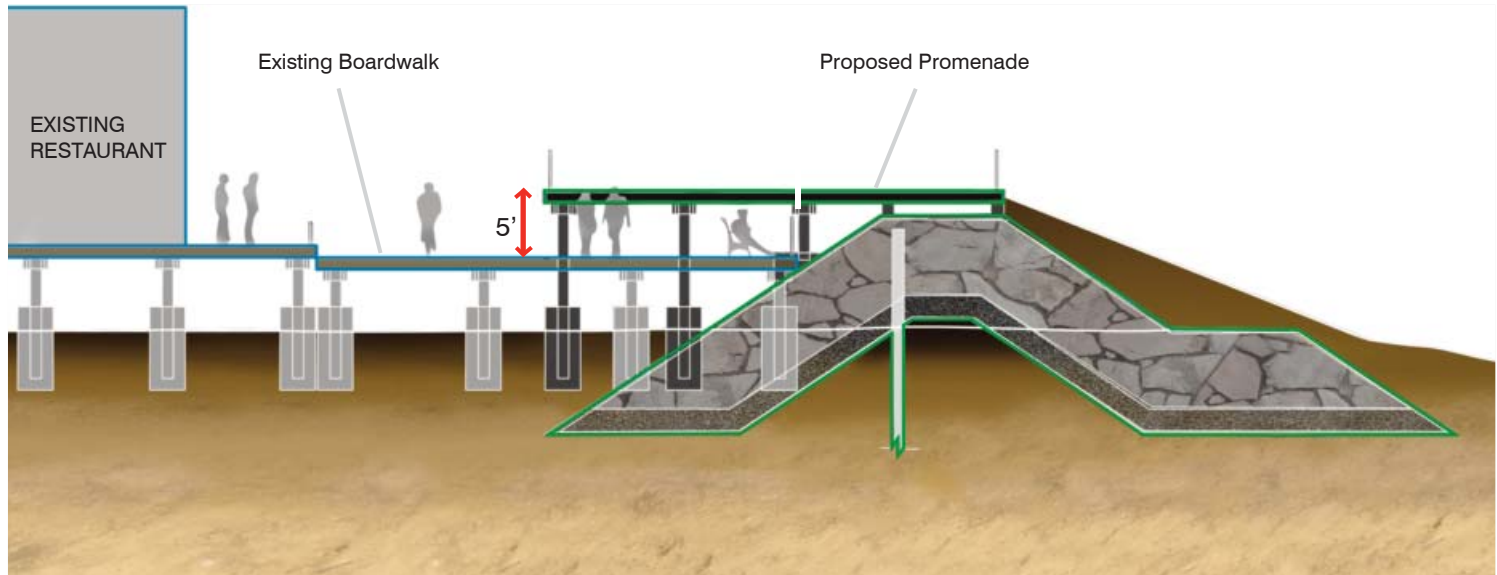
Further information pertaining to the settlement differences between pile supported and reinforced concrete beam supported sections of the seawall will need to be provided. In particular, the Army Corps will need to address and provide information on how the footings for the 12' diameter timber piles will be integrated into the armor stone layer.



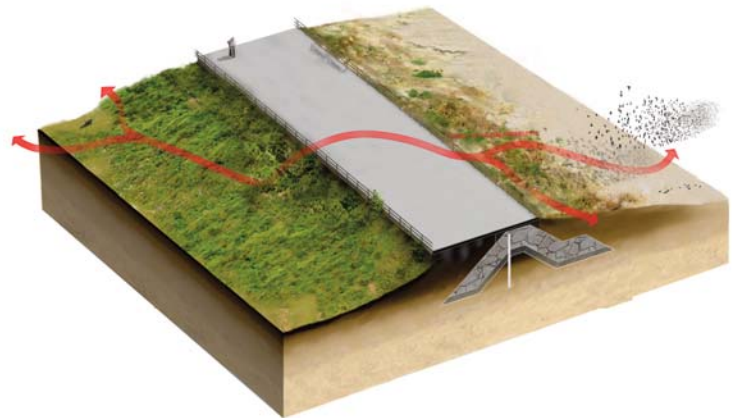
2. Pedestrian Stairs & ADA Access Ramps

In the Army Corps preliminary drawings, it is unclear whether the stairs are designed to give way during an extreme storm event or designed to withstand a storm. Also, it is unclear whether the loss of sand cover on the buried seawall would result in the failure of the concrete stairs.

Vehicular and pedestrian access ramps are required. All pedestrian ramps proposed in this plan are ADA accessible and should be constructed using NYC Parks standards for ADA hazard tolerance. Early coordination with Army Corps will ensure appropriate ADA ramps are designed to follow ADA requirements.



The Army Corps LOP impacts existing park uses in elevation. For example, the figure above shows the proposed seawall promenade (in green) 5 feet higher than the existing boardwalk (in blue). The Shoreline Plan raises the restaurant to meet the elevation of the new promenade.



3. Structures

The construction of the foundations for any landside structures like bleachers and comfort stations in close proximity to the beach will be significantly affected by the buried seawall. Early coordination with Army Corps is recommended for the construction of buildings such as comfort stations and lifeguard stations built into the LOP.

4. Sand Cover on Buried Seawall

The Army Corps' plan shows many sections of the seawall covered in sand of varying depths planted with dune grasses along the ocean side of the promenade. The Shoreline Parks Plan describes the planting on the LOP as a mix of native dune plantings on the sand cover to naturally stabilize the slope.

Engineering Considerations

Pedestrian stairs along the beach, stairs and bleacher seating on the upland side of the seawall, vehicular access, and ADA accessible ramps will require close coordination with the design of the the Army Corps' seawall and will need to meet NYC Parks standards.

The Shoreline Parks Plan removes, relocates and restores unique features that have significant value for the East Shore community such as the Turtle Fountain.





Ecological Considerations

The Army Corps' development of the shoreline protection levee and this Shoreline Parks Plan, presents many opportunities to identify, protect, enhance, or create native ecosystems.

There are several areas of existing plant communities of high ecological value along the beach and in areas the Army Corps has designated for pond excavation to manage inland flooding. These plantings are required to protect the slopes and crest of the LOP to stabilize the ground but they can also provide new areas of valued native habitat.

Native Plantings

We propose indigenous tree species and communities of beach scrublands throughout the parkland, as well as incorporating native, herbaceous species for plantings on and around the LOP. Native species have evolved to thrive in maritime conditions and strengthen local environments by providing habitat for native wildlife and reducing competition from invasive species.

