RUTGERS
School of Environmental and Biological Sciences

Eliminating a False Dichotomy

Developing an Ecological Respite in the Industrial New York Harbor

Rutgers School of Environmental and Biological Sciences, Dept. Landscape Architecture:
Praxis Studio (EC), 11:550:332, 432, 532
Spring 2019: T 2:15-6:55; Th 2:15-5:1
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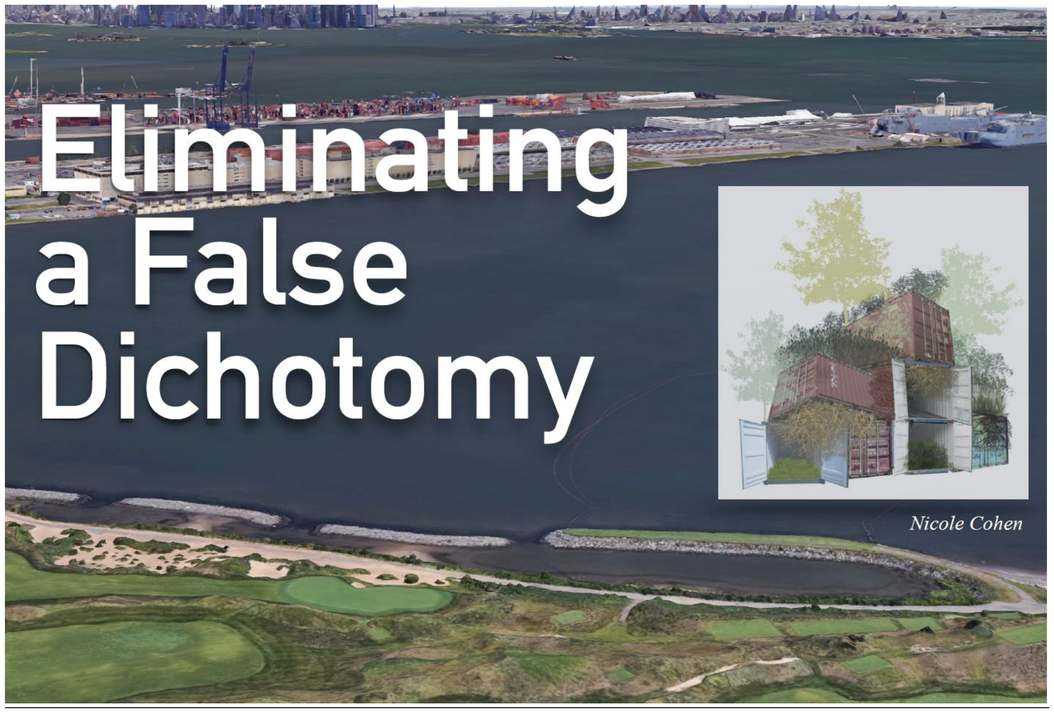


OVERVIEW

In 2008, the earth's population became more urban than rural. We are now at the beginning of the 'Urban Millennium,' and there is a growing realization that over the next century urban populations will mushroom to densities incomprehensible just a few decades ago. Cities across the world are beginning to re-evaluate the traditional relationships between public, industrial and post-industrial lands to accommodate and sustain an increased demand for social space and ecological services.

To actively participate in this current discourse, this studio will remove the perceptual barriers that exist between Nature and Human Made. We will explore what a barrier island, one that functions for both storm surge protection and ecological services, look like? What plant assemblages would be most productive? What species of wildlife could be targeted? And what are appropriate measures of success?

Our goal is to develop a range of different design proposals that resolve planning, landscaping, and ecological challenges within this urban context and to provoke a fruitful conversation with both the client, the golf course leadership and the regulatory community.

Through the vehicle of lectures, field trips, multi-discipline collaboration, and engagement with the client, government agencies, and professionals in the field students will gain an understanding of the challenges to influencing big picture changes within urban environments as landscape architects. The hope is through this process, each student will begin to define a personal thesis for how and where landscape architects and planners might find new opportunities to intervene in more meaningful ways. Ways that seek to adaptively reuse industrial landscapes wile providing ecosystem services, and most importantly create areas of "place". The studio will employ Innovative green technologies and concepts of fourth nature to maximize the social and ecological potential of the site.

THE SITE

Located on the western shoreline of the New York Harbor, the Bayonne Golf Club is home to a waterfront golf course that is atypical for this side of the Atlantic. The course itself is constructed of dredge from the New York Bight and technically serves as a cap for hydrocarbon contaminated soils, the result of the past industrial use. The golf course wants to build the island to both protect the course from storm surge and enhance the areas maritime ecology.

Course Goals and Objectives:

1. Students will develop the skills to interpret science, technology, and cultural context to critique, design, and to envision and develop innovative solutions in sustainability, land stewardship, and other contemporary urban challenges. They will;
   - be able to differentiate between ecosystem functions and services within the context of urban green space.
   - be able to differentiate between native, novel, and non-native vegetative assemblages and develop an appropriate context for each.
   - be able to relate site-scale observations and interventions to larger regional ecological and social processes spatially and temporally.

2. Students will gain a functional understanding of and develop the ability to creatively design space and spatial relationships. They will;
   develop design strategies that create places while providing social and ecosystem services.
   be able understand and evaluate a site for ecological services.
   develop the ability to construct a plan based upon a client's objects.

Schedule: The studio is structured in three broad phases:

Phase I: Landscape Research Inventory & Analysis
During this phase of research and analysis, you will investigate not only the site and its history, but also broader human and ecological systems in which the site exists as well as engaging in a class-wide investigation and discussion of issues of environmental ethics, nature and ecosystem services. You will meet with the client and examine the existing conceptual redevelopment plan and environmental impact statement. Your study of the site, landscape, and environmental issues will set the framework in which you will develop your site-specific plan. This phase of the studio will culminate in the presentation of your site and system investigations as well as your proposed locations for your constructed intervention.

Phase II: Synthesis, Case Studies and Presidents
During this phase of the studio you will synthesize your research into a design approach. You will each undertake several case study investigations of similar projects. You will combine this information with the needs of the community. You will formulate a conceptual landscape design based upon your approach.

Phase III: Conceptual and Final Designs The final design will present a landscape solution which represents your teams' resolution of the issues and opportunities discovered during the process. The design will present a specific philosophical approach to landscape design that is reflective of the Commoner's Laws of Ecology.

Field Trips:
Field Trips are designed for half or whole day examinations of specific sites. Field Trips will generally take place on Thursdays. You will be given the opportunity to talk with site personell and examine how policy is translated into action.

Reviews:
You will have two or three reviews over the course of the semester where you will be asked to formally present your work to outside guest critics as well as your instructors. The dates of these reviews will be determined by the progress of the class.

We will try to limit these reviews to normal class hours, please keep in mind that presentations by the entire class can be time intensive and we will need to work around the schedules of guest critics. Reviews may start before normal class hours or end after, do what you can to schedule accordingly. Please let us know immediately of any schedule conflicts that arise over the course of the semester.

The schedule below is tentative and may change as the course develops:

Detailed Schedule				
Week	**Date**	**Activity**	**Assignments**	**Readings**
1	1/22/2019	*Lecture: Connections to the Land*		
		Four Trace Concepts in LA and Topolgy		Topology Pamphlet 15 (Intro, Definitions, Maxims)
		Ecological Design	Assignment 1	Ecological Design (Marie Listner)
	1/24/2019	*Mark Gallagher - Pricton Hydro*	Expressing Experience - Your "Place"	A Sense of Place (Stegner)
		Existing Resource Review	Assignment 2	
			Assignment 1 Due	
2	1/29/2019	The Ecology of the Harbor		Ecological Legacy_ Is Urban Marsh
	1/31/2019	Field trip Scape Studios Manhattan		Sustainability Compatible with CWA
3	2/5/2019	*What is a "Landscapist Attitude" in*	Assignment 2 Due	The Land as Palimpsest (Corboz)
		The Three Natures, Fourth Nature		Novel ecosystems: theoretical and
	2/7/2019	Field Trip Bayonne Golf Club		management aspects of the new world
4	2/12/2019	*Urban Ecology*	Assignment 3	Novel Ecosystems
	2/14/2019	*NY NJ Baykeeper*	Exploring Concepte	James Corner
			Assignment 3 Due	Harborne and Mumby
5	2/19/2019	Inventory and Analysis Work Session	Assignment 4	What is Good
	2/21/2019	Inventory and Analysis Work Session		Ecological Restoration
6	2/26/2019	Initiate Conceptual Design		Readings for Projections
		Protecting Open Space		
	2/28/2019	Inventory and Analysis Pin-up	Assignment 4 Due	Economic Value of Ecological Restoratio
7	3/5/2019	Developing Alternatives Work Session	Assignment 5	How to Study Public Life
	3/7/2019	Developing Alternatives Work Session		
8	3/12/2019	Developing Alternatives Pin-up	Assignment 5 Due	
		The Public Trust		Public Trust Doctrine
	3/14/2019	Choosing a Solution		
9	3/18/2019	No Class / Spring Break		
10	3/26/2019	Who is the Space For?	Assignment 6	
		New Jersey Demographics		4 Change in New Jersey
	3/28/2019	Developing the Solution		
11	4/2/2019	Who is the Space For? Pin-up	Assignmnet 6 Due	
				Climate Change with Landscape
	4/6/2019	*Rates of Change during the Anthropocene*	Asignment 7	Architecture
12	4/9/2019	Case Study Presentation	Assignment 7 Due	
	4/11/2019	Work Session Final Design	Asignment 8	
13	4/16/2019	Work Session Final Design		
	4/18/2019	Work Session Final Design		Readings: Ascension Island
14	4/23/2019	Work Session Final Design		
	4/25/2019	Final Presentation	Assignment 8 Due	
15	4/30/2019	*The World Without Us*		
	5/2/2019	Booklet		
16	5/7/2019	Booklet Due		
		Italics indicate Lecture		

