

KINGSTON POINT CLIMATE ADAPTIVE DESIGN

PRELIMINARY DESIGN REPORT



Supermass Studio

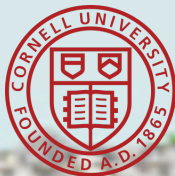


emphas!s



Department of
Environmental
Conservation

Hudson River
Estuary Program



Cornell University



SEPTEMBER 2020

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Prepared for:

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NEIWPCC

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In partnership with:

City of Kingston, project advisory



Department of
Environmental
Conservation

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Estuary Program

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In the summer of 2019, the project team was awarded a grant by the New York State Department of Environmental Conservation (NYSDEC) and NEIWPCC to develop a preliminary design for a climate adaptive design project in Kingston Point in partnership with the City of Kingston.

Chapter 1 provides an introduction and overview of the project and a summary of the findings and review of various background materials and completed site surveys. Initial tasks also included the completion of Quality Assurance Project Plan (QAPP) as well as hosting a community engagement event to introduce the project to the broader public and solicit general feedback.

CHAPTER 1: EXISTING DATA REVIEW

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PROJECT INTRODUCTION AND OVERVIEW

THE VISION OF THE PROJECT

Kingston Point is a riverfront public recreational park and preserved natural lands along the Hudson River. Once the site of Kingston Point Park with its merry-go-round, dance hall, and other recreational amenities, it has been a cherished and valued oasis and natural public asset in Kingston for well over a hundred years. In its current form and together with Kingston Rotary Park, it contains a public beach with parking, a playground, a baseball diamond, a BMX track, naturalized areas with trails and picnic shelters, and a tourist trolley station all surrounded by a tidal wetland to the south. The bulk of the site is owned publicly by the City of Kingston, but private property owners include Kingston Point Terminal, the operators of the existing KoscoHeritage oil storage and distribution terminal located along the northeastern part of the shoreline.

The project considers the need to examine Kingston Point as a site demonstrating a complex interplay of a shifting and changing estuarine ecosystem due to sea level rise and the city’s need to provide accessible recreational lands, protect its valuable natural resources, and maintain economic viability. The overall vision of the project is to create a well connected and resilient Kingston Point which can remain a viable public and natural asset for Kingston for decades to come.

A primary objective unique to this project is to promote resiliency through the protection and management of natural resources and sensitive ecosystems, instead of focusing strictly on protecting and reinforcing shorelines. Not only will the project help Kingston reduce vulnerability to sea level rise, it will also enable its communities to embrace and strengthen their relationships with their evolving natural environment in a larger context. The project explores these ideas through a comprehensive development and analysis of an overall climate adaptive spatial framework of Kingston Point in consultation with community and stakeholder participants. Subsequently, the project prepares several design alternatives for an identified pilot project and a final preliminary design for the pilot project with additional inputs from relevant stakeholders and community members.

The project is in part inspired by the design ideas, research, and collaborative spirit set forth by the Climate Adaptive Design Studios of the Landscape Architecture Department at Cornell University. Over the last several years, students and faculty have been working with several cities along the lower Hudson River, including Kingston, to foster urban resilience and collectively envision climate adaptive measures for their communities in the face of sea level rise.

It is the aim of this project to develop an implementable national model for climate adaptive design and ecological resilience drawing on the work created by the Cornell studios and will explore nature-based solutions for shoreline protection and stormwater management, while enhancing public waterfront access and waterfront programming and recreation for the communities of Kingston.

PROJECT TASKS SUMMARY LIST

- Task 1: Project Kickoff, Engagement Strategy, & Quality Assurance Project Plan (QAPP)
- Task 2: Review of Existing Data and Site Conditions
- Task 3: Overall Concept Framework Analysis and Plan
- Task 4: Pilot Project: Preliminary Design Alternatives
- Task 5: Pilot Project: Final Preliminary Design
- Task 6: Draft and Final Preliminary Design Report

AERIAL VIEW OF KINGSTON POINT TODAY



DATA REVIEW & ANALYSIS SUMMARY

Pursuant to the approval of the Quality Assurance Project Plan, the project team undertook the existing data review and analysis task. The study included a literature review of existing city plans, initiatives, ecological studies, as well as various mapping analyses of Kingston and Kingston Point focused on circulation, programming, topographical conditions, shoreline types, and sea level rise scenarios. On-site work included a general site reconnaissance documentation of Kingston Point and a separate ecological survey culminating in vegetation-type mappings, with a particular focus on the identification of invasive and non-invasive species. Finally, the data review included a review of the various plans and designs generated by the Cornell University Climate Adaptive Design Studio.

PROJECTED SEA LEVEL RISE

According to a study undertaken by Scenic Hudson (Protecting the Pathways: Sea-Level Rise Affecting Marsh Migration, May 2016), much of the wetlands along the shoreline in the central portion of the Hudson River, including the Rondout Creek mouth in Kingston, will be lost and migrate inland as a result of sea level rise. As the composition of these wetlands change, niche shoreline habitats will shift upland where soils, slopes, and seed banks become increasingly inconsistent with the needs of intertidal ecosystems and alter the delicate interplay of erosion and deposition.

At Kingston Point, unmitigated sea level rise is projected to inundate parts along the west and north, including the woodlands east of North Street, the existing parking lot area, and the beach, effectively cutting Kingston Point off of the mainland shore. The projection diagrams shown align with the “central range” scenario as outlined by the NYS Sea Level Rise Task Force Report (2010) and the NYS 2100 Commission Report (2013).

SEA LEVEL RISE PROJECTION_PRESENT DAY



SEA LEVEL RISE PROJECTION_2050



SEA LEVEL RISE PROJECTION_2080



*Sea Level Rise scenarios are shown in the central range scenario

DATA REVIEW & ANALYSIS - CITY OF KINGSTON

CITY OF KINGSTON CIRCULATION/ACCESS ANALYSIS

The primary automobile access routes from the outskirts of the city and beyond are Route 9W and Route 28 / I-587, both of which lead directly to the downtown area. Route 28 / I-587 leads directly into Broadway, the major downtown thoroughfare of Kingston.

Within city limits, Delaware Avenue provides major automobile access to the Kingston Point area from various parts of the city. Along the proposed Kingston Greenline Trail System, North Street and the Kingston Point Rail Trail provide pedestrian and cycling access to the waterfront area.

There is also a ferry service from Rhinecliff to the Kingston waterfront area offering direct access from Rhinecliff Amtrak Station to the Kingston waterfront.



CITY OF KINGSTON PROGRAM ANALYSIS

The city of Kingston offers a variety of programs including various arts and entertainment venues, parks, playgrounds, and marina and boat launches along Rondout Creek.

The Kingston waterfront is defined by the confluence of Rondout Creek and the Hudson River and is rich with history. In addition to marinas and other forms of water access, Rondout Creek is tied to the historic district and multiple historic buildings, sites, art galleries, and museums exist along the creek and beyond.



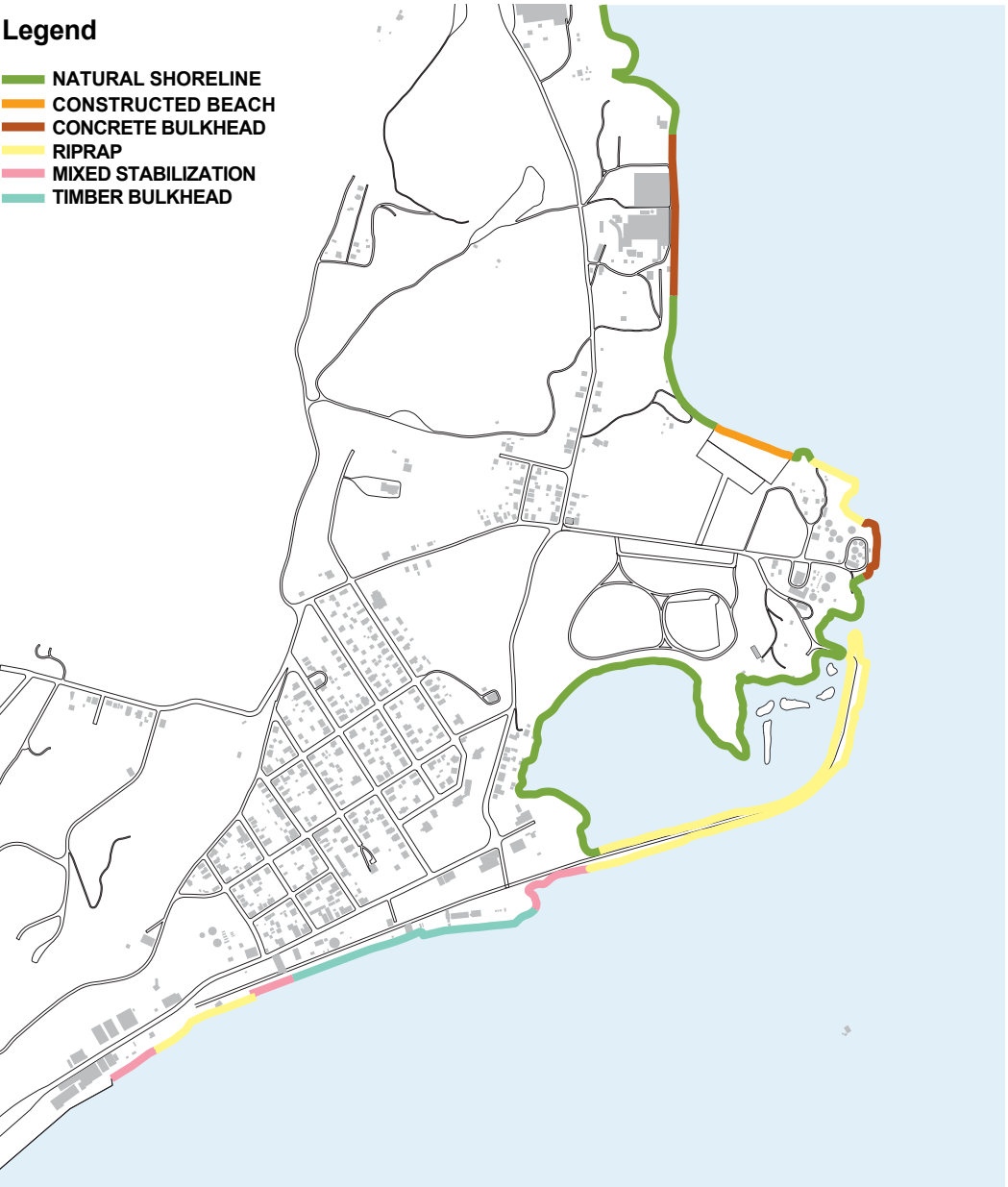
DATA REVIEW & ANALYSIS - KINGSTON POINT

TOPOGRAPHY



Kingston Point occupies relatively low-lying areas compared to the rest of the city. The high points within the site are occupied by the oil storage terminal and Kingston Rotary Park. The active areas south of Delaware Ave. are built on a former city landfill. The overall topography of Kingston Point also informs vulnerable areas and projected inundation patterns due to the sea level rise scenarios shown on p. 9. Topographic data is obtained from Ulster County GIS.

SHORELINE TYPES



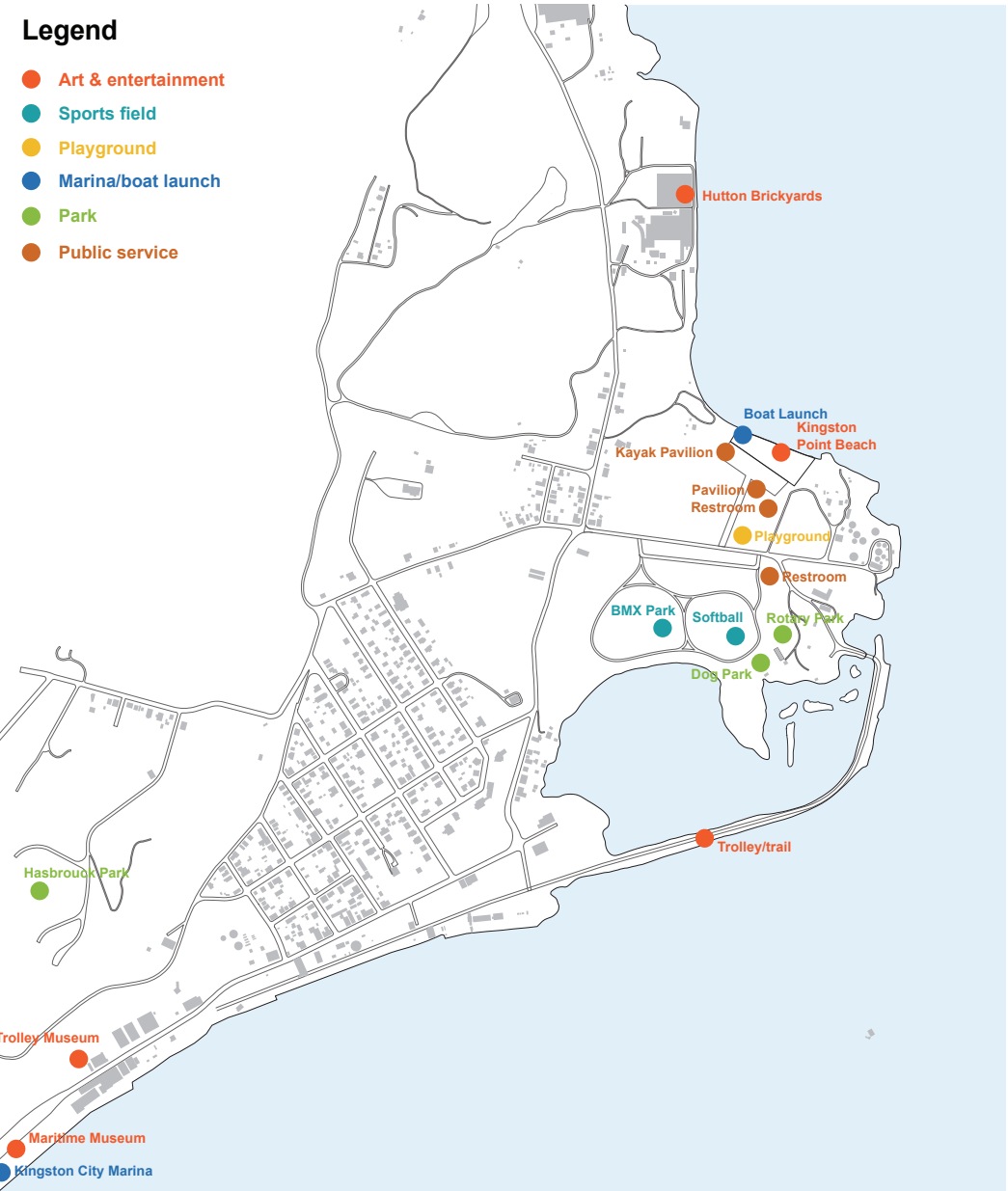
Various types of shorelines comprise the water edges of Kingston Point. The northern part of Kingston Point is mainly comprised of naturalized shorelines. The trolley line causeway along the southern edge of the point is stabilized with rip-rap. The east strand of Rondout Creek is comprised of constructed shorelines primarily due to past industrial uses. The shoreline along the oil storage terminal is a constructed concrete bulkhead.

CIRCULATION / ACCESS



Delaware Avenue is the major automobile road providing access to Kingston Point from downtown. E Strand Street from Rondout Creek is connected to North Street, which also provides automobile access. There is a continuous stretch of pedestrian path between Rondout Creek and the Hutton Brickyards. Currently the path runs mainly through the trolley line trail and Kingston Rotary Park and there are no riverfront segments north of Kingston Point beach.

PROGRAM



Kingston Point beach and Kingston Rotary park are the two major destinations at Kingston Point today. Kingston Point beach provides a constructed sand beach as well as a boat launch. The trails within Rotary Park connects to the trolley line trail, offering a continuous waterfront walking path for residents. Other major programs at Kingston Point include a dog park, playground, a softball field, and a BMX course.

DATA REVIEW & ANALYSIS - SITE RECONNAISSANCE



Waterfront area north of the oil storage terminal



Wetland area east of existing playground area



Waterfront area near Hutton Brickyard



Kingston Hutton Brickyards

During project kick-off, the project team participated in a general tour of Kingston Point to learn about its overall physical characteristics, including both built and ecological conditions. The tour helped reveal the delicate relationship between recreational use and the mature ecology present at the site. The photographs represent a summary of the key areas visited. They include the Kingston trolley line causeway, Rotary Park, Kingston Point Beach, the softball field, the existing parking lot, various forested areas, and a potential connection corridor leading up to the Hutton Brickyard site.



Wetland area, south of the Rotary Park bridge



North of Delaware Ave.



North of Delaware Ave., woodland interior



Path to the Hutton Brickyard



Kingston Point beach



Existing Kingston Point parking lot area



Kingston Point Rotary Park



Kingston Point Rotary Park



Waterfront view, north of the Rotary Park bridge



Softball field at Kingston Point



Waterfront area along the trolley line



Wetland view along the trolley line



Trolley line/causeway

DATA REVIEW & ANALYSIS - EXISTING ECOLOGICAL CONDITIONS

The project team reviewed the habitat, hydrology, and hydrogeology information available via Cornell’s CAD Studio online resources as well as other collected studio materials. Cornell CAD Studio materials are reflected as secondary sources. The team supplemented the analysis with a vegetation survey of the site on 9/16/2019 and 9/26/2019. The collected data from the survey are reflected as primary sources.

The survey team traversed the site to assess vegetation at multiple points, focusing on the forested regions, the emergent wetland in the central parking lot, and the wetland in the southern portion of the site. At each point, the survey team identified species in the canopy stratum within 50-80 feet, in the shrub/vine stratum within 30-50 feet, and in the ground cover stratum within 30-50 feet. Following the survey, the team performed an analysis to assess the percentage of native species at each point versus the percentage of non-native species. The field survey analysis maps are shown on pages 20 and 21.

HABITAT

Primary Source (September 16 and 26, 2019 field survey): The forested regions of the site are in varying states, from regions worthy of preservation to areas in need of enhancement. Overall, the canopy stratum is predominantly native and therefore preservation is recommended, whereas the shrub/vine and ground cover strata can be enhanced by removing non-native species and planting native species.

Secondary Sources: The secondary source data supports the team’s findings from the vegetation survey that the canopy stratum predominantly consists of native species such as *Populus deltoides* (eastern cottonwood) and *Celtis occidentalis* (hackberry).

The following regions of the site are classified as upland forest: the northeastern forest along the waterfront, the eastern edge of the southwestern forest, the southeastern forest, and the forested region along the northern edge of the tidal wetland in the southern portion of the site (herein referred to as the “southern tidal wetland”).

The following areas of the site are classified as lowland forest: the southern portion of the northeastern forest, the northwestern forest, the western and central portions of the southwestern forest, and the elevated berm. The non-forested regions of the site contain low species diversity (Terrestrial Ecosystem document, Cornell CAD Studio Materials; pages 14, 17-20). The southern tidal wetland and the waterfront areas adjacent to the Hudson River are coastal habitat zones that are critical habitat for migratory birds and fish (City of Kingston Brownfield Opportunity Area Step 3 – Final Implementation Plan Volume 1 – September 2015 document, page 62).

Overall, the habitat surveyors and secondary sources report diverse native ecosystems with some non-native encroachment that can be mitigated by invasive species removal and select plantings to promote native plant colonization, thus suppressing the success of non-native competition.

HYDROLOGY

Primary Source (September 16 and 26, 2019 field survey): Based on plant species and their wetland indicator classifications, the team observed wetland regions of varying typologies throughout the site. Most notably, the team observed the large, emergent tidal wetland in the south of the site and saturated soil conditions with some surface inundation throughout the southwestern forest, the adjacent central parking lot, and the northwestern forest near Delaware Avenue. Plant communities in these areas are stable and well adapted to the wet conditions. Inland sources of runoff do not contribute significantly to hydrologic conditions at the site.

Secondary Sources: As of February 2014, the National Wetland Inventory (NWI) and the NYS Freshwater Wetland Map recognized the following areas of the site as “known wetlands”: the southern tidal wetland, areas within the northwestern forest, areas within the northeastern forest, and an area of the southwestern forest adjacent to the southern tidal wetland. The site also contains areas recognized as “probable wetlands”, as indicated by drainage classes in the Ulster County Soil Survey, in the northwestern, southwestern, and northeastern forests, as well as in the central region of the site near the southeastern forest (Kingston Natural Resources Inventory 2018 Images document, page 8). The wetland types within the southern tidal wetland consist of upper and lower intertidal mix, *Typha angustifolia* (narrowleaf cattail), submerged aquatic vegetation, and open water. Areas within the northwestern and southwestern forests near Delaware Avenue are classified as upper and lower intertidal mix. (September 5, 2019 Site Analysis document, page 5) The site’s waterfront edge consists of natural shoreline, constructed beach and riprap along the elevated berm (September 5, 2019 Site Analysis document, page 6).

Areas of the site will become increasingly inundated due to sea level rise. By the 2020s, the southern tidal wetland and areas within the northwestern and southwestern forests near Delaware Avenue may experience up to 12 inches of inundation at high tide. By the 2050s, these inundated areas may expand in surface area with inundation depths up to 30 inches. Notably, much of the southwestern forest is predicted to be inundated with up to 30 inches of water by 2050, with inundation extending into the central parking lot and the forest on the northern edge of the southern tidal wetland. Additionally, all waterfront edges may be inundated with up to 30 inches of water. By the 2080s, much of the northern portion of the site and the elevated berm may be inundated by approximately 30 inches of water, and the areas predicted to be inundated by 2050 will expand in area with inundation depths up to 60 inches. (September 5, 2019 Site Analysis document, pages 1-3)

HYDROGEOLOGY

Primary Source (September 16 and 26, 2019 field survey): The team surveyors observed culverts under the western entrance to the central parking lot and near the intersection of Delaware Avenue and the road that leads to the northern parking lot. Gas pipeline notification signage was observed throughout the northwestern forest and under Delaware Avenue near the western entrance to the central parking lot. Additionally, there is a walking bridge on the southeastern side of the site, connecting the engineered berm to the mainland. The team performed no soil borings or sub-surface explorations, although the water table across the site is expected to be close to the ground surface; deeper in areas of higher elevation.

Secondary Sources: The culverts and bridge observed during the vegetation survey are confirmed in the Watershed Hydrology document, Cornell CAD Studio Analysis Materials (Chan, Divekar & Song 2017) on page 5, in addition to a culvert noted under Delaware Avenue near the western entrance to the central parking lot, which was not observed during the vegetation survey. The site is within the Hudson River Watershed, and based on the site’s location in relation to the Hudson River, groundwater flows toward the River. The surface elevations throughout the site are within 100 feet above sea level. Slopes greater than or equal to 15 percent are present only in the southeastern forest. Bedrock geology at the site consists of the Austin Glen Formation: surficial geology consists of recent alluvium and surface water. Soils at the site consist of Bath-Nassau-Rock outcrop complex, Made Land, and Freshwater Marsh. The site is within the 100-year floodplain (Kingston Natural Resources Inventory 2018 Images document, pages 1, 3, 4, 5, 6, 7, 45).

DATA REVIEW & ANALYSIS - ECOLOGICAL SURVEY MAPPING: PREVALENT SPECIES

Within each of the strata surveyed (canopy, shrub/vine and groundcover), examples of native species with the highest preservation value are shown here: Pages 20 and 21 show the graphical results of the team’s plant surveys. The figures presented are “heat maps” showing the relative proportions of native versus non-native plant species. Red “hot spots” are areas where invasive species mitigations are needed. Green areas represent high native plant dominance. Non-native species are generally most successful in areas where soils have been disturbed by compaction, development or erosion; where soil moisture conditions vary to extremes; or where chemical properties of the soils, either natural or anthropogenic, limit the success of native plant communities. Invasive plant communities also tend to dominate as monoculture with minimal diversity and limited ecosystem benefits. Areas dominated by native plant species are generally stable, biologically diverse, and play an important role in supporting wildlife, soil biota and invertebrates. After disturbance, land areas will undergo a period of supporting successional growth of aggressive herbaceous species, followed by low-quality (invasive) shrubs and vines, and eventual emergence of canopy trees. The extent to which non-native species dominate this process can be influenced by regrading (to assure soil stability and consistent moisture regimes) and planting of appropriately selected native species which can out-compete the non-native plants.

Species are chosen based on hydrology, soil type, slope and light regime. Where restoration plans call for specific habitat typologies that are not easily supported by the existing conditions, restoration ecologists are limited in what can be feasibly altered to achieve design goals. Frequently, hydrology can be adjusted by modifying topography to promote drainage (channeling or diversion away from the site) or increase moisture regimes (through detention or diversion toward the site). Importing soils is also a common technique but is costly, typically requiring some removal of existing soils prior to placement of 18 or more inches of appropriate fill. Restorations also require some degree of protection from herbivory during early establishment periods, such as tree guards, water fowl barriers and deer fencing. Restoration ecologists are hesitant to employ the use of chemical herbicides because of the negative impacts on other ecosystem components.

Extensive non-native monocultures are sometimes extremely difficult if not impossible to mitigate because of the resilience of the species and maturity of root systems. In these cases, restoration ecologists will often design to contain the spread of the monoculture by supporting and enhancing robust native plants at the perimeter. Phragmites (common reed), which was identified at the site, is an example of a stubborn invader whose rhizomes survive even the most aggressive management efforts. Garlic mustard and mugwort, for example, do not establish extensive monocultures but emerge more diffusely and in smaller clusters; mugwort in open areas and garlic mustard beneath the forest canopy. Similarly, many of the non-native shrubs and vines such as Asian bittersweet, Japanese honeysuckle and buckthorn will appear as individuals or in small communities within a generally native environment.

The strategy for mitigating these species does not rely on removal, but by establishing and nurturing native communities that compete to inhabit the same niche conditions as their non-native counterpart. Removal in small areas can be successful if sustained over time, but some species have become so widespread regionally that their control is not feasible. This is largely true of Norway maple, Ailanthus and white mulberry – the three primary invasive tree species found at Kingston Point that have become largely naturalized throughout North America because of their rapid growth and prevalence, and ability to reproduce prolifically from both shoots and seeds. These invasives have shorter life expectancies than most native trees, which leads to greater susceptibility to erosion and further invasion of aggressive species, especially in disturbed areas.

NATIVE & NON-INVASIVE SPECIES: PRESERVE

Canopy



Acer negundo
box elder



Acer rubrum
red maple



Fraxinus americana
white ash

Shrubs & Vines



Amorpha fruticosa
false indigo bush



Lindera benzoin
spicebush



Parthenocissus quinquefolia
virginia creeper

Groundcovers



Equisetum hyemale
rough horsetail



Impatiens capensis
orange jewelweed



Pontederia cordata
pickerelweed

NON-NATIVE SPECIES (INVASIVE & NON-INVASIVE): RESTORE

Canopy



Acer platanoides
Norway maple



Ailanthus altissima
tree of heaven



Morus alba
white mulberry

Shrubs & Vines



Celastrus orbiculatus
asian bittersweet



Lonicera japonica
Japanese honeysuckle



Rhamnus cathartica
buckthorn

Groundcovers



Alliaria petiolata
garlic mustard



Artemisia vulgaris
mugwort



Phragmites australis
common reed

NATIVE & INVASIVE SPECIES: MANAGE



Populus deltoides
eastern cottonwood



Robinia pseudoacacia
black locust



Typha latifolia
common cattail

DATA REVIEW & ANALYSIS - ECOLOGICAL SURVEY MAPPING

VEGETATION TYPE: FOREST & HERBACEOUS WETLAND

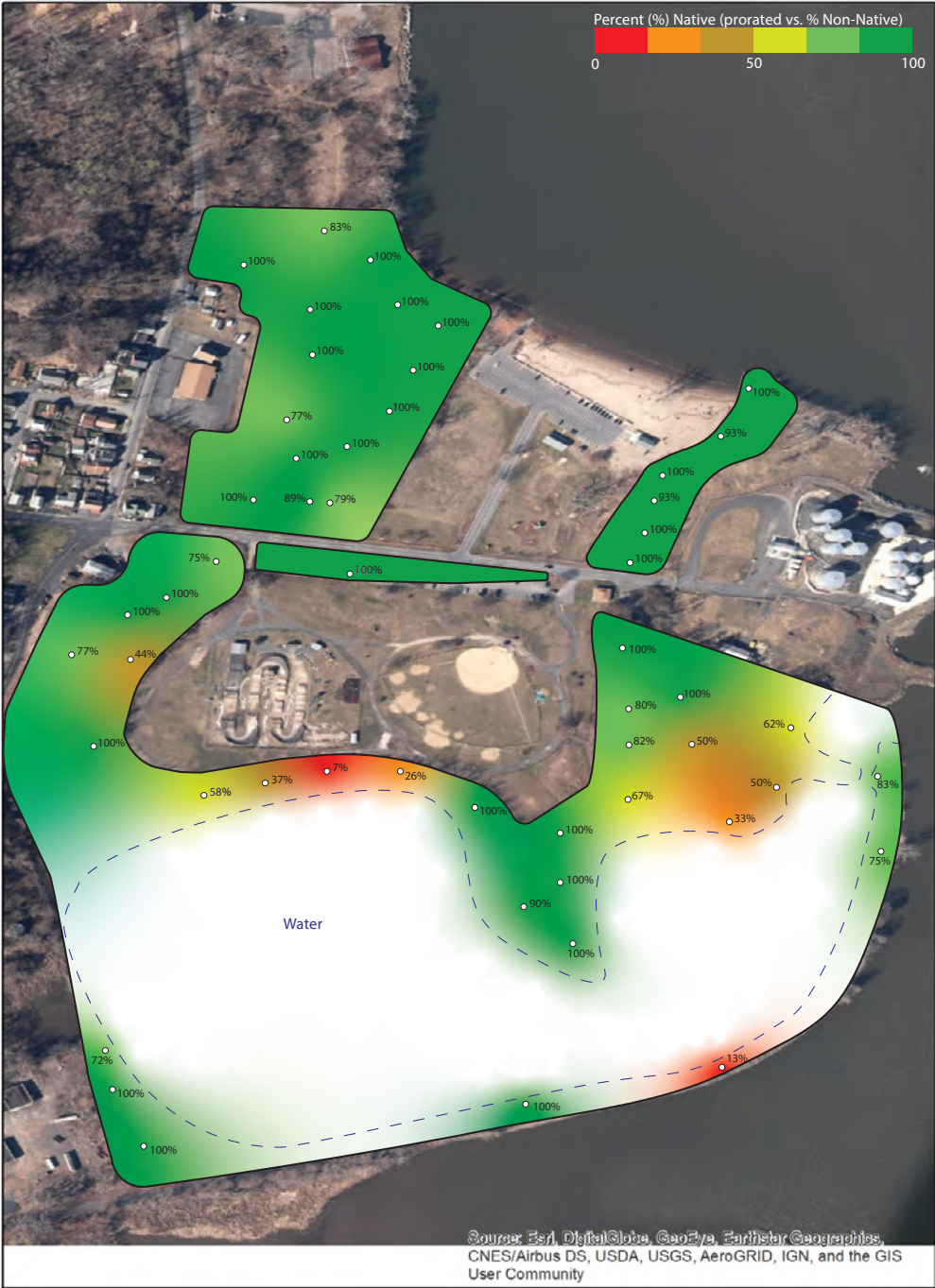
Vegetation Survey - FOREST VS. HERBACEOUS WETLAND
October 2019



The overall vegetation and ecological communities (flora) at Kingston Point may be divided into two broad types: forest and herbaceous wetland.

CANOPY

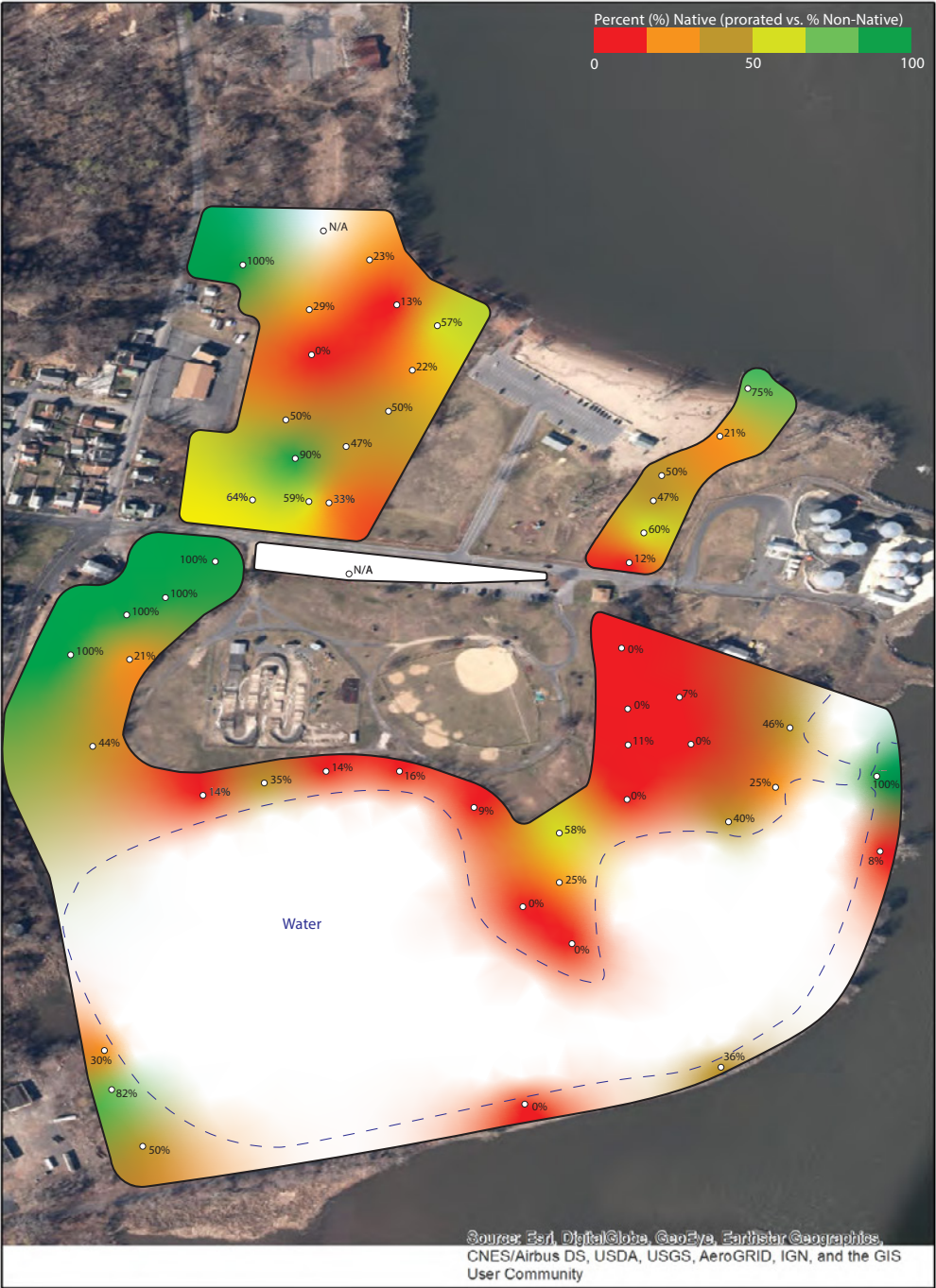
Vegetation Survey - Percent (%) Native Species of CANOPY STRATUM
October 2019



Much of the canopies at Kingston Point consist of native, non-invasive species. The area around Rotary Park is mixed and there are a couple of isolated areas with non-native species.