Drainage Areas

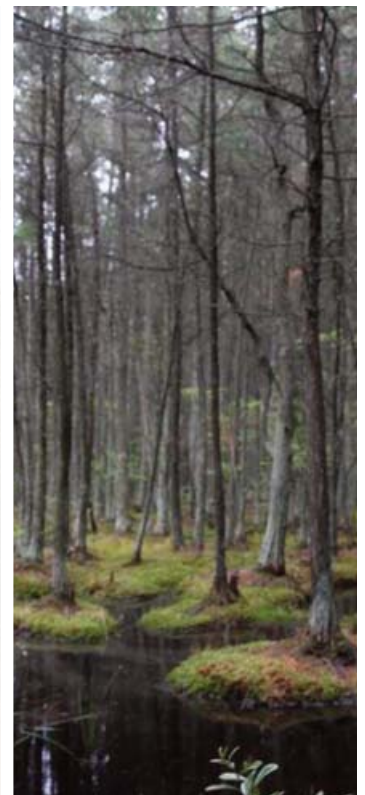
The Army Corps is proposing to restore tidal wetlands in the area outboard of the LOP at Oakwood Beach and excavate ponds in several locations to create storm water flood storage for inland locations behind the LOP. The total capacity of these ponds is important to contain the anticipated volume of runoff. These ponds present a unique opportunity to sculpt the contours and plant the area with native species in such a way that it will create large new areas of native habitat and still provide the same volume of storm storage. Understanding the proposed depth of water, the ground water conditions, and the level of salinity is critical for defining the proper plant communities.



The largest of the detention ponds is proposed adjacent to Oakwood Beach. There are areas of high value plant communities within the footprint of the pond. Depending on the proposed conditions, the detention basin could incorporate deep water emergent wetlands, become a diverse northeast swamp forest, or an Atlantic White Cedar swamp forest.



EXISTING
Phragmites at
Oakwood Beach



PROPOSED
Atlantic White Cedar swamp
forest at Oakwood Beach
pond excavation area

The deep water emergent wetlands proposal includes free water and low pH loamy soils to help prevent establishment of invasive species such as *Phragmites*¹². The shallow waters and nutrients are ideal for organisms low on the food chain, which many species depend on. Wetland foliage also provides shelter for birds, insects, amphibians, reptiles and other “herps”¹³. Alternatively, the detention area could be developed as a swamp forest ecosystem, as either a diverse northeast forest or as an Atlantic White Cedar forest. Swamp forests filter and absorb pollutants, protect soil from erosion and store flood waters. Their high levels of nutrients make them one of the most valuable ecosystems.

In a northeast swamp forest, native species such as Pin Oak and Sweet Gum exist in a diverse range of soil moistures and will colonize different elevations. The array of tree species predominantly prefer low-salinity,

moderately acidic soils and grow best in moist to wet conditions. An Atlantic White Cedar swamp forest could help restore the presence of what was once a historically large and valuable estuarine resource, strengthening the local environment by providing unique habitat for native wildlife.

Planting the LOP

The Army Corps recognizes the importance of incorporating plants and ground covers to stabilize the side slopes and crests of the LOP levee. The side slopes are ideal for native facultative plants such as Big Bluestem, Purple Joe-Pye Weed, Rice Cutgrass or Switch Grass. The drier crest of the levee could be planted with an upland facultative plant selection including Black-Eyed Susan, Little Bluestem or Indian Grass. Planting appropriate native species will strengthen East Shore ecology by providing habitat and reducing competition from invasive species.