Studio Resources:

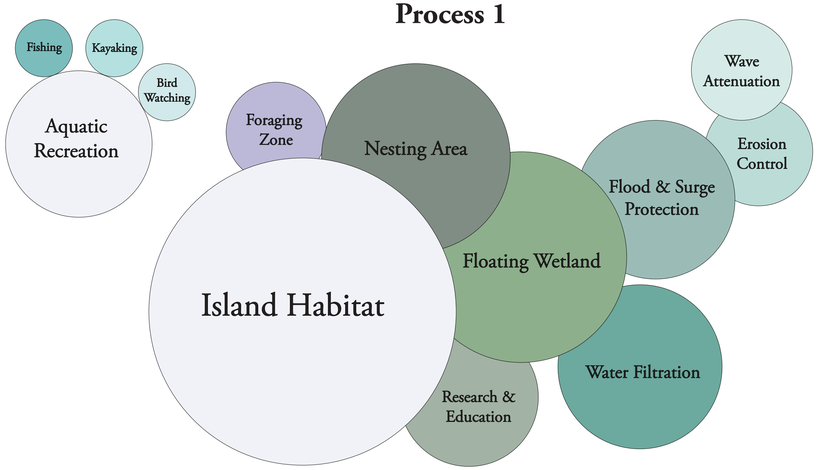
Course readings will be made available on the course SAKAI website. Data and information such as base maps and the environmental impact statement will be available through the course folder.

BAYONNE WETLAND PARK

BAYONNE WETLAND PARK:

Meng Guo, Daniel Ilkow, Brady Smith

Process 1



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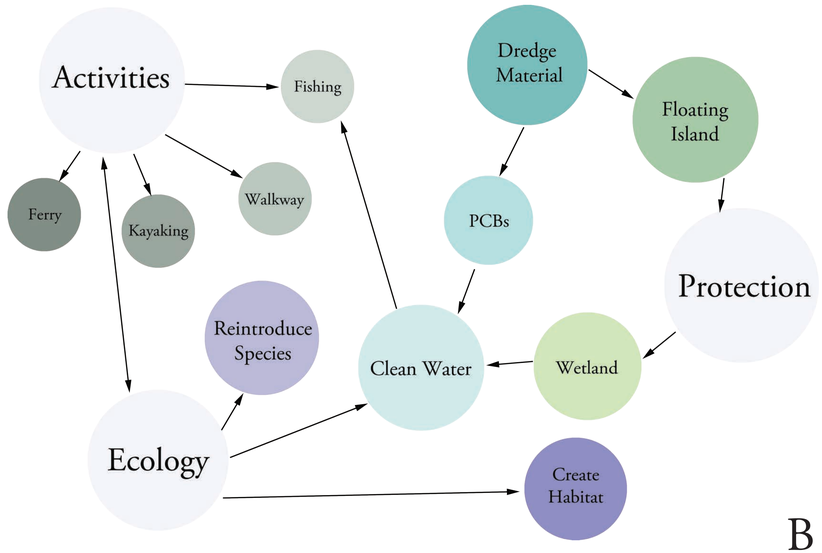

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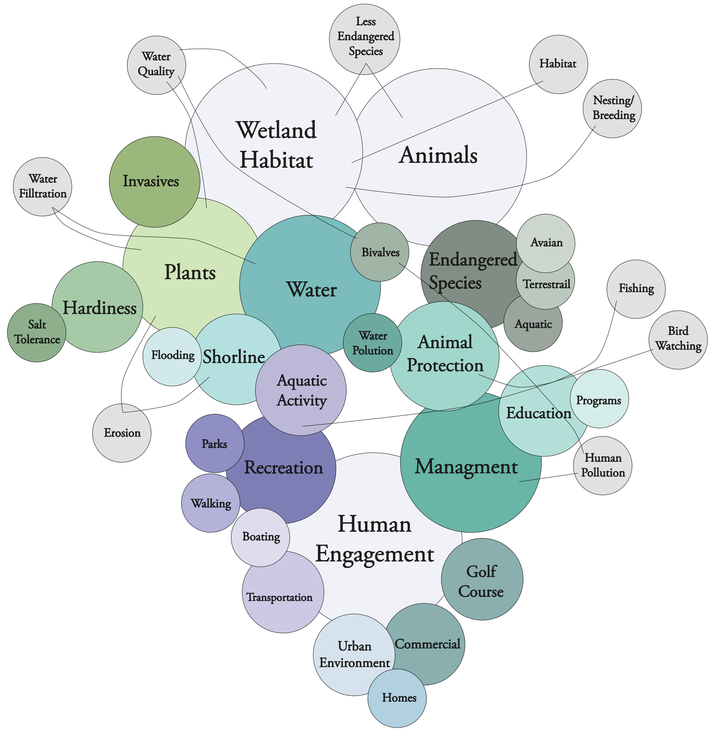

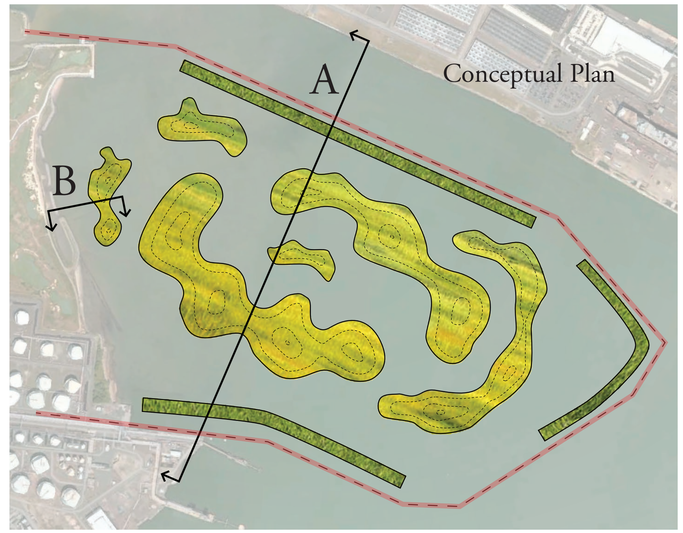

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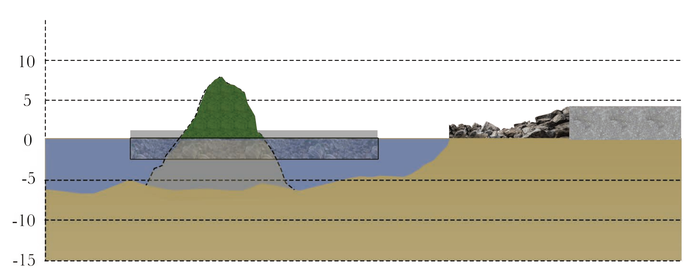