SHRUBS & VINES

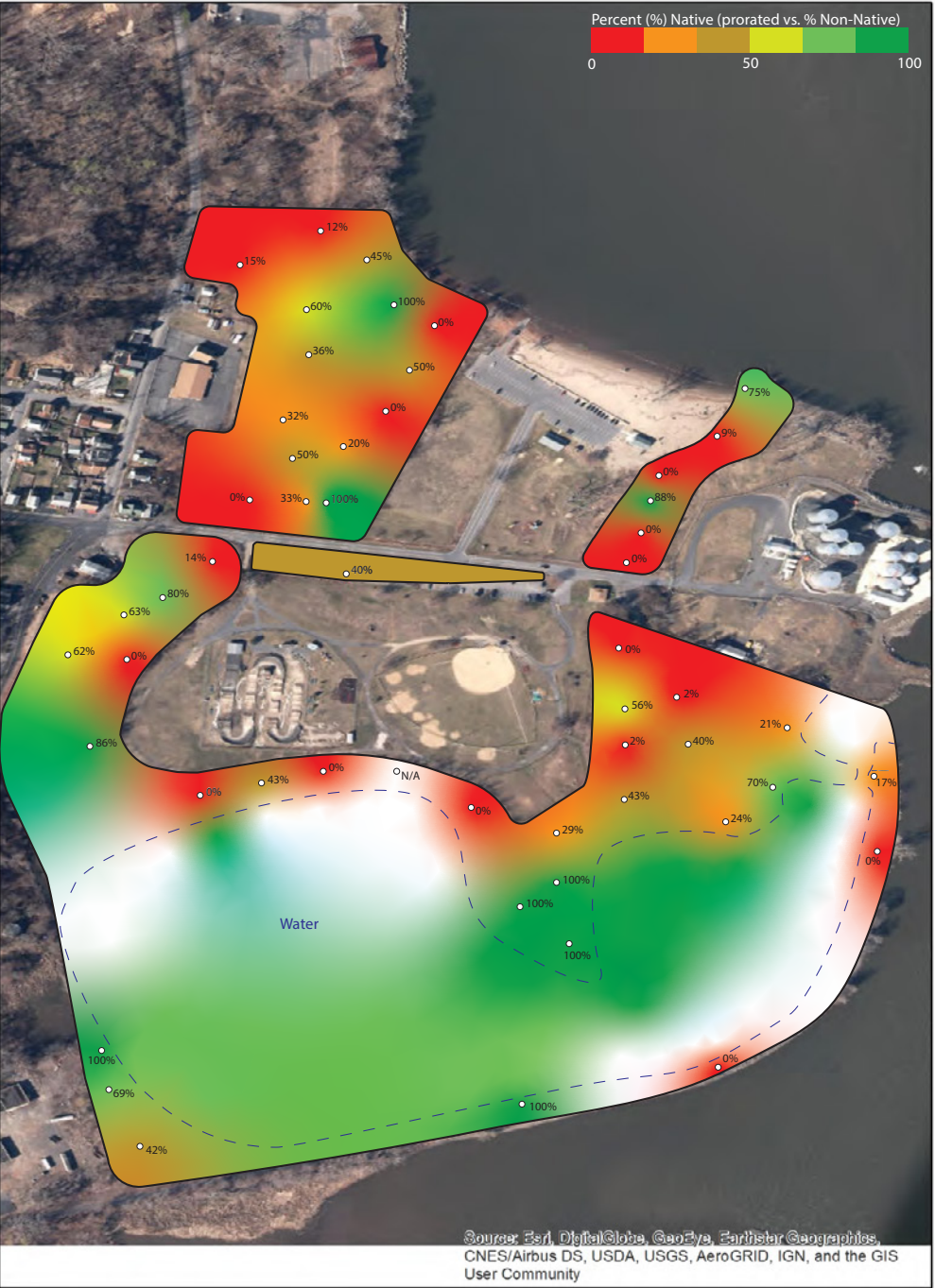
Vegetation Survey - Percent (%) Native Species of SHRUBS & VINES STRATUM
October 2019



Invasive non-native shrub and vine species have colonized significant portions south of the softball field and the Rotary Park area. Native species are found along the western edge of Kingston Point.

GROUNDCOVERS

Vegetation Survey - Percent (%) Native Species of GROUND COVER STRATUM
October 2019



Groundcover patterns are similar to the shrubs and vines, with the establishment of non-native and invasive communities around the perimeter of the most programmed areas of Kingston Point.

CORNELL CLIMATE ADAPTIVE DESIGN STUDIO SUMMARY FOR KINGSTON POINT



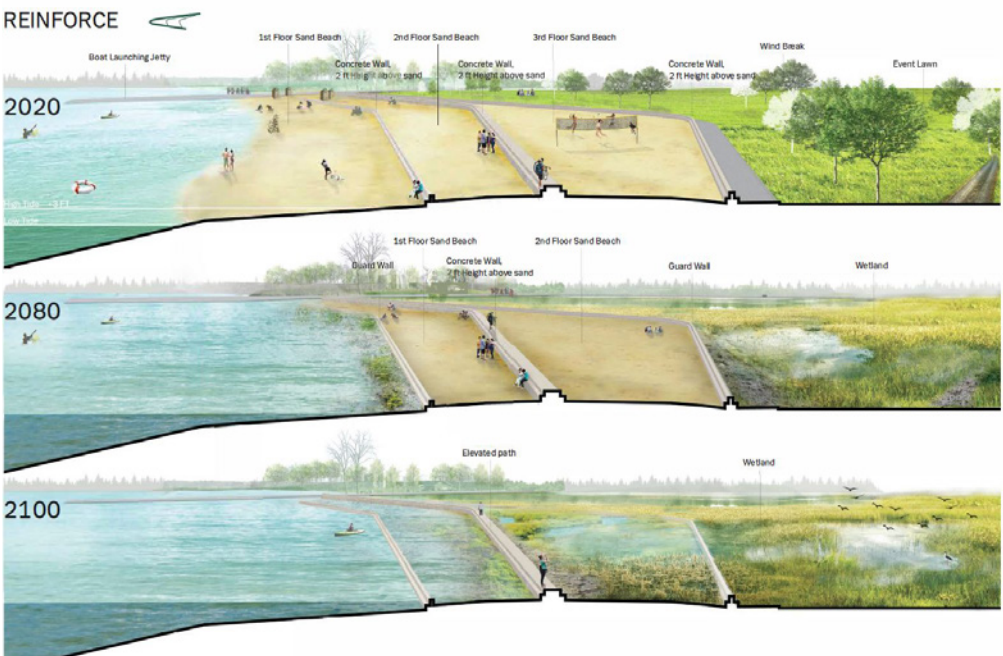
As part of the existing data review task, the project team reviewed concepts and strategies developed by students of the Cornell University Climate Adaptive Design Studios. There were a total of 3 studios held for Kingston, including one specifically for Kingston Point. Other Kingston sites included Rondout Creek and Block Park. The cities of Hudson, Catskill, and Piermont also had studio sites. A full survey of the studio materials is included in Chapter 5: Appendices.

For Kingston Point, design ideas and strategies explored by the Cornell Climate Adaptive Design Studio are mainly focused on these three areas:

- Shoreline stabilization and habitat creation strategies along the west side of the existing beach, where ecological management strategies like living shorelines are proposed.
- Beach reinforcement. Structural strategies are proposed to protect the beach area from future sea level rise.
- Causeway management. Both ecological and structural measures are proposed to be implemented along the existing causeway for shoreline stabilization and protection.

These particular investigations provide useful background research as well as a basis and initial framework for potential climate adaptive design projects which can be implemented on Kingston Point in the near future.

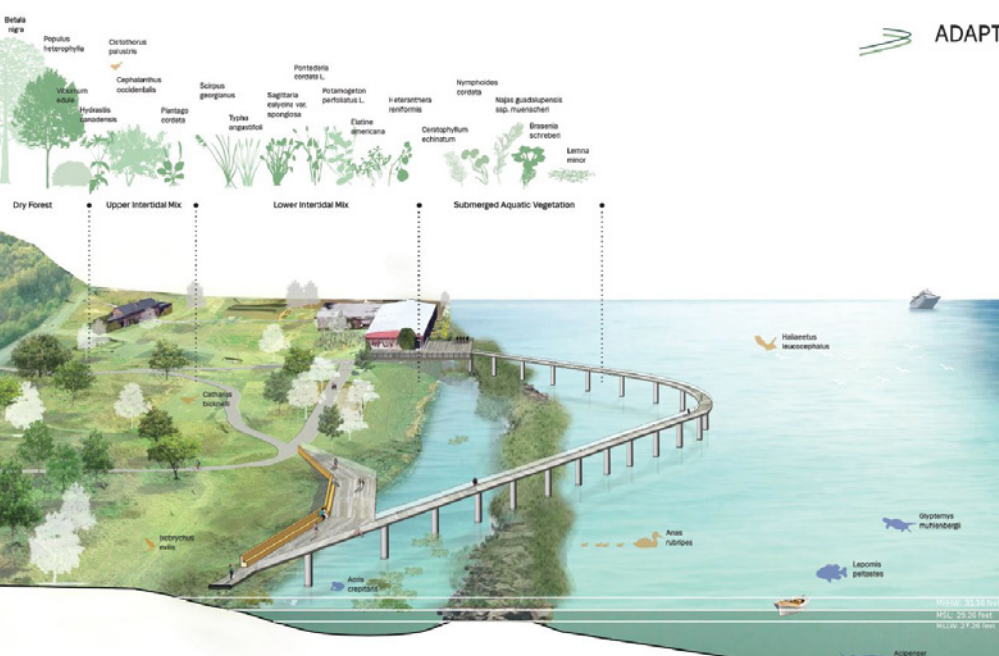
REPRESENTATIVE STUDENT WORK
SAMPLES FOR KINGSTON POINT
FROM THE CORNELL CAD STUDIO



Terraced beach to protect the area from tidal erosion and future sea level rise
Project: Weaving the Waterfront by Luyao Kong, Hong Gao, Qianli Feng



Causeway ecological reinforcement
Project: Tracing Temporality by Tess Russwick, Daisy Hoyt



Constructed living shore
Project: Weaving the Waterfront by Luyao Kong, Hong Gao, Qianli Feng



Floodable playground
Project: Actipelago by Yifu Kang, Xuru Yuan

WEAVING THE WATERFRONT OPEN HOUSE

With a multitude of ongoing waterfront projects in Kingston in addition to Kingston Point, the project team saw an opportunity to engage all waterfront design and planning efforts at once as part of an expanded community event. In an effort to bring the public into the design process and to have the them understand the connective relationship of the Kingston Point CAD project with the other ongoing waterfront projects, a waterfront design celebration day was developed and branded Weaving the Waterfront.

Weaving the Waterfront was on October 26th, 2019 from 11:00 to 4:00. It was designed to be a celebration of the Kingston waterfront, while giving each project team a platform to connect with the public, update them on their project’s progress (kick-off for the CAD project), connect the projects and collect community feedback in the form of direct conversation and written surveys.

The design presentations and project displays were supplemented by trolley and boat rides, face painting, apple cider and donuts.

A brochure with map was created to inform the public of the many ongoing projects, as well as, to encourage the public to explore the full length of the waterfront and lighthouse by foot, bike, trolley and/or boat. The brochure also provide the web address and QR Code to an online version of the survey if the attendee didn’t complete a survey while attending Weaving the Waterfront.

After the event the presentation materials were relocated to the City of Kingston’s Library for two weeks of additional public viewing. The online survey continued to be live until November 11th.

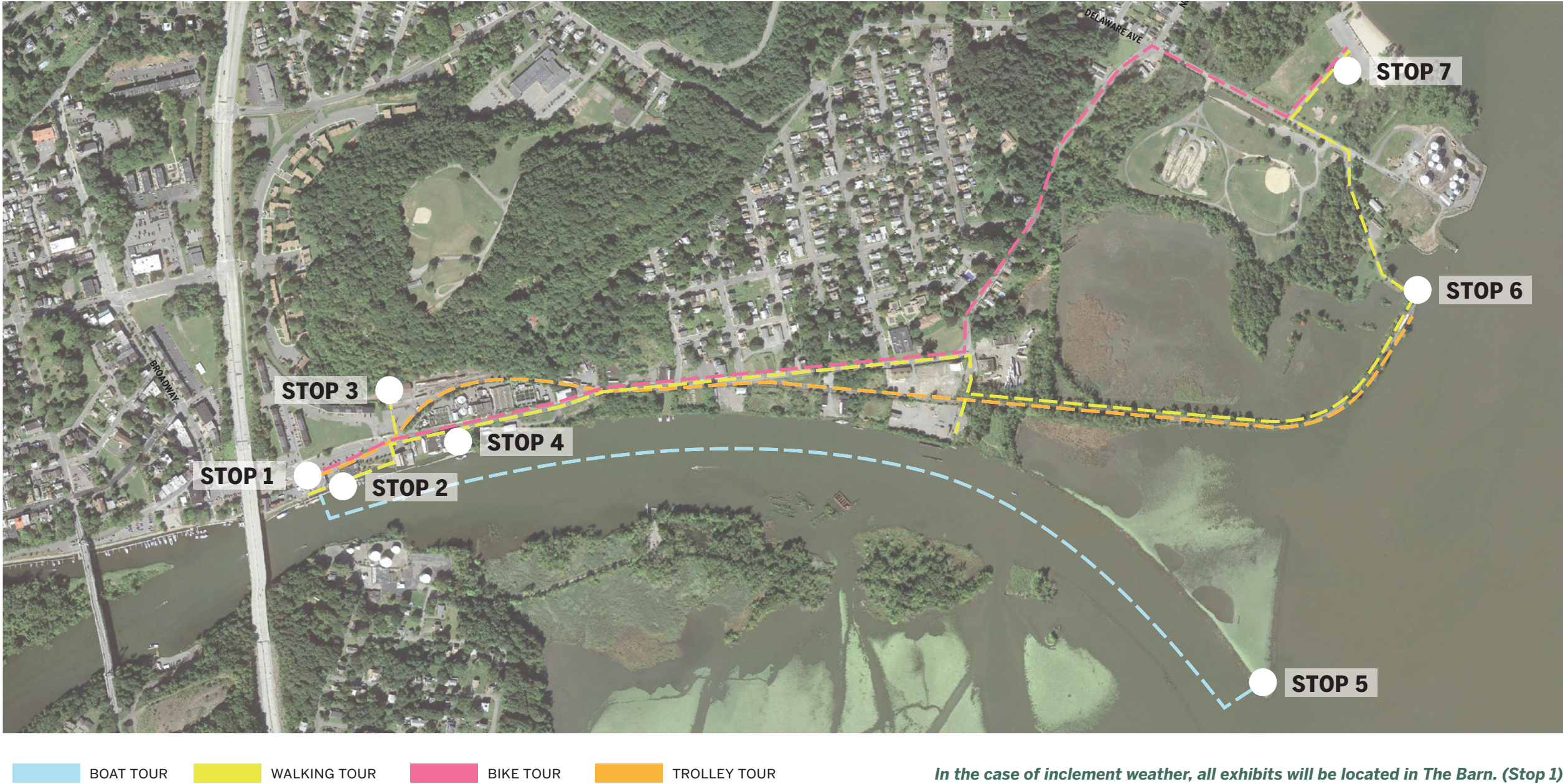
Weaving the Waterfront was promoted using the City’s website, social media, postering and local radio and news media. The projects and teams represented at the event were:

- Living Well Kingston Chess Playground; Kingston Health and Wellness Depart.
- TR Gallo Park; Tighe & Bond
- Waterfront Resiliency; McLaren Engineering Group
- Kingston Point Rail Trail Phase 2; McLaren Engineering Group
- Empire State Trail; Alta Planning & Design and Scenic Hudson
- Kingston Riverwalk; Weston & Sampson (City) and HKMR (private landowner)
- Lighthouse & Trolley Causeway; Weston & Sampson
- Kingston Point CAD; Supermass Studio
- Kingston Point Park Infrastructure Improvements; Brinnier & Larios
- Kingston Point Beach ADA Improvements; Kingston Parks and Recreation





Kingston Waterfront Design Open House
Tour by foot, bike, trolley, or boat | October 26th, 2019



WEAVING THE WATERFRONT WALKING TOUR BROCHURE

WEAVING THE WATERFRONT OPEN HOUSE - KINGSTON POINT

SURVEY RESULTS (209 Respondents Total)

Q1 Please provide the following information

ANSWER CHOICES	RESPONSES	
Name	175	83.73%
Zip Code	201	96.17%
Email Address	144	68.8%

Q2 How did you hear about Weaving the Waterfront.

ANSWER CHOICES	RESPONSES	
City website	29	13.81%
Posters	6	2.8%
Radio	9	4.3%
Social Media	65	31.10%
Other (please specify)	104	49.76%

Presented are a summary of the survey results from the Kingston Point Open House held on 10/26/19. Results include in-person written surveys during the Open House as well as an online survey which remained open for several weeks following the Open House event.

The top five desired waterfront area amenities are:

- Park/Open space
- Nature exploration and interpretation
- Small boat access
- Historic structures
- Lighthouse access

Flood control and nature preservation are the most important issues facing the future of Kingston Point.

The top three recreational features people would like to see in Kingston Point are:

- Canoe/kayak/boat launch
- Nature walk/interpretation
- Swimming/sunbathing

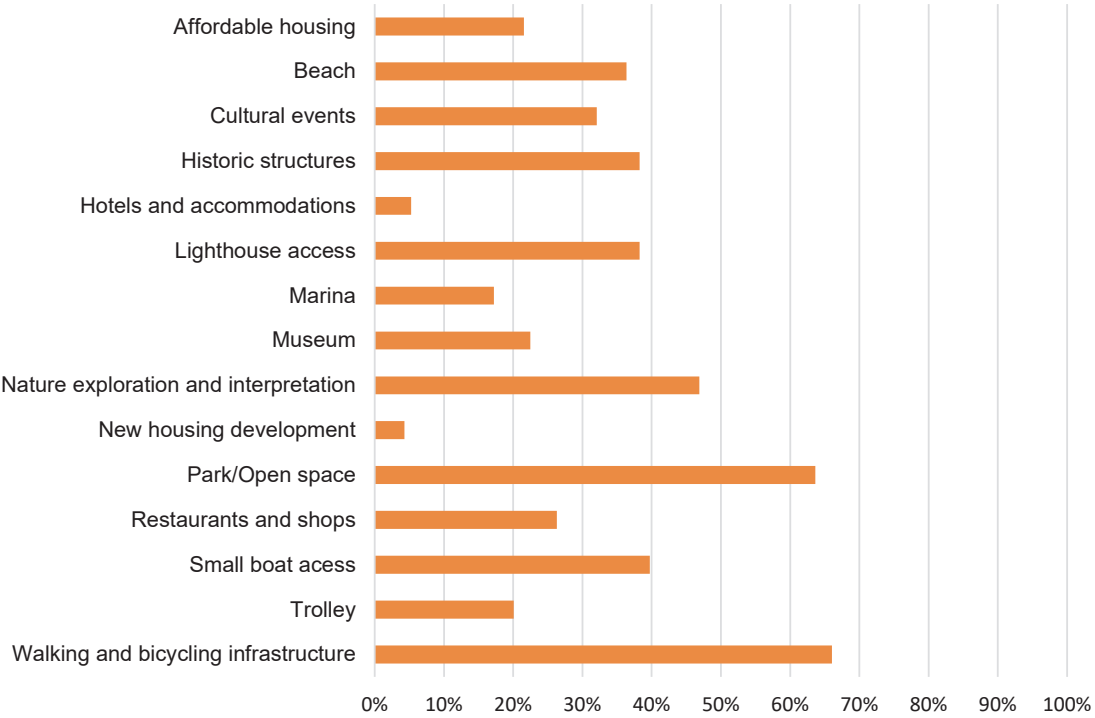
The top three park amenities people would like to see in Kingston Point are:

- Restrooms
- Picnic Tables and Shelter
- Benches / Seating

Beaches, forests, and wetlands are the most important natural features to protect at Kingston Point.

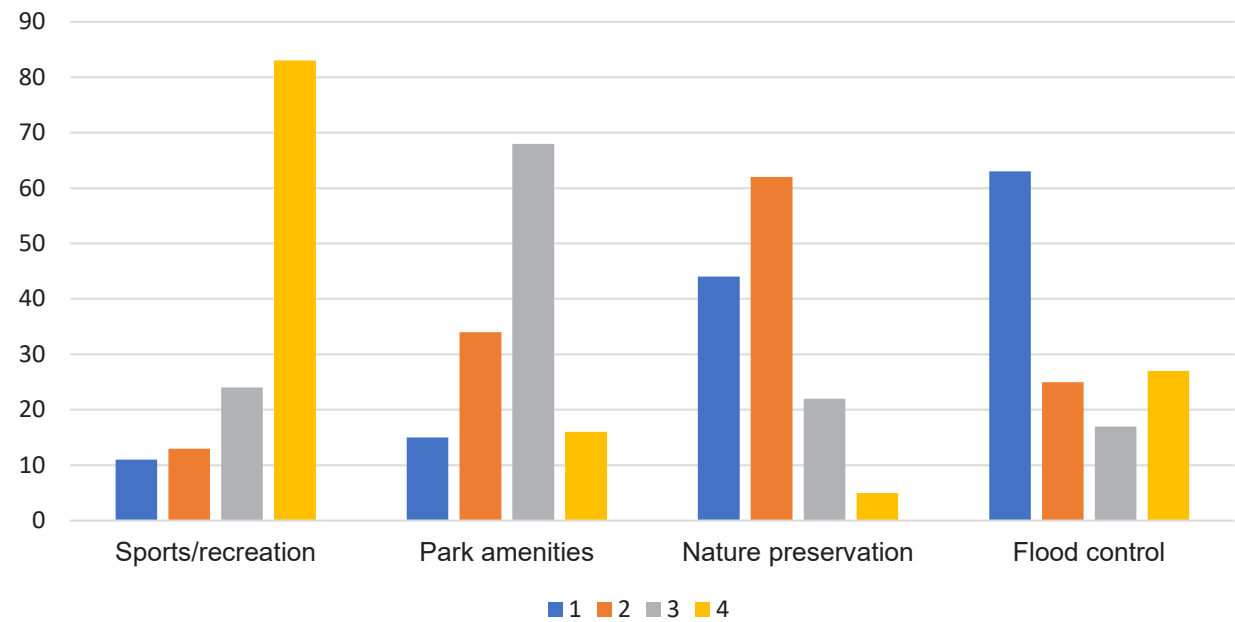
Flooding, aquifers/soil contamination and shoreline loss are the top three critical impacts of sea level rise at Kingston Point.

Q3 Please choose your top five waterfront area amenities now or in the future.

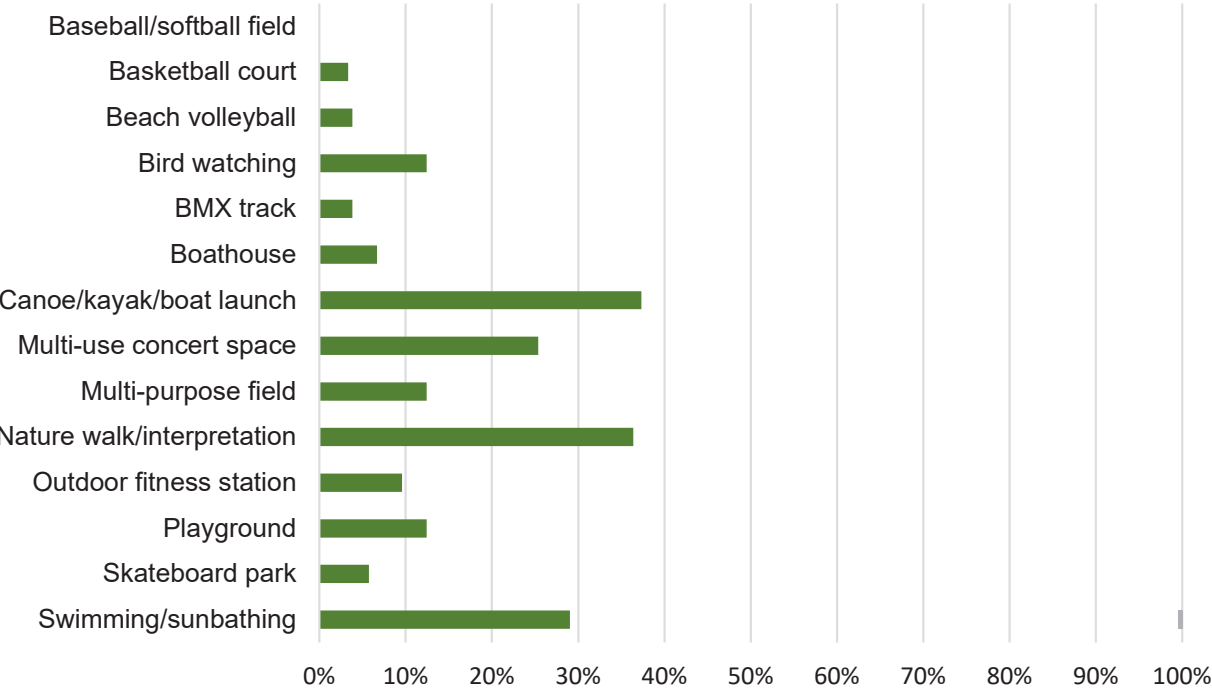


Q4 Please rank the following in order of importance to the future of Kingston Point.

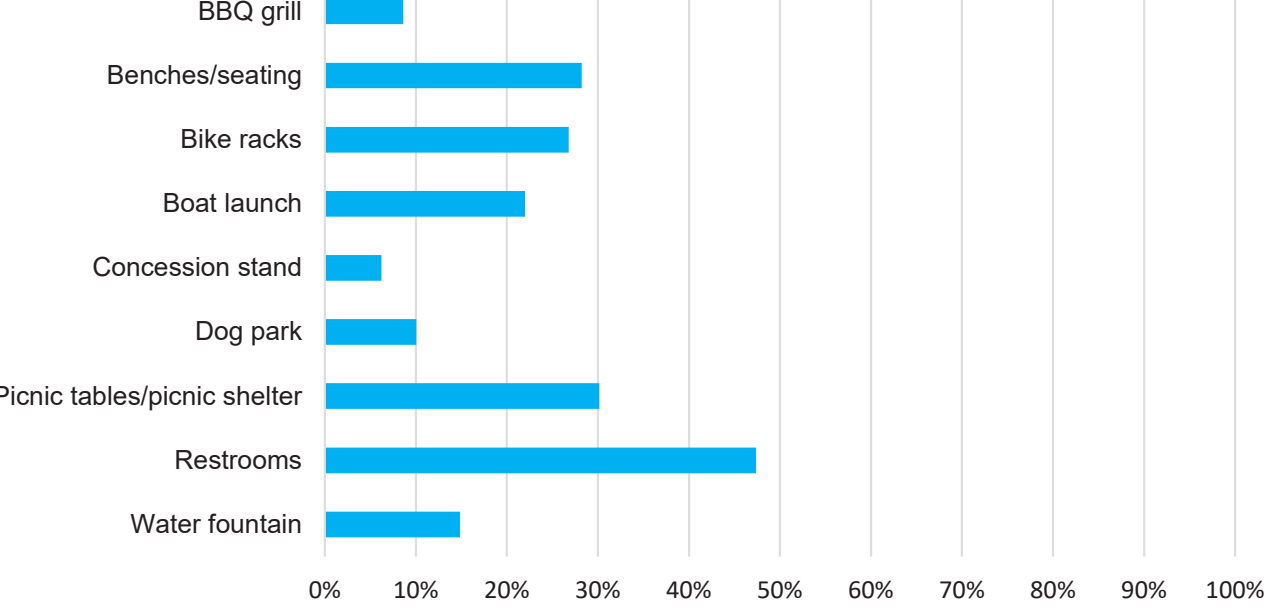
(1 being the most important)



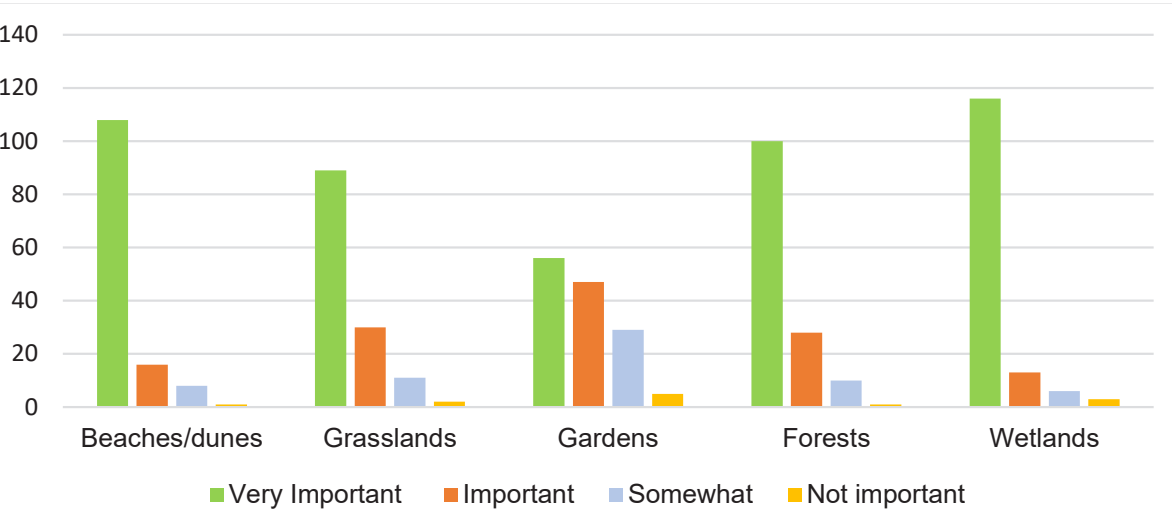
Q5 Please choose the top three recreational features you would like to see.



Q6 Please choose the top three park amenities you would like to see.

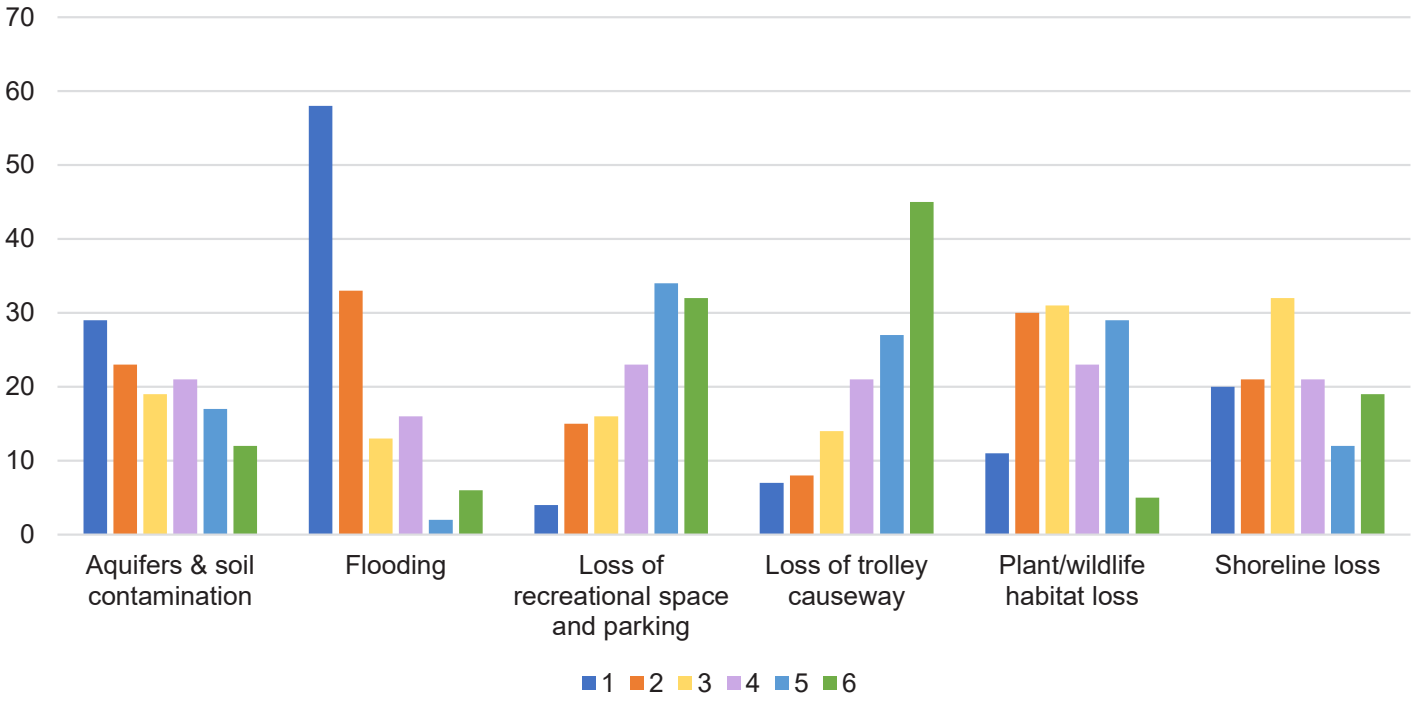


Q7 Please rank the importance of protecting natural features.