Facultative Native Plant List



Botanical Name: *Andropogon gerardii*
Common Name: Big Bluestem



Botanical Name: *Eupatorium coelestinum*
Common Name: Blue Mist Flower



Botanical Name: *Eupatorium purpureum*
Common Name: Purple Joe-Pye Weed



Botanical Name: *Leersia oryzoides*
Common Name: Rice Cutgrass



Botanical Name: *Panicum virgatum*
Common Name: Switchgrass

Upland Facultative Native Plant List



Botanical Name: *Rudbeckia hirta*
Common Name: Black-Eyed Susan



Botanical Name: *Schizachyrium scoparium*
Common Name: Little Bluestem

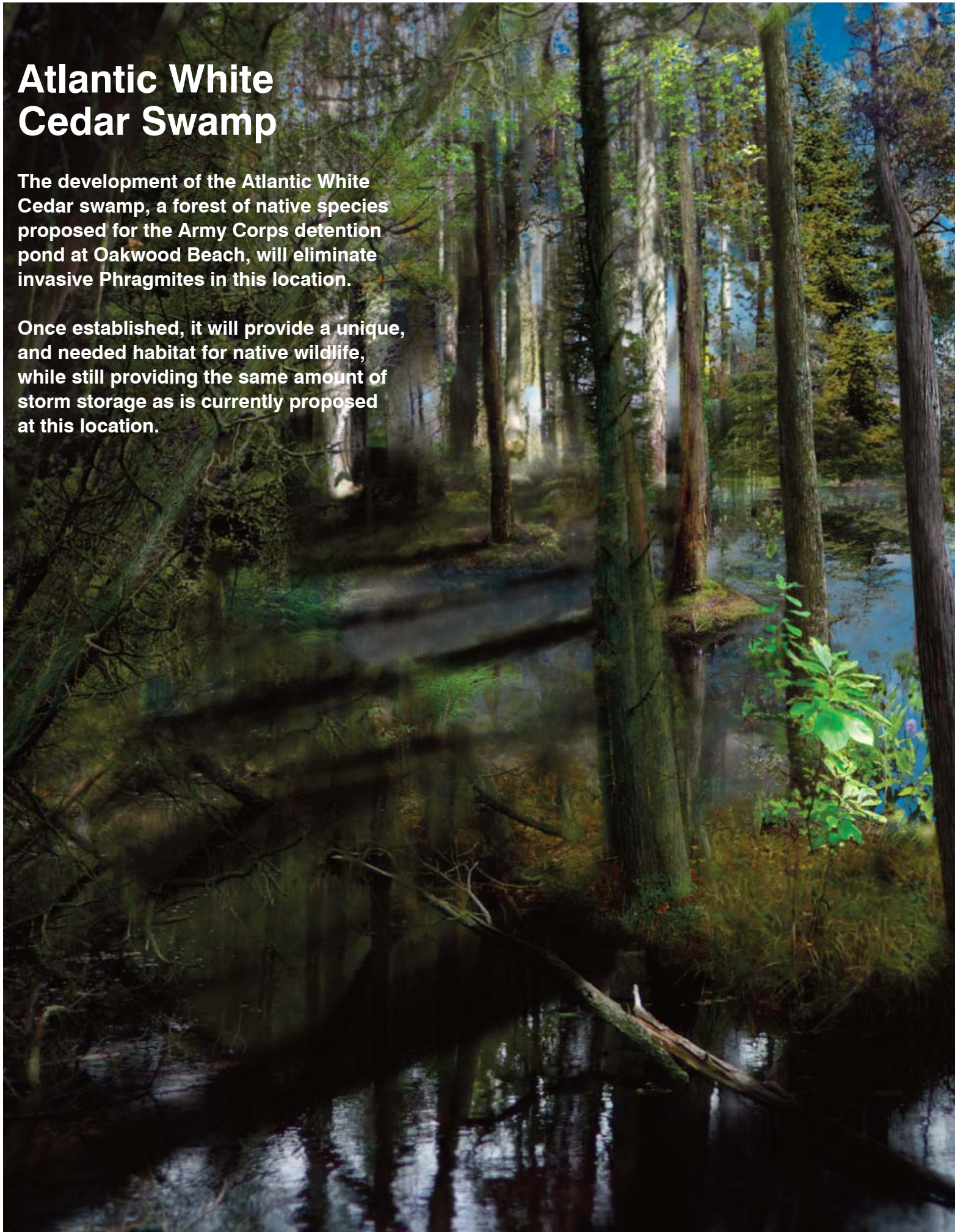


Botanical Name: *Sorghastrum nutans*
Common Name: Indian Grass

Atlantic White Cedar Swamp

The development of the Atlantic White Cedar swamp, a forest of native species proposed for the Army Corps detention pond at Oakwood Beach, will eliminate invasive Phragmites in this location.

Once established, it will provide a unique, and needed habitat for native wildlife, while still providing the same amount of storm storage as is currently proposed at this location.





Community Engagement

Community input was essential to the meaningful development of the Shoreline Parks Plan. Starting in summer 2015, NYC Parks engaged with stakeholders and people from the shoreline communities through a series of public meetings, surveys and online engagement in order to understand needs and wishes for the East Shore of Staten Island, and the shoreline parkland.



The interactive break-out sessions at the stakeholder and public meetings focused on eliciting community opinions regarding the adaptation of the parkland to the seawall. 214 hard-copy surveys were completed during beach events in the summer of 2015, and 160 online surveys were completed between July and December, 2015.

An interactive map was posted online to collect community opinions about the different locations along the shoreline. 63 map comments were generated from 33 users.

The process accomplished the following goals:

- ✓ Identified the community's desires, concerns and priorities for parkland development
- ✓ Created consensus around the vision, goals and identity of the shoreline parkland
- ✓ Fostered active participation and elicited feedback during the conceptual design process
- ✓ Identified potential partners for the development and maintenance of shoreline parks

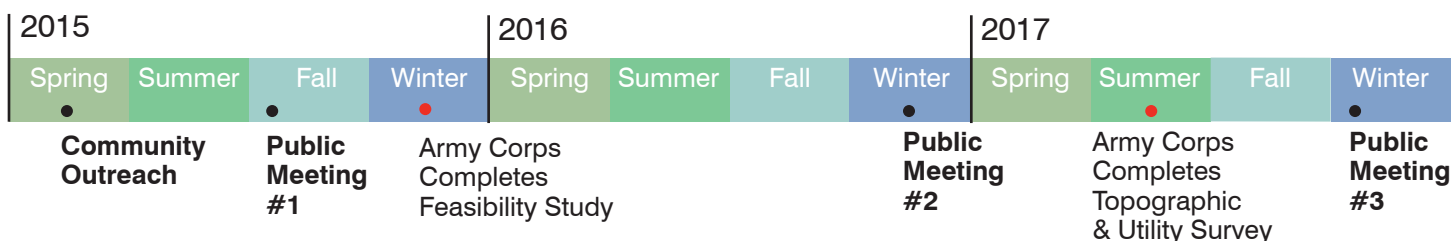
The results of the community engagement were synthesized and referenced during the course of the planning process. Overall, prevailing support for the protection proposed by Army Corps was documented along with general support for the need to improve and rethink piecemeal maintenance and development of the shoreline parks. While the community had diverse ideas and goals, the outreach efforts echoed the following themes:

Community Desires:

- Uninterrupted construction of the Army Corps seawall
- Safe & easy access over the seawall
- More shade trees, landscape & dune planting
- More recreational opportunities for all ages
- Continuous walkway and bike path from Fort Wadsworth to Oakwood Beach
- More park facilities and amenities like comfort stations and concessions

Community Concerns:

- Timeframe of the Army Corps seawall construction
- Loss of trees from storms and flooding
- Policing and safety
- Providing adequate parking at peak times





Four Neighborhood Entrances

Sand Lane



Proposed section of elevated promenade & restaurant at Sand Lane

Existing Landmarks:



Vanderbilt Restaurant



Boardwalk Cafe



South Beach Swimming Area



Comfort Station

Sand Lane

Currently one of the busiest park entrances, Sand Lane is home to The Vanderbilt restaurant and catering hall, the Boardwalk Café and the South Beach swimming area. Other landmarks and activities in this area include the Fountain of the Dolphins sculpture, Playland playground and a gazebo on the boardwalk.

The Army Corps' seawall and elevated promenade will displace park elements on the boardwalk and the higher elevation of the new promenade will render many park facilities unusable.

Existing conflicts include a dangerous turn on the bike path and walkway near the playground entrance; use of the bike path and walkway for restaurant delivery trucks; and storage of garbage containers adjacent to the playground.

The Vision Plan for Sand Lane

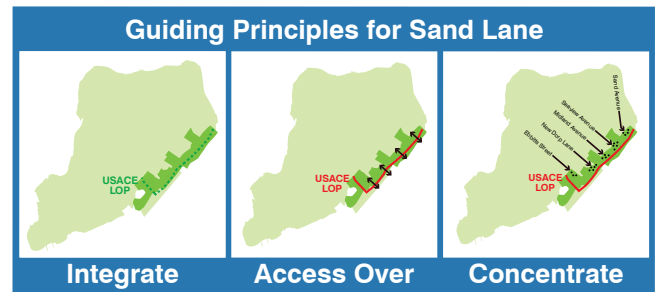
- 1 Relocate Playland playground to the north of Sand Lane, adjacent to the new promenade, and reconfigure the existing drop-off to accommodate a central arrival plaza between the promenade and the vehicular drop-off.
- 2 Reconstruct the Vanderbilt at the new promenade elevation. The new restaurant could have a larger outdoor space which flows onto the 38 foot wide promenade. A vehicular drop-off with pedestrian connection from the parking lot is provided for easy access.
- 3 Raise connections to allow park walkway and bike path underneath for uninterrupted at-grade circulation.
- 4 Create a bollard-separated paved zone for vehicular turn-around and drop-off.
- 5 New bleacher seating with ADA accessible ramps and reconstructed gazebo integrate the seawall into the parkland.
- 6 Relocate the Fantasy Shore Amusement Park to concentrate family activities at Sand Lane.