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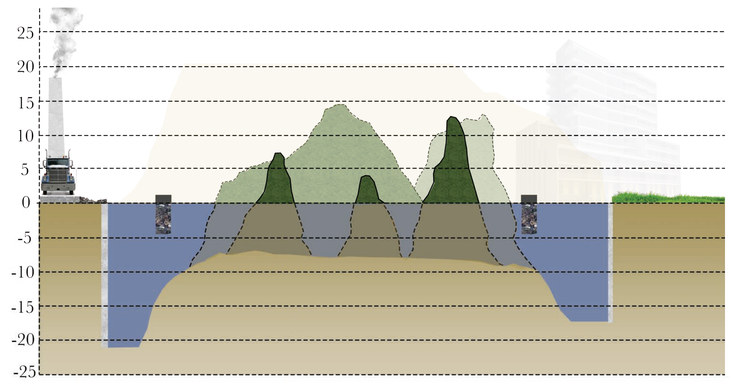
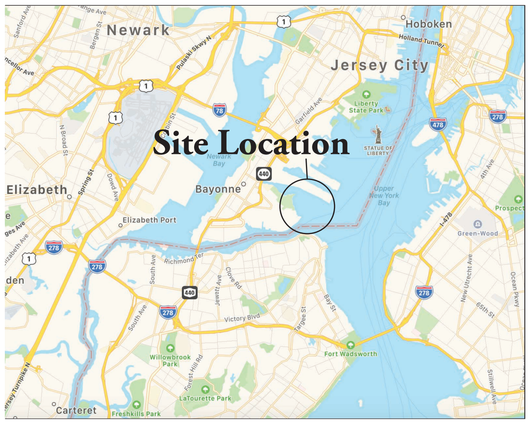
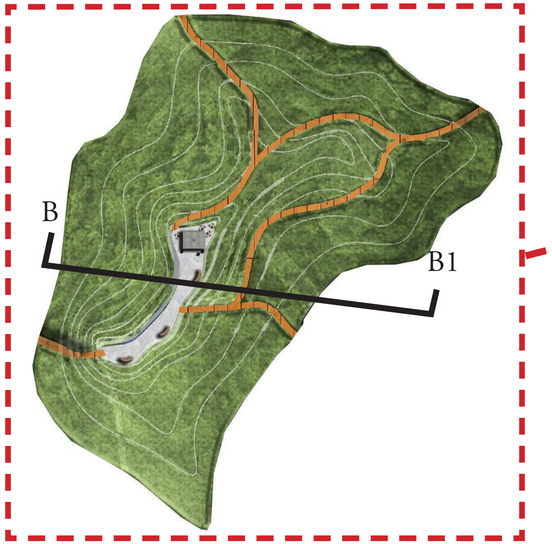


The main design considerations were centered around providing rich, ecological habitat, natural protection from large storm events and sea level rise, and functional green space for people to enjoy and study New York Harbor. Additional peripheral relationships were developed, serving as important factors in the initial formulation of design concepts.

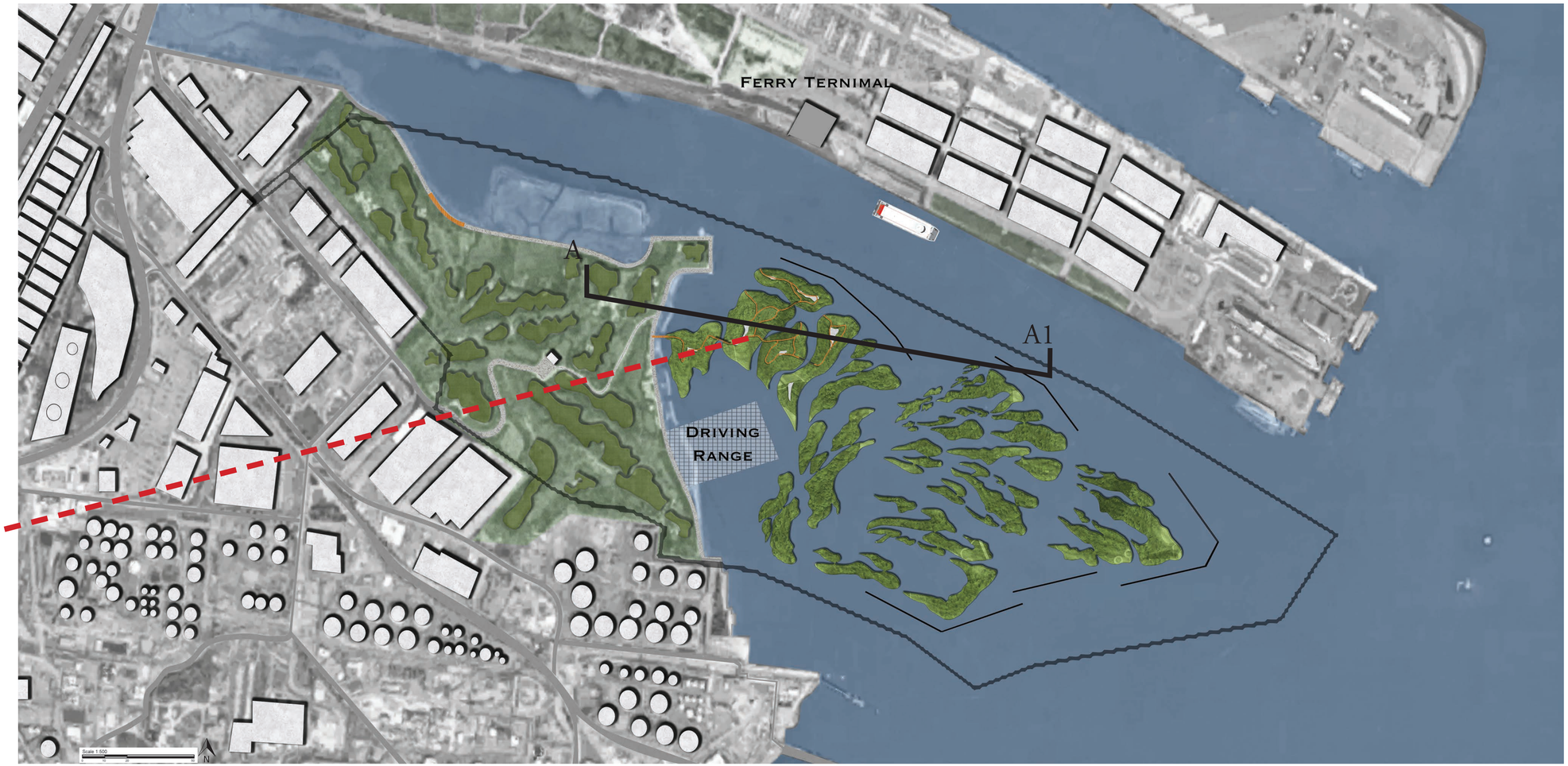
Initial design concepts were centered around the formation of multiple islands serving various functions surrounded by strategically placed floating wave attenuation barriers. These barriers would serve as components to help decrease wave fetch, minimize erosion, and help increase localized accretion within the island complex. All this takes into account the shipping channelization that exists along three borders of the site.

Context Map





Base Plan



Possible Walkway Pavillion

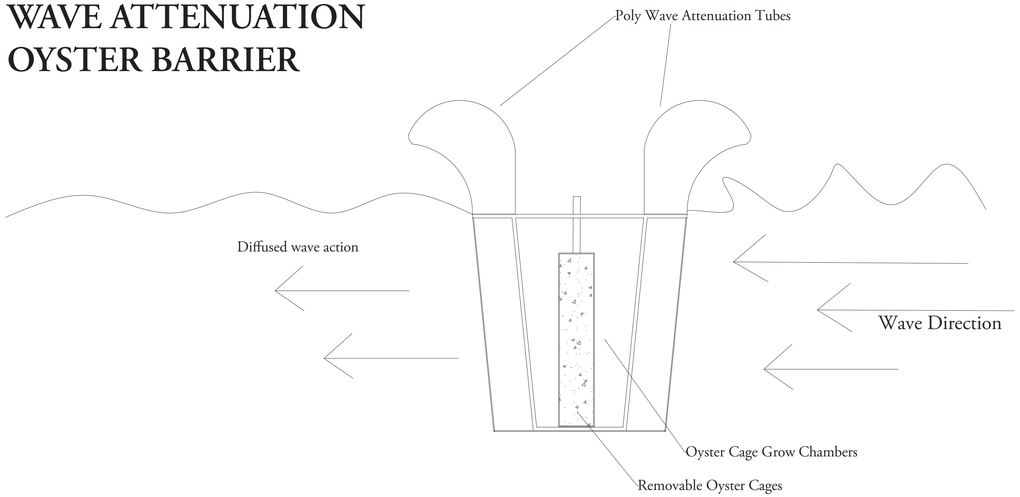
The site is located in Upper New York Harbor along the eastern shores of Bayonne, New Jersey. This site is the largest privately-owned parcel having riparian rights within the entire Harbor. Bayonne Golf Course envisions the site as serving multi functions, including storm resilience, wildlife habitat, and space for outdoor recreation for local residents.