Q8 Please rank the most critical impacts of sea level rise at Kingston Point.

(1 being the most critical impact)



KINGSTON POINT SURVEY SUMMARY

Presented is a summary of the Kingston Point survey results, which includes the in-person written surveys during the Open House on 10/26/19 as well as the on-line survey which remained open for several weeks following the Open House.

In general, the top five desired waterfront area amenities are:

- Park/Open space
- Nature exploration and interpretation
- Small boat access
- Historic structures
- Lighthouse access

Flood control and nature preservation are the most important issues facing the future of Kingston Point.

The top three recreational features people would like to see in Kingston Point are:

- Canoe/kayak/boat launch
- Nature walk/interpretation
- Swimming/sunbathing

The top three park amenities people would like to see in Kingston Point are:

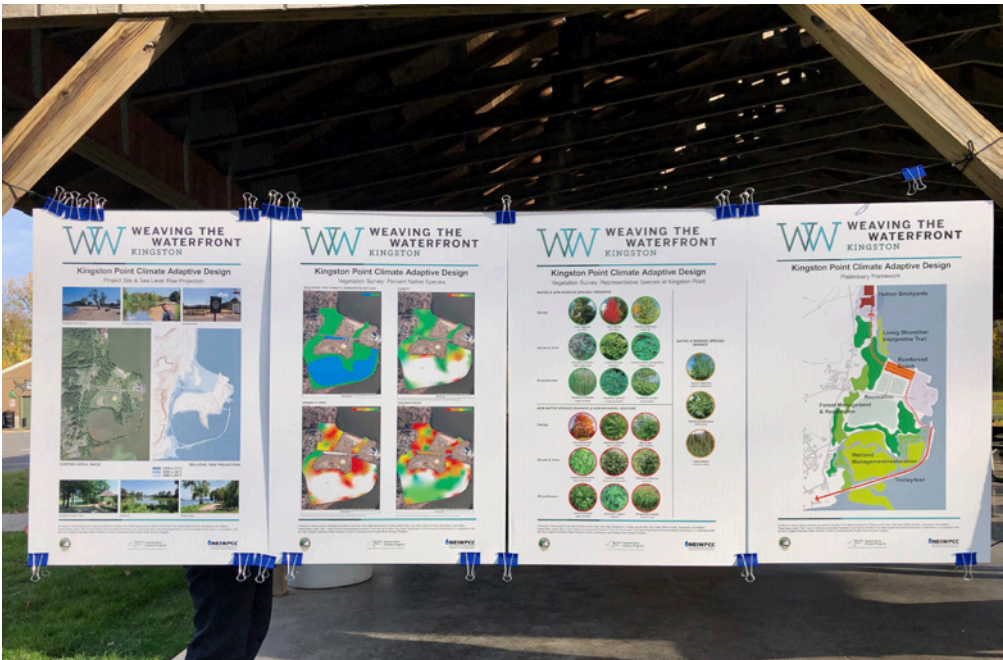
- Restrooms
- Picnic Tables and Shelter
- Benches / Seating

Beaches, forests, and wetlands are the most important natural features to protect at Kingston Point.

Flooding, aquifers/soil contamination and shoreline loss are the top three critical impacts of sea level rise at Kingston Point.



The most desired waterfront amenities chosen by Kingston local residents



Poster boards for the Kingston Point Open House



The project team reviewing existing conditions information with the public



Kingston residents taking the Kingston Point survey

WW WEAVING THE WATERFRONT KINGSTON SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name _____ (optional)

Zip code 12401

E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☐ Social Media

☒ Word of mouth

☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.

☐ Affordable housing

☒ Beach

☒ Cultural events

☒ Historic structures

☐ Hotels and accommodations

☒ Lighthouse access

☐ Marina

☐ ...

4) Please choose your top five waterfront area amenities you would like to see.

☐ Affordable housing

☒ Beach

☒ Cultural events

☒ Historic structures

☐ Hotels and accommodations

☒ Lighthouse access

☐ Marina

☐ ...

5) Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

☒ Bird watching

☐ BMX track

☒ Boathouse

☐ Canoe/kayak/boat launch

☒ Multi-use concert space

☒ Multi-purpose field (soccer/lacrosse/football)

☒ Nature walk/interpretation

☐ Outdoor fitness station

☒ Playground

☐ Skateboard park

☒ Swimming/sunbathing

☐ Other _____

6) Please choose the top three park amenities you would like to see.

☒ BBQ grill

☐ Benches/seating

Sample survey sheet

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The overall concept framework plan investigates Kingston Point as a whole in relation to potential sea level rise risk and develops several overall planning frameworks through a scenario-building approach. The ecological survey results presented in Chapter 1 are synthesized to develop a set of overarching ecological and habitat intervention recommendations to mitigate sea level rise. Some ideas for potential future programming for Kingston Point are also introduced.

The overall adaptation scenarios are calibrated based on three levels of interventions: minimum, moderate, and maximum; and examine their implications for projected sea level rise in the years 2050 and 2080. As a whole, these adaptation scenarios illustrate vulnerabilities and help envision different futures for Kingston Point in light of climate change. They are also utilized to help identify preliminary project opportunities and to narrow down a list of potential preliminary design project candidates.

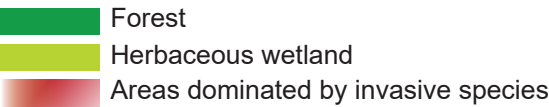
CHAPTER 2: OVERALL CONCEPT FRAMEWORK PLAN

2.1 Site Ecological Synthesis and Recommendations	32
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2.3 Sea Level Rise and Compatible Habitat Interventions	36
2.4 Overall Adaptation Scenarios	40
2.5 CAD Project Opportunities and Priority Matrix	46

SITE ECOLOGICAL ASSESSMENT: SYNTHESIS AND RECOMMENDATIONS

Based on the results of the vegetation survey analysis presented in Chapter 1, the design team recommends the following restoration alternatives for Kingston Point:

1. Forest Enhancement: The site was assessed via multiple transects. Points were located a minimum distance of 75 feet apart along each transect. The team recommends removing invasive species from the shrub/vine and ground cover strata and enhancing these forest layers with native species. Replacement species include bloodroot (*Sanguinaria Canadensis*), Virginia creeper, jewelweed, cardinal flower and other natives that thrive in the shade. The team is not recommending removal of invasive trees, but suggests enhancing the native tree population by planting seedlings from eastern cottonwood, red maple and white ash.
2. Conversion of the Central Parking Lot to a Wetland: The team recommends converting the centrally located parking lot into an emergent wetland, based on existing conditions and sea level rise projections. Hydrologic conditions are already consistent with emergent wetlands, and additional runoff can be directed to the area from nearby impervious surfaces. The team recommends establishing the wetland with varying elevations, thus also varying the moisture regime to support greater diversity of both plants and invertebrate communities. Wetland plantings should include: pickerelweed, duck potato, soft-stem bulrush, blueflag iris, swamp rose-mallow and Canada rush.
3. Replacement of Existing, Non-Habitat Areas with Swamp Forest: The team recommends replacing non-forested areas with swamp forests i.e. the baseball field. Swamp forests are slow to establish, but with the correct moisture regime, swamp forests are stable productive ecosystems that host a wide variety of fauna, provide water quality benefits, and stabilize low-lying floodplains where flooding and erosion occur.
4. Creation of Freshwater Reefs in the Hudson River: The team recommends creating freshwater reefs (i.e. using reef balls) along the Hudson River shoreline adjacent to the site to foster fish habitat and to create a barrier for increased storm surge intensity as a result of climate change. These artificial structures are relatively simple to install, require little maintenance, and can provide valuable spawning and foraging grounds to support local fisheries.





Wetland vegetation west of the Kingston Point Terminal oil storage facility



Waterfront outside of the Kingston Point Terminal oil storage facility



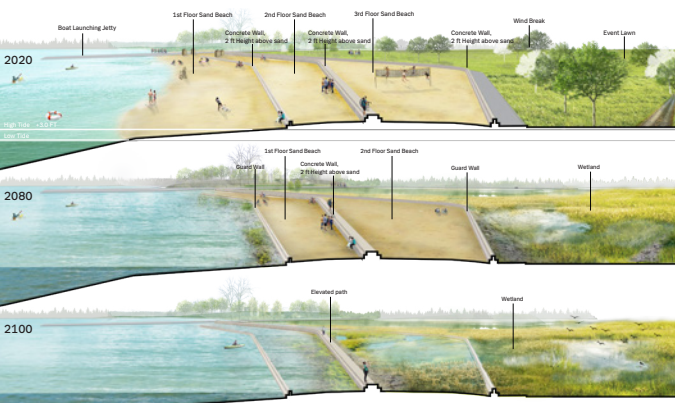
Forest north of Delaware Avenue



Parking lot, south of Delaware Ave.

FUTURE PROGRAMMING EXAMPLES FOR KINGSTON POINT

COMMUNITY OPEN SPACE



Terraced beach



Waterfront park



Nature park with interpretive trail

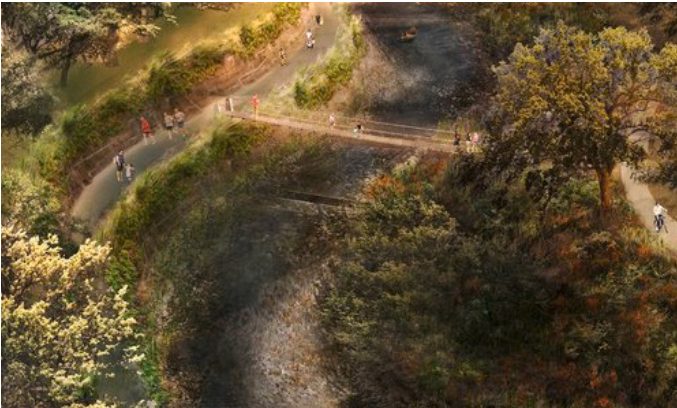


Sports field/Recreation

FRESH TIDAL WETLANDS



Freshwater tidal wetland preserve



Wetland buffer corridor



Stormwater retention park



Biodiversity garden

INTERPRETIVE TRAIL



Forest trail
34



Meadow trail



Wetland trail



Causeway trail

ECOLOGICAL/BIOENGINEERING REINFORCEMENT



Living shoreline



Live stakes



Brush mattress



Reef balls & other fish structures

HABITAT CREATION



Tidal freshwater wetlands



Meadow wildlife



Aquatic habitat



Fish habitat

EDUCATIONAL PROGRAM



Interpretive signs



Outdoor classroom



Forest tour



Botanical garden learning center

PROJECTED SEA LEVEL RISE AT KINGSTON POINT *

CURRENT CONDITION



ANTICIPATED 2050 SEA LEVEL RISE +18" ANTICIPATED 2080 SEA LEVEL RISE +48"



This is the projected Sea Level Rise expected at Kingston Point based on an aggressive scenario at high tide. By 2050 some of the properties on North Street may become inundated. By 2080, half of Kingston point, including its beach, is expected to be submerged at high tide.

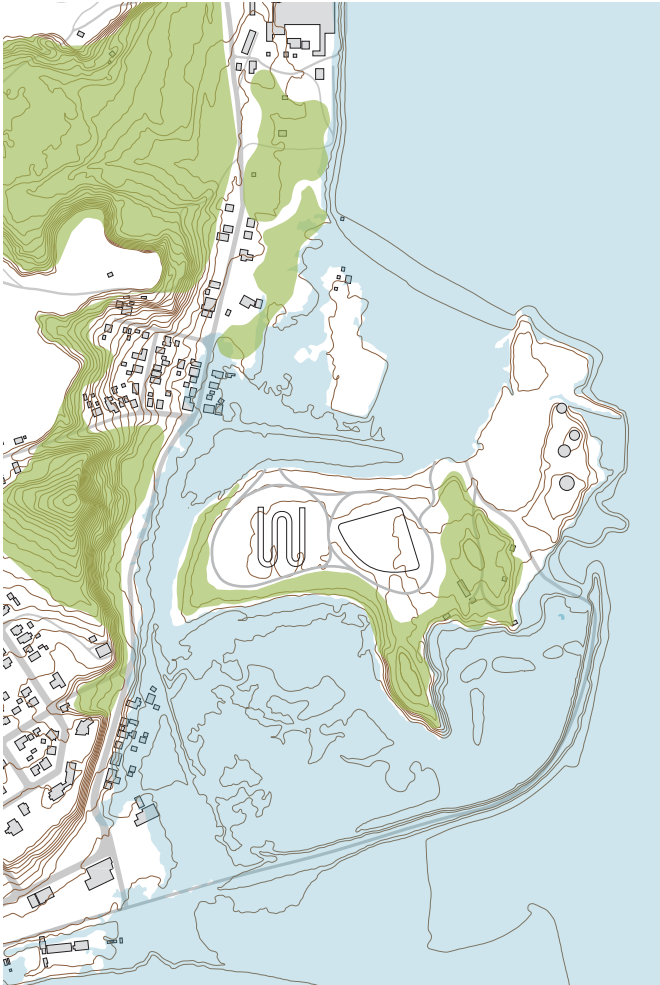
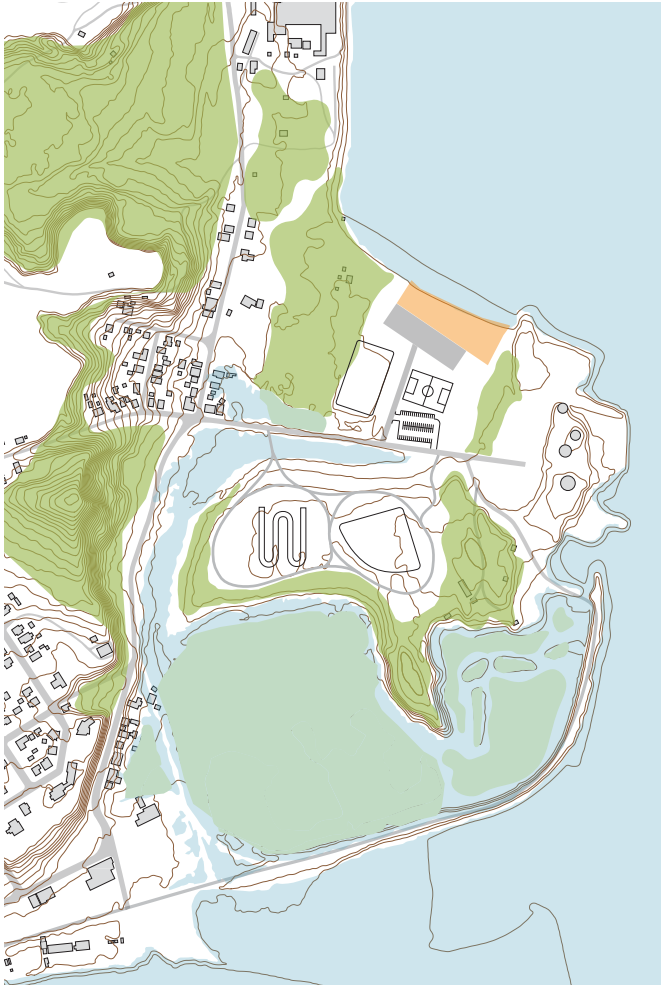
* Based on an aggressive scenario at high tide (<https://coast.noaa.gov/slrdata/>)

THE FUTURE OF KINGSTON POINT WITH NO ACTION

2020

2050

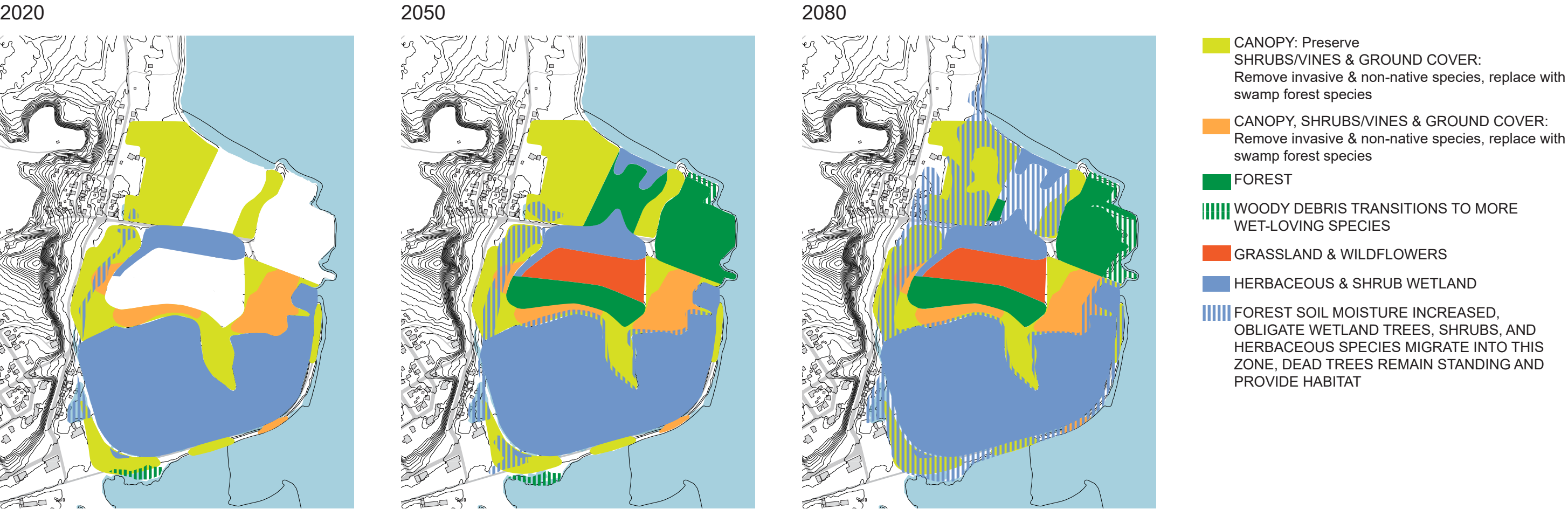
2080



- Beach
- Upland forest
- Herbaceous & shrub wetland

With no action taken, the parking lot along Delaware avenue will be slowly submerged under rising waters, a phenomenon which is already starting to occur. By 2050, the large area around Delaware Avenue will be affected and the existing wetland vegetation will die back. By 2080, it is anticipated that the herbaceous wetland to the south will disappear at Kingston Point due to rising water levels.

COMPATIBLE ECOLOGICAL HABITAT INTERVENTIONS BASED ON SEA LEVEL RISE



It is critical that the design anticipate the evolution of habitats at the site and how they shift due to changes in hydrology. The design focuses on increasing biodiversity and including more wet loving species that will migrate to higher elevations over time. The direction of habitat change near the river will be primarily a response to wetter uplands and deeper water at the shoreline. The recommended strategy is to anticipate the changing conditions and plant water-loving species in low-lying upland areas where those species do not currently appear. As species less tolerant to wet soils die out, the plants and seed stock more appropriate to the new conditions will be present, replacing habitats left by retreating upland ecosystems, and limiting the spread of undesirable invasive plants.

Because other climatic conditions are expected to change as well, there will be other pressures that compromise the success of existing systems such as temperature, winter freezing, wind and rainfall patterns. The goal is not to attempt to limit change, but to provide the conditions such that ecosystem adaptation can occur without reducing productivity or inviting colonization of invasive species. Plant diversity within all strata is the key to managing the damaging effects of changing climate and sea levels.

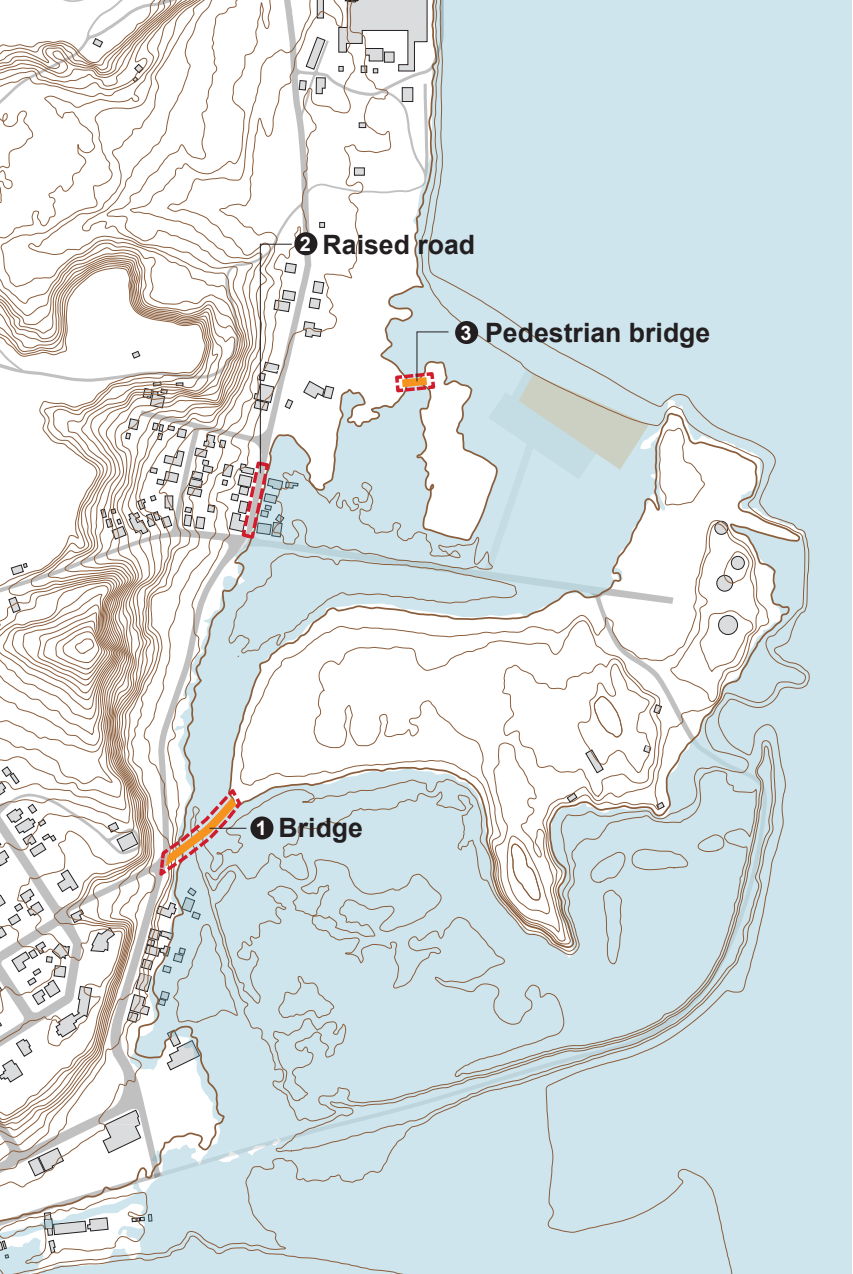
Forest: Planting of native swamp forest species in the canopy stratum in the beginning, followed by the planting of native swamp forest species in the shrub stratum and the groundcover stratum in subsequent years. Creating connectivity with existing fragmented forests and providing future seed stock that will be tolerant of wetter and warmer conditions as a result of climate change.

Grassland & Wildflowers: Planting of native grassland and wildflower species. These grasslands can be utilized by birds within the primary migratory flyway of the Northeast.

Herbaceous & Shrub Wetland: Planting of native wetland species to enhance biodiversity through providing habitats for a wide variety of aquatic wildlife including birds, reptiles, amphibians, and invertebrates and allow for successional wetland migration.

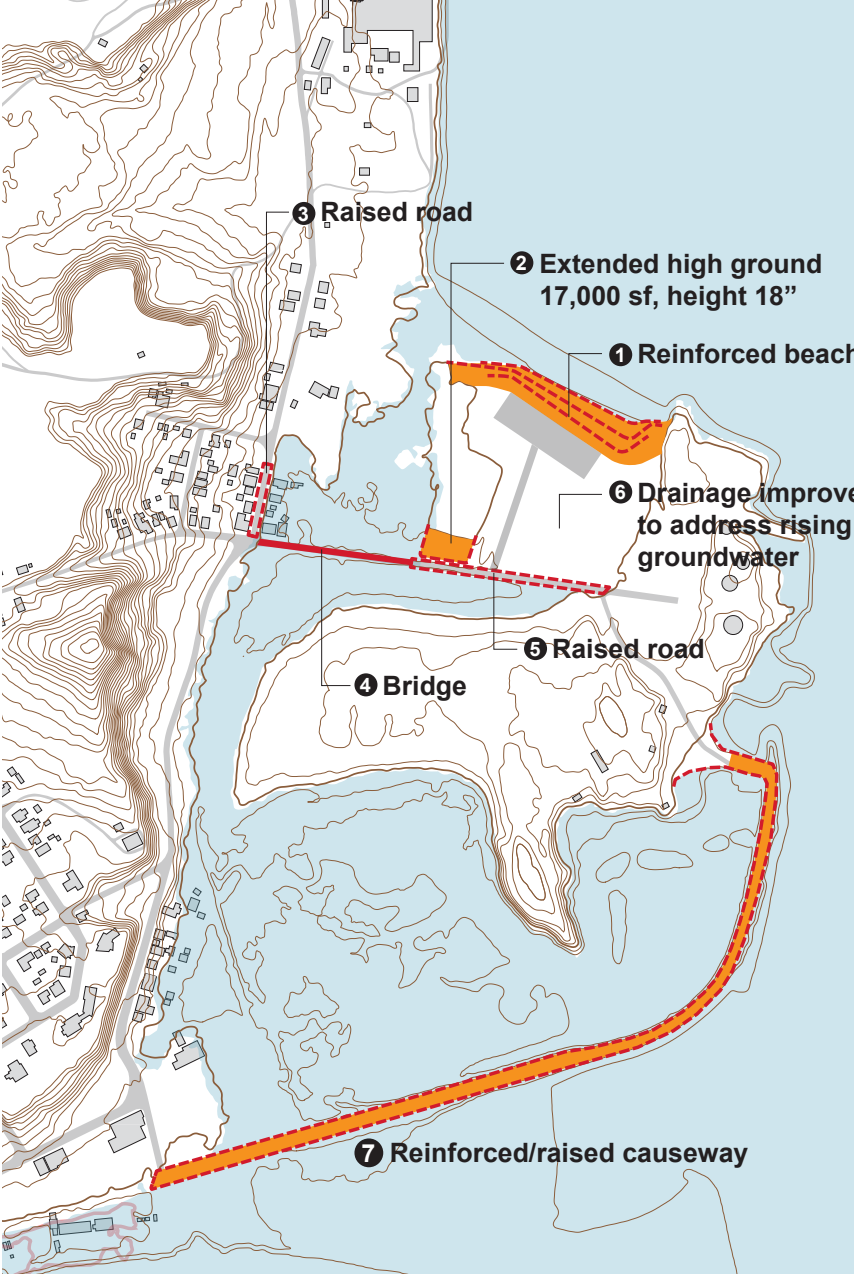
SITE INTERVENTION SCENARIOS BASED ON PROJECTED 2080 SEA LEVEL RISE

SCENARIO 1: NATURE ISLAND
(MINIMAL INTERVENTION)



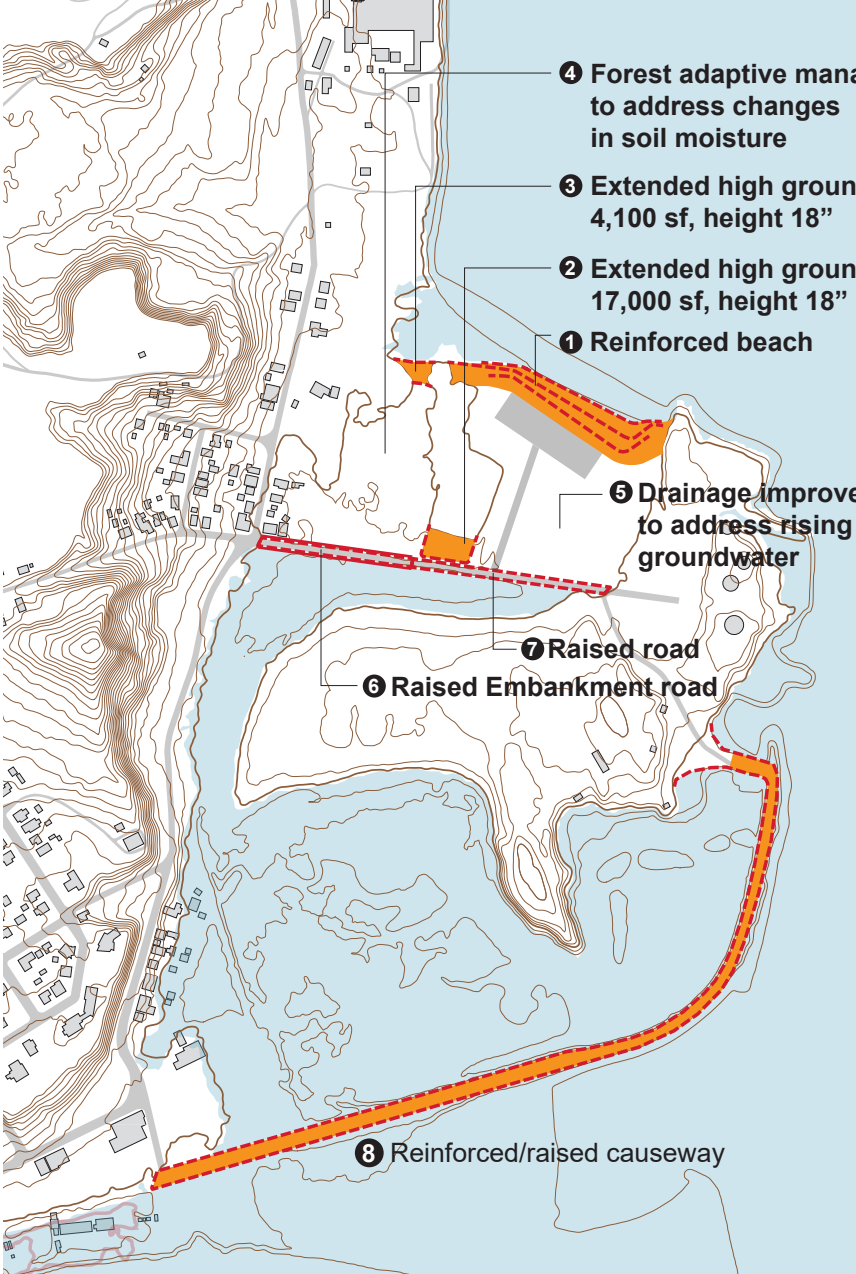
Minimal intervention will lead to Kingston Point being predominantly inundated. Sea level rise will flood the lower grounds and make the high grounds islands.

SCENARIO 2: CHANNEL ISLAND
(MODERATE INTERVENTION)



Protection of the beach and active recreation areas is achieved by connecting the two high grounds to the north with raised and reinforced beach and by raising Delaware Ave.

SCENARIO 3: PENINSULA
(MAXIMUM INTERVENTION)



Kingston Point can remain a peninsula by adding high grounds to the north and an embankment along Delaware Ave to the south. This intervention would protect existing forest habitats and properties on North Street.

SCENARIO 1_ NATURE ISLAND (MINIMAL INTERVENTION)

SEA LEVEL RISE 2080

By 2080, Sea Level Rise will flood the lower ground at Kingston Point, leaving the high grounds as islands. In this scheme, we test a minimal intervention scenario at Kingston Point. By connecting the islands with two new bridges, the Point will gradually turn to a natural island but will remain accessible.

The result of minimal intervention would be to maintain access while allowing the loss of existing amenities. Low-lying habitats will experience frequent or continuous inundation, plant loss, erosion, and vulnerability to invasive species. Higher areas will remain largely unaffected, though some trees may experience stress due to rising groundwater. Shallow areas that remain wet and protected from higher velocity flows may become vulnerable to invasive water chestnut. Overall, wetland resources, habitats, and passive wildlife recreation opportunities may increase but will be dominated by non-native plant communities.



2020 KINGSTON POINT



2050 CLIMATE ADAPTIVE OPPORTUNITIES
@ SEA LEVEL RISE +18"



2080 CLIMATE ADAPTIVE OPPORTUNITIES
@ SEA LEVEL RISE +48"



SCENARIO 2_ CHANNEL ISLAND (MODERATE INTERVENTION)

SEA LEVEL RISE 2080

In this scheme we test a moderate intervention scenario to preserve the beach and its nearby active recreational spaces. The beach would be reinforced and raised to connect the two high grounds on either side of the beach. Delaware Ave would also be raised to maintain access and offer flood mitigation.