Gazebo



Playland Playground



The Vision Plan for Sand Lane

Sand Lane

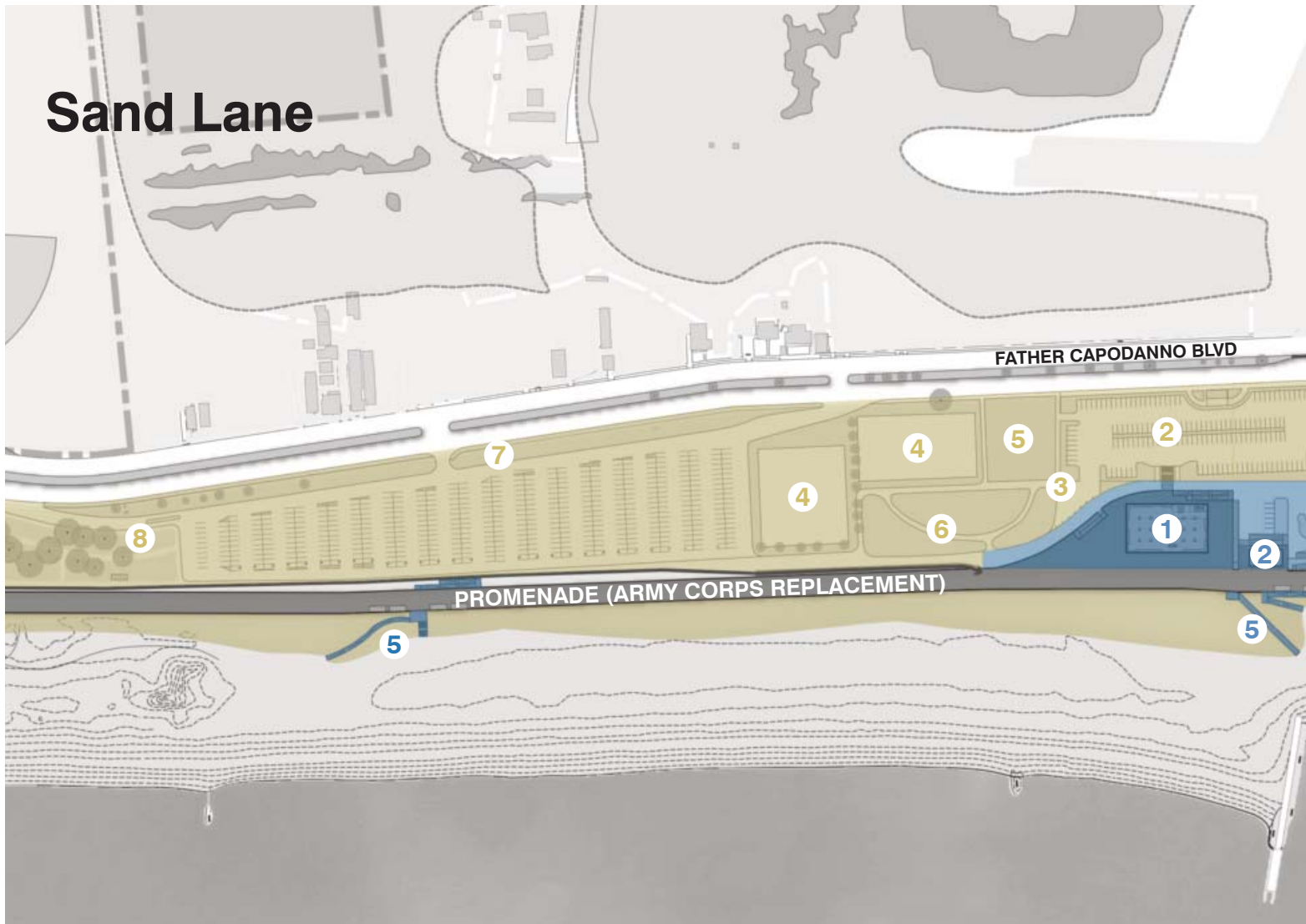
The vision plan for Sand Lane creates a family-oriented node, with the amusement park, playgrounds, concessions, swimming beach, comfort station, passive landscape areas and multipurpose sports fields that caters to all ages and interests throughout the year.

Wider steps and additional ramps on the land side of the park entrance will accommodate increased pedestrian circulation. A larger pedestrian plaza will support the new activities by providing a gathering space with shade and seating.





Sand Lane



Phase 1

Project

- 1 Raise The Vanderbilt Restaurant to new promenade level, reconstruct deck, access stairs & ramps to restaurant
- 2 Raise boardwalk café, shade structure, comfort station & PEP lifeguard station
- 3 Construct pedestrian plaza with landscaped islands
- 4 Reconstruct the gazebo at the new promenade level
- 5 Provide pedestrian, vehicular & ADA Access over the seawall
- 6 Reconfigure vehicular access with modifications to the existing turn-around & vehicular access from Sand Lane
- 7 Construct new M&O facility and service area
- 8 Construct the transfer station in new location

Phase 2

Project

- 1 Reconfigure & reconstruct parking lot at Drury Avenue
- 2 Relocate Playland Playground to new location



Phase 3

Project	Project	Cost
1 Relocate & reconstruct Fantasy Shore Amusement Park	8 Construct BBQ area with lawn & shade trees	
2 Expand, reconfigure and repave parking lots with permeable paving and planting	9 Plant native dune grasses along the promenade	
3 Provide paved area for delivery truck drop-off at The Vanderbilt		
4 Construct multi-purpose sports field		
5 Provide overflow parking for recreational area		
6 Incorporate new landscape & pathways in passive area near the fields		
7 Plant landscape & shade trees at the parking lot perimeter		

Four Neighborhood Entrances

Seaview Avenue

COMFORT STATION



Proposed section of Seaview Avenue

Existing Landmarks:



"Splaza" Water Play & Fountain



Performance Lawn



Fishing Pier



Freedom Circle Plaza

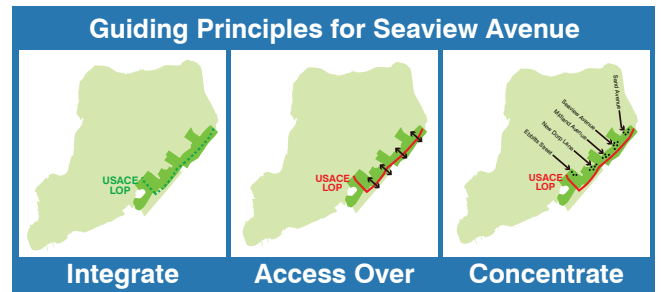
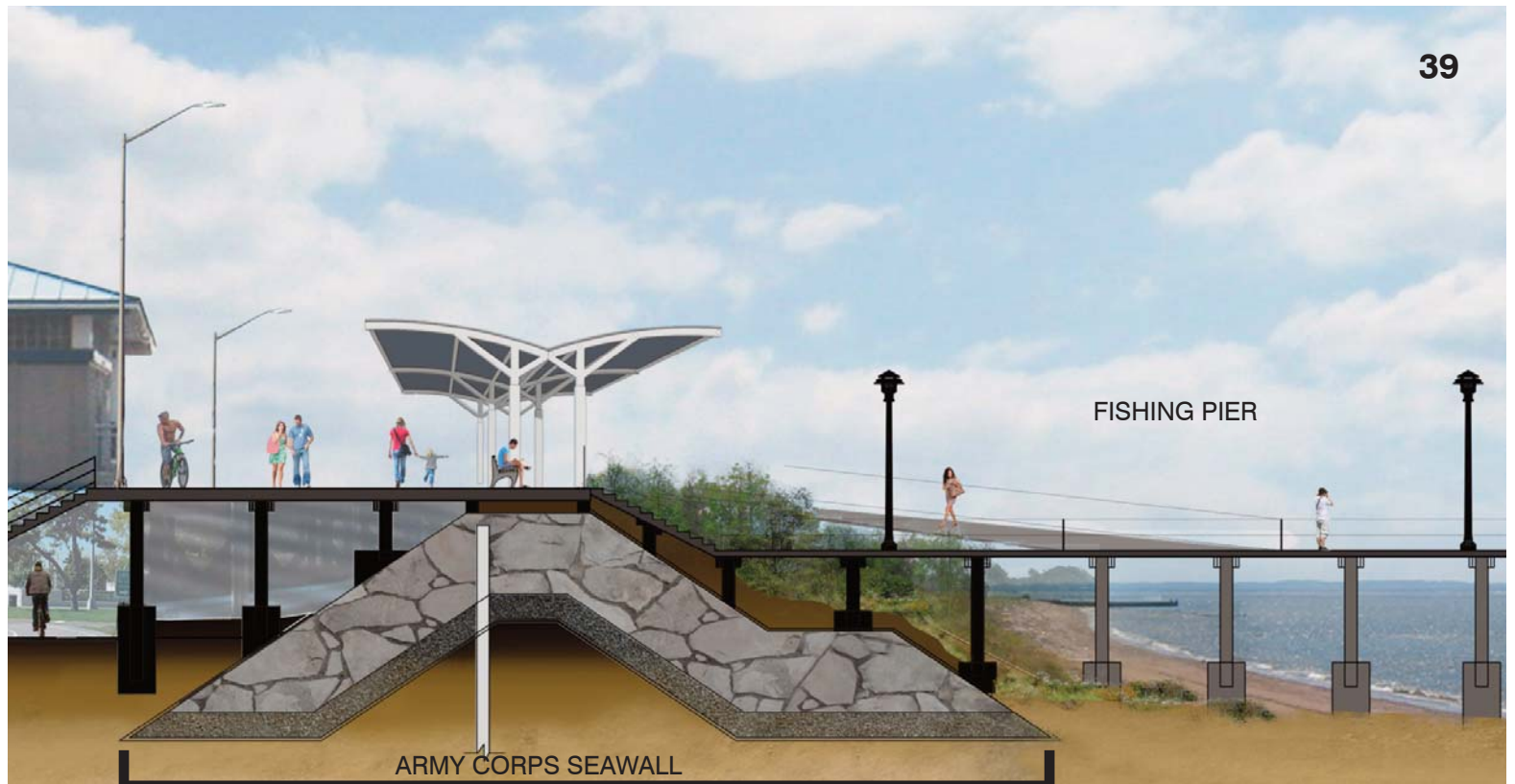
Seaview Avenue

The recently constructed 'Splaza' water play and fountain, performance lawn and the 800 foot long Ocean Breeze fishing pier are the main attractions at Seaview Avenue. It is also the location where the existing boardwalk transitions into an at-grade promenade and consists of Freedom Circle Plaza, a local landmark with memorial flag poles and seating terrace. Two parking lots and a natural area make up the rest of this site.

The seawall affects many park elements like the Freedom Circle Plaza, performance lawn and Splaza fountain. The new promenade will sit roughly 5 feet above the existing fishing pier, displacing the comfort station and shade structures on the existing boardwalk at the head of the pier.

The Vision Plan for Seaview Avenue

- 1 Connect the existing fishing pier to the new promenade via a stepped seating plaza with a shade structure. The accessible ramps on either sides of the plaza connect the new promenade to the fishing pier.
- 2 Restore comfort station, shade structure and the Freedom Circle flags at the new promenade level. Aligned with Seaview Avenue, the landmark flags act as visual markers to upland communities.
- 3 Connect parking lots, paved plazas, tree lined walking and biking paths.
- 4 New picnic lawn with seating, shade, and a hillock offering bay views at the existing natural area.
- 5 At-grade concession below the shade structure will support existing and new park activities. Paved plaza in front of the concession provides a public gathering space with seating and shade.



Seaview Avenue

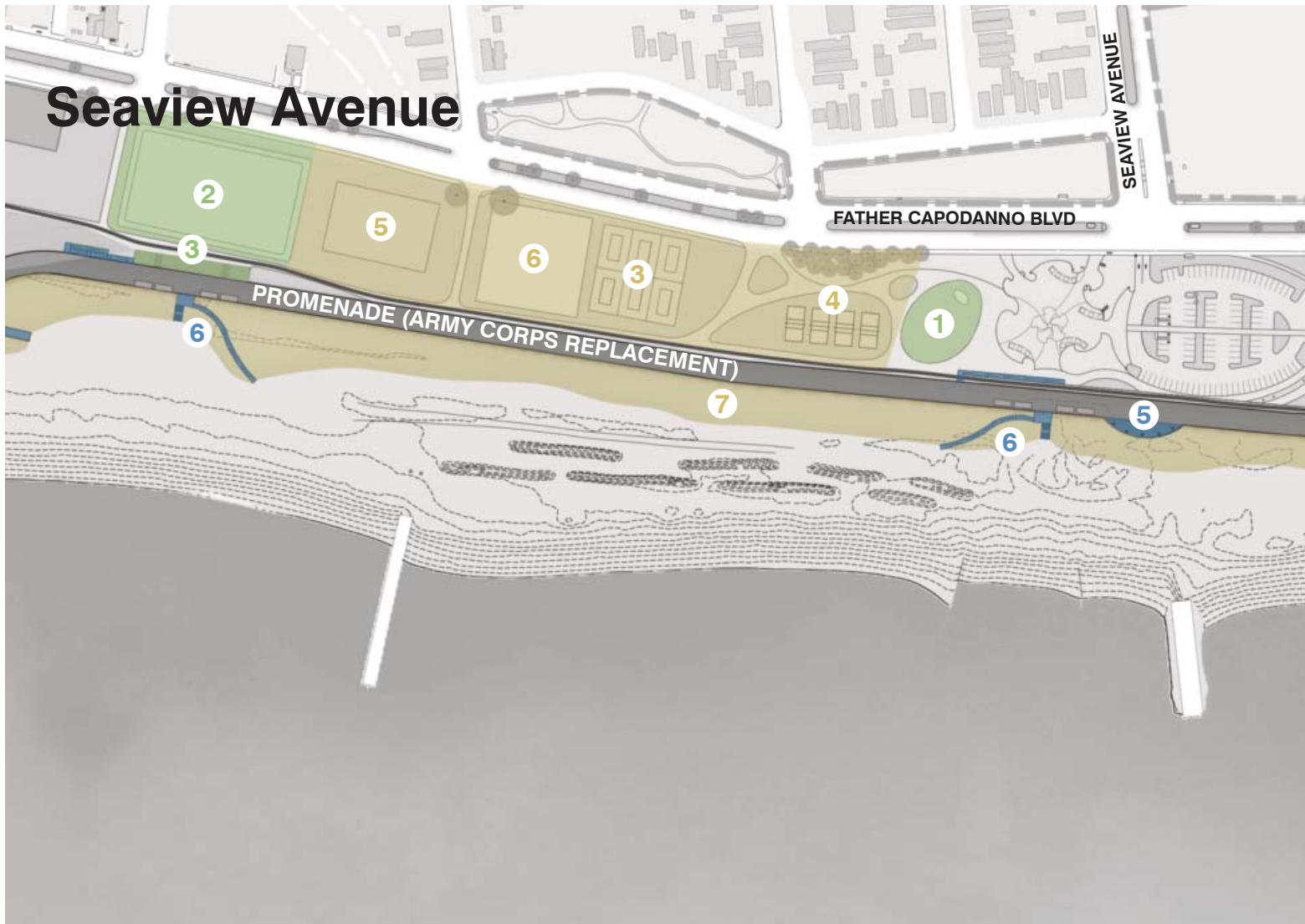
Both steps and accessible ramps will provide connections from the new, higher promenade to the existing pier. The steps protected by a new, larger shade structure, will double as bleacher seating overlooking the pier and the bay.