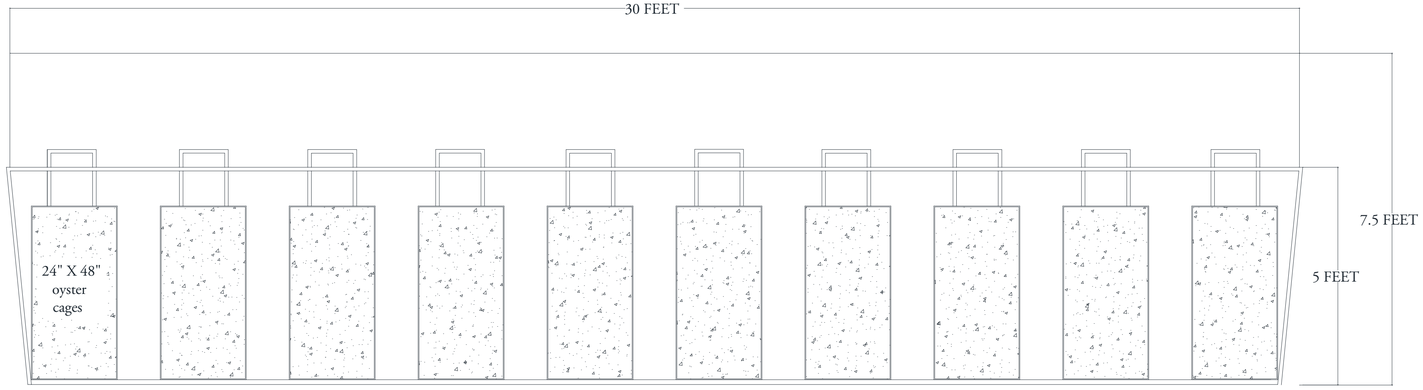
Sections:

Section B-B1

Section A-A1

WAVE ATTENUATION OYSTER BARRIER

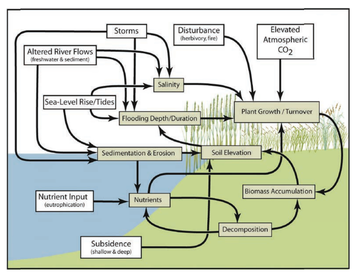




The use of wave attenuation barriers is necessary to counter wave action from high navigation traffic along commercial shipping channels surrounding the site plus the strong wave fetch from winds blowing in from the nearby Atlantic Ocean. These attenuators help minimize heavy erosion of the islands and serve as effective energy diffusers during strong storm events.

Oyster cages, located within the core of the wave attenuation barriers, will serve as effective, natural water purification systems for the site. The long-term reestablishment of oysters in this area is a primary objective to help bring the Harbor back to a level of "fishable and swimmable".

Long term success of this site will depend on accretion rates keeping up with future seal level rise (currently rising at 4.2mm/yr.) within New York Harbor. Lush low marsh helps increase accretion by helping settle sediments floating within the plant matrix.

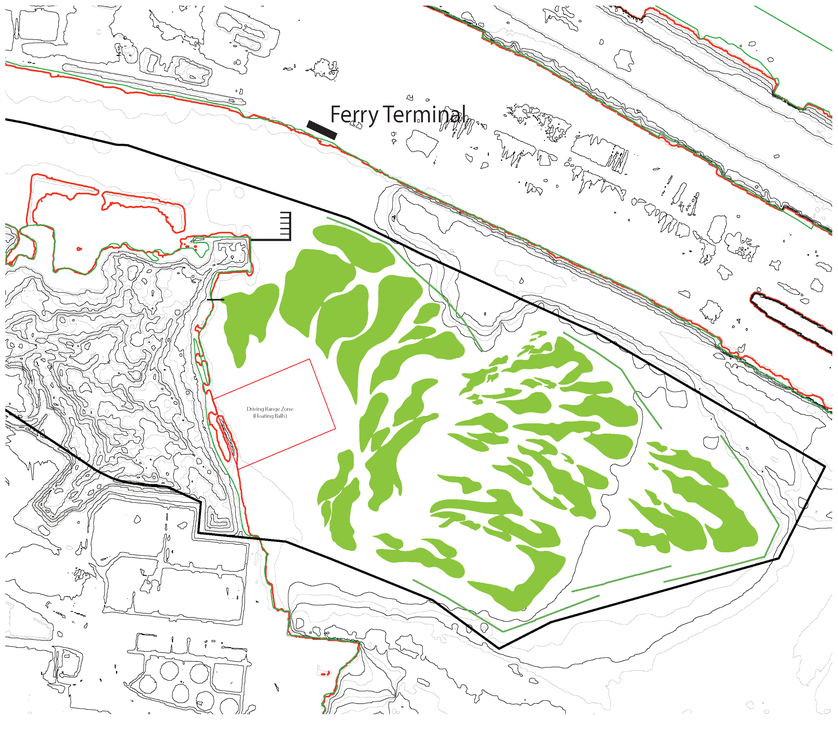


Conceptual model of a tidal marsh in salt marshes with substantial tidal inputs of mineral sediment as influenced by environmental drivers and factors affecting accretion processes.

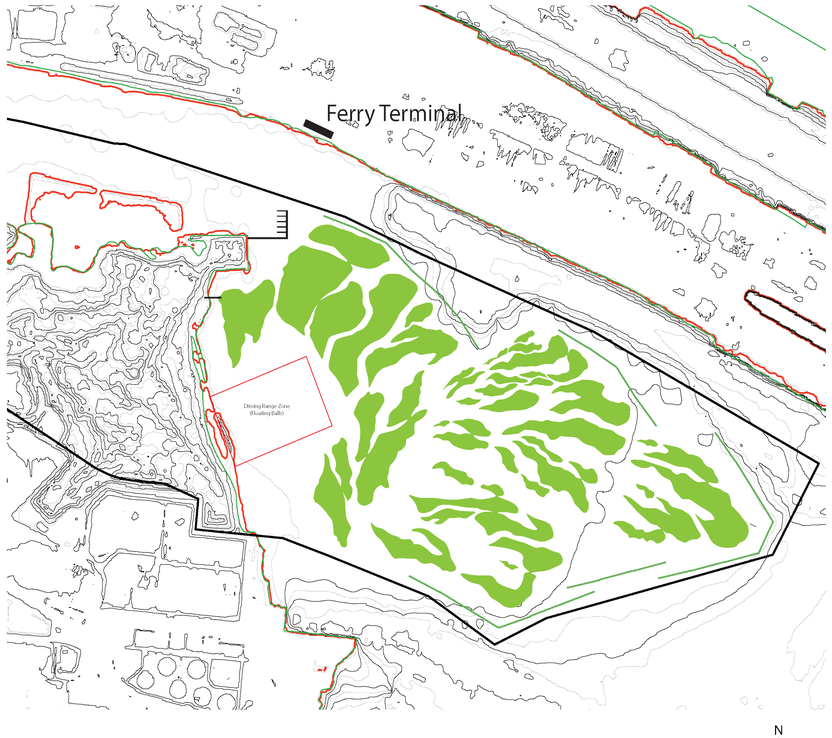
SOURCE: Cahoon et al., 2009.