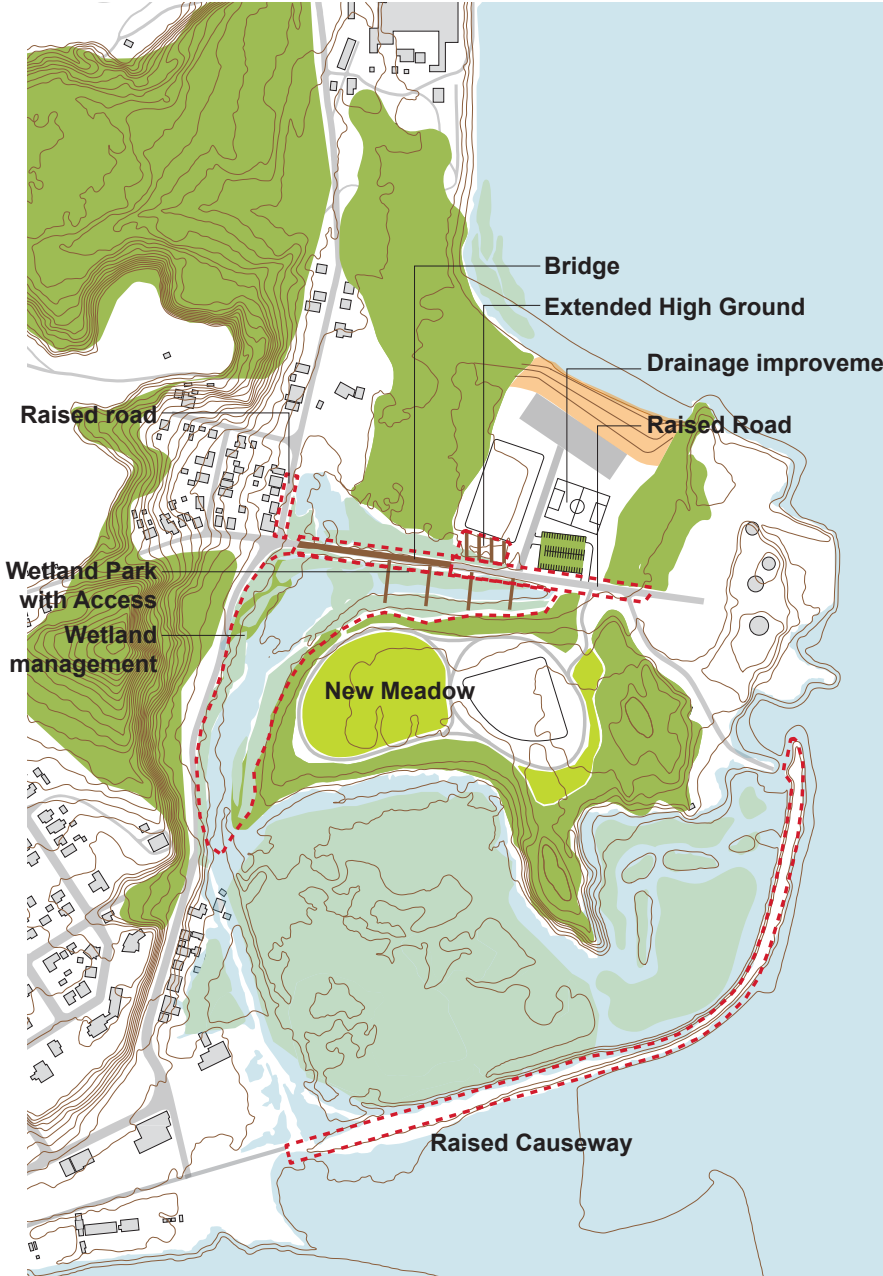
By 2080, Kingston Point will become an island during high tide, representing significant long-term changes to land use and cover, along with likely changes to the physical land forms from scour and sedimentation. The mitigation goal is to preserve access and amenities by protecting and armoring higher ground, using bio-engineering at the water's edge to limit erosion and encroachment, and assuring that appropriate plant species of all strata are present to accommodate wetter conditions.



2020 CLIMATE ADAPTIVE OPPORTUNITIES



2050 CLIMATE ADAPTIVE OPPORTUNITIES
@ SEA LEVEL RISE +18"



2080 CLIMATE ADAPTIVE OPPORTUNITIES
@ SEA LEVEL RISE +48"



SCENARIO 3_ PENINSULA (MAXIMUM INTERVENTION)

SEA LEVEL RISE 2080

In this scheme, we test a maximum intervention scenario, where most of Kingston Point may be preserved with a more involved ground extension and lifting strategy.

In addition to measures in the moderate intervention scenario, Delaware Avenue may be raised, reinforced, and fully embanked. Ground elevations adjacent to Delaware Avenue and the beach would be raised to prevent inundation. The beach and causeway would be further reinforced to prevent erosion.

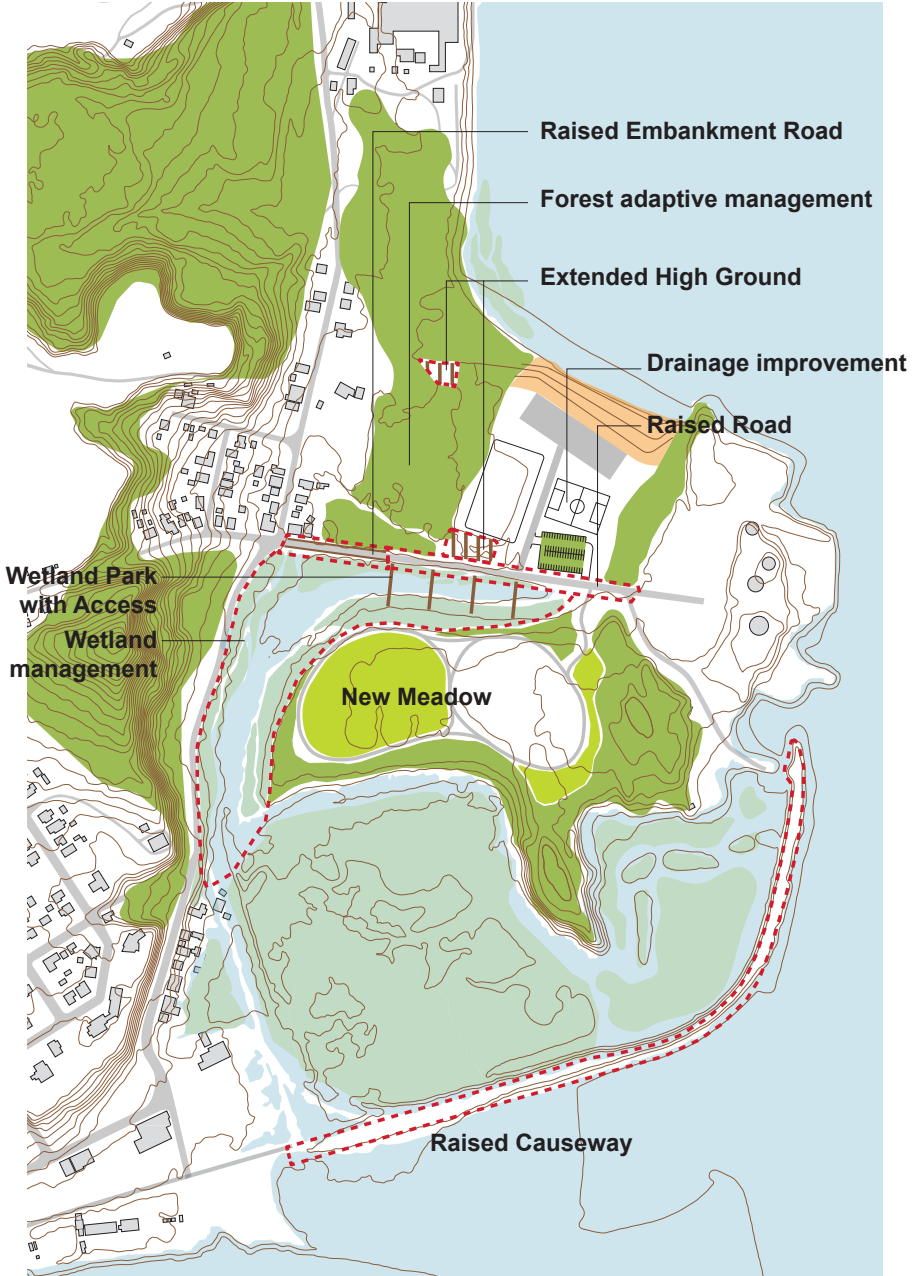
As with Scenario 2, Kingston Point will experience significant long-term changes to land use and cover, along with likely changes to the physical land forms from scour and sedimentation. Introducing fill to raise and protect inland areas will preserve access and connections to the mainland. Bio-engineering at the water’s edge will limit erosion and encroachment, and assure that appropriate plant species of all strata are present to accommodate wetter conditions. Potential for damage during peak events will be mitigated by protective barriers. Through building upon existing high grounds, this scheme best preserves Kingston Point as a peninsula.



2020 CLIMATE ADAPTIVE OPPORTUNITIES



2050 CLIMATE ADAPTIVE OPPORTUNITIES
@ SEA LEVEL RISE +18"



2080 CLIMATE ADAPTIVE OPPORTUNITIES
@ SEA LEVEL RISE +48"



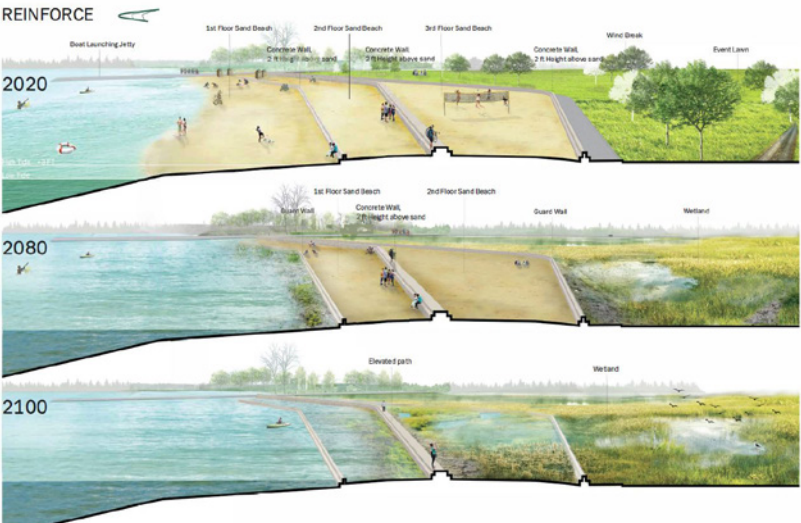
CLIMATE ADAPTIVE DESIGN PROJECT OPPORTUNITIES

Based on a review of existing site conditions and analysis, as well as an evaluation of various intervention strategies of Kingston Point at different levels, the most meaningful and valuable measures of adaptation may be implemented in the following areas:

- Kingston Point Beach: Kingston Point Beach is an important and extremely popular recreational destination for Kingston and regional residents. Potential ecological education programs and additional habitat enhancements may be intertwined with the provision of reinforcement with mitigation measures and ecosystem services.
- Wetland Habitat: Without intervention, much of the wetland habitat at Kingston Point will be adversely impacted due to sea level rise. Through adaptive strategies, wetland habitat can be added this decade that can migrate upward over the next 50 years.
- The Causeway: Reinforcing the causeway would help maintain the large existing wetland to the south, contributing to the overall ecological health of Kingston Point while providing access to downtown through the trolley line and rail trail. Simple bioengineering measures such as live stakes and brush mattresses can be added along the causeway in addition to the existing riprap to naturalize and further stabilize the linear waterfront walkway to help ensure the preservation of the wetland.



BEACH REINFORCEMENT EXAMPLES



Terraced sand beach



Sand beach with new wetland



Terraced wetland park



Waterfront pathway



WETLAND RESTORATION AND MIGRATION EXAMPLES



Freshwater wetland preserve



Stormwater retention park



Wetland interpretive trail



Biodiversity garden



CAUSEWAY REINFORCEMENT EXAMPLES



Ecological reinforcement



Structural reinforcement



Reinforcement & recreation



Aquatic edge habitat

PROJECT OPPORTUNITIES AND PRIORITY MATRIX

The three identified project opportunities, namely, the beach reinforcement, wetland management, and causeway reinforcement were evaluated based on their merits to enhance sea level rise adaptation, ecological opportunities, and programming opportunities.

Sea Level Rise Adaptation: Reinforcement of the beach area can help maintain the beach through 2080 while protecting the surrounding program areas. Resilient strategies for wetland management can help preserve the freshwater wetland in Kingston Point.

Ecological Opportunities: Bioengineering strategies can be utilized at the beach area to enhance the ecological connection. Wetland management strategies can help maintain ecosystem diversity on site.

Programming Opportunities: Various program spaces can be created through the beach reinforcement structure. Eco-education programs can be offered at the wetland area.

A comparison of the three project opportunities through an organized priority matrix (shown on the following page), reveals that a beach reinforcement project can provide the highest levels of benefit in the three targeted enhancement areas.

	BEACH REINFORCEMENT	WETLAND MANAGEMENT	CAUSEWAY REINFORCEMENT
SEA LEVEL RISE ADAPTATION	• Terraced beach designed to adapt to the changing sea level in the future • Reinforce and maintain the sand beach through 2080 • Mitigation strategy for sea level rise • Protection of program areas	• Resilient strategy for sea level rise • Adaptive strategy for wetland migration	• Reinforce the causeway • Mitigation strategy for sea level rise • Protection of wetland habitat
ECOLOGICAL OPPORTUNITIES	• Bioengineering strategies such as live stakes and brush mattress • Ecological reinforcement strategy such as eco-gabions for higher energy zones • Forest/beach habitat restoration and management • Freshwater tidal wetland	• Freshwater tidal wetland preservation • Maintain ecosystem diversity • Wetland buffer corridor	• Bioengineering strategies such as live stakes and brush mattress • Aquatic habitat creation with ecological reinforcement
PROGRAMMING OPPORTUNITIES	• Recreational beach activities • Interpretive ecological education activities • Terraced wetland park • Waterfront pathway	• Freshwater tidal wetland preservation • Stormwater retention park • Biodiversity garden • Eco-education	• Waterfront walkway • Multi-use trail connection

Preliminary Design Focus: Kingston Point Beach
image credit: www.dailyfreeman.com



Following an evaluation of the various climate adaptive intervention scenarios based on projected sea level rise for Kingston Point and a project opportunities and priorities matrix shown in Chapter 2, it was determined that Kingston Point Beach would be the most optimal site to develop a preliminary design for the project. Kingston Point Beach not only presents opportunities to incorporate climate adaptive design measures to protect Kingston Point but also provides a setting to intertwine a variety of programming improvements into the design to enhance the recreational value of Kingston Point.

After a more detailed topographical study of the beach area and developing an inventory of potential intervention strategies that focus on ecological / habitat management, bioengineering, and structural reinforcements, three design alternatives for Kingston Point Beach were developed and shared with the public and key stakeholders via an online webinar. Feedback on the three alternatives were collected and compiled to identity the preferred alternative for final preliminary design development. A summary and synthesis of the feedback is provided at the end of the chapter.

CHAPTER 3: PRELIMINARY DESIGN ALTERNATIVES

3.1 Preliminary Design Focus	54
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PRELIMINARY DESIGN FOCUS: KINGSTON POINT BEACH

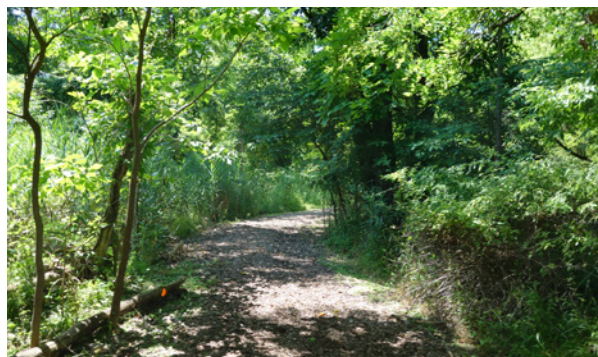
EXISTING CONDITIONS

Kingston’s waterfront will be at greater risk to flooding in the coming decades due to a combination of sea level rise and the increased probability of storm surge from hurricanes and tropical storms. In the long-term, waterfront and shoreline structures and habitats will be damaged as a result of climate change if new adaptations measures are not implemented. Proper planning and design of Kingston’s waterfront is critical to addressing these new challenges.

The existing conditions include a heavily utilized beach, a brick debris shoreline to the west of the beach with materials generated from the historic Hutton brickyard, and rock outcrops to the east of the beach. Upland forests are present on either side of the beach. Kingston Point Beach is a popular public beach attracting local Kingston residents as well as people from the near region. The core uses of the area involve swimming, boat access, beach volleyball, lounging, and parking.

Existing shoreline conditions are somewhat degraded due to human activities, bank erosion, dumping, loss of native plants and encroachment of invasive plant species. Sandy beaches are kept stable when a host of conditions align; such as nearby parent material, river velocity, bathymetry and bank stability. As these conditions become unstable, either due to changes in habitat, extreme weather or climate change, beach geometries also change, generally leading to loss of sandy material or deposition of fines.

To sustain the Kingston Point Beach as a popular amenity, the team proposes to reinforce conditions by installing a set of protective barriers which will hold back material to prevent loss of sand. As river levels rise over time, these structures will continue to stabilize the near-shore areas and promote stability of the adjacent upland. It may still be necessary, however, to nourish the beach with additional sand in the future.



EXISTING CONDITIONS



SKETCH MAP SHOWING ULSTER CO. LIDAR (1-FT CONTOURS)		
CITY OF KINGSTON, ULSTER CO., NEW YORK		
BRINNIER & LARIOS, P.C. ENGINEERS & LAND SURVEYORS		
67 MADEN LANE KINGSTON, N.Y.		
Phone: 845-338-7622 Fax: 845-338-7660		
SCALE	DATE JUNE 2019 DWG HME CHK DML	SHEET NO. 1 OF 1

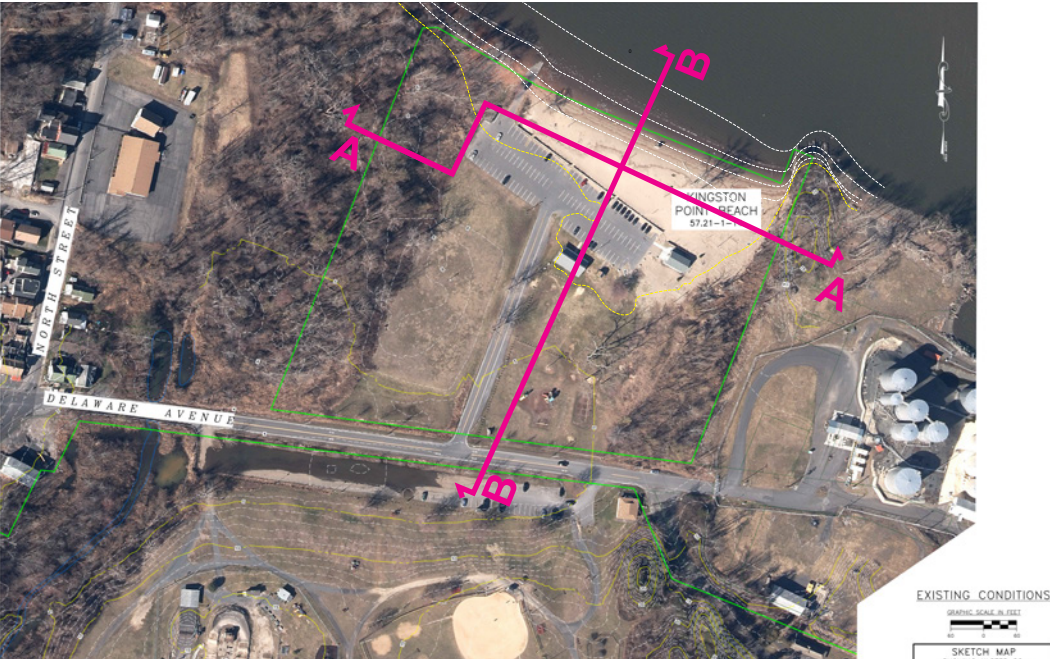
KINGSTON POINT BEACH: TOPOGRAPHICAL CONTEXT

SECTIONS

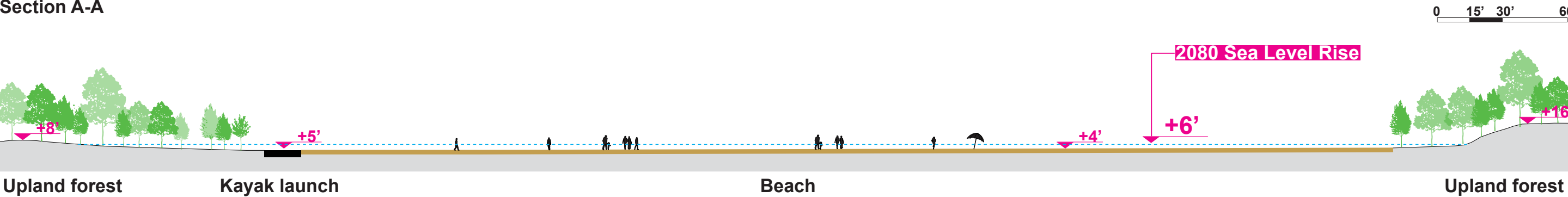
Section A-A illustrates how Kingston Point Beach is flanked by two elevated upland forest areas on either side. By potentially connecting these two higher grounds on either sides of the beach with an elevated mechanism, the elevated water level projected for 2080 may be mitigated and prevent water for inundating the interior of Kingston Point through the beach.

Section B-B illustrates the very flat profile of the existing parking lot and the interior of Kingston Point in relation to the beach, showing how the interior can easily become inundated by 2080 if no interventive measures are taken.

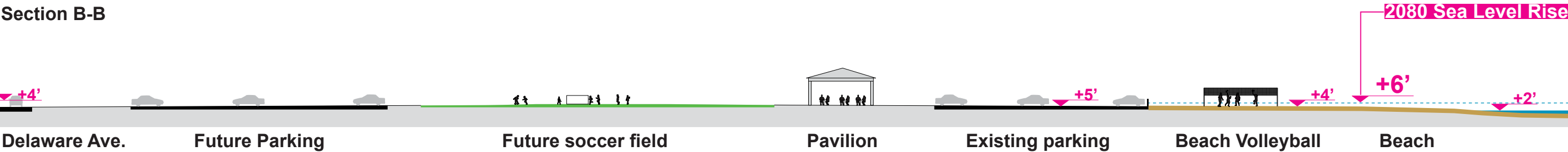
Existing spot elevations are indicated on the sections along with the projected sea level rise elevation by 2080.



Section A-A

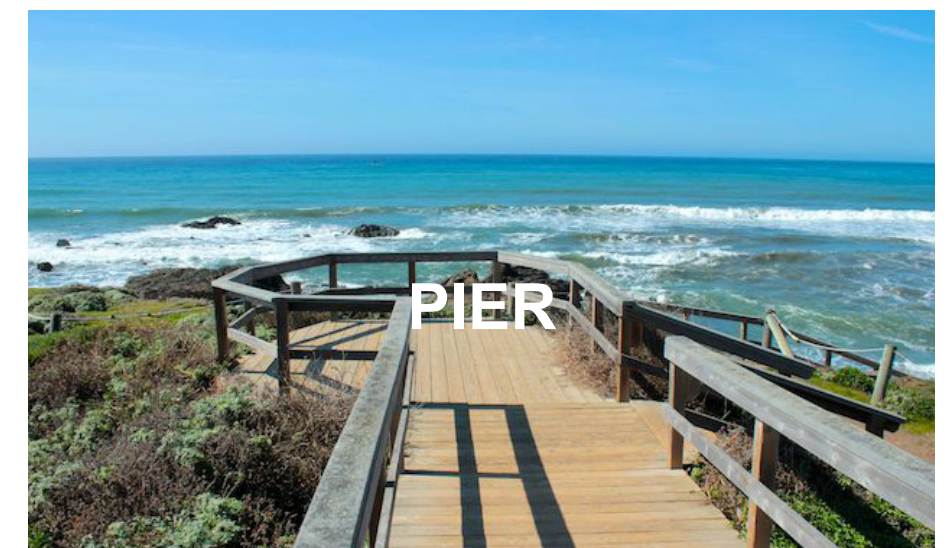


Section B-B



KINGSTON POINT BEACH PROGRAMMING FRAMEWORK

Kingston Point Beach is a highly valued recreational and leisure asset for Kingston residents of all ages and backgrounds. The programming framework development will assume maintaining existing features, such as the boat launch, and the ability to host existing popular recreational activities, such as beach volleyball. The preliminary design options explore a variety of ways to enhance the programming potential of the beach, such as the addition of a beach pavilion, pier, or other focal gathering areas.

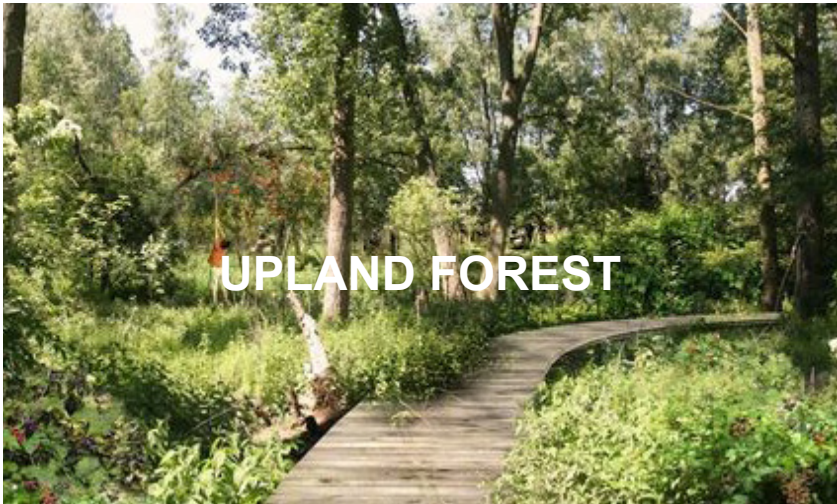


KINGSTON POINT BEACH CLIMATE ADAPTIVE DESIGN TOOLKIT

HABITAT RESTORATION / ECOLOGICAL MANAGEMENT

The habitat restoration / ecological management toolkit relies on developing naturalized approaches that promote landscape resilience and other softer environmental treatment strategies. This strategy can help renew and restore degraded, damaged ecosystems and habitats in the Kingston waterfront area which have been affected by post-industrial development and activities in the past decades.

Ecosystems like meadows and wetlands can function as natural sponges that trap and slowly release surface water, which can provide effective measures for adaptive flood mitigation while bolstering habitat value.

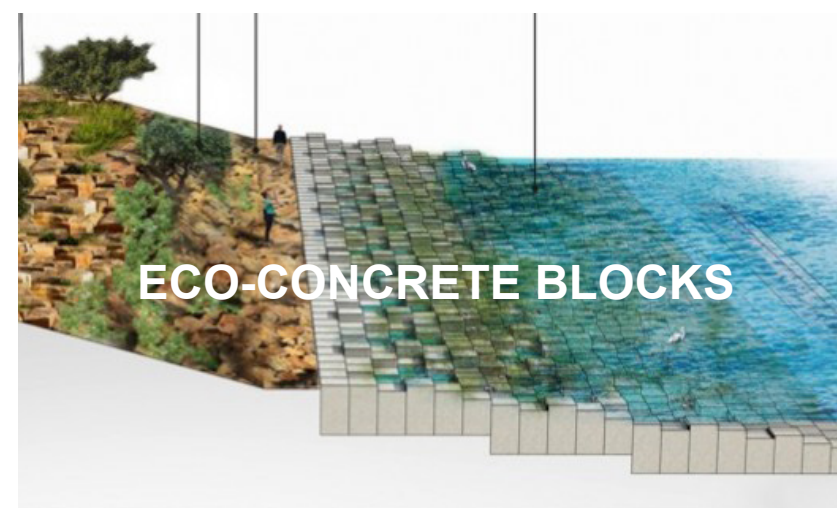


KINGSTON POINT BEACH CLIMATE ADAPTIVE DESIGN TOOLKIT

BIOENGINEERING

Various bioengineering techniques, as well as living shorelines, offer environmentally friendly and cost effective solutions to slope degradation and soil erosion. They are also effective in absorbing adverse wave impacts along the waterfront edge.

With the appropriate engineering approach and design development, a combination of harder physical and softer vegetative measures like berms, eco-concrete blocks, and living breakwaters can work in unison to offer both immediate and long-term protection for the waterfront.

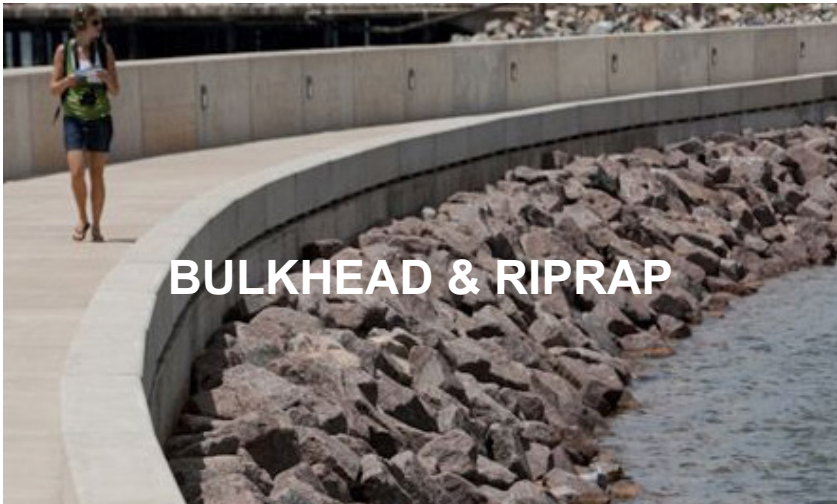


KINGSTON POINT BEACH CLIMATE ADAPTIVE DESIGN TOOLKIT

STRUCTURAL REINFORCEMENT

Traditional structural reinforcement measures can also be an effective supplement to softer naturalized engineering strategies. While not necessarily the preferred approach for the project, selective interventions together with bio-engineering approaches can provide critical protection for especially vulnerable areas.

Hard-engineered structural reinforcement such as bulkheads, rip rap, and bouldered steps can provide long-term, stable, and durable protection for the shoreline and can often be combined easily with other practical functional elements such as waterfront promenades and walkways.



KEY DESIGN ELEMENTS

As a broad conceptual design approach, there are three core landscape elements which may be tied together to create a functional climate adaptive framework for Kingston Point Beach - the beach on the lower ground, hills, berms, and other elevated elements on the higher grounds, and habitat elements which can serve to make connections between the two.

Various combinations of these major landscape elements are explored in the preliminary design alternatives studies to help evaluate and develop a final preliminary design.



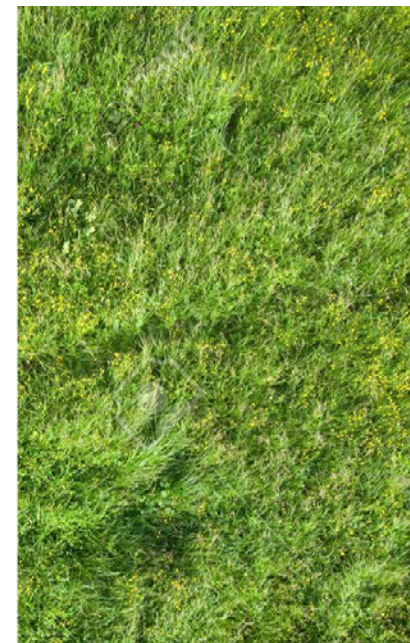
Beach

+

Habitat

+

Hill & Berm



DESIGN ALT. 1: LANDFORM HILL & BERM

Alternative 1 is based on a simple landform hill combined with a lateral berm along the border of the beach and parking lot to connect the two high grounds on either sides of the beach. The raised hill and berm combine to serve as the primary protection measure that will prevent the inundation of the parking lot and inland areas due to sea level rise.

The landform hill is connected to the existing upland forest to the east and provides a natural recreational and ecological platform for new activity areas, a picnic meadow, an upland woodlands, and a pier extending into the river. A generous raised “beach” promenade with seating runs along the top of the berm and connects to the hill allowing visitors back and forth. The height of the vegetated berm is about 4’ and the visibility of the beach from the parking lot is maintained. There will be habitat enhancements at either ends of the beach, a wetland cove to the east and a living shoreline to the west, that connect to larger adjacent habitat ecosystems.

The landform hill will provide new ways to experience the beach environment with the introduction of a picnic meadow and woodland. The activity decks and the pier expand the programming and activity range of beachgoers. The overall beach configuration large remains the same as it is today.

The boat launch access will need to be sloped and raised in order to cross the raised promenade.

With this alternative:

By 2050, sea level rise will start claiming part of the beach area.

By 2080, most of the beach will be submerged at high tide.



PLAN

DESIGN ALT. 1: LANDFORM HILL & BERM



AERIAL VIEW (PRESENT DAY)

DESIGN ALT. 1: LANDFORM HILL & BERM



VIEW FROM LANDFORM HILL



VIEW FROM BERM



VIEW FROM BERM



VIEW FROM PARKING LOT

DESIGN ALT. 2: LINEAR TERRACES

Alternative 2 relies on a beach terracing approach to provide protection and adaptive measures. The beach is divided into several terrace levels by constructed edges at seat wall heights. The terraces emerge narrowly from the western upland area as planted zones and expand out towards the east to provide several different beach levels and are sized generously enough to accommodate beach volleyball courts. The top level terrace serves as a promenade and connects to the upland area to the east, ultimately providing a sea level rise barrier at the appropriate elevation. Access to the beach from the parking lot is provided by a combination of gentle 5% accessible ramps and direct stairs that connect to the promenade and run down the terraces. Views to the beach are maintained over the promenade, which is raised 4’ from the parking lot. Similar to Alternative 1, a wetland cove and a living shoreline on either ends of the beach connect to the larger ecosystems of Kingston Point.