Native dune plantings will enhance the visual appeal and ecological health of the plaza, creating a gathering space while integrating the pier into the new infrastructure.





Seaview Avenue



Phase 1

Project

- 1 Connect fishing pier to new promenade with public access stairs and ramps
- 2 Construct a new shade structure over access stairs
- 3 Reconstruct the shade structure and seating at new promenade area to be used for concessions
- 4 Raise the existing comfort station to new promenade level
- 5 Reconstruct the Freedom Circle flag poles at the new location on the promenade
- 6 Provide pedestrian, vehicular & ADA Access over the seawall

Phase 2

Project

- 1 Construct a performance lawn space at Naughton Avenue and relocate existing shade structure to the new lawn
- 2 Construct a multi-purpose sports field
- 3 Construct concrete stepped bleachers attached to promenade facing the multi-purpose sports field



Phase 3

Project

- 1 Construct a picnic lawn with paths, paved plazas, shade structures and picnic tables
- 2 Expand, reconfigure and repave parking lots with permeable paving and additional planting
- 3 Construct pickleball courts with landscape and surrounding shade trees
- 4 Construct volleyball courts with landscape and surrounding shade trees
- 5 Construct multi-purpose sports field to be used as overflow parking
- 6 Construct new youth soccer field
- 7 Plant native dune grasses along the promenade

Four Neighborhood Entrances

Midland Avenue



Existing Landmarks:



Turtle Fountain



Comfort Station



At-Grade Promenade



Baseball Field

Midland Avenue

Existing park activities at Midland Avenue include ballfields, handball and basketball courts and a picnic & barbecue area. The Midland Beach Veterans Memorial, a significant local landmark, is located on the sidewalk on Father Capodanno Boulevard across from Midland Avenue Attractions to the north of the site include a swimming beach, a playground and the popular Turtle Fountain.

The at-grade promenade at Midland Avenue is characterized by groves of pine trees, and offers bay views and beach access. The proposed elevated promenade will severely restrict beach access and block bay views from park areas at Midland Beach. Midland Avenue's potential as a commercial corridor makes this site an attractive setting for a variety of programming.

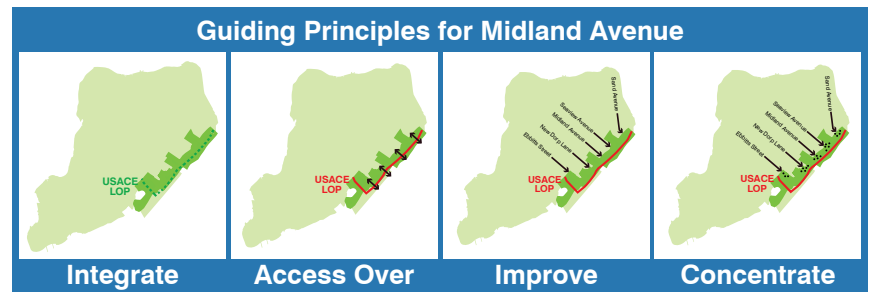
The Vision Plan for Midland Avenue

- 1 Relocate the vehicular entrance and the Turtle Fountain from Jefferson Ave to Midland Ave in order to reinforce the connection to the upland corridors and simplify circulation.
- 2 Relocate Midland Beach Veterans Memorial to the interior of the park, where it will function as a pedestrian plaza overlooking the Turtle Fountain and the promenade.
- 3 Provide new park activities like a playground, adult fitness, water play and/or a dog park.
- 4 Reconfigure and expand the picnic lawn.
- 5 Maintain existing ballfields and add a new comfort station and a concession building.
- 6 Integrate bleacher seating into the seawall overlooking the Turtle Fountain to provide casual seating for park goers.
- 7 Provide stairs and ADA accessible ramps on the beach-side to integrate the seawall structure completely into the park landscape. The 'Sandy Commemorative Walk' project by NYC Parks, will be integrated into the promenade at this location.

TURTLE FOUNTAIN



Picnic & BBQ Areas



The Vision Plan for Midland Avenue concentrates existing and new park activities around the new entrance

Midland Avenue

The vision plan views the seawall as an opportunity to create meaningful additions to park uses.

At Midland Beach where multipurpose sports fields are proposed, bleacher seating will be incorporated into the seawall structure, overlooking the fields. This built-in feature will easily adapt to the new seawall elevation and provide public access to the promenade above.