ISLAND CHANGES OVER TIME DUE TO ACCRETION RATES

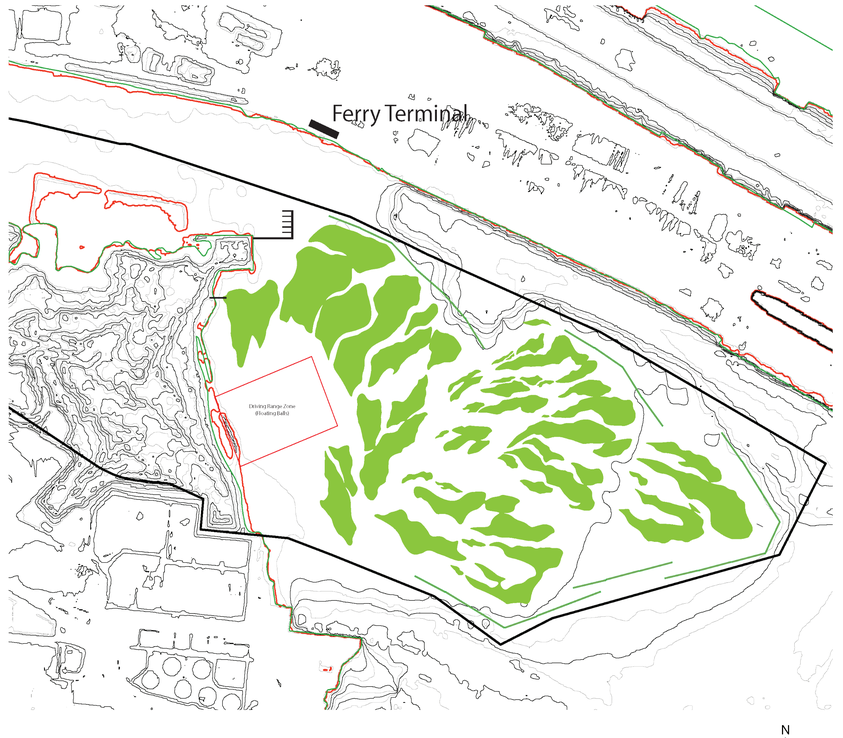
Ititial Islands - Proposed



Ititial Islands - 50 Years Later



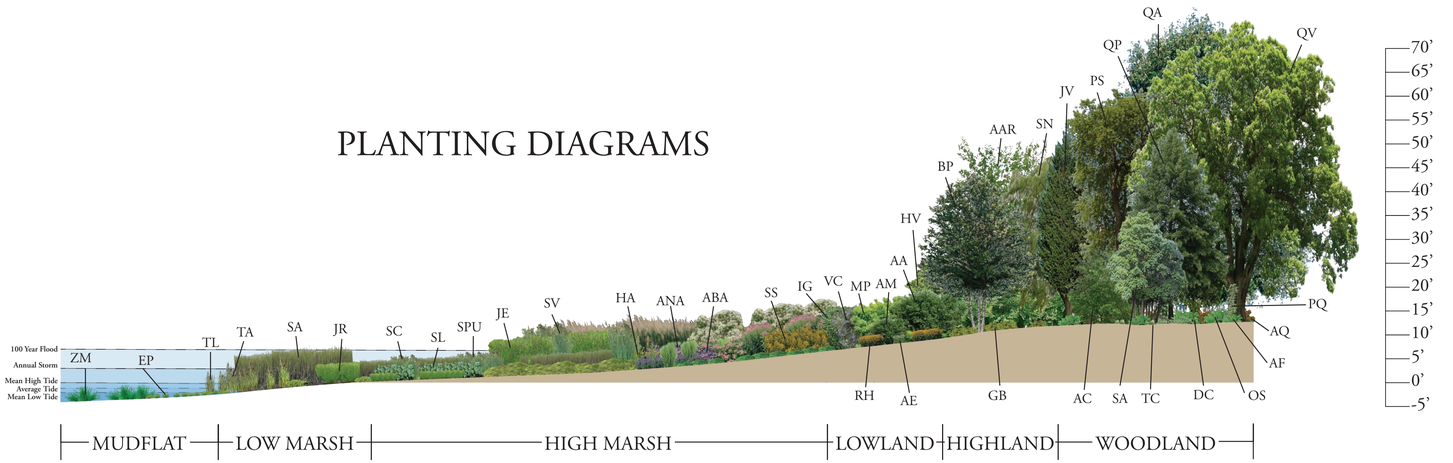
Ititial Islands - 100 Years Later

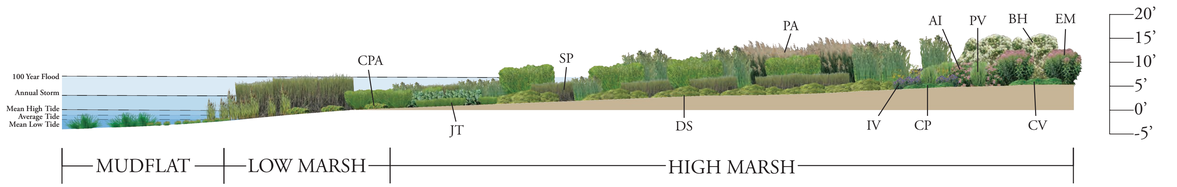


PLANTING SCHEDULE

ABBREVIATION	BOTANICAL NAME	COMMON NAME	HEIGHT	SPREAD	BLOOM PERIOD	FORAGERS	POLLINATORS	SUN/SHADE	MOISTURE	SOIL
WOODLANDS										
Ferns:										
AF	*Athyrium filix-femina*	Lady Fern	2-3'	1-2.5'	-	-	-	Part Shade - Full Shade	Medium	Well Drained
DC	*Dryopteris carthusiana*	Toothed Woodfern	1-3'	2-3'	-	-	-	Part Shade - Full Shade	Medium	Well Drained, Acidic
OS	*Onoclea sensibilis*	Sensitive Fern	3-4'	3-4'	-	-	-	Part Shade - Full Shade	Medium - Wet	Well Drained
Forbs:										
AQ	*Aquilegia canadensis*	Red Columbine	2-3'	1-1.5'	April - May	-	Hummingbirds	Full Sun - Part Shade	Medium	Well Drained
PQ	*Parthenocissus quinquefolia*	Virginia Creeper	30-50'	5-10'	May - August	Birds	-	Full Sun - Part Shade	Medium	Well Drained, Tolerates Most Soils
SR	*Smilax rotundifolia*	Common Greenbrier	20'	1-3'	April - May	-	-	Full Sun - Part Shade	Medium - Moist	Tolerates Most Soils
TC	*Tiarella cordifolia*	Foamflower	6-12"	1-2'	April - May	-	-	Part Shade - Full Shade	Moist	Well Drained
Shrubs:										
AC	*Amelanchier canadensis*	Shadblow	10-25'	10-25'	April - May	Birds	-	Full Sun - Part Shade	Medium	Well Drained, Tolerates Most Soils
Trees:										
CO	*Celtis occidentalis*	Common Hackberry	75-100'	75-100'	April - May	Birds	Butterflies	Full Sun - Part Shade	Medium - Wet	Well Drained, Tolerates Most Soils
IO	*Ilex opaca*	American Holly	15-30'	10-20'	May	Birds	-	Full Sun - Part Shade	Medium	Well Drained, Acidic
JV	*Juniperus virginiana*	Eastern Red Cedar	50-75'	35-50'	-	-	-	Full Sun	Dry - Medium	Well Drained, Acidic, Tolerates Most Soils, Intolerant of Wet Soils
LS	*Liquidambar styraciflua*	Sweet Gum	75-100'	50-75'	April - May	-	-	Full Sun	Medium	Well Drained, Deep Soil, Tolerates Most Soils
NS	*Nyssa sylvatica*	Black Tupelo	50-75'	35-50'	May - June	Birds	-	Full Sun - Part Shade	Medium - Wet	Tolerates Poor Drainage, Acidic
PD	*Populus deltoides*	Eastern Cottonwood	75-100'	75-100'	March - April	-	-	Full Sun	Medium - Wet	Well Drained, Drought Tolerant
PS	*Prunus serotina*	Black Cherry	50-75'	35-50'	April - May	Birds	-	Full Sun - Part Shade	Medium	Well Drained
QA	*Quercus alba*	White Oak	75-100'	75-100'	May	-	-	Full Sun	Dry - Medium	Well Drained, Acidic, Loam
QB	*Quercus bicolor*	Swamp White Oak	75-100'	50-75'	April	Birds	-	Full Sun	Medium - Wet	Well Drained, Acidic
QP	*Quercus palustris*	Pin Oak	50-75'	50-75'	April	-	-	Full Sun	Medium - Wet	Acidic, Tolerates Poor Drainage, Prefers Loam
QV	*Quercus velutina*	Black Oak	75-100'	75-100'	April - May	-	-	Full Sun	Dry - Medium	Well Drained, Acidic, Tolerates Poor Soils
SN	*Salix nigra*	Black Willow	35-50'	20-35'	March - April	-	-	Full Sun - Part Shade	Medium - Wet, Tolerates Flooding	Good Erosion Control
SAL	*Sassafras albidum*	Sassafras	35-50'	35-50'	April - May	-	-	Full Sun - Part Shade	Medium	Well Drained, Acidic, Tolerates Dry Soil
HIGHLANDS										
Shrubs:										
GB	*Gaylussacia baccata*	Black Huckleberry	1-2'	1-2'	May - June	Songbirds, Small Mammals	-	Full Sun - Full Shade	Dry - Wet	Well Drained, Acidic, Prefers Sandy or Rocky Soil
Trees:										
AAR	*Amelanchier arborean*	Serviceberry	35-50'	35-50'	April - May	Songbirds, Thrushes	-	Full Sun - Part Shade	Dry - Moist	Well Drained, Coarse Sands - Medium Loams
BP	*Betula populifolia*	Gray Birch	35-50'	20-35'	April	Songbirds, Gamebirds	-	Full Sun - Part Shade	Dry - Wet	Coarse Sand - Poor Clay Loams
HV	*Hamamelis virginiana*	Witch Hazel	20-35'	20-40'	October - December	Birds	-	Full Sun - Part Shade	Dry - Moist	Well Drained, Coarse - Fine Sands, Sandy - Medium Loams
LOWLANDS										
Forbs:										
AN	*Aralia nudicaulis*	Wild sarsaparilla	1.5-2'	1.5-2'	May - June	-	Bees	Part Shade - Full Shade	Medium - Moist	Tolerates Most Soils and Poor Soils
AE	*Aster ericoides*	Heath Aster	2'	1-1.5'	August - September	-	Butterflies	Full Sun	Dry - Moist, Drought Tolerant	Well Drained, Tolerates Most Soils and Poor Soils
EM	*Eupatorium maculatum*	Spotted Joe-Pye Weed	6-8'	2-4'	August - September	-	Bees and Butterflies	Full Sun - Part Shade	Moist, Tolerates Periodical Saturation	Tolerates Most Soils
RH	*Rudbeckia hirta*	Black-Eyed Susan	2-2.5'	1-2'	June - September	-	Butterflies	Full Sun	Dry - Moist, Drought Tolerant	Well Drained, Adaptable Except for Poor Drainage
SS	*Solidago sempervirens*	Seaside Goldenrod	3-6'	1-2'	September - October	Songbirds	Butterflies, Monarch	Full Sun	Dry - Moist, Drought Tolerant	Tolerates Poor Soil
Graminoids:										
CL	*Chasmanthium latifolium*	Indian Woodoats	2-5'	1-2.5'	August - September	-	-	Full Sun - Part Shade	Medium-Wet	Well Drained, Fertile, and Moist, Tolerates Poor Soil
Shrubs:										
AA	*Aronia arbutifolia*	Red Chockeberry	6-12'	3-6'	May - June	Birds	-	Full Sun - Part Shade	Wet, Tolerates Seasonal Inundation	Well Drained, Tolerates Most Soils
AM	*Aronia melanocarpa*	Black Chockeberry	3-6'	3-6'	May - June	Birds	-	Full Sun - Part Shade	Dry - Wet	Tolerates Most Soils
CA	*Ceanothus americanus*	New Jersey Tea	2-4'	3'	June - July	-	Butterflies, Hummingbirds	Full Sun - Part Shade	Dry - Moist	Well Drained, Acidic, Tolerates Poor Soils
CAL	*Clethra alnifolia*	Sweetpepper Bush	6-12'	3-6'	July - August	Birds	Butterflies	Full Sun - Part Shade	Moist - Wet	Acidic, Tolerates Poor Soils