Paired with the constructed hard edges, the planted terraces can absorb more inundation and stabilize the ground more effectively when interacting with floods. The edges of the terraces can function as natural seating for people to sit on. The narrower planted terracing on the western side can function similar to a grandstand for people to watch a beach volleyball game from different height levels.

The boat launch access will need to be sloped and raised in order to cross the raised promenade.

With this alternative, rising sea levels will interact differently with the beach since the terraces gradually step up over several levels:

By 2050, the lowest beach level (+4’) would submerge but the raised, terraced beaches will remain protected (+5.6’ and above).

By 2080, the first raised beach terrace (+5.6’) would submerge at high tide, but the top level beach terrace and promenade (+7.3’ and above) are protected.



PLAN

DESIGN ALT. 2: LINEAR TERRACES



AERIAL VIEW (PRESENT DAY)

DESIGN ALT. 2: LINEAR TERRACES



VIEW FROM UPPER TERRACE



VIEW FROM BEACH



VIEW FROM UPPER TERRACE PROMENADE



VIEW FROM PARKING LOT

DESIGN ALT. 3: STACKED TERRACES

Alternative 3 is also a terracing approach but is a more articulated version of Alternative 2. As opposed to the terraces being linear, the terraces in this alternative are stacked in a way to create more distinct zones, allowing more opportunities for diversified programming and activity configurations. Sea level rise protection is similar to Alternative 2, where an elevated promenade runs east-west to connect the two upland areas. Access to the beach from the parking lot is provided by a combination of gentle 5% accessible ramps and direct stairs that connect to the promenade and run down the terraces. Views to the beach are maintained over the promenade, which is raised 4’ from the parking lot.

The terraces come in various geometric forms, sizes, and heights and can provide a range of places: an Activity Terrace, a Garden Terrace, a Picnic Terrace, a Lookout Terrace, a Grandstand, and two different beach terraces. A bouldered rock outcrop terrace, designed to be accessed, replaces the wetland cove to the east with this scheme. This constructed landscape serves as a natural extension of the rock outcrop found along the eastern shoreline. A living shoreline remains to the west to connect the beach to the large habitat ecosystem of Kingston Point.

The boat launch access will need to be sloped and raised in order to cross the raised promenade.

With this alternative:

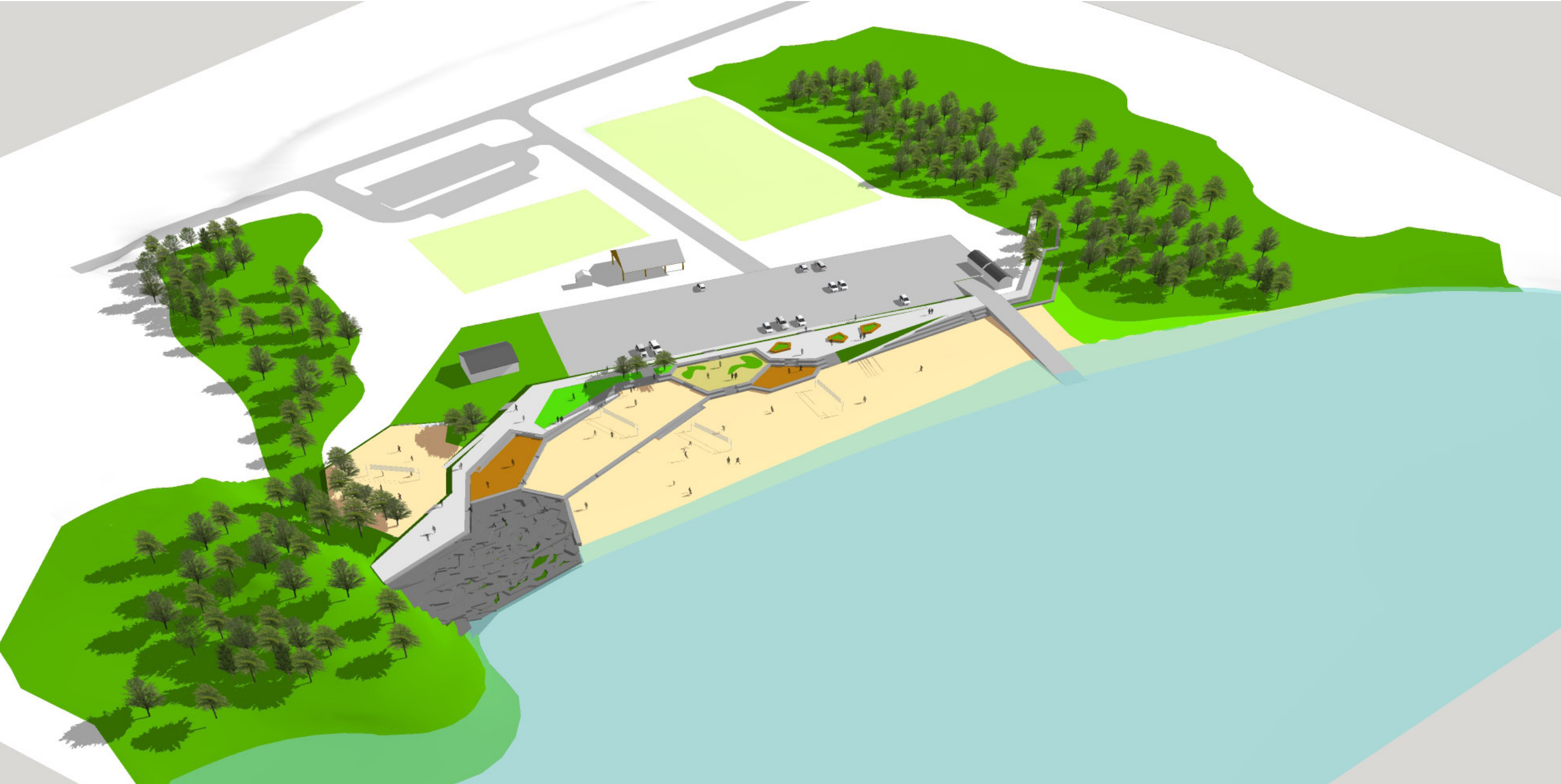
By 2050, the lowest beach level (+4’) would submerge but the raised terraced program areas will remain protected (+5.6’ and above). The articulation of the terrace edges will define a new shoreline.

By 2080, the lower beach and beach terrace will submerge at high tide. The programs on the upper terraces (+7.3’ and above) will remain active while providing a barrier.



PLAN

DESIGN ALT. 3: STACKED TERRACES



AERIAL VIEW (PRESENT DAY)

DESIGN ALT. 3: STACKED TERRACES



VIEW TOWARD ACTIVITY TERRACE & BEACH



VIEW FROM BEACH



VIEW FROM LOOKOUT TERRACE



VIEW FROM PARKING LOT

DESIGN ALTERNATIVES COMPARISON

SUMMARY

As a snapshot comparison, each design has its own merits and disadvantages:

Alternative 1 Landform Hill & Berm relies primarily on earthwork engineering and planting enhancements and is the simplest effective approach presented to provide an adaptive measure for sea level rise. It would likely be the most cost friendly but does afford a varied approach to programming and most of the beach is vulnerable at once.

Alternative 2 Linear Terraces relies on a good combination of hard engineering, bioengineering, and habitat creation. The terraces provide a varied approach to sea level rise protection where portions of the beach can clearly remain into the future since they are separated by seat walls. Its linear geometry allows generous but simpler programming spaces.

Alternative 3 Stacked Terraces provides the most diversified program opportunities with exciting and varied experiences and spaces, significantly expanding the potential recreational value of the beach. The terraces also provide a varied approach to sea level rise protection. The more complicated terracing and configuration may add a premium to the construction budget.

PUBLIC FEEDBACK ON ALTERNATIVES

A public presentation on the alternative concepts was made to interested stakeholders as well as the general public along with a simple survey. A summary of the survey follows in the next section. The survey revealed that **Alternative 2 Linear Terraces** was the most preferred option by those who participated in the survey.

DESIGN ALTERNATIVES

Alt 1 Landform Hill & Berm



Alt 2 Linear Terraces



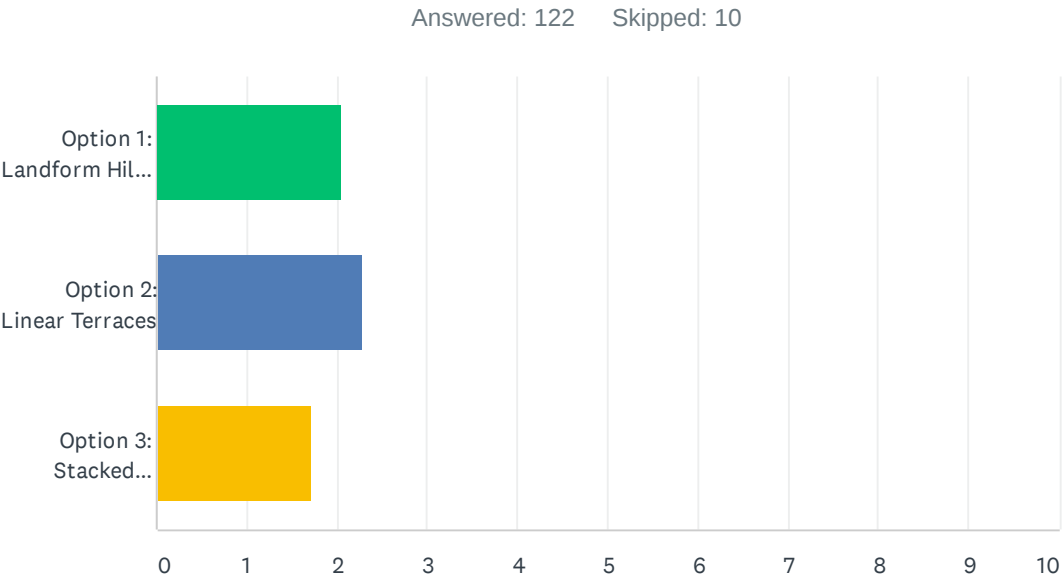
Alt 3 Stacked Terraces



KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY SUMMARY

Q1 Kingston Point Beach Design Options

Q1 Please rank the following designs for Kingston Point Beach in order of preference, 1 being your most preferred option.



- 1. Linear Terraces
- 2. Landform Hill & Berm
- 3. Stacked Terraces

	1	2	3	TOTAL	SCORE
 Option 1: Landform Hill & Berm	35.34% 41	33.62% 39	31.03% 36	116	2.04
 Option 2: Linear Terraces	49.17% 59	29.17% 35	21.67% 26	120	2.27
 Option 3: Stacked Terraces	17.95% 21	35.04% 41	47.01% 55	117	1.71

Design Alt. 1: Landform Hill & Berm



Design Alt. 2: Linear Terraces



Design Alt. 3: Stacked Terraces



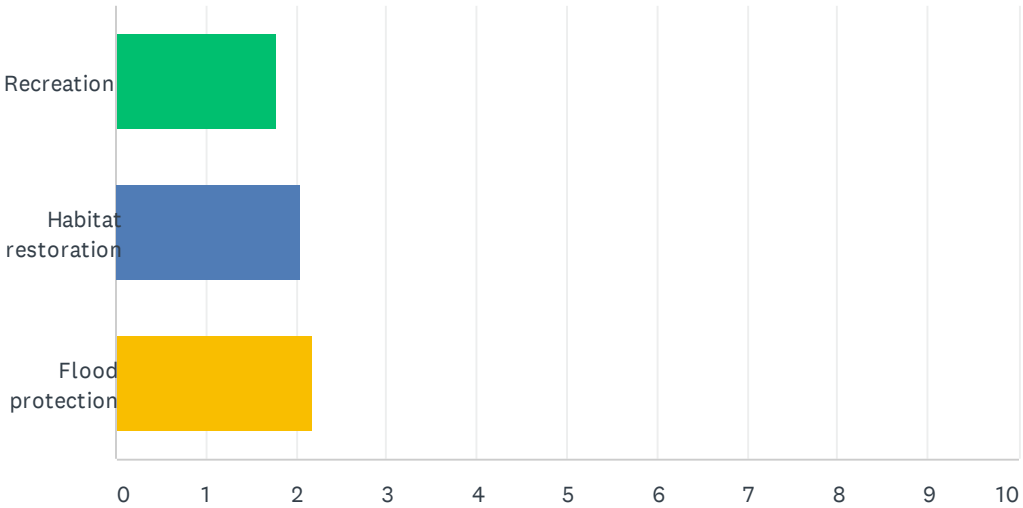
KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY SUMMARY

Q2 Kingston Point Beach Order of Importance

Q2 Please rank the following in order of importance, 1 being the most important.

Answered: 126 Skipped: 6

- 1. Flood Protection
- 2. Habitat Restoration
- 3. Recreation



	1	2	3	TOTAL	SCORE
Recreation	28.23% 35	21.77% 27	50.00% 62	124	1.78
Habitat restoration	36.80% 46	32.80% 41	30.40% 38	125	2.06
Flood protection	36.59% 45	44.72% 55	18.70% 23	123	2.18

Design Alt. 1: Landform Hill & Berm



Design Alt. 2: Linear Terraces



Design Alt. 3: Stacked Terraces



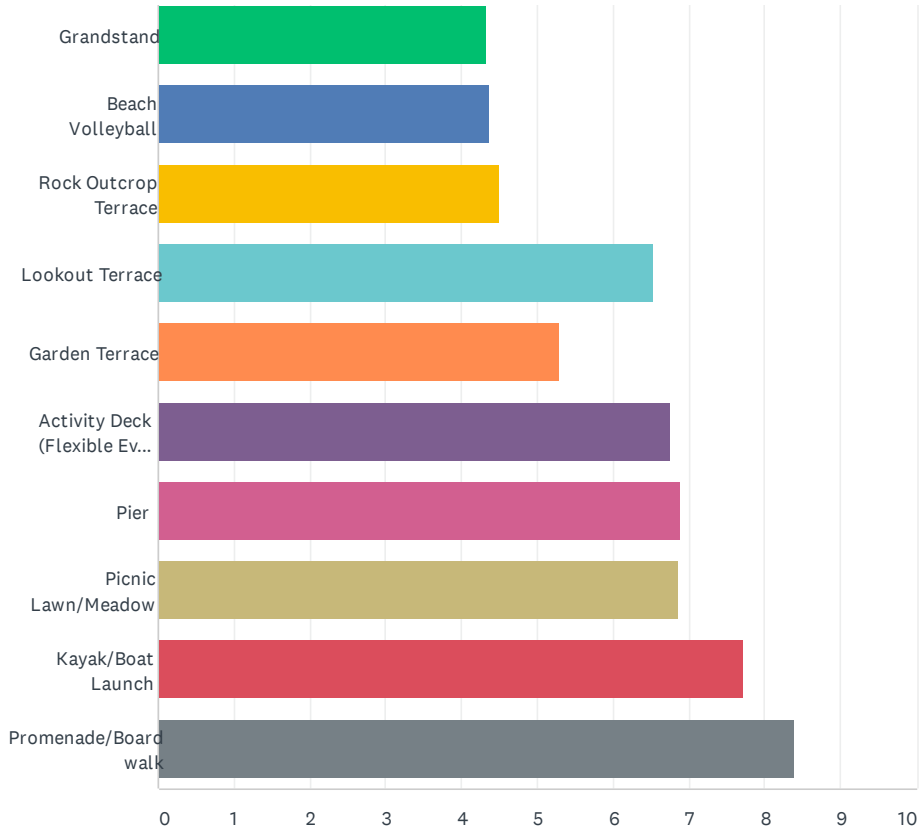
KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY SUMMARY

Q3 Kingston Point Beach Recreational Features

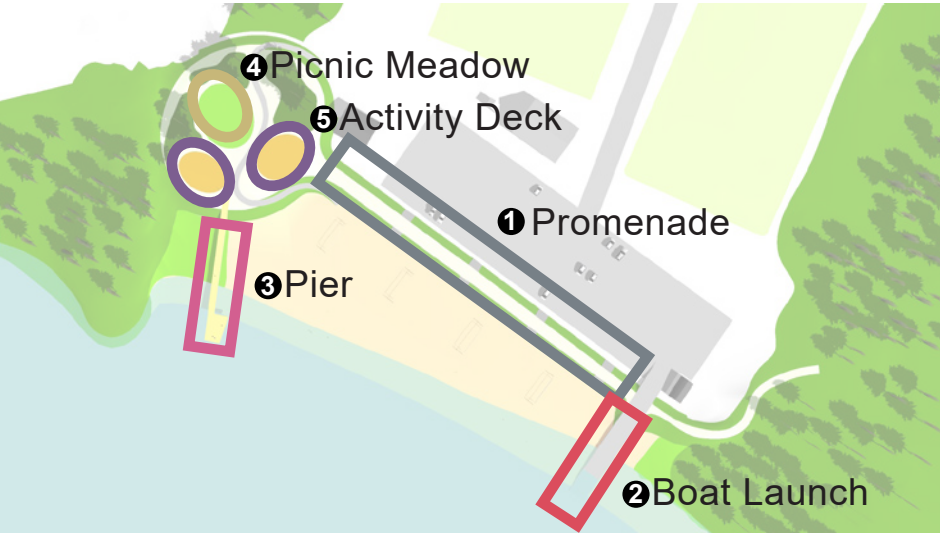
Q3 Please select your top five recreational features (in addition to sunbathing and swimming) in order of importance, 1 being the most important feature.

Answered: 131 Skipped: 1

- 1. Promenade/ Board walk
- 2. Kayak/ Boat launch
- 3. Pier
- 4. Picnic Lawn/ Meadow
- 5. Activity Deck (Flexible Event Space)
- 6. Lookout Terrace
- 7. Garden Terrace
- 8. Rock Outcrop Terrace
- 9. Beach Volleyball
- 10. Grandstand



Design Alt. 1: Landform Hill & Berm



Design Alt. 2: Linear Terraces



Design Alt. 3: Stacked Terraces



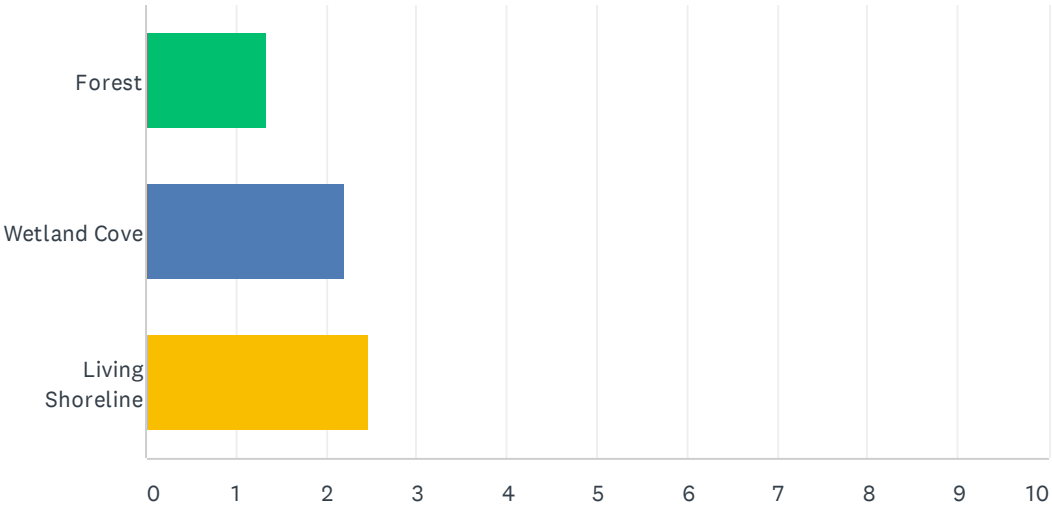
KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY SUMMARY

Q4 Kingston Point Beach Natural Features

Q4 Please rank the following natural/ecological features in order of importance, 1 being most important.

- 1. Living Shoreline
- 2. Wetland Cove
- 3. Forest

Answered: 127 Skipped: 5



	1	2	3	TOTAL	SCORE
Forest	9 7.20%	24 19.20%	92 73.60%	125	1.34
Wetland Cove	44 35.48%	61 49.19%	19 15.32%	124	2.20
Living Shoreline	73 57.48%	40 31.50%	14 11.02%	127	2.46

Design Alt. 1: Landform Hill & Berm



Design Alt. 2: Linear Terraces



Design Alt. 3: Stacked Terraces



KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY SUMMARY

Kingston Point Beach Features

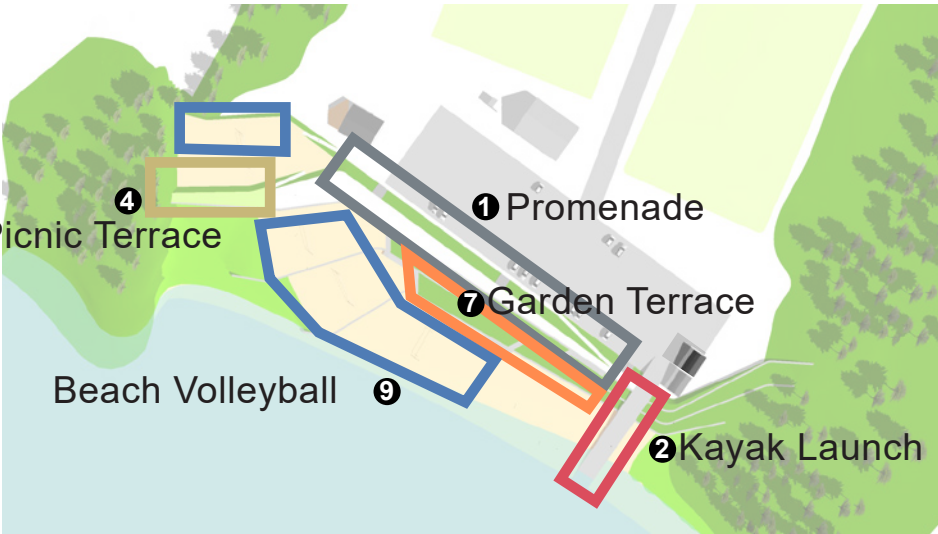
Design Alt. 1: Landform Hill & Berm



Existing Feature:
Multi-purpose pavilion
Changing facility
Kayak center
Parking

Proposed Feature:
Berm & promenade
Upland woodland
Picnic meadow
Activity deck
Beach
Pier
Kayak launch
Wetland cove
Brick beach living shoreline

Design Alt. 2: Linear Terraces



Existing Feature:
Multi-purpose pavilion
Changing facility
Kayak center
Parking

Proposed Feature:
Promenade
Beach terrace
Picnic terrace
Planted terrace
Beach
Kayak launch
Wetland cove
Brick beach living shoreline

Design Alt. 3: Stacked Terraces



Existing Feature:
Multi-purpose pavilion
Changing facility
Kayak center
Parking

Proposed Feature:
Picnic terrace
Activity terrace
Lookout terrace
Beach terrace
Garden terrace
Rock outcrop terrace
Grandstand
Beach
Kayak launch
Brick beach living shoreline

KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY SUMMARY

Q5 Kingston Point Beach Features Feedback

Flood Protection

Resilience to large storm event
Tide monitor

Habitat Restoration

Water chestnut removal
Perennial pollinator plantings
More trees planted on the beach
Nature restoration/reservation

Recreation

Windsurf (3)

Stand up paddle boards
Windsurf rigging area
Rowing boat launch
Non-motored boat launching
Swimming area
Playground (4)
Eco Kids play area
Skate park (2)
Pickleball courts
Amusement facility
Basketball court
Mini golf
Outdoor shuffleboard courts
Futsal court

Fishing dock (2)
Habitat viewing area
Water views from pavilion
Community garden

Amenity

Shaded seating (3)
Picnic table (2)
Way-off station
Concert/bandstand
Interpretive display (2)
Non-light pollution lighting
Seasonal vendors (2)
Restaurant
Outdoor cafe
Restrooms (3)
Sustainable bathrooms
Parking with retained river view (3)
Parking (3)
Boat trailer parking
Emergency call box

Circulation

Handicap access (3)
Site Transportation
Connection to Empire Trail
Fisherman access
Bike Path
Hiking and bike trail connections
Waterside trail

Concerns

Maintenance
Safety concern with terrace

**FUTURE PICNIC TERRACE AND WETLAND COVE
AT KINGSTON POINT BEACH**



The final preliminary design is a development of Design Alternative 2 Linear Terraces, which was determined to be the most preferred design option based on public feedback. It further articulates the terracing concept with additional elevational details in relation to sea level rise projections into 2080. The design is developed into a coherent whole with targeted program areas, such as the wetland cove, a living shoreline, the planted terraces, and a fishing pier. Circulation with accessible routes from the parking lot are determined and initial material concepts are presented to define the major building materials. A wayfinding and signage concept is also included.

In addition to the development of the design, this chapter includes a Project Monitoring Plan, a review of anticipated permitting needs, an overall implementation strategy, and an order-of-magnitude cost estimate for the design. The materials included in the final preliminary design is intended to provide enough details to move the project towards construction documentation and implementation in subsequent phases.

CHAPTER 4: FINAL PRELIMINARY DESIGN

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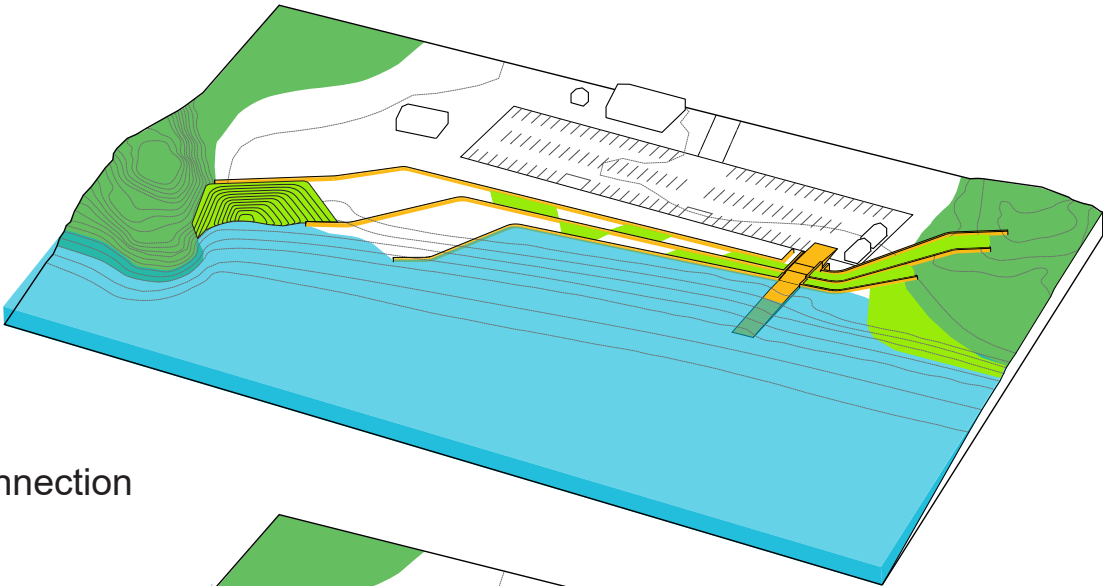
LINEAR TERRACES CONCEPT

CLIMATE ADAPTIVE OPERATIONS

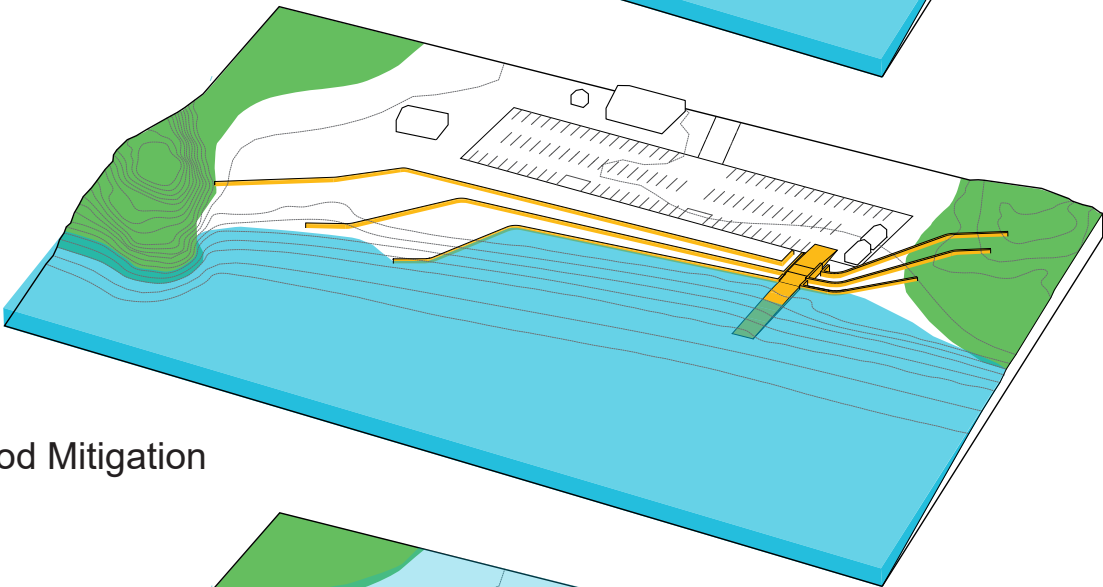
The configuration and layout of the linear terraces is the fundamental driver of the preliminary design concept. The multi-tiered raised terraces connect the two upland areas on either side of the existing beach to provide flood mitigation and protect the interior of Kingston Point against sea level rise. The terraces will be created and held by constructed seat wall height edges.

The terraces can serve to encourage habitat creation and connections. By virtue of connecting the two naturalized upland areas on either side of the beach, it is possible to extend their presence onto the edges of the beach as added amenities and opportunities for environmental stewardship and education.

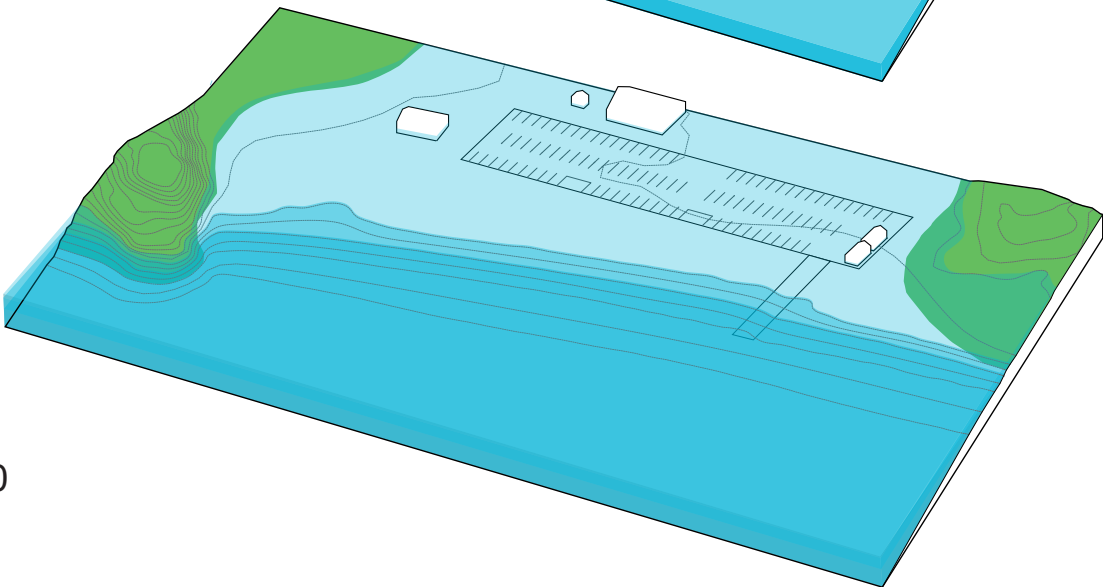
The terraces can also be designed to serve practical functions, such as seating elements along the beach, or to form a larger grandstand to provide platforms for a variety of recreational programs. Their orientation and layout can create larger spaces, which can accommodate beach volleyball courts for example, as well as smaller spaces suitable for planted areas or activity nooks for more intimate activities.