Phase 1

Project

- 1 Relocate Transfer Station to new location
- 2 Construct new M&O facility building & service area
- 3 Construct lifeguard station at new promenade level
- 4 Relocate Turtle Fountain to Midland Avenue
- 5 Construct new comfort station with planted roof
- 6 Provide pedestrian, vehicular & ADA Access over the seawall

Phase 2

Project

- 1 Construct new parking lot at Graham Boulevard
- 2 Move vehicular access & turn-around from Jefferson Avenue to Midland Avenue. Add curbs, bollards & pedestrian paving
- 3 Construct 2 new parking lots with medians & permeable paving
- 4 Relocate Midland Beach WWII memorial inside park



Phase 3

Project

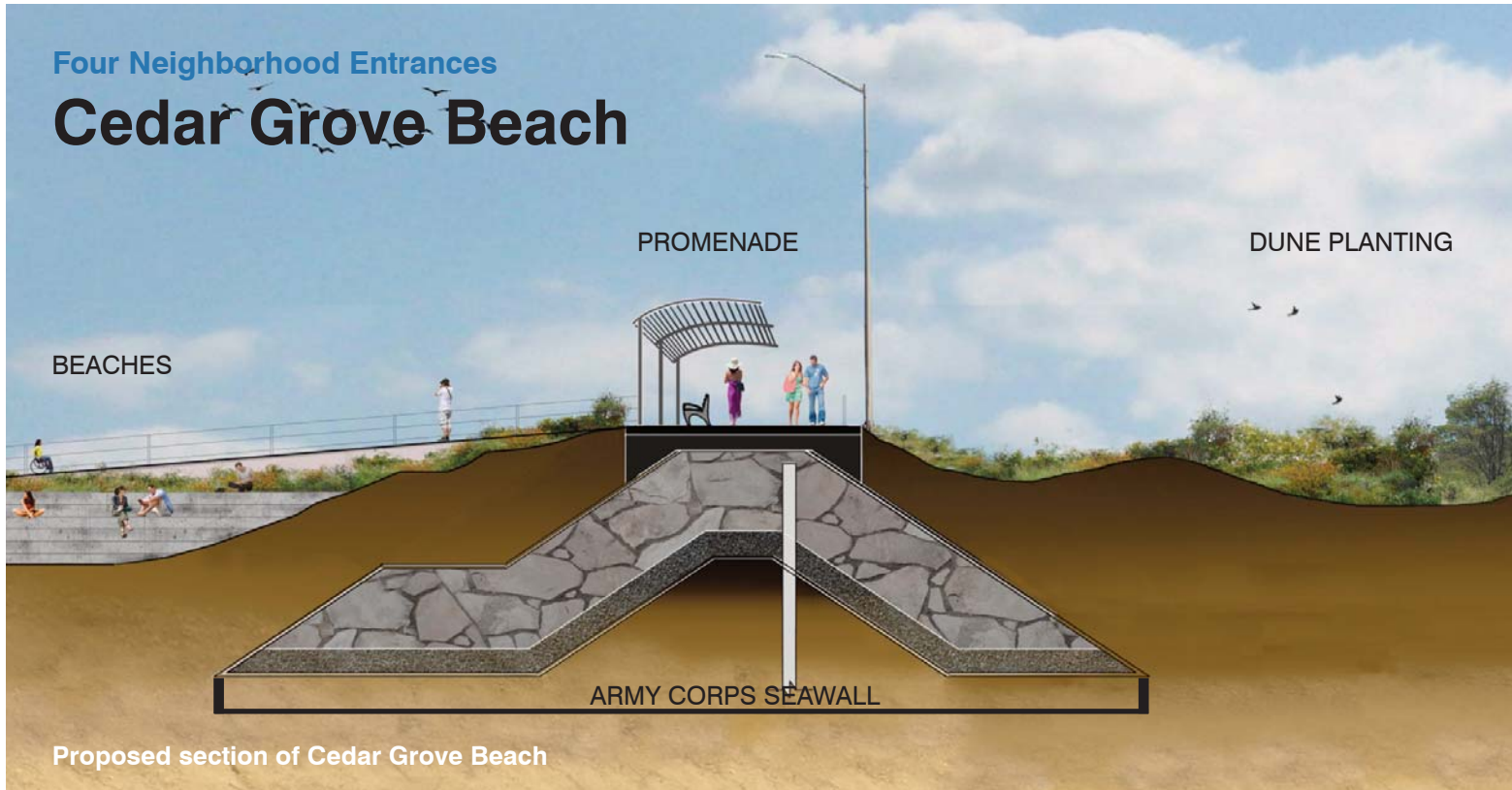
- 1 Build picnic area at Jefferson Avenue with seating, planting and landscape
- 2 Construct new at-grade comfort station
- 3 Construct new at-grade concession building
- 4 Reconstruct Midland Beach Playground at new location
- 5 Reconstruct skate park at new location
- 6 Construct multi-purpose synthetic turf field
- 7 Construct new ballfield next to existing field at Hunter Avenue
- 8 Expand existing pine grove & shade trees
- 9 Construct new at-grade comfort station
- 10 Construct new at-grade concession building
- 11 Build new water play area

Project

- 12 Construct new dog park
- 13 Construct landscape area with shade trees
- 14 Construct new playground & adult fitness area
- 15 Expand & reconfigure picnic area
- 16 Reconstruct handball courts
- 17 Reconstruct basketball courts
- 18 Plant native dune grasses along the promenade

Four Neighborhood Entrances

Cedar Grove Beach



Proposed section of Cedar Grove Beach

Existing Landmarks:



Swimming Beach



Lifeguard Station



Natural Areas



Remains of Bungalows

Cedar Grove Beach

Located in a natural setting and devoid of a promenade or a boardwalk, Cedar Grove Beach is known for its bucolic and beautiful family-friendly ambiance. It is one of the three swimming beaches in the project area. Formerly a bungalow community, most beach houses and utilities at Cedar Gove Beach were destroyed during Hurricane Sandy in 2012.

Today the beach is supported by two Parks modular units serving M&O staff and lifeguards. South of Ebbitts Street is a natural landscape with areas of marshland presenting significant opportunities for ecological restoration and storm-resiliency. The seawall and promenade will obstruct at-grade access to the swimming beach, limit bay views and change the visual character of the area.

The Vision Plan for Cedar Grove

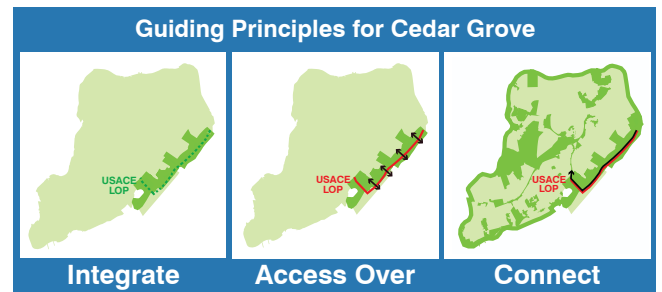
- 1 Introduce a nature play area and a picnic forest.
- 2 Shade trees and extensive dune planting along the new promenade will create a natural storm resilient landscape along the beach.
- 3 Provide bleacher seating facing the swimming beach along with ADA accessible ramps.
- 4 Construct a new comfort station that is integrated into the planted dunes on site.
- 5 Create passive lawns and public plazas with seating to enhance the quality of parkland at Cedar Grove Beach.
- 6 Reuse existing modular buildings as PEP Offices.
- 7 Provide a new elevated building for lifeguards.
- 8 Relocate M&O office & Transfer Station facilities along Cedar Grove Avenue, away from the beach and park activities.
- 9 Provide a vehicular access ramp over the seawall for maintenance and emergencies .