IG	*Ilex glabra*	Inkberry	6-12'	6-12'	May - June	Songbirds	-	Full Sun - Part Shade	Moist - Wet	Acidic, Tolerates Poor Soils
LB	*Lindera benzoin*	Northern Spicebush	6-12'	6-12'	March	Birds	Butterflies	Full Sun - Full Shade	Medium	Well Drained
MP	*Myrica pensylvanica*	Bayberry	6-12'	6-12'	March - May	Birds	-	Full Sun - Part Shade	Dry - Wet, Drought Tolerant	Well Drained, Acidic, Tolerates Most and Poor Soils
SD	*Salix discolor*	Pussy Willow	20-35'	10-20'	March - April	-	-	Full Sun - Part Shade	Medium - Wet	Tolerates Most Soils Except Dry Soil
VC	*Vaccinium corymbosum*	Highbush Blueberry	6-12'	6-12'	May - June	Birds, Songbirds, Chipmunks, Rabbits	Bees and Butterflies	Full Sun - Part Shade	Dry - Moist	Well Drained, Acidic, Tolerates Most Soils
VD	*Viburnum dentatum*	Arrowwood	6-12'	6-12'	May - June	Birds	Butterflies	Full Sun - Part Shade	Moist - Wet, Some Drought Tolerance	Tolerates Most Non-Clay Soils
HIGH MARSH										
Forbs:										
AI	*Asclepias incarnata*	Swamp Milkweed	4-5'	2-3'	June - August	-	Butterflies	Full Sun	Moist - Wet, Tolerates Seasonal Saturation	Tolerates Poor Drainage
ANA	*Aster novae-angliae*	New England Aster	4-6'	2-3'	September	-	Butterflies	Full Sun - Part Shade	Medium - Wet, Tolerates Periodical Saturation	Well Drained, Slight Acidity
ANB	*Aster novi-belgii*	New York Aster	3-5'	3'	July - October	-	Butterflies	Full Sun	Medium - Wet, Tolerates Saturation	Tolerates Most Soils
HA	*Helenium autumnale*	Common Sneezeweed	2-5'	2-3'	July - October	-	Butterflies	Full Sun	Medium - Wet, Tolerates Saturation	Intolerant of Dry Soils, Tolerant of Clay Soils
HAN	*Helianthus angustifolius*	Swamp Sunflower	5-9'	4-6'	June - August	Songbirds	-	Full Sun - Part Shade	Moist - Wet, Tolerates Saturation	Tolerates Most Poor and Dry Soils
IV	*Iris versicolor*	Blue Flag Iris	1-3'	1-3'	May - June	-	-	Full Sun	Wet, Requires Saturation	Tolerates Poor Drainage and Poor Soils
LC	*Limonium carolinianum*	Sea Lavender	1-3'	1-3'	July - October	-	Butterflies	Full Sun	Moist - Wet	Tolerates Most Soils
SL	*Sagittaria latifolia*	Arrowhead	1-4'	1-3'	July - September	Water Fowl, Muskrats	-	Full Sun	Wet	Tolerates Most Soils
TV	*Tradescantia virginiana*	Spiderwort	1-3'	1-1.5'	June - August	-	-	Part Shade - Full Shade	Medium - Moist	Tolerates Poor Drainage, Poor Soils, Wet Soils, and Clay Soils
Graminoids:										
CP	*Carex Pensylvanica*	Pennsylvania Sedge	1-1.5'	1-1.5'	May	-	-	Part Shade - Full Shade	Dry - Moist	Well Drained, Acidic
CV	*Carex vulpinoidea*	Fox Sedge	0.5-3.5'	0.5-2'	May - July	-	-	Full Sun - Part Shade	Wet	Tolerates Saturation
DS	*Distichlis spicata*	Saltgrass	0.5-4'	0.5-2'	April - October	-	-	Full Sun	Wet, Saline	Tolerates Most Soils and Dry Soils
JE	*Juncus effusus*	Soft Rush	1.5-7'	1.5-7'	June - August	-	-	Full Sun	Wet	Tolerates Saturation, Intolerant of Dry Soil
JT	*Juncus tenuis*	Slender Rush	0.5-2'	0.5-2'	May - September	-	-	Full Sun - Part Shade	Medium - Wet	Tolerates Most Soils
PV	*Panicum virgatum*	Switchgrass	4-6'	2-2.5'	July - February	-	-	Full Sun - Part Shade	Medium - Wet	Tolerates Most Soils, Prefers Moist Sand or Clay
PA	*Phragmites australis*	Reed Grass	6-12'	10'	August - February	Songbirds	-	Full Sun - Part Shade	Moist - Wet	Tolerates Most Soils
SSC	*Schizachyrium scoparium*	Little Bluestem	1.5-5'	1.5-2'	August - February	-	-	Full Sun	Dry - Moist, Drought Tolerant	Tolerates Most Poor and Dry Soils
SC	*Scirpus cyperinus*	Woolgrass	3-5'	2-4'	June - July	-	-	Full Sun - Part Shade	Moist - Wet, Tolerates Seasonal Inundation	Tolerates Saturation
SPU	*Scirpus pungens*	Common Threesquare	4'	2-4'	June - September	-	-	Full Sun	Wet	Tolerates High pH and Temporary Drought
SV	*Scirpus validus*	Great Bulrush	6-10'	4-5'	May - October	-	-	Full Sun - Part Shade	Moist - Wet, Tolerates Saturation	Tolerates Poor Drainage and Poor Soils
SP	*Spartina patens*	Saltmeadow Cordgrass	1-4'	1-4'	April - May	-	-	Full Sun - Part Shade	Wet, Tolerates Tidal Flooding	Tolerates Poor Drainage and Poor Soils, Prefers Moist Sand
Shrubs:										
BH	*Baccharis halimifolia*	Groundsel Bush	6-12'	6-12'	August - November	Birds	Bees, Butterflies, Moths	Part Shade	Wet, Tolerates Seasonal Inundation	Acidic, Tolerates Most Soils, Prefers Gravelly to Sandy Loam
LOW MARSH										
Forbs:										
CPA	*Caltha palustris*	Marsh Marigold	1-1.5'	1-1.5'	April - June	-	-	Full Sun - Part Shade	Wet	Tolerates Most Soils, Prefers Boggy Sites
Graminoids:										
JR	*Juncus roemerianus*	Black Rush	1-4'	1-4'	May - October	-	-	Full Sun	Moist - Wet	Prefers Loam - Clay Soils
SA	*Spartina alterniflora*	Saltmarsh Cordgrass	4-7'	4-7'	April - May	Birds, Water Fowl, Muskrats	-	Full Sun	Wet, Requires Tidal Inundation	Tolerates Most Soils
TA	*Typha angustifolia*	Narrow-Leaved Cattail	3-7'	3-5'	May - July	Birds, Geese, Muskrats	-	Full Sun - Part Shade	Wet	Tolerates Most Wet and Saturated Soils
TL	*Typha latifolia*	Broad-Leaved Cattail	4-6'	4-6'	June - July	Birds, Geese, Muskrats	-	Full Sun - Part Shade	Wet	Tolerates Most Wet and Saturated Soils, Prefers Loamy Soils
MUDFLATS										
Graminoids:										
EP	*Eleocharis parvula*	Dwarf Spikerush	0.5-1'	0.5-1'	June - January	Birds, Water Fowl, and Fish	-	Full Sun - Part Shade	Wet, Requires Saturation and Tidal Inundation	Tolerates Saturation and Poor Soils
ZM	*Zostera marina*	Common Eelgrass	2-4'	2-4'	-	Birds, Water Fowl, Marine Animals	-	Full Sun - Part Shade	Wet, Requires Saturation and Tidal Inundation	Tolerates Saturation and Poor Soils, Prefers Sand or Mud