Habitat Creation/Connection



Raised Terraces/Flood Mitigation



Sea Level Rise 2080

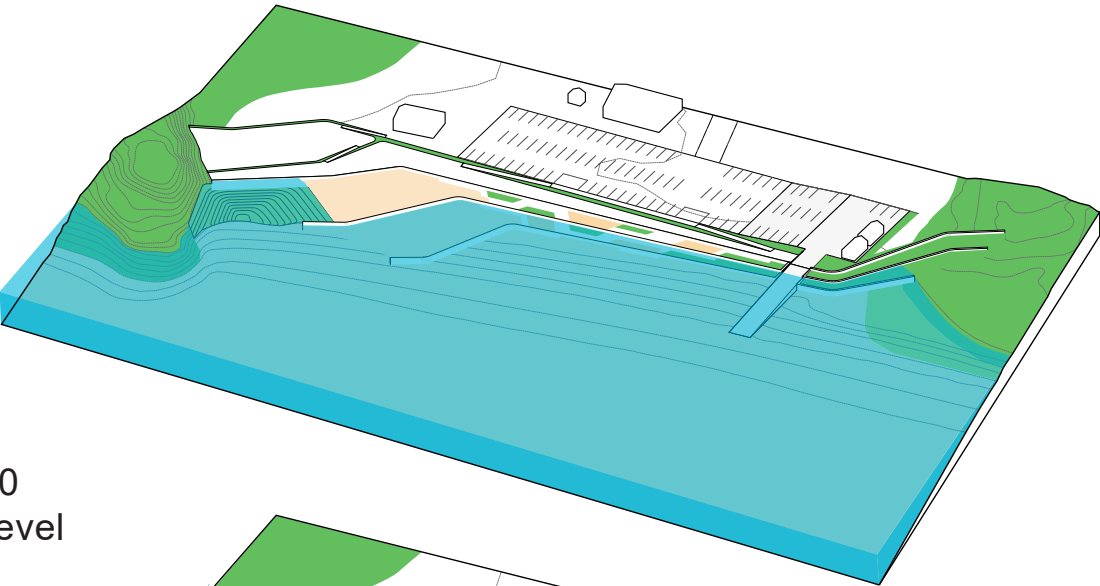
LINEAR TERRACES CONCEPT

SEA LEVEL RISE IMPLICATIONS

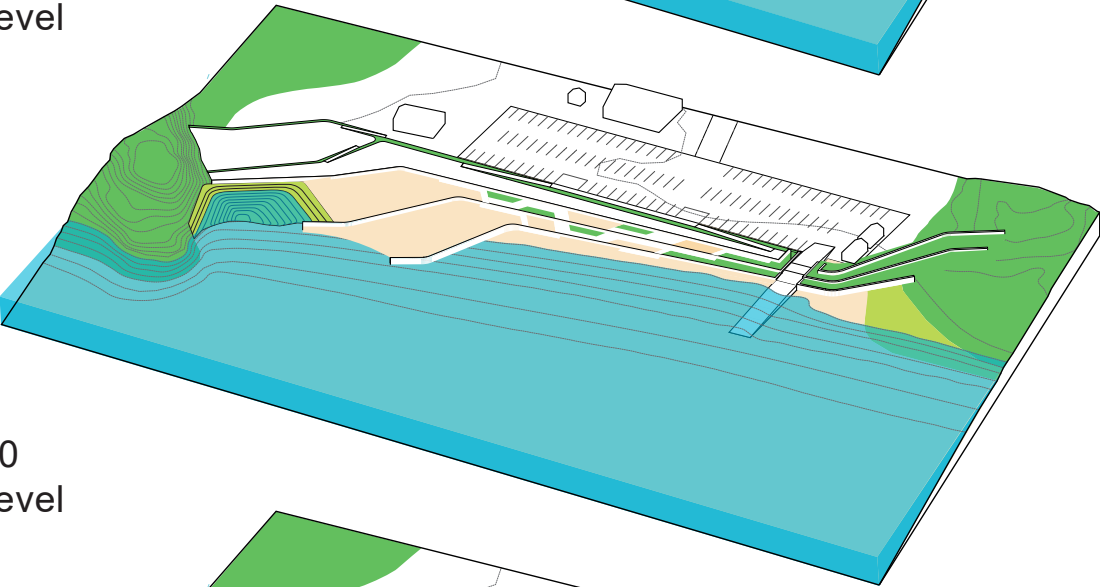
The terraces are set at certain key elevations to work effectively with rising sea levels. At today's MHW (Mean High Water) level, terracing and other design elements of the plan are out of the water.

By 2050, sea level rise will start claiming the lower portion of the beach, while the terraced areas with programming are protected from the rising waters.

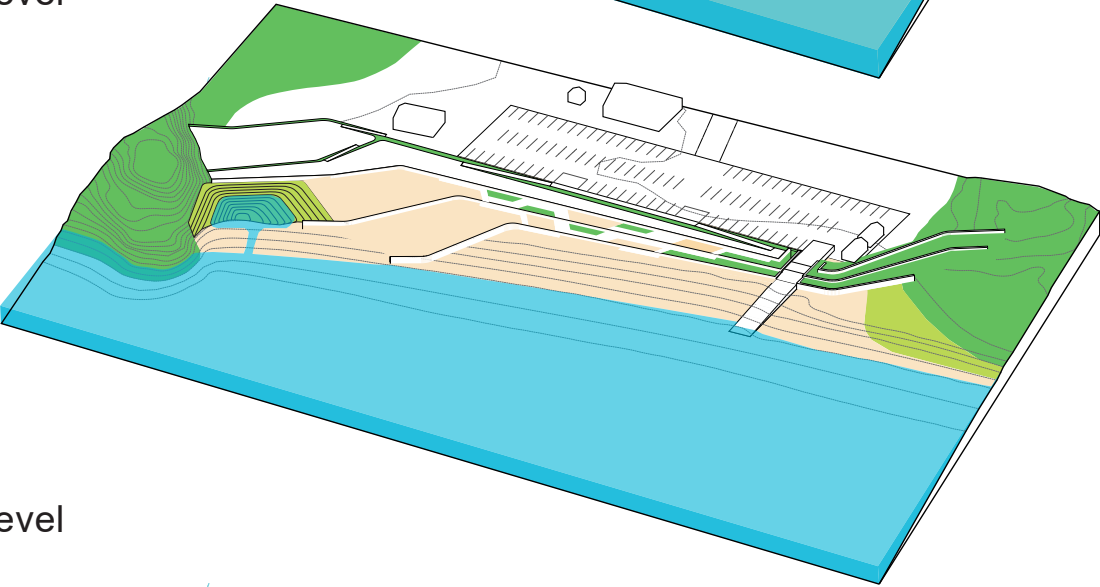
By 2080, the lower tier terrace will become inundated at high tide. The upper tier terrace and the main walkway level at the top will remain protected and can still serve as a major riverfront attraction.



Sea Level Rise 2080
Mean High Water Level

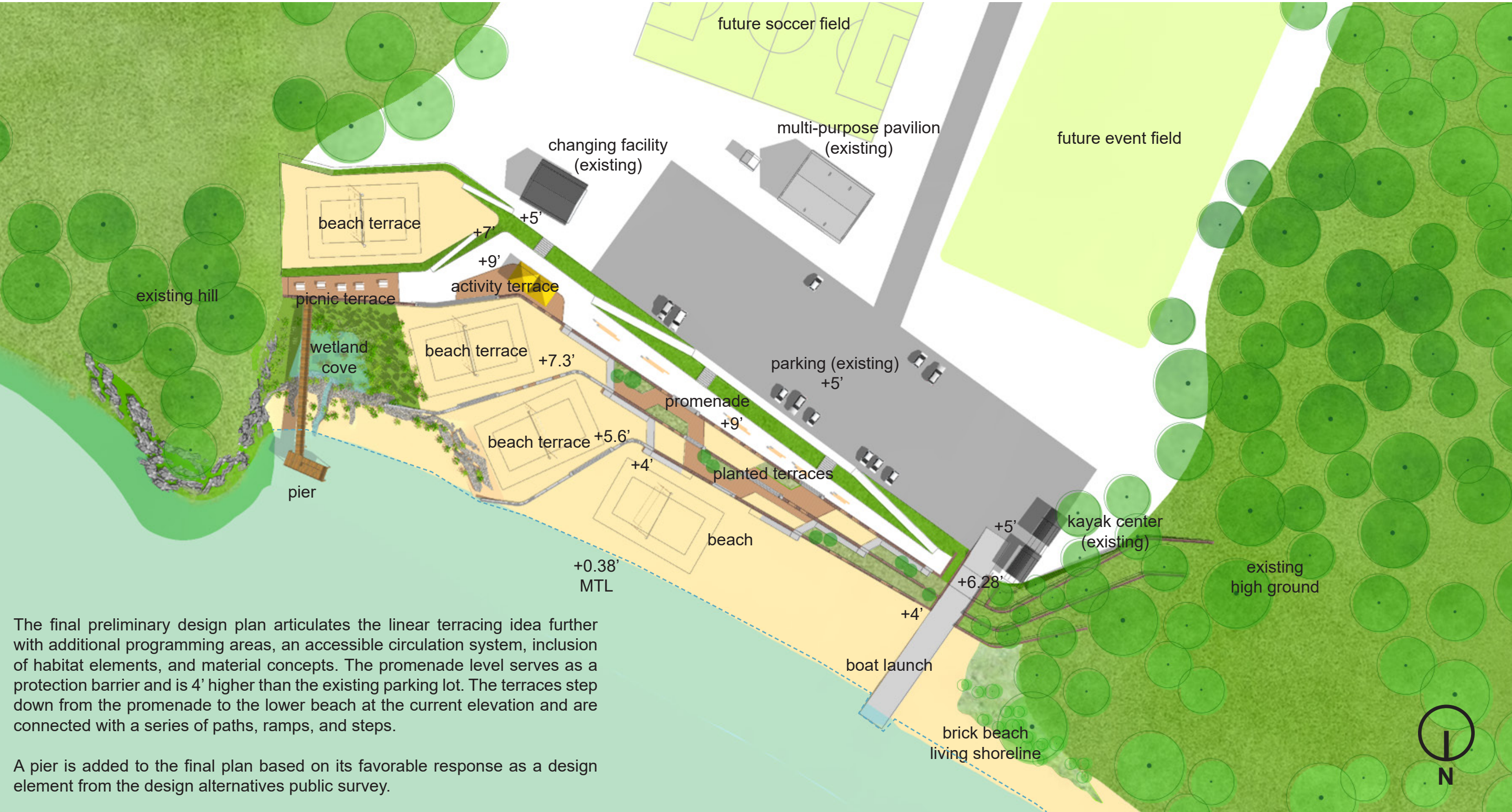


Sea Level Rise 2050
Mean High Water Level



Current Day
Mean High Water Level

FINAL PRELIMINARY DESIGN PLAN_PRESENT DAY @ Mean Tide Level +0.38

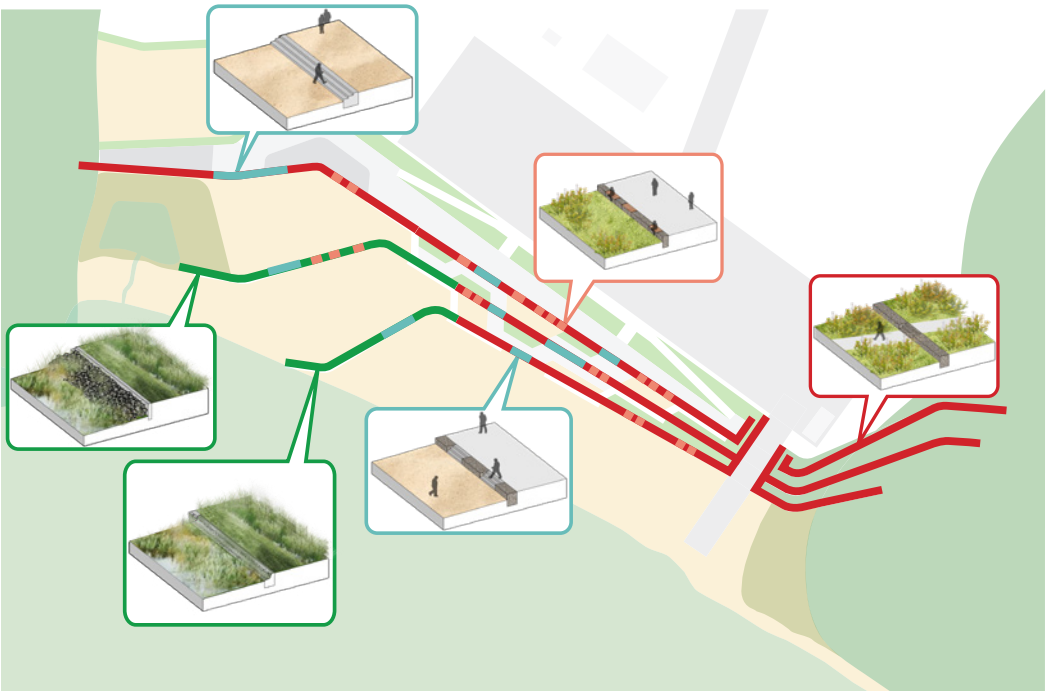


ORGANIZATIONAL DIAGRAMS

Edge Types

The terrace edges are constructed of different materials depending on the their anticipated exposure to water. Steps and seating elements are built in for circulation and functionality.

- Gabion Edge
- Concrete Steps
- Eco-Concrete Block
- Seating



Ecological Habitats

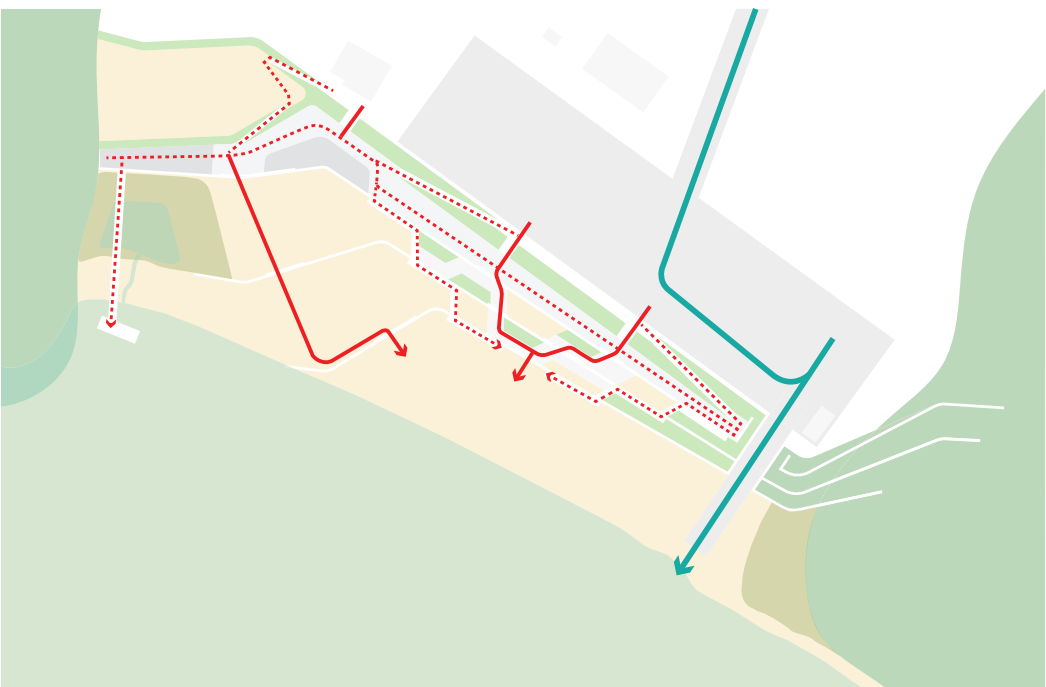
Several new ecological habitats are created to integrate the surrounding ecosystem with the beach. Proposed habitats include a tidal wetland to the east, a living shoreline to the west, and coastal scrub-shrub plantings along the narrower terraces.



Access & Circulation

The circulation system provides ADA ramps for accessing the upper promenade and the lower beach through the terraces. The existing boat launch route is maintained for automobile and service access.

- Automobile Access
- Pedestrian Access
- ADA access



Recreational Programs

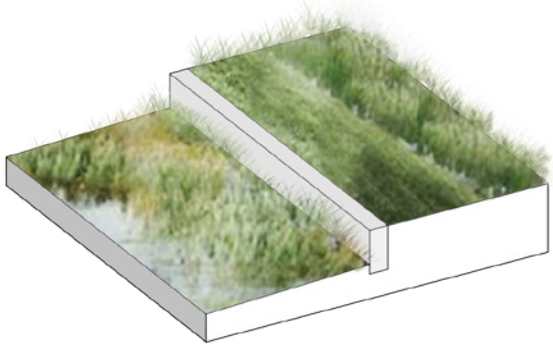
The terraces and the upper promenade level combine to create a cohesive programming organization. The larger “beach” terraces can be utilized to host beach volleyball courts. Smaller activity terraces are inserted along the narrower terraces for more intimate activities.



TERRACE EDGES: ALTERNATIVE TOOLKIT TO STANDARD CONCRETE EDGE

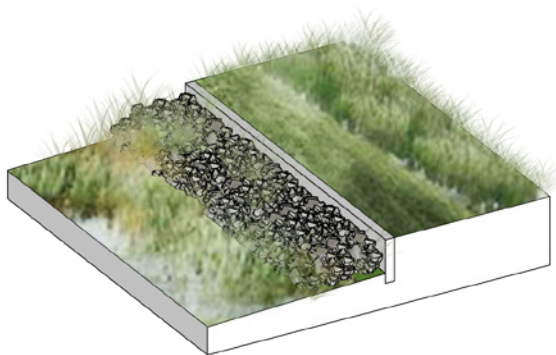
As alternatives to standard concrete edges, a combination of materials will be used to construct the terrace edges. These include rip rap, gabion walls, and precast ecological concrete blocks where appropriate. Concrete steps will provide access between the terraces and simple seating elements will be added on top of the gabions.

In all cases, proper wave attenuation measures shall be designed in more detail in subsequent phases to prevent scouring at the bottom of the terrace walls.



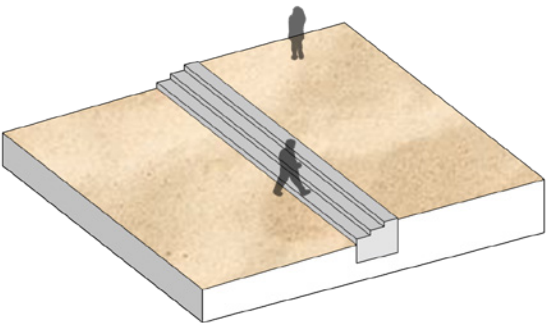
Standard concrete edge

WAVE ATTENUATION



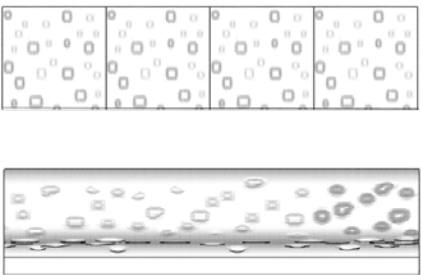
Riprap

ACCESS AND SEATING

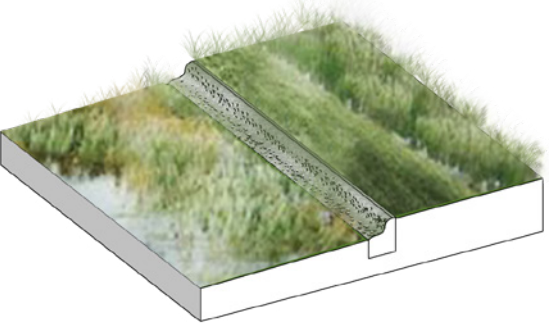


Concrete steps

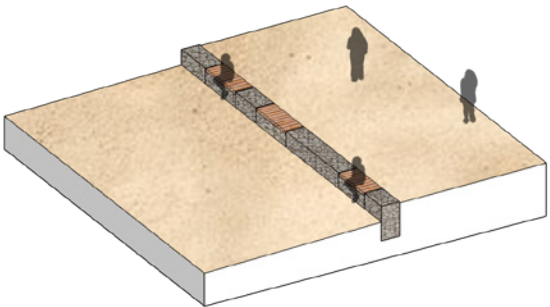
AQUATIC HABITATS



Ecological concrete block types



Ecological concrete edge



Gabion edge with seating

TERRACE EDGE TYPES

The east end of the existing beach shoreline consists of rock outcrops and heavy vegetation, while the west end of the existing beach area is covered by drifted brick pieces from the historic Hutton Brickyards, showing a visible trace of the industrial history of Kingston. Based on this existing context, the east end of our terrace, where the wetland cove is proposed, will be structured with rip rap. The bricks on the beach and elsewhere on the site, can be utilized as fill material for the gabion terrace edges. Eco-concrete units can also be selectively used in areas where the edges may come in contact with the water and can additionally provide aquatic habitat elements in the future.



Rock outcrops at Kingston Point Beach (existing)



The brick filled beach at Kingston Point (existing)



Rip rap (proposed)



Eco-concrete units (proposed)



Gabion (proposed)

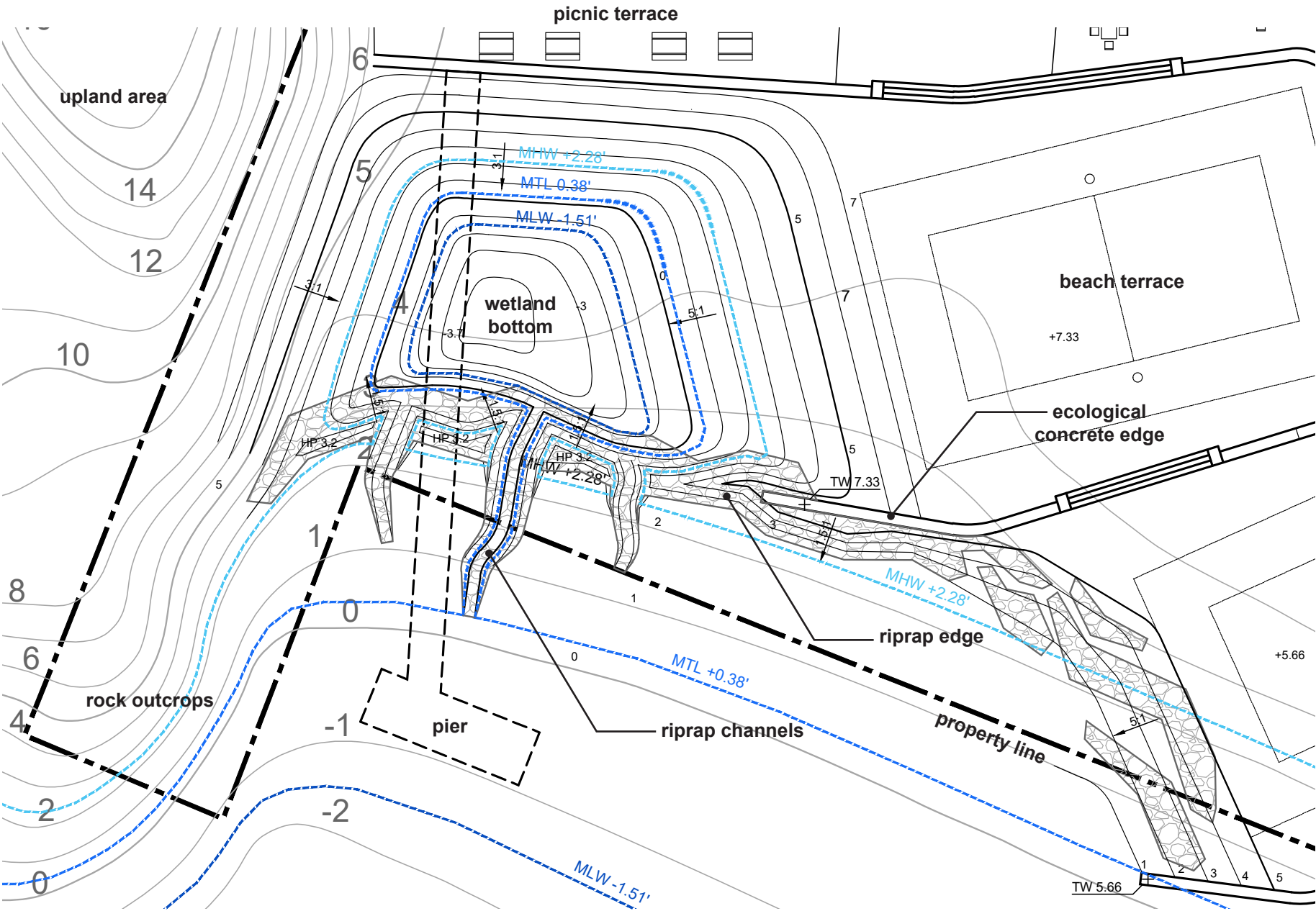
WETLAND COVE

The wetland cove to the east will provide a dynamic habitat element to the beach and connect to the upland forest as well as the rock outcrop shoreline. An accessible pier with seating elements will extend from the upper promenade level over the wetland allowing visitors to engage more directly with the constructed wetland environment.

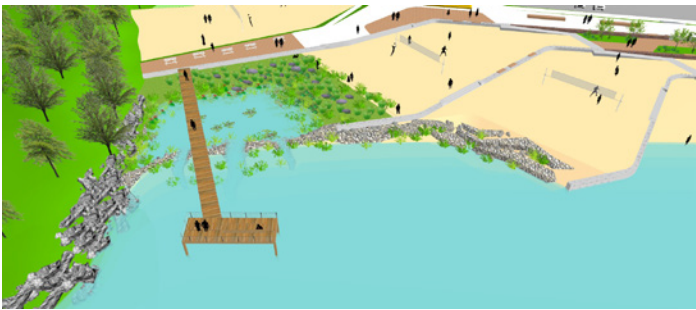


WETLAND COVE

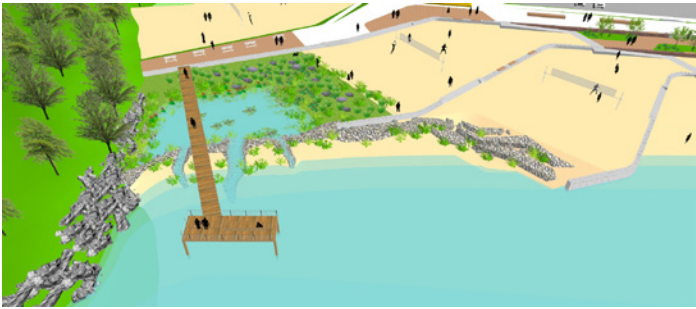
The wetland is designed to interact with the tidal levels of the river. Riprap channels are created along the beach side to allow water to enter the wetland at mean tide and high water levels. The water levels of the wetland will fluctuate in accordance to the river tides to create an ever-changing environmental amenity and educational feature for the beach. Design elements are proposed mostly outside of the current Mean High Water level to minimize any impacts of the development to the existing river hydrology.



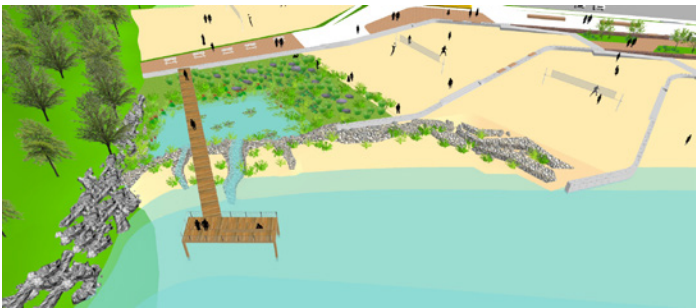
MHW @ +2.28
Mean High Water



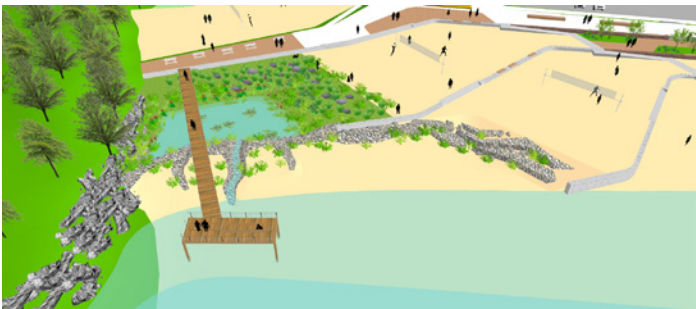
MTL+1.5' @ +1.88
Mean Tide Level



MTL+1' @ +1.38
Mean Tide Level



MTL @ +0.38
Mean Tide Level



MLW @ -1.51
Mean Low Water



WETLAND HABITAT PLANTING

In general, planted areas will receive sandy- loamy soils graded to elevations that will sustain a stable moisture regime through drainage and contact with groundwater and the tidally driven Hudson River. Native plants of different strata have been chosen for their ability to thrive under the zone’s specific conditions and for their hardiness, aesthetics, and contribution to ecosystem connectivity, linking the east and west portions of the site.

The wetland basin is designed with direct connections to the river, and the upper half will illustratively fill and drain twice daily in response to the changing tides. Maximum slopes within the wetland assure minimal erosion and sufficiently broad planting zones that change with elevation. The deeper portion (zero to two feet below the Mean Tide Level) will provide an open water area that is permanently inundated. From zero to 1.5 feet we establish floating leaf aquatic plantings of spatterdock that may grow to extend throughout the open water zone. Deep water emergents will be planted between 1.5 and three feet, shallow water emergents between the three and four foot contours, and a selection of herbaceous upland plants at elevations above four feet. Shade tolerance will be required for plants at the east and south sides of the wetland. The hydric wetland soils will attract and sustain a diverse community of benthic invertebrates, which will, in turn, attract foraging birds and fish.

WETLAND COVE PLANT LIST

Wetland Area Planting Plan by Elevation
West Side (more sun)

Elevation (ft)		Typology	Species		Maximum Height (ft)	Wetland Indicator Status	Permanent Inundation Depth	Bloom Color	Bloom Period	Light Requirements	Plant Spacing	notes
from	to		common name	scientific name								
-2	0	Open Water - Tidal	--	--								
0	1.5	Floating Leaf Aquatics	Spatterdock	<i>Nuphar advena</i>	1 - 3	OBL	36	Yellow	March to October	Part Shade	18" O.C.	deep water rhizomatous perennial. Solitary yellow flowers. Leaves submerged, floating on surface or emergent.
1.5	3	Deep Water Emergents	Pickerelweed	<i>Pontederia cordata</i>	3	OBL	12	Purple	June to September	Sun to Part Shade	18" O.C.	Herb of tidal marshes and shallow waters, with fleshy, heart-shaped leaves and purple spikes.
			Duck potato	<i>Sagittaria latifolia</i>	4	OBL	24	White	July to September	Sun to Part Shade	18" O.C.	Herb of shallow waters, with arrowhead shaped leaves and small white flowers. Overwinters as a tuber.
			Soft-stem bulrush	<i>Schoenoplectus tabernaemontani</i>	10	OBL	12	Reddish Brown	April to May	Sun	18" O.C.	Stems slightly triangular at base. Good colonizer of very wet soils.
3	4	Shallow Water Emergents	Blueflag iris	<i>Iris versicolor</i>	2 - 3	OBL	6	Blue	May	Sun to Part Shade	18" O.C.	Native iris of northern wetlands with attractive blue flowers and flattened, sword shaped leaves.
			Swamp rose-mallow	<i>Hibiscus moscheutos</i>	7	OBL	3	White or Pink	July to September	Sun to Part Shade	18" O.C.	Perennial herb with large, attractive, white or pink, five petaled flowers.
			Fringed sedge	<i>Carex crinita</i>	2 - 3	OBL	6	Brown and Green	June to August	Part Shade to Shade	18" O.C.	Grasslike sedge usually about 2-3' tall. Long heavy seed heads pendant when ripe.
4	5.5	Upland Adjacent	New England aster	<i>Symphyotrichum novae-angliae</i>	3 - 5	FACW	--	Blue	August to October	Part Shade	18" O.C.	Forb with lavender, purple, or blue flowers. Somewhat shade and drought tolerant.
			Blue mistflower	<i>Eupatorium coelestinum</i>	1 - 2	FAC	--	Purple	July to November	Sun and Part Shade	18" O.C.	Adaptable perennial of sandy coastal marshes to drier inland meadows. Ornamental lavender flowers.
			Purple joe-pye weed	<i>Eupatorium purpureum</i>	4 - 6	FAC	--	Pink	July to September	Sun, Part Shade and Shade	18" O.C.	Wildflower of moist woods and meadows with whorled leaves and dome-shaped clusters of pink flowers.
			Big bluestem	<i>Andropogon gerardii</i>	6	FAC	--	Blue to Reddish Brown	August to November	Sun to Part Shade	18" O.C.	Tall grass, found on dry, sunny sites. Foliage turns from bluegreen to coppery in the fall.
			Switch grass	<i>Panicum virgatum</i>	6	FAC	--	Green to Brown	August to November	Sun to Part Shade	18" O.C.	Very common bunch grass of medium to dry open sites. Attractive fall & winter color.
			Indian grass	<i>Sorghistrum nutans</i>	6	UPL	--	Yellow	August to October	Sun, Part Shade and Shade	18" O.C.	A striking bunch grass. Very tolerant of most site conditions

East Side (shady)

Elevation (ft)		Typology	Species		Maximum Height (ft)	Wetland Indicator Status	Permanent Inundation Depth	Bloom Color	Bloom Period	Light Requirements	Plant Spacing (ft)	notes
from	to		common name	scientific name								
-2	0	Open Water - Tidal	--	--								
0	1.5	Floating Leaf Aquatics	Spatterdock	<i>Nuphar advena</i>	1 - 3	OBL	36	Yellow	March to October	Part Shade	18" O.C.	deep water rhizomatous perennial. Solitary yellow flowers. Leaves submerged, floating on surface or emergent.
1.5	3	Deep Water Emergents	Arrow arum	<i>Peltandra virginica</i>	2	OBL	12	Green	April to June	Part Shade	18" O.C.	Fleshy herb of tidal marshes and shallow water, with large arrowhead shaped leaves and inconspicuous flowers.
			Pickerelweed	<i>Pontederia cordata</i>	3	OBL	12	Purple	June to September	Sun to Part Shade	18" O.C.	Herb of tidal marshes and shallow waters, with fleshy, heart-shaped leaves and purple spikes.
			Duck potato	<i>Sagittaria latifolia</i>	4	OBL	24	White	July to September	Sun to Part Shade	18" O.C.	Herb of shallow waters, with arrowhead shaped leaves and small white flowers. Overwinters as a tuber.
3	4	Shallow Water Emergents	Fringed sedge	<i>Carex crinita</i>	2 - 3	OBL	6	Brown and Green	June to August	Part Shade to Shade	18" O.C.	Grasslike sedge usually about 2-3' tall. Long heavy seed heads pendant when ripe.
			Shallow sedge	<i>Carex lurida</i>	3	OBL	12	Green	March to May	Part Shade	18" O.C.	Similar to fringed sedge except seedheads are much thicker and shorter and do not hang down when ripe.
			Canada rush	<i>Juncus canadensis</i>	3	OBL	6	Greenish Brown	July	Part Shade	18" O.C.	Midsize, clumping rush of all wetland types except saltmarsh and heavily forested wetlands
4	5.5	Upland Adjacent	New England aster	<i>Symphyotrichum novae-angliae</i>	3 - 5	FACW	--	Blue	August to October	Part Shade	18" O.C.	Forb with lavender, purple, or blue flowers. Somewhat shade and drought tolerant.
			Purple joe-pye weed	<i>Eupatorium purpureum</i>	4 - 6	FAC	--	Pink	July to September	Sun, Part Shade and Shade	18" O.C.	Wildflower of moist woods and meadows with whorled leaves and dome-shaped clusters of pink flowers.
			Switch grass	<i>Panicum virgatum</i>	6	FAC	--	Green to Brown	August to November	Sun to Part Shade	18" O.C.	Very common bunch grass of medium to dry open sites. Attractive fall & winter color.
			Indian grass	<i>Sorghistrum nutans</i>	6	UPL	--	Yellow	August to October	Sun, Part Shade and Shade	18" O.C.	A striking bunch grass. Very tolerant of most site conditions