Marshland



Parking at Ebbitts Street



Cedar Grove Beach

Accessible ramps will provide a seamless connection between the land side and the beach. Bleachers on the beach will provide additional seating for the beach area. Extensive dune planting on both sides of the promenade will enhance the natural setting.





Cedar Grove Beach



Phase 1

Project

- 1 Construct a new lifeguard station
- 2 Construct a new M&O facility building and service area
- 3 Relocate the Transfer Station
- 4 Provide pedestrian, vehicular & ADA Access over the seawall

Phase 2

Project

- 1 Expand the parking lot at Ebbitts Street
- 2 Build a comfort station under constructed dunes adjacent to the promenade



Phase 3

Project

- 1 Construct a new comfort station
- 2 Construct new basketball courts
- 3 Construct new handball courts
- 4 Construct new tennis courts
- 5 Construct paved paths and add trees and planting to nature area
- 6 Construct a natural playground
- 7 Construct new picnic lawn with picnic tables
- 8 Construct lawn area with gravel paths
- 9 Plant native dune grasses along the promenade

Capital Projects: Cost Estimates & Phasing

Capital projects in this plan were considered from multiple perspectives including: key locations to support future growth, natural topography and storm resilience, community desires for activities, required Army Corps seawall betterments, construction costs and regulatory considerations. Park designs may be modified to reflect input from additional parties.

A complete list of capital projects with cost estimates will supplement the plan. All cost estimates are based on NYC Parks Capital Projects Standard Costs for materials in 2017 with escalation factored through 2025. Prices and rates are subject to change. Army Corps is required to pay for several park replacements including the promenade on top of the seawall. All other projects in the Shoreline Parks Plan are currently unfunded and will require significant community support to raise funding from the City and other sources to make the vision for Shoreline Parks Plan a reality.

Phase 1

Phase 1 prioritizes the replacement of park elements directly impacted by the seawall. Phase 1 projects are carefully coordinated to allow recreational resources for the community to resume immediately after post construction.

Significant engineering considerations will need to be coordinated with Army Corps. Foundations and footings for light poles, shade structures, ramps, stairs and bleachers will have to be accommodated in the Army Corps' seawall structure. Phase 1 is the first step towards achieving the complete vision for Shoreline Parks Plan and will be implemented immediately following the Army Corps' seawall construction.

GOALS	
1	Immediate replacement of park elements impacted by the Army Corps' project
2	Facilitate meaningful use of park activities & maintenance operations during construction
3	Build towards implementation of the vision for Shoreline Parks Plan

Phase 1 also prioritizes restoration of impacted natural areas as well as all elements on the existing boardwalk, comfort stations, concessions and shade structures that will be demolished during the seawall construction will be reconstructed.

At Seaview Avenue, accessible ramps and a stepped plaza with shade structure connecting the existing fishing pier to the new promenade will be built. The relocation of Fantasy Shore Amusement Park to Sand Lane will facilitate easy transition into the Shoreline Parks Plan for Sand Lane.

In order to keep park facilities and maintenance active during construction, new M&O offices, service yards, lifeguard stations and PEP offices will be constructed during Phase 1. Promenade elements like benches, light poles, fences and public access points including staircases and ADA accessible ramps are proposed to be constructed alongside the construction of the new promenade.

Phase 2

Phase 2 advances the goals of the Shoreline Parks Plan by implementing elements that support the projects in Phase 1. It addresses the park facilities not directly affected by the seawall construction but necessary for everyday park functions. For instance, Phase 2 projects at Sand Lane include rebuilding the M&O Transfer Station, office building and service yard.

Phase 3

During Phase 3, the final elements will be implemented ensuring a safe and vibrant East Shore for generations to come.

Passive landscapes including natural areas, picnic lawns and dune plantings; new active recreational uses like sports fields, courts, and playgrounds, along with new comfort stations and concessions are also a part of Phase 3.

Next Steps

The next step for this plan will be to coordinate with the Army Corps as they develop the seawall design, and implement capital projects identified in the plan in phases, as funding becomes available.

Continued partnership between City agencies, local officials and community stakeholders is important to create consensus and support the development of the Shoreline Parks Plan.

The plan envisions a comprehensive parkland along Staten Island's East shore by creating safe and universal access over the Army Corps' seawall and recreational opportunities within a resilient environment.

Long-term community engagement in this master plan will ensure the goals of the plan are followed through as the project moves ahead.





Notes

- 1, 2
US Army Corps of Engineers, New York District. South Shore of Staten Island Coastal Storm Risk Management: Interim Feasibility Study for Fort Wadsworth to Oakwood Beach Draft Main Report (November 2014)
- 3
The City of New York. PlaNYC: A Stronger, More Resilient New York, Chapter 15 (2013)
- 4
NYC Department of City Planning, Resilient Neighborhoods: East Shore, Staten Island, (2017)
<http://www1.nyc.gov/site/planning/plans/resilient-neighborhoods/east-shore.page>
- 5
Barlow, Elizabeth, The Forests and Wetlands of New York City (Little Brown, 1969)
- 6
NY Rising Communities, NY Rising Community Reconstruction Plan: East & South Shores Staten Island (2014)
- 7
US Army Corps, South Shore of Staten Island Draft Environmental Impact Statement (October 2016, revised December 2016)
- 8
Easement Zone: Portion of land required for staging/work area purposes. The required temporary work areas are typically adjacent to land to be acquired for construction of the Line of Protection.
- 9
Construction Limit: Extent of construction activity defined in the Army Corps' feasibility study.
- 10
Construction Staging Area: Temporary storage area for construction equipment and materials such as vehicles and stockpiles.
- 11
Greenbelt: A system of contiguous public parkland and natural areas in central Staten Island.
- 12
Phragmites australis: An invasive perennial grass found in eastern US wetlands, known as the common reed. It shades or crowds out native wetland vegetation, eliminating food and shelter for wetland-dependent wildlife and sometimes acting as kindling for fires when plant material dies off in the fall. Once Phragmites australis takes root, it is difficult to stop due to its rhizomes – continuous, horizontal underground stems that shoot out lateral roots and facilitate the plant's expansion and growth.
- 13
Herpetofauna or "Herps": Reptiles and amphibians who depend on the food, water, and shelter provided by wetlands. Deep water emergent wetlands provide habitat for amphibians in every stage of their lives. Wetlands also provide food for many species of amphibians, such as insects, spiders, snails, worms, and small fish. Reptiles also find wetlands an ideal living environment because of the abundance of food and protective flora. This is especially true of reptiles that swim, such as the common snapping turtle and the water snake.