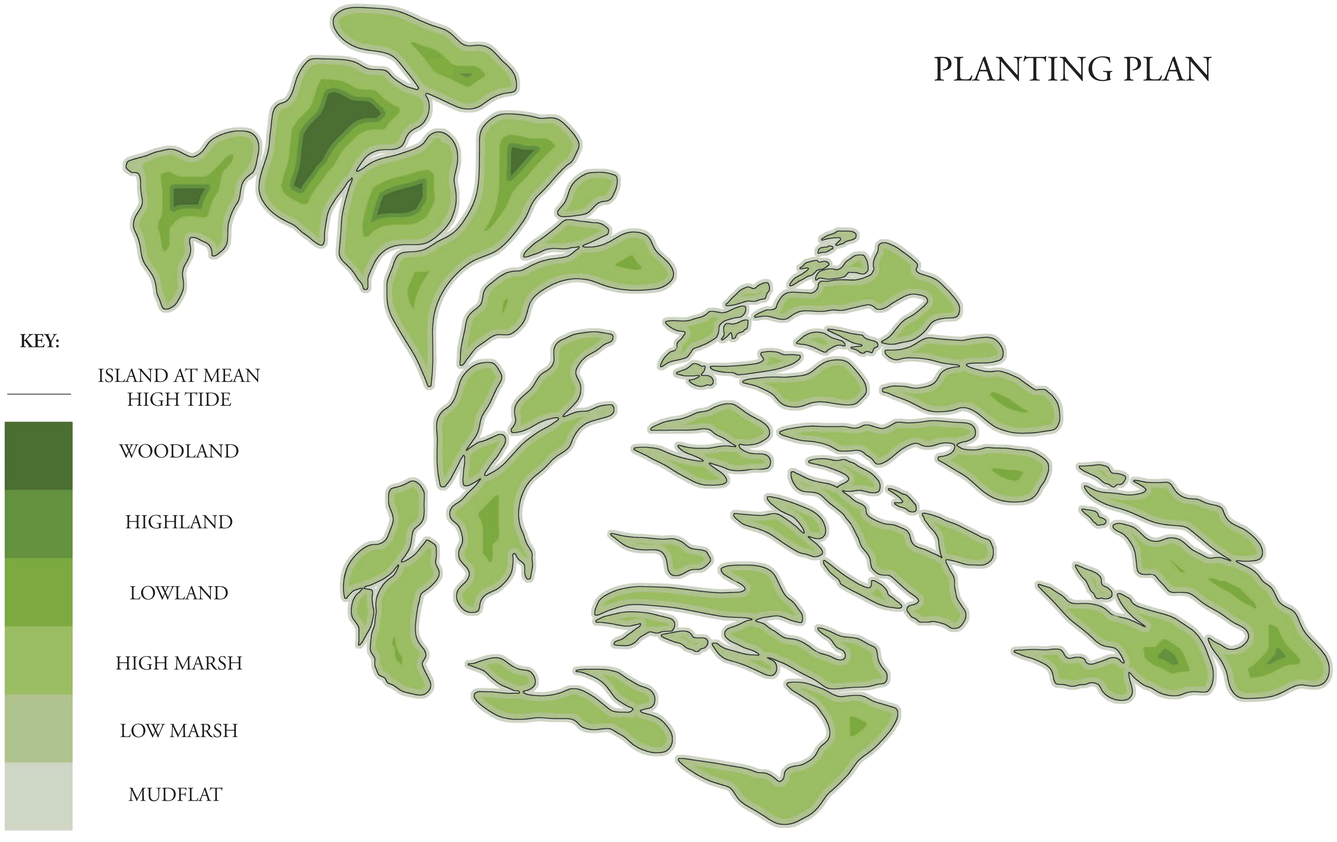
PLANTING DIAGRAMS





SCALE: 1"=15'

PLANTING PLAN

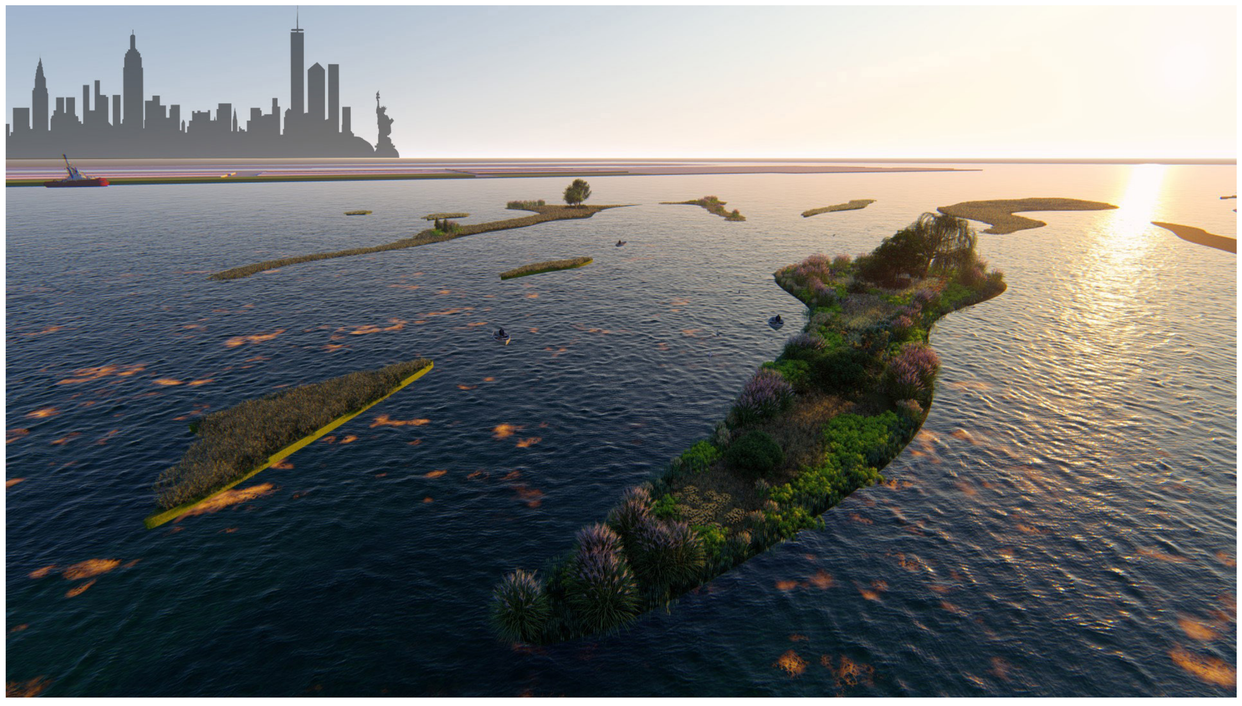


Park Islands

Approximately one-quarter of the island space will be designated for recreational use. Visitors will have a broad array of trails to traverse on each pedestrian island along with a variety of seating and covered pavilions for relaxing, picnicking, and protection from the elements. This island complex is somewhat larger and higher than the habitat islands, offering wooded uplands to enjoy.

Habitat Islands

The remaining complex of islands will serve as rich habitat for a broad array of foraging, benthic, and aquatic animals, along with numerous nesting and migratory birds. Various levels of research and study will be conducted on site, with the site serving as a premier learning lab for monitoring wildlife, climate change, and other related issues.