WETLAND COVE VEGETATION COMMUNITIES

Upland Adjacent



Aster novae-angliae
New England aster



Andropogon gerardii
Big bluestem



Purple joe-pye weed
Eupatorium purpureum

Shallow Water Emergents



Carex lurida
Shallow sedge



Hibiscus moscheutos
Swamp rose-mallow



Juncus canadensis
Canada rush

Deep Water Emergents



Peltandra virginica
Arrow arum



Pontederia cordata
Pickerelweed



Sagittaria cordata
Duck potato

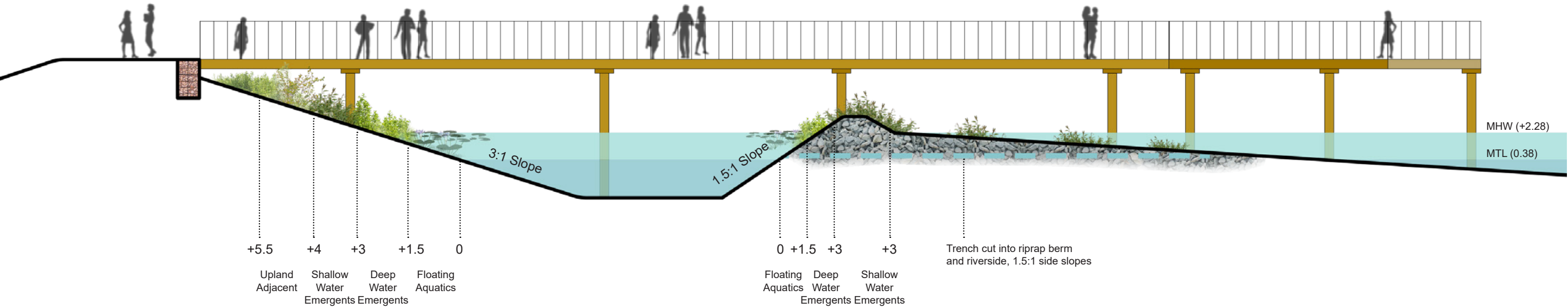
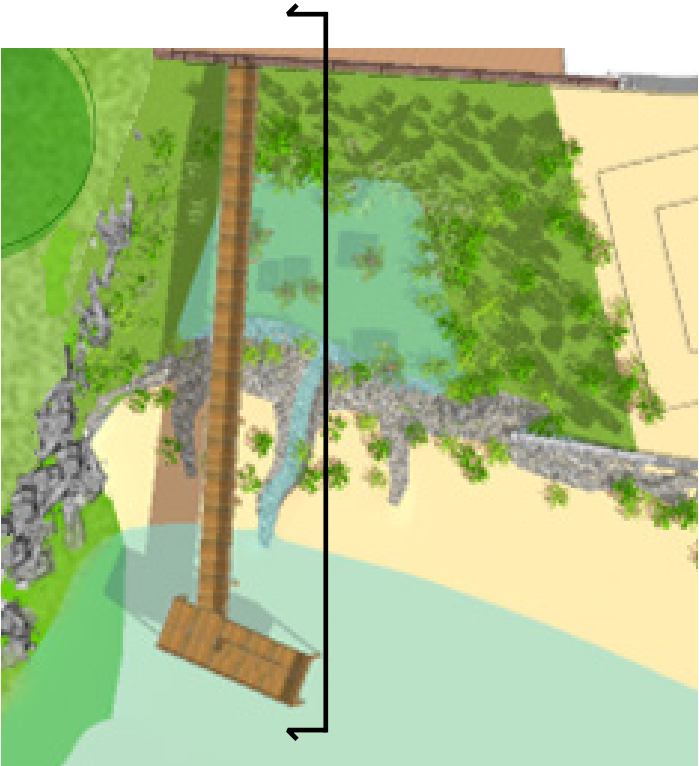
Floating Aquatics



Nuphar advena
Spatterdock

Sun Plant

Shade Plant



WETLAND COVE VEGETATION COMMUNITIES

Upland Adjacent



Aster novae-angliae
New England aster



Andropogon gerardii
Big bluestem



Purple joe-pye weed
Eupatorium purpureum

Shallow Water Emergents



Carex lurida
Shallow sedge



Hibiscus moscheutos
Swamp rose-mallow



Juncus canadensis
Canada rush

Deep Water Emergents



Peltandra virginica
Arrow arum



Pontederia cordata
Pickerelweed



Sagittaria cordata
Duck potato

Floating Aquatics

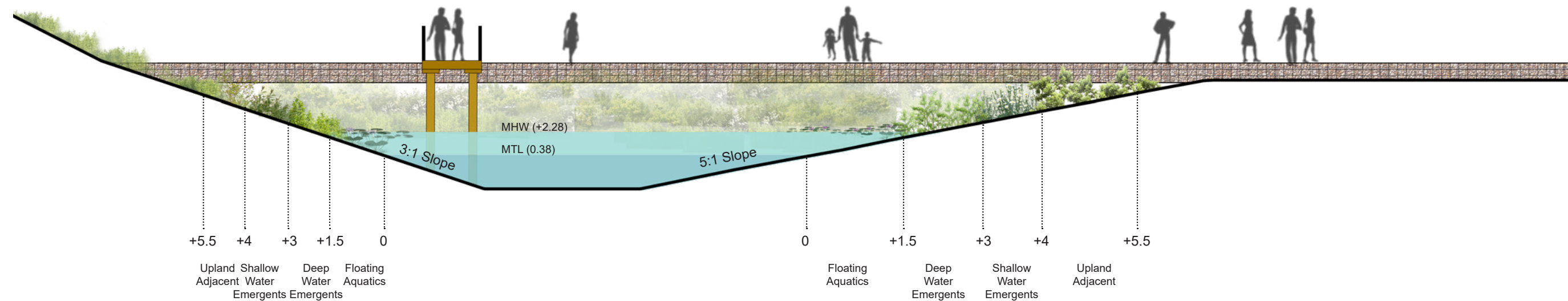
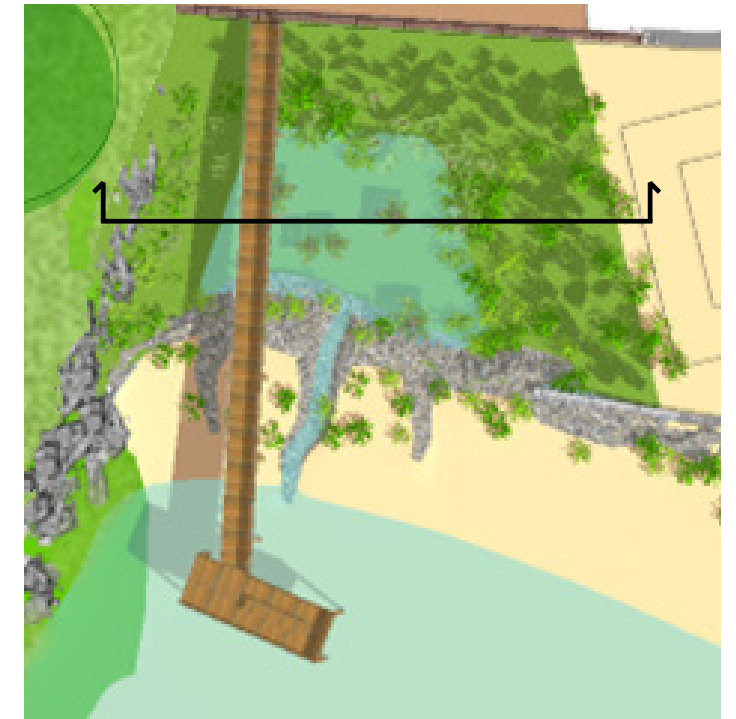


Nuphar advena
Spatterdock

Sun Plant



Shade Plant



TERRACES AND PROGRAMS



BEACH TERRACES

BEACH VOLLEYBALL, SUNBATHING, OPEN & FLEXIBLE ACTIVITIES

The large terraces to the east are sand-filled “beach” terraces which can support general beach-going activities as well as beach volleyball games. The first and second tiers of the beach terraces are proposed to be constructed with ecological concrete units as they are likely to be the first areas to be impacted by sea level rise. Interaction with water will enable the creation of aquatic habitats along these edges and can integrate with the adjacent wetland cove. Steps and seating elements are also added for functionality and access.

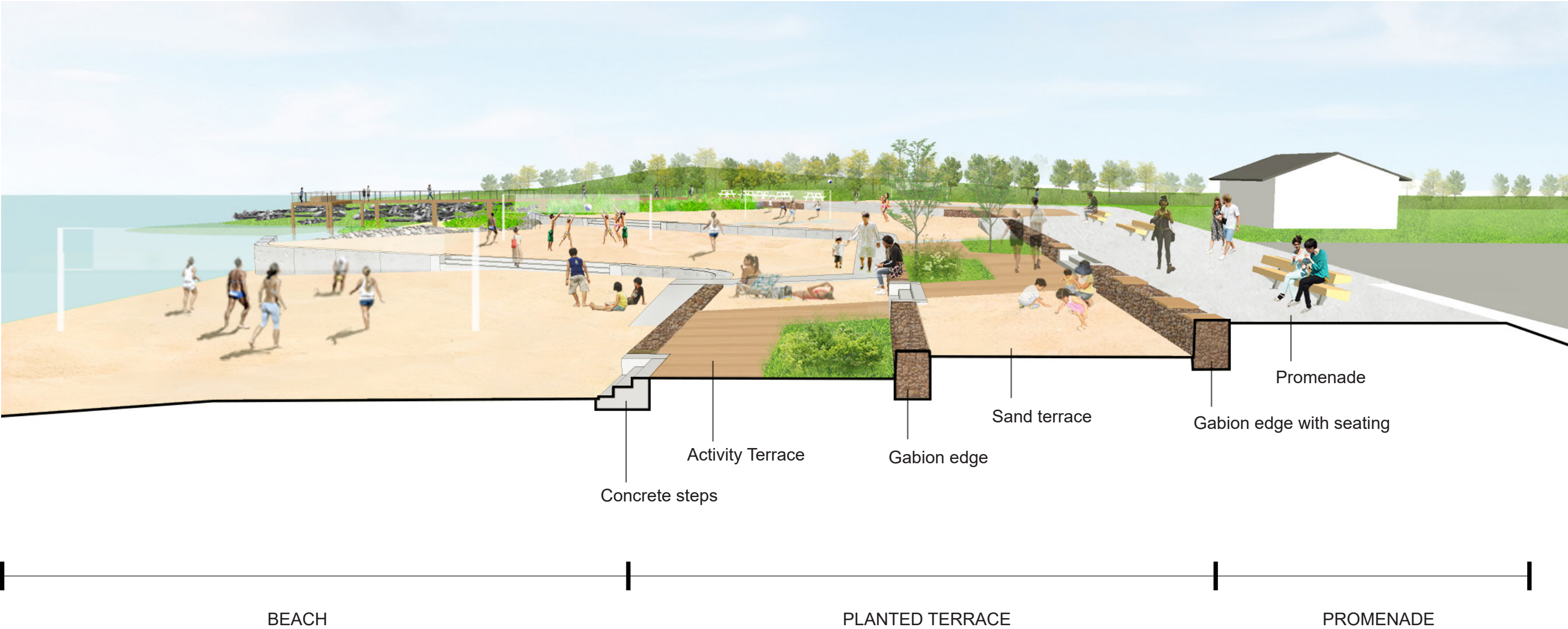


Section A-A'

PLANTED TERRACES

PLANT HABITATS, BOARDWALKS, SAND PLAY, RIVER GAZING

The narrower terraces to the west are designed to be planted in some portions and provide smaller program spaces such as activity decks and sand play areas. The planting scheme will serve to connect with the upland forest area to the west, essentially extending the western habitat element into the beach. The edges for these terraces will be constructed with brick-filled gabions with steps and seating elements built in. ADA ramps also flank these terraces and provide access from the top-level promenade down to the main lower beach level.



Section B-B'

PLANTED TERRACES AT THE UPPER PROMENADE

PERSPECTIVE VIEW



PLANTED TERRACE AND FOREST MANAGEMENT

Maintaining the planted terraces will require weeding and removal of dead plants. Unsuccessful plant species should be replaced with other species that are experiencing improved survival. It will be necessary to keep herbivory barriers in place for two to three years during establishment. Irrigation should not be needed as long as groundwater remains near the surface. As river levels increase, some of the upland terraces may begin to experience frequent inundation or soil saturation. If this is observed, maintenance staff should consider transplanting upland species to higher ground, replacing them with a more water-loving plant palette.

To successfully eliminate invasive understory plants from forest areas, it will be necessary to repeat manual species removal activities on an annual basis. Experience suggests that this can be accomplished in as few as five years or as many as 15, depending on the extent of the invasion and the success in establishing native plantings that out-compete non-natives. Planted native saplings should be checked for growth and replaced as necessary, and herbivory protections should remain in place until the young tree grows mostly out of reach from deer.

Swamp forest areas will remain largely the same except for changes at lower-lying areas where some trees will be lost to the higher water levels. Interventions will help reduce the impact of invasive understory plants and limit the influence of invasive tree species. Wooded areas that become flooded will provide valuable near shore habitat for fish and invertebrates as trees decompose and offer refuge from predation.

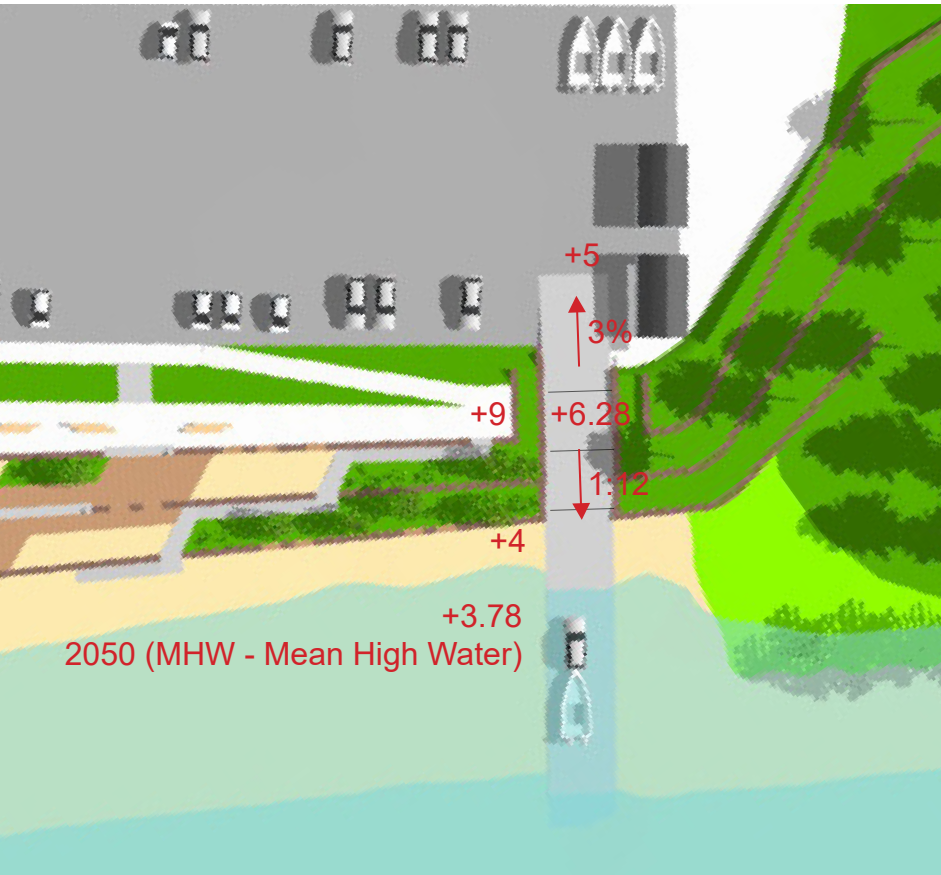
PLANTED TERRACES PLANT LIST

Planted Terraces

Species		Maximum Height (ft)	Bloom Color	Bloom Period	Fall Color	Light Requirements	Plant Spacing	notes
common name	scientific name							
Fragrant sumac	<i>Rhus aromatica</i>	2 - 6	Yellow	April to June	Yellow, Orange, Red and Purple	Sun to Part Shade	4 - 6 ft	Extremely adaptable, durable, spreading shrub, excellent for controlling erosion on slopes, banks and roadcuts. Striking fall color.
Winged sumac	<i>Rhus copallinum</i>	20 - 30	Yellowish Green	July to August	Orange-Red	Sun to Part Shade	10 - 15 ft	Mid-sized shrub with slightly pubescent stems. Winged rachis of compound leaves make this plant easy to ID. Striking fall color.
Smooth sumac	<i>Rhus glabra</i>	20 - 30	Yellowish Green	May to August	Orange, Red and Purple	Sun, Part Shade, Shade	10 - 15 ft	Tall shrub with pinnately compound leaves and smooth stems. Tolerates dry conditions, forms large colonies and has attractive orange-red-purple fall color.
Bayberry	<i>Morella Pensylvanica</i>	5 - 12	Yellow	July to October		Part Shade	7 - 10 ft	Medium size, semi-evergreen shrub found on a variety of sites. Aromatic leaves and berries. Salt tolerant. Good for coastal and highway plantings. A nitrogen fixer.
Beach plum	<i>Prunus maritima</i>	6	White	April to June	Red	Sun	4 - 6 ft	Salt tolerant, medium size, rounded shrub of the outer coastal plain from Maine to Virginia. Attractive, white flowers; its fruit is prized for making jams and jellies.
Switch grass	<i>Panicum virgatum</i>	6	Green to Brown	August to November		Sun to Part Shade	18" O.C.	Very common bunch grass of medium to dry open sites. Attractive fall & winter color.
Big bluestem	<i>Andropogen gerardii</i>	6	Blue to Reddish Brown	August to November		Sun to Part Shade	18" O.C.	Tall grass, found on dry, sunny sites. Foliage turns from bluegreen to coppery in the fall.
Little bluestem	<i>Schizachyrium scoparium</i>	3	White, Green, Brown	June to December	Mahogany-red	Sun to Part Shade	18" O.C.	Ornamental bunchgrass with fine-textured foliage that forms very dense mounds 18-24 inches tall. Slender blue-green stems reach 3 feet by September.
Seaside goldenrod	<i>Solidago sempervirens</i>	7	Yellow	August to October		Sun	18" O.C.	Salt tolerant, fleshy perennial with terminal panicles of yellow flowers in the fall
Black-eyed susan	<i>Redbeckia hirta</i>	2	Yellow	June to October		Sun, Part Shade, Shade	18" O.C.	Drought tolerant perennial of fields and meadows. Bright yellow flowers and a prolific bloomer.

BOAT LAUNCH AREA PHASE 1: 2020 - 2050

The existing boat launch is maintained but will need to be raised in order to maintain use over the raised promenade level of the beach. In an initial phase, the boat launch area can be raised minimally in order keep that launch ramp slopes manageable for visitors backing in their boats into the water. The mid point of launch access will be raised from +5' to +6.28'. The proposed +6.28' height will provide ample flood and surge protection until 2050.

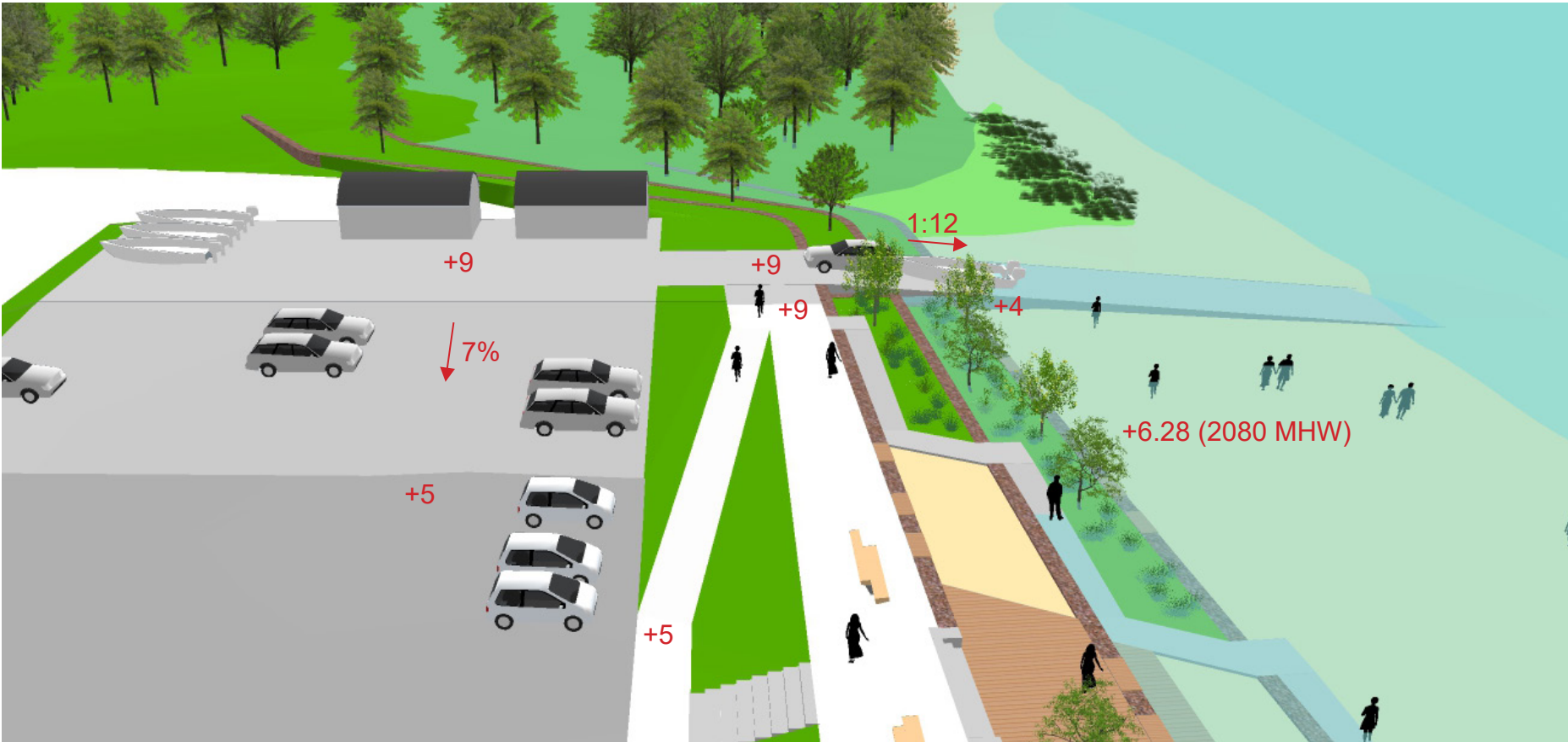
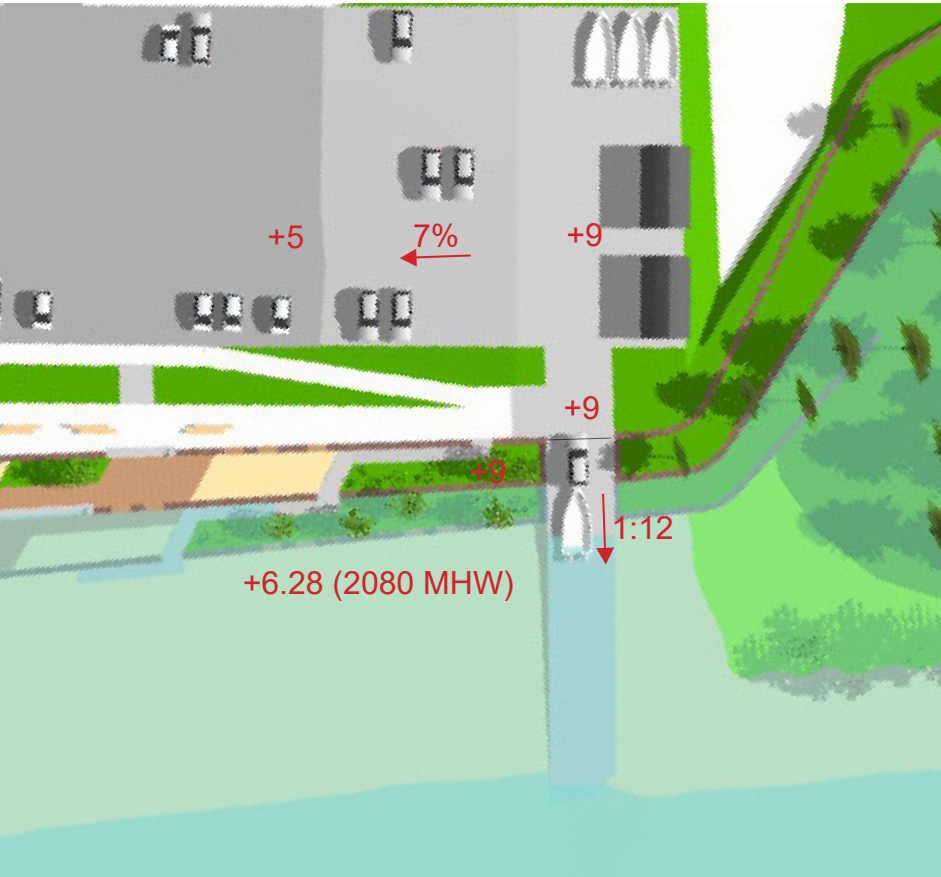


BOAT LAUNCH IN 2050



BOAT LAUNCH AREA PHASE 2: 2050 - 2080

In a subsequent phase, a more extensive intervention will be necessary to prepare for 2080 sea level rise projections, which can add another 3 feet to the high water level. The eastern end of the parking lot can be elevated from +5' to +9' to avoid creating a ramp too steep for vehicles towing a boat. The raised portion of the parking lot can become a dedicated boat parking and turnaround area to increase functionality and provide the necessary access for vehicles towing a boat.



BOAT LAUNCH IN 2080



LIVING SHORELINE LIVE STAKES: A COMMUNITY PROJECT

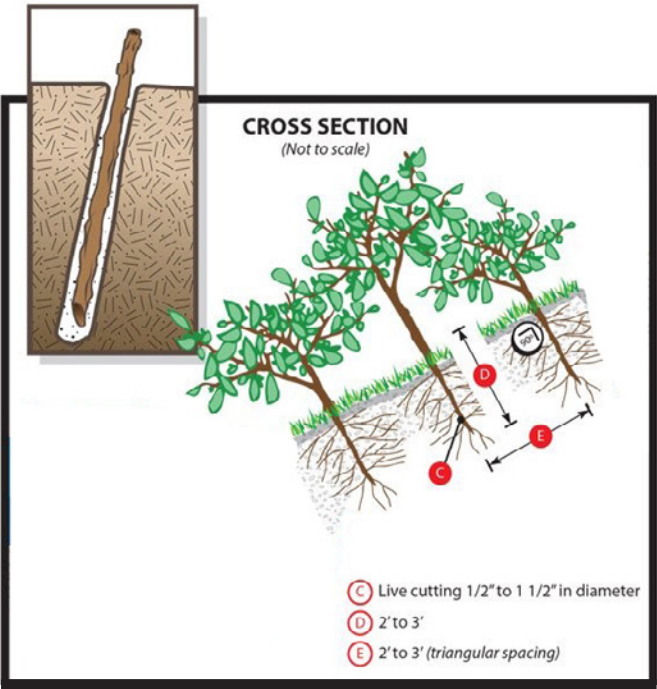
Planting of live stakes is a widespread practice for stabilizing shorelines and increasing near shore habitat. Three varieties of native willows (pussy, shining and silky) will be planted both below and above mean high water. The practice is simple and inexpensive, and is ideal for involving the public in restoration activities as an early community engagement tool at the beach. A two-foot hole is made in the soil using a metal rod, and the live stake, cut in late winter before budding, is inserted in the hole. The stake may require two seasons before showing leaves, but the root system will start establishing in the first year.

**For zones from upland down to 6” below MHW
(Mean High Water):**

- *Salix discolor* (Pussy Willow)
- *Salix lucida* (Shining Willow)
- *Salix sericea* (Silky Willow)

For zones from 6” above MHW to 2’ below MHW:

- *Cephalanthus occidentalis* (Button Bush)



View of the brick-filled beach converted to a living shoreline with live stakes

PROJECT MONITORING PLAN

In the bid documents (under a subsequent contract), the design team will specify three to five years of ongoing maintenance and monitoring obligations by the landscaping contractor, who will follow a detailed Contractual Monitoring Plan that will be more formally developed in subsequent scopes-of-work. The protocols for monitoring and record keeping will meet the standards described in “The Hudson River Estuary Habitat Restoration Plan” as well as any other standards established by the NYSDEC, HREP, NEIWPCC or USACE.

The final project plant list will become the basis for ecological monitoring and record-keeping within the planted areas. These areas include:

- Wetland Cove with four habitat types based on hydrology:
 - 1) Floating Leaf Aquatics, 2) Deep Water Emergents, 3) Shallow Water Emergents, 4) Upland Adjacent
- Terraces which possess:
 - 1) Herbaceous ground cover, 2) Shrub stratum, 3) Tree stratum
- Shoreline live stakes

Annual monitoring reports will contain summaries of the monitoring data including woody plant species, height and densities; herbaceous cover estimates and species; representative descriptions of soil morphology; site photographs; hydrologic data and description of management issues. Each area is subject to a different monitoring protocol depending on the habitat type.

Wetland Cove: Observations shall be made twice annually in late spring and early fall, and when the Hudson River is at low tide. A schedule shall be set so that the monitoring occurs at the same time each year. The sampler will visually identify the four separate planting areas based their elevation and, for each plant species present, will record observations that quantify their relative success. Within each habitat layer, the sampler will randomly establish three quadrats of one meter by one meter. Using the plant list as a guide, the sampler records quantitative estimates of total percent plant cover, species percent cover and stem height (if relevant). If some individuals are found dead, then they are recorded separately. Observations of plants that do not appear on the list shall also be recorded and identified in the data sheet as colonizers. Sampler will also document the quadrat with a clear photograph taken as close as possible, and will record other qualitative observations such as soil loss or accumulation, damage to wall structures, litter, oil sheen, odor, algae, etc.

Terraces: Observations shall be made twice annually in late spring and early fall. The sampler will record approximate height and diameter at breast height (dbh) of each planted tree, along with any qualitative observations such as damaged limbs, scars, signs of disease, predation, or other disturbance. At each

terrace, the sampler should establish a diagonal transect from one corner to the other. Along each transect the sampler will randomly stake-out two 4 m2 (two meter by two meter) quadrats, and record observations of total percent plant cover, species percent cover and stem height, combining both the shrub and herbaceous strata. Sampler will also document the quadrat with a clear photograph taken as close as possible, and will record other qualitative observations such as soil loss or accumulation or signs of disease. If plants are found to be dead then they shall be observed and recorded separately. Observations of plants that do not appear on the list shall also be recorded and identified in the data sheet as colonizers. If any stands of clusters of invasive species are observed outside of the quadrats, then those shall be recorded qualitatively.

Shoreline live stakes: This restoration effort is proposed as an early endeavor that can easily be performed by volunteers in a few days, and therefore will not be under the Contractor’s purview. Three species of willow stakes are to be planted in regular spacing and at a range of elevations down to six inches below MHW. It may not be feasible to identify the precise species for the first few years of growth, so they can be assessed as a single species. Button bush is planted below MHW. The entire planted area should be exposed during low tide when observations should be made.

The volunteer sampler will identify three random transects running perpendicular to the water’s edge, extending from the highest to the lowest elevation within the planting zone. Using visual evidence of the tidal range, the observer will (visually, if necessary) place a 4 m2 (two meters by two meters) quadrat within each of the tidal zones: subtidal, intertidal and supratidal. Quantitative observations of stem count, stem height and percent plant cover shall be recorded, along with any observations of additional plant species, erosion, deposition, litter, etc. The sampler will also record a photograph of the transect from top of bank or nearest accessible location.

All recordings will be made on digital standardized data forms created for each habitat typology. The forms will include the plant lists and provide space for additional observations. A separate manual will describe each operation in detail and will include a map as well as representative photos of each of the planted species. The forms will correspond with a data entry template for digital archiving along with the photo records. The record archive can be configured to upload to an online portal accessible by the public. The completed plan will provide quantitative recovery goals that are to be met during each year of the Contractual Monitoring period.

Additional monitoring, performed concurrently and well after the termination of the contractual monitoring period, can be recorded at any time by a volunteer citizen scientist. Additional forms can be created for use by lay-people, and may contain additional information such as wildlife sightings, leaf and bloom dates, flood and high-tide elevations, storm damages, bank erosion, pests, rare or invasive plants.