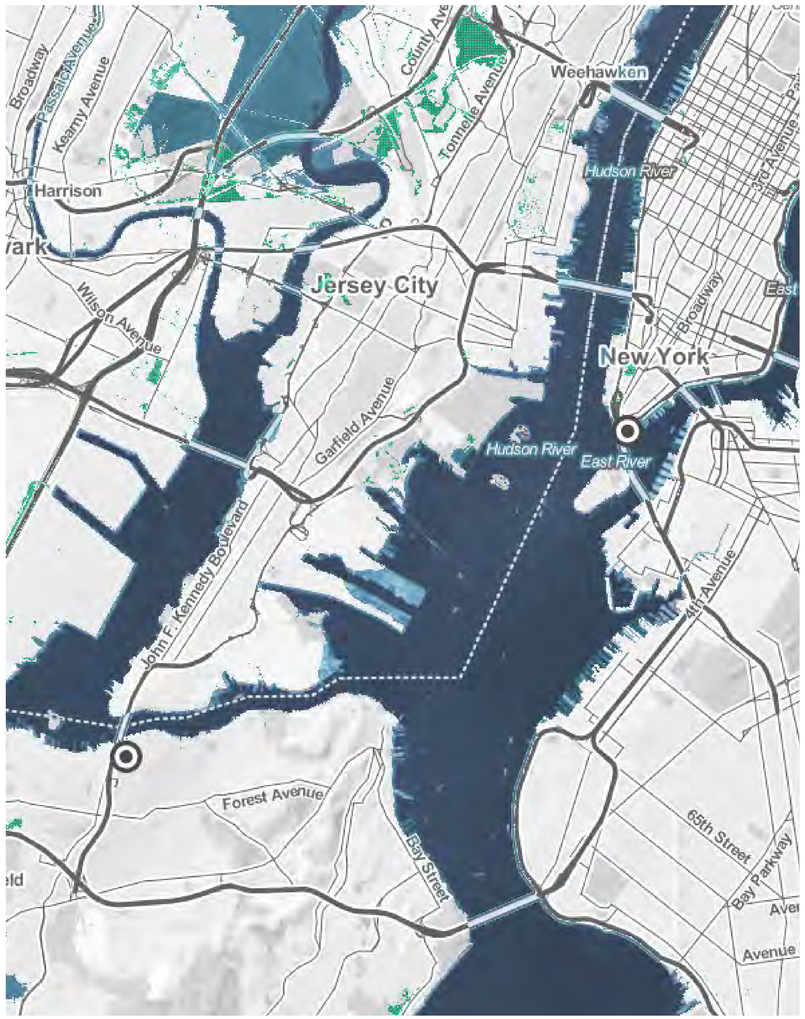


THE BAYONNE TIDAL WALK

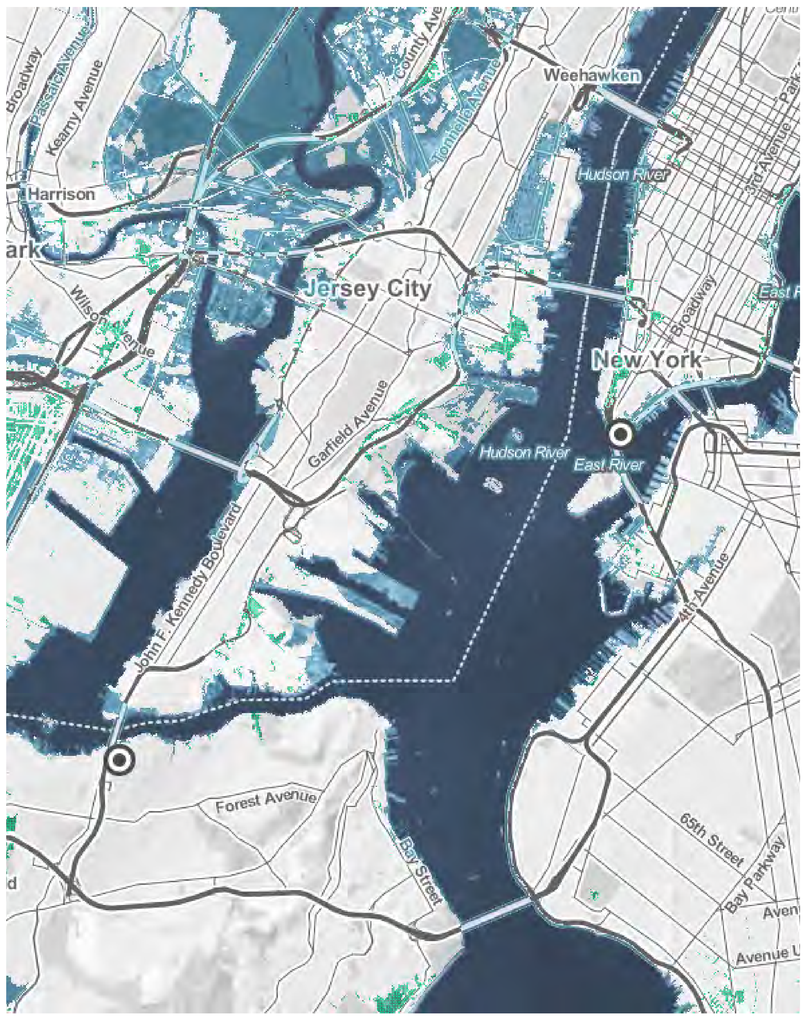
-Bayonne, NJ-

Robert Cook, Sam Ferrara, Aliya Williams

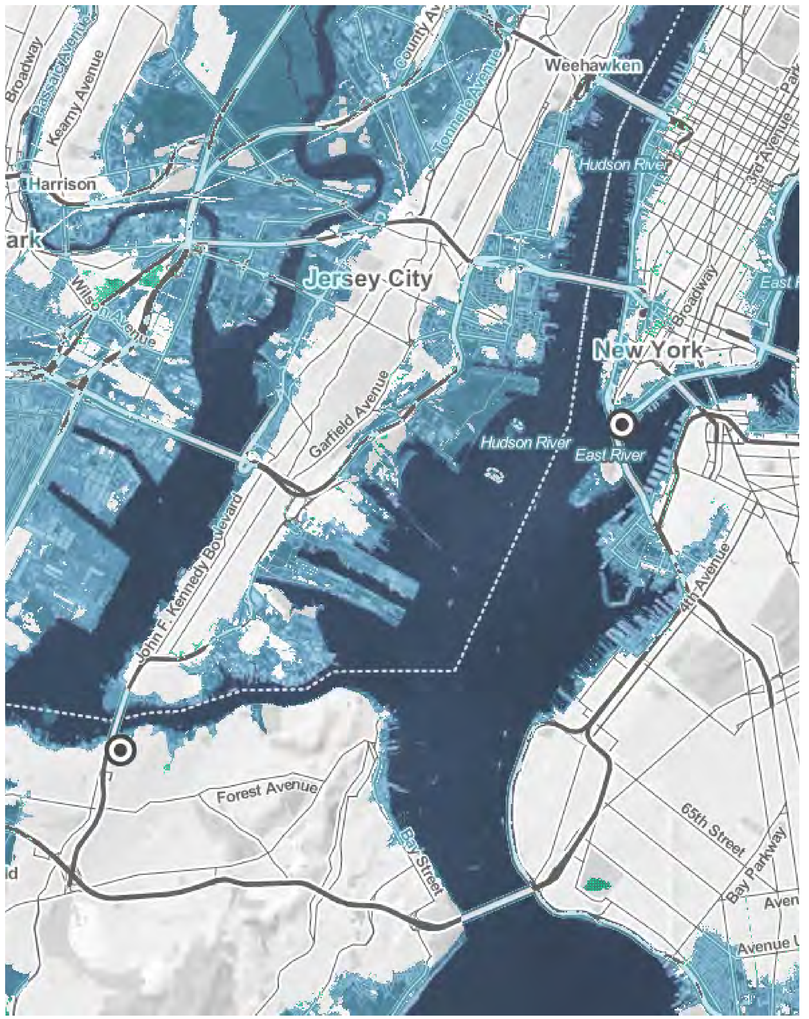
SITE COMMUNITY



1’ SEA LEVEL RISE



5’ SEA LEVEL RISE



10’ SEA LEVEL RISE

THE ISSUES AT HAND

DESIGN INFLUENCES

Sedimentation
Berm

Deposition Wetland
Formation

Wave Break
Storm Revetments

Berms

Coastal Revetment

Wetlands

Local --> Destination

Pedestrian Path

BAYONNE TIDAL WALK PLAN

0 300’

SITE 1: SEDIMENTATION

SEDIMENTATION WALK

DEPOSITION AREA

SEDIMENTATION DIAGRAM

COASTAL REVETMENT & SEDIMENTATION

THE REVETMENTS

VERRAZANO POINT