WAYFINDING AND INTERPRETIVE SIGNAGE CONCEPT

A system of site and facility identification, directional and regulatory signs, as well as, environmental and historic interpretive plaques have been developed and applied to the project area north of Delaware Avenue on Kingston Point. However, it is recommend that the system be applied to the full Kingston Point Park and that a systematic nomenclature for naming the park and its distinctive areas and facilities be created.

The design for Kingston Beach references elements in the proposed landscape architecture design, such as, brick filled gabion cages and cedar posts. The colors (green and sandy tan) and typeface have been selected to communicate a friendly and approachable earthy palette. Cost effective fabrication methods have been specified to ensure easy maintenance, replacement and growth of the sign system. The system can also be adapted to be bi-lingual if desired.

Sign Family:

- Main Park ID*
- Vehicular Directional*
- Vehicular Facility ID
- Pedestrian/Trail Directional
- Pedestrian Facility ID with rules*
- Bicycle directional
- Historic dedication
- Singular rule*
- Step Distance Marker
- Small Interpretive*
- Large Interpretive*
- Fauna and Flora ID

* designed in this phase

Proposed nomenclature hierarchy:

Park name:

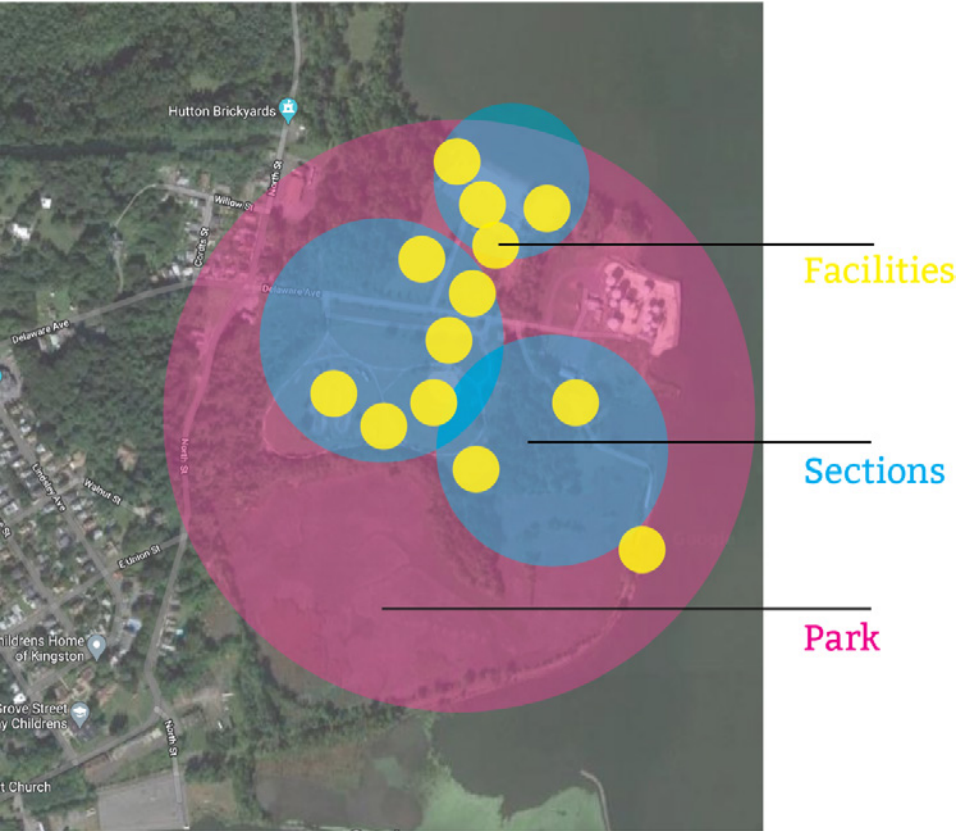
- Kingston Point Park

Section names:

- Beach
- Rotary Fields
- Peninsula Grove

Facility names:

- Beach Volleyball Courts
- Boat Launch
- BMX Track
- Dog Lawn
- Loop Trail
- Parking: Beach
- Parking: Fields North
- Parking: Fields South
- Soccer Field East
- Soccer Field West
- Softball Field
- Kingston Point Rail Trail



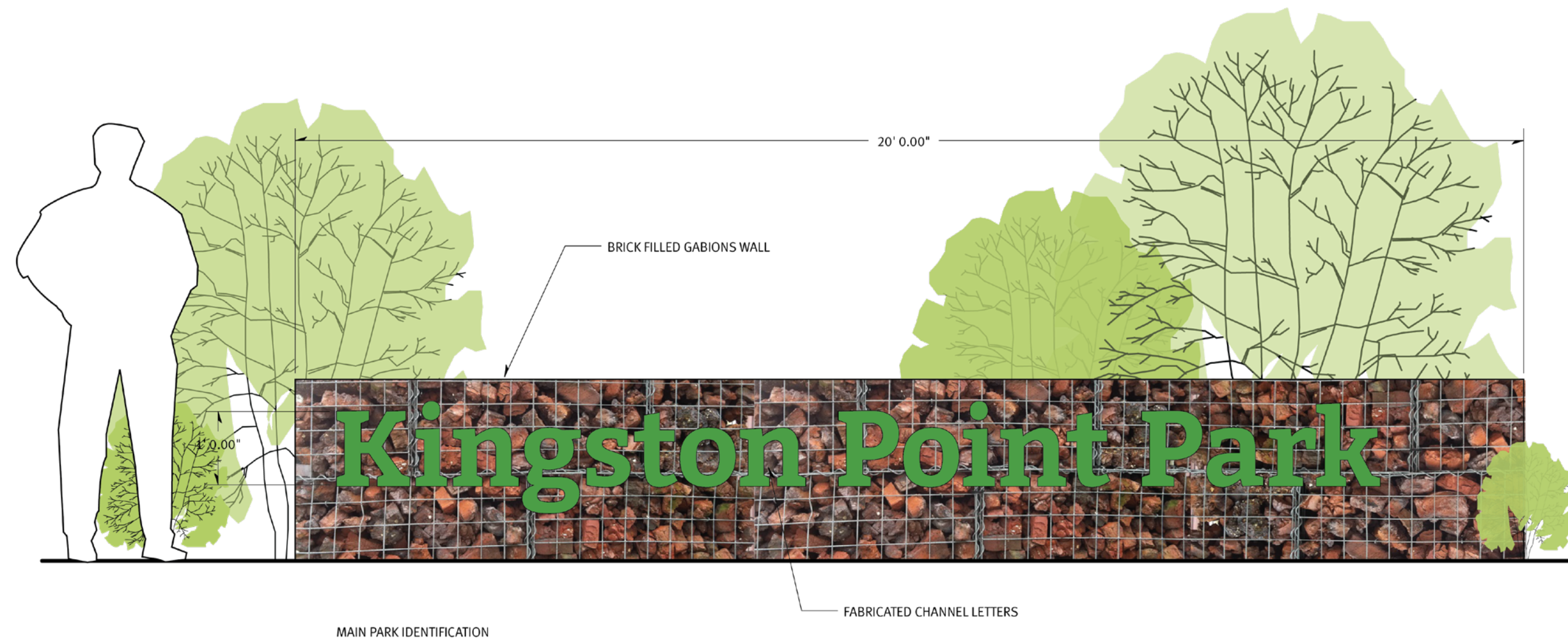
WAYFINDING AND INTERPRETIVE SIGNAGE CONCEPT

SIGNAGE FAMILY & LOCATIONS



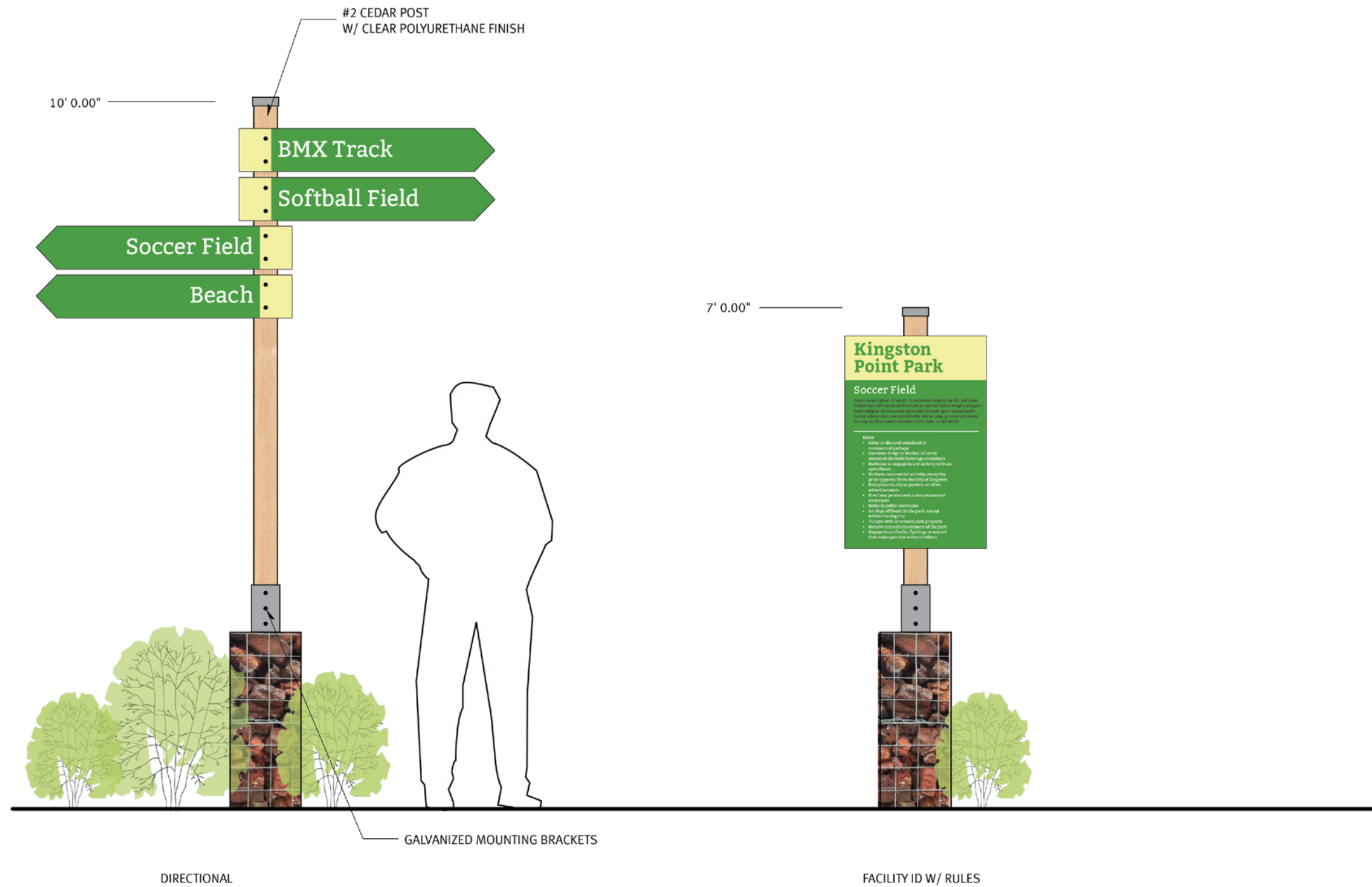
WAYFINDING AND INTERPRETIVE SIGNAGE CONCEPT

PARK ID SIGN



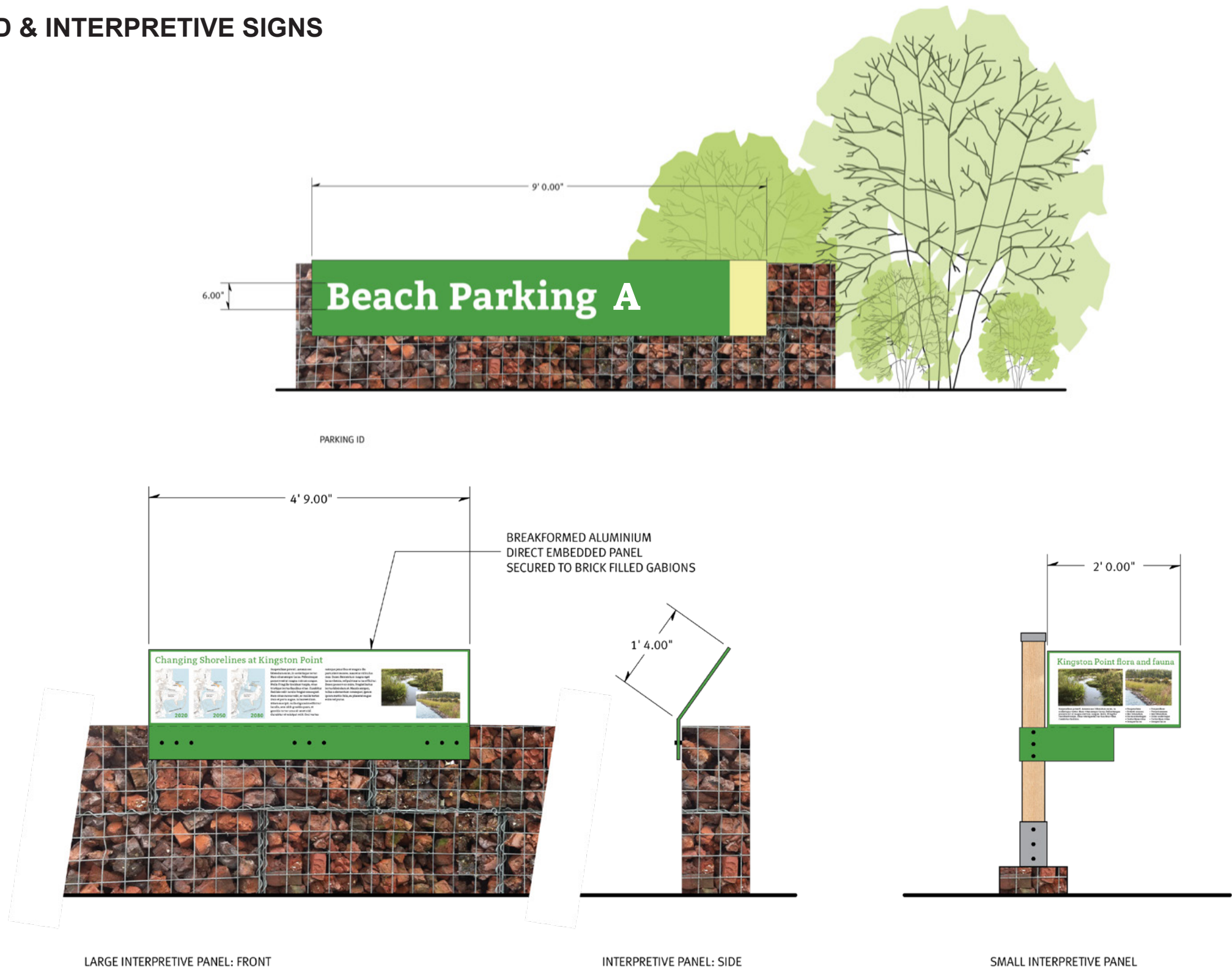
WAYFINDING AND INTERPRETIVE SIGNAGE CONCEPT

DIRECTIONAL & FACILITY SIGNS



WAYFINDING AND INTERPRETIVE SIGNAGE CONCEPT

PARKING LOT ID & INTERPRETIVE SIGNS



PERMITTING STRATEGY

The primary permitting requirement for the interventions described here shall be the Joint Permit issued by the US Army Corps of Engineers and the New York State Department of Environmental Conservation. The Joint Permit Application will be prepared for submission to:

- NYSDEC Region 3
- USACE
- NYS Department of State
- NYS Office of General Services

Additional permit forms must be submitted along with the Joint Permit Application related to specific interventions along the Hudson River shoreline. These will likely include:

- Protection of Waters Permit
- Wild, Scenic and Recreational Rivers System Permit
- Construction, Reconstruction or Expansion of Docking and Mooring Facilities
- Waterfront Activities Application Checklist

Upon completion of the 50% Designs (DDs), the dimensions and extents of the proposed facilities will be established and the criteria for submitting additional permit forms can be assessed. Until designs are better formalized, it is not useful to prepare additional permitting materials.

The Team participated in a pre-Pre-App call on June 22, 2020, with the NYSDEC to assess their priorities. DEC strongly encouraged minimal work below mean high water unless accompanied by justification that the work is “reasonable and necessary,” which includes activities related to creating or sustaining access or improvements to habitat. Planting of live stakes and placement of reef balls are both permissible activities, as is any invasive species removal from wetland areas. The DEC highly discourages any filling or shading of wetland or open water areas.

DEC regulates shoreline areas to “top of bank” but no further than 50 feet from MHW. Establishing MHW is critical to establish as the permit application will focus on excavation, filling and over-water structures on the river side of the MHW line. For impacts that involve excavation, filling, or shading, the benchmark for approval will be to establish that the measures are "reasonable and necessary." A reasonable measure determination should be tied to a water dependent use. A necessary measure should indicate that the measure will cause the least impact among other design options. Impacts evaluations will focus on construction activities and permanent structures, and will not only consider the final product but also the means, methods, and timing of installation. Timing is tied to breeding seasons of critical species.

Any proposed habitat in the water will be considered fill, however approval is possible if the designers can show, utilizing scientific papers and proof of concept, that the structures are serving a purpose. The design team may wish to introduce some fish structures into the design to assist in establishing “purpose”.

For the wetland cove area, the evaluation will primarily fall under a "stream disturbance review." So long as we are not excavating or filling below the MHW line, the permit review will focus on ensuring that no harm will occur to the river during construction or upon completion of the project.

The pier structure will fall under a stream disturbance review. If the pier structure extends past the MHW line, it will not only fall under a stream disturbance review, but also, more critically, an excavation and fill permit review where we must show that the pier is reasonable and necessary. If the water dependent use is for fishing, the application will further need to justify the width, height, and depth of the pier. DEC will be looking to minimize the size, so minimum ADA requirements will likely define the upper limit of pier dimensions. Expansion beyond ADA dimensions would need to be justified-- perhaps through discussing fishing demand and related safety requirements for spacing of anticipated anglers.

Upon client approval of the 50% Designs, the thresholds that trigger permit requirements will be reconsidered and the team will act as Agent for the City of Kingston and will prepare the Joint Permit Application and other relevant permits for submission by the City. The Joint Permit Application and other associated permits are available online through the DEC website.

IMPLEMENTATION STRATEGY

Construction Phasing:

The live stake area to the east will be a community project separate from construction costs. The work can be performed on a flexible schedule, and can focus on community activity, youth programming and environmental education. The beach, terraces, wetland and connecting berm will be performed by a general construction contractor that will follow bid documents. We anticipate the phasing to be:

- Excavation and removals; excavation of wetland cove
- Installation of hard structures (gabions, eco concrete, pier, boat ramp)
- Backfill of all soils and sands; placement of berm
- Amenities (finishings, benches, path network, structures)
- Plantings and forest restoration

Active construction is expected to take approximately six to eight months.

Short-term plant maintenance during the establishment period (two years) will be the contractual responsibility of the construction contractor. Long term maintenance will be conducted by the City of Kingston, and will be similar to the existing maintenance regimen at Kingston Point. This will include litter collection; incidental repairs, provision of a life-guard; general custodial activities.

List of specifications:

- Earthwork
- Soils and Sand
- Rip-rap
- Gabion walls
- Cast-in-place concrete (stairs, walkways, ramps, boat launch)
- Decking and Pier
- Furnishings (benches, tables)
- Plantings
- Wetland construction
- Eco concrete
- Tree guards
- Herbivory fencing
- Waterfowl barrier

Potential Funding Sources:

Corporate and private foundation funding opportunities can be available to supplement State and Federal grants. Foundation funding should be leveraged to make the required 25% to 50% local match that is required with most government grants. Private foundation frequently are looking for projects that are pushing the boundaries in response to climate change and adaptive reuse of post-industrial lands, as well as, projects that can be scalable to other locations in the region. Funding should be sought for specific scope area in the Kingston Point CAD Project, such as education (interpretive signage and curriculum), community engagement, native plantings, development of eco wall technologies, solar and wind power and smart light systems and the pier as an outdoor “eco-classroom”.

Some Foundations that are currently funding similar projects to Kingston Point CAD are:

Climate Resilience Fund
Doris Duke Charitable Foundation
Flora Family Foundation
The Kresge Foundation
The Rockefeller Foundation; Climate and Resilience Initiative
Trust for Public Land

PRELIMINARY DESIGN COST ESTIMATE

The following construction cost estimate is a cursory accounting of the materials and activities recommended in this report. The estimate includes standard industry costs for earthwork, retaining walls, pavements and ramps, as well as recent estimates for costs of imported soils and beach sand, native plant plugs and saplings. The boat launch, boardwalk, tidal wetland and fixtures are also included. Contingency is set to 30% because of the early state of the design, and includes design, permitting, site preparation and construction administration. The total estimated cost in today’s dollars is \$3.16M.

Kingston Point Beach Climage Adaptive Design Improvements
Preliminary Design Cost Estimate

	Notes	Unit Cost	Unit	Qty	Cost
EARTHWORK					
Wetland Cove Excavation		\$70.00	CY	833	\$58,333
Wetland Cover Over-Excavation	over-excavate 1 foot and fill with sandy soils	\$70.00	CY	233	\$16,333
Wetland fill	1 foot of sandy soil	\$100.00	CY	233	\$23,333
Promenade Fill	4' fill (including landside vegeted slope backfill)	\$100.00	CY	2074	\$207,407
Sand/Loamy Sand Fill (1st Tier)	20" fill (including backfill)	\$100.00	CY	477	\$47,741
Sand/Loamy Sand Fill (2nd Tier)	40" fill (including backfill)	\$100.00	CY	1074	\$107,407
Sand/Loamy Sand Fill (landside Beach Terrace)	24" fill (including backfill)	\$100.00	CY	708	\$70,815
Rip rap		\$80.90	SY	242	\$19,552
Gabion Terrace Edges	20"H x 24"W, filled with bricks collected from the site	\$75.00	LF	1400	\$105,000
CONCRETE					
Conc Stairs	Average Concrete	\$725.00	CY	76	\$55,207
Conc Walkways/Ramps	4" conc slab, pedestrian grade. Including ADA ramps and sidewalks	\$20.00	SF	2570	\$51,400
Conc ADA Ramp	Concrete ramps in the planted terrace (exposed block type)	\$725.00	CY	64	\$46,454
Boat Launch Conc Slab	6" vehicular grade	\$20.00	SF	1435	\$28,700
Boat Launch Conc Block	Gravel filled open grass blocks (Brooklyn Bridge Park kayak launch type)	\$18.00	SF	1150	\$20,700
PAVING & DECKING					
Promenade Conc Permeable Paving	Upper promenade (levee) surface	\$18.00	SF	7872	\$141,696
Boardwalk/Decking	Activity Terrace & Picnic Terrace	\$60.00	SF	5125	\$307,500
FURNISHING					
Picnic Tables	Picnic Terrace	\$14,600	ea	4	\$58,400
Promenade Long Bench 20' L	Promenade	\$20,960	ea	3	\$62,880
Promenade Long Bench 10' L	Promenade	\$14,000	ea	3	\$42,000
Backless Seating on Gabion 6' L	Custom composite decking mounted on gabion	\$24.00	sf	126	\$3,024
Misc. Furnishing Allowance	Trash receptacles, benches on pier, etc.	\$40,000	ea	1	\$40,000

	Notes	Unit Cost	Unit	Qty	Cost
PLANTING					
Vegetated Slope Shrubs + Grasses	Herbaceous only	\$2.50	sf	9000	\$22,500
Planted Terrace Shrubs + Grasses	Shrubs and herbaceous	\$3.75	sf	2468	\$9,255
Planted Terrace Shrubs + Grasses	Trees and herbaceous	\$2.78	sf	3920	\$10,889
Planted Terrace Trees	Large diameter trees	\$1,000	ea	30	\$30,000
Wetland herbaceous	18" O.C.	\$2.50	sf	6300	\$15,750
Live Stakes	Western end beachfront area	\$1.43	sf	3500	\$5,000
SPECIAL CONSTRUCTION					
Constructed Wetland	Wetland Cove				
EConcrete	20"H x 24"W, Tide pool type	\$1,087.50	CY	28.6	\$31,148
Pier	950 SF	\$200.00	sf	950	\$190,000
	cost per 18"x4" stripe plus \$310 sub-				
Parking lot re-striping	mobilization	\$4.25	car	120	\$820
Interpretive Signage		\$6,000	ea	1	\$6,000
SUBTOTAL					\$1,835,245
Mobilization-Demobilization		6%			\$110,115
Design, Permitting, Construction					
Mgmt		25%			\$486,340
Contingency		30%			\$729,510
TOTAL					\$3,161,210

USE THESE COSTS PER SF FOR PLANTING COST ESTIMATING INCL LABOR				
square foot costs of plantings	spacing	per plant		cost per sf
		item cost	area (sf)	
new wetland herbaceous	18" O.C.	\$5.00	2	\$2.50
upland herbaceous	18" O.C.	\$5.00	2	\$2.50
trees	average 8 to 12 ft O.C.	\$25.00	90	\$0.28
herbaceous under trees	18" O.C. plus tree space	\$5.00	2	\$2.50
shrubs	average 4 to 6 ft O.C.	\$25.00	20	\$1.25
herbaceous under shrubs	18" O.C. plus shrub space	\$5.00	2	\$2.50
live stakes	24" O.C.	\$5.00	3.5	\$1.43

SEA LEVEL RISE SIMULATIONS

KINGSTON POINT BEACH



SEA LEVEL RISE SIMULATIONS

KINGSTON POINT BEACH





CHAPTER 5: APPENDICES

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5.1 QUALITY ASSURANCE PROJECT PLAN (QAPP)

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QUALITY ASSURANCE PROJECT PLAN

JOINT PROJECT BETWEEN
SUPERMASS STUDIO
EDESIGN DYNAMICS, LLC
EMPHAS!S DESIGN
GRANT # C009469

Kingston Point Climate Adaptive Design

Prepared by Eric Rothstein and Emma Peleg (no role extended beyond authorship)
8/14/19 Version 1.3
eDesign Dynamics, LLC
402 W 40th St.
New York, New York, 10018

Prepared for: NEIWPCC and NYSDEC Hudson River Estuary Program

Project Plan Title: Kingston Point Climate Adaptive Design
Coordinating Organization: Supermass Studio
307 Fifth Avenue, 11th Floor
New York, New York, 10018
Supermass Project QA Manager: Taewook Cha
Email: taewook.cha@supermassstudio.com
QAPP Manager: Jessica Haitz
Email: JHaitz@eDesignDynamics.com

Participating Organizations: Supermass Studio
eDesign Dynamics
emphas!s design

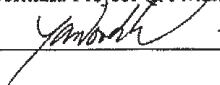
Effective Date of the Plan: August 2019
Plan Description: The primary data acquisition objective of this project is to inform feasibility and design work for the Kingston Point site with a focus on implementation of nature-based shoreline technologies and resilience planning measures to address and mitigate future habitat destruction due to rising sea levels and climate change.

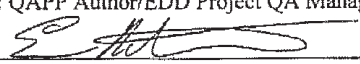
5.1 QUALITY ASSURANCE PROJECT PLAN (QAPP)

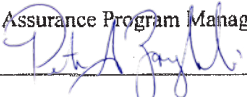
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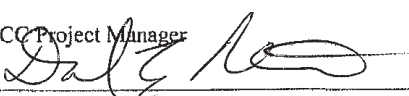
QAPP APPROVAL SHEET

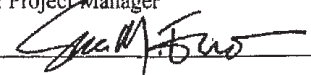
APPROVED BY:

NAME: Taewook Cha
TITLE: Principal-In-Charge/Project Director
PROJECT ROLE: Supermass Project QA Manager
SIGNATURE:  DATE: 8/20/19

NAME: Eric Rothstein
TITLE: Managing Partner, eDesign Dynamics
PROJECT ROLE: QAPP Author/EDD Project QA Manager
SIGNATURE:  DATE: 8/19/19

NAME: Peter Zaykoski
TITLE: Quality Assurance Program Manager
SIGNATURE:  DATE: 8/21/19

NAME: Daniel Miller
TITLE: NEIWPCC Project Manager
SIGNATURE:  DATE: 8/21/19

NAME: Sean Eno
TITLE: Project Manager, Supermass
PROJECT ROLE: Project Manager
SIGNATURE:  DATE: 8/20/19

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DISTRIBUTION LIST:

Individuals who will receive copies of the approved Quality Assurance Project Plan, and any subsequent revisions, are identified below.

Individual

Eric Rothstein
Jessica Haitz
Franco Montalto
Peter Zaykoski
Daniel Miller
Taewook Cha
Sean Eno
Andrew Simons
Libby Zemaitis
Susan Bailey

Organization

eDesign Dynamics
eDesign Dynamics
eDesign Dynamics
NEIWPCC
NYSDEC/NEIWPCC
Supermass Studio
Supermass Studio
emphas!s design Inc.
HREP/NYSDEC
NEIWPCC QAPP inventorying at:
qapps@neiwpcc.org
(978) 323-7929

The EDD Project Manager will be responsible for maintaining and distributing the approved QAPP. Additionally, upon completion of the project, a draft report will be distributed to the above list for their review by the EDD Project Manager.

5.1 QUALITY ASSURANCE PROJECT PLAN (QAPP)

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5.1 QUALITY ASSURANCE PROJECT PLAN (QAPP)

1 Project Description

1.1 General Overview

The purpose of this project is to assess the effects of sea level rising at the Kingston Point site within the larger Hudson River estuary ecosystem and produce draft designs that mitigate future habitat and programming loss through implementing resiliency-based technologies and nature-based planning methods. Using the concepts and strategies outlined in the 2017 Cornell Climate Adaptive Design Studio located at the Kingston Point site, the proposed Kingston Point Climate Adaptive Design Project will evaluate sea level rise scenarios and determine potential solutions to be shared with the community and develop a framework plan with engineering concepts for the location. The New England Interstate Water Pollution Control Commission (NEIWPCC), in collaboration with NYS DEC Hudson River Estuary Program (HREP), is funding the design and implementation of nature-based solutions to complement the development of the site in order to provide successful examples of climate adaptive design as long-term habitat management and restoration. NEIWPCC and HREP awarded a grant to Supermass Studios, and its partners: eDesign Dynamics, LLC (EDD), and emphasis design to produce draft designs for climate adaptive interventions at the site.

1.1.1 Statement of Project Objectives

Rising sea levels can be detrimental to wetlands along Hudson River shorelines; wetland ecosystems are forced to migrate inland where soil, slopes and seedbanks are inconsistent with the niche needs of the intertidal ecosystem. This project will result in the analysis of the Kingston Point wetland region for potential nature-based resilience planning and create a groundwork for construction of the adaptive climate measures deemed appropriate. Resilience engineering in selected natural areas will seek to locate opportunities to adjust elevations near the shoreline, restore grassland and tidal wetland habitats through new plantings and integrate the potential region of wetland migration with adapted public and recreational assets. Project outcomes will also include public environmental education, public participation in green spaces and the management and habitat restoration of tidal wetlands. Additionally, this project will serve as an example of resilience planning technologies that can be visually and tangibly experienced, increasing awareness of climate change and how to adaptively work with the evolving environment.

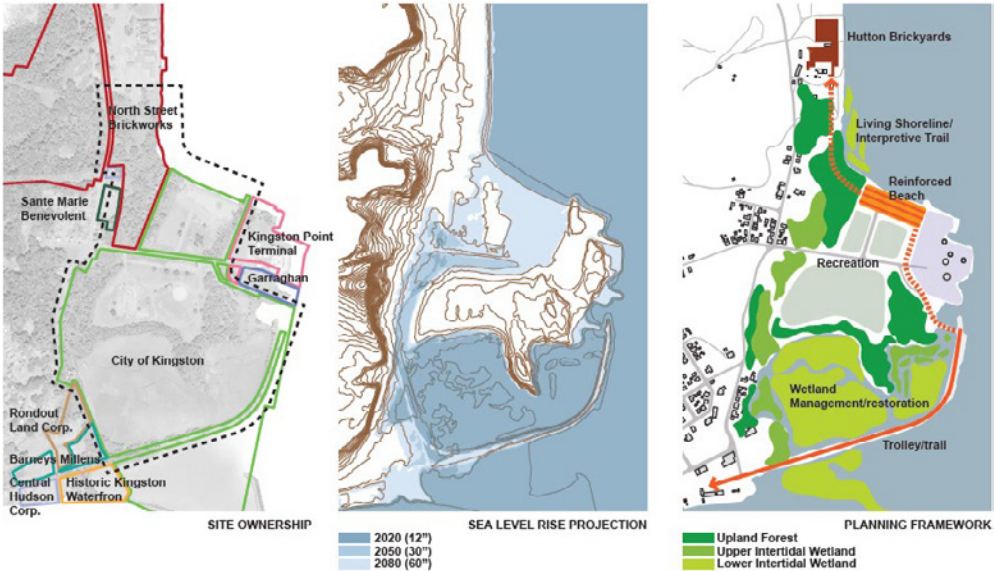
1.1.2 Site Description

The site is located at Kingston Point, Kingston, NY (41°55'43.14"N, 73°57'56.02"W), and is primarily owned by the City of Kingston, with potential private stakeholders including Kingston Point Terminal, operators of an operational oil storage and distribution site, North Street Brickworks, owners and operators of Hutton Brickyards, with the addition of a few other members south along the mouth of Rondout Creek. Much of the location serves as public recreational area and preserved natural lands, apart from the operational heating oil terminal at the shoreline location. In its current form in conjunction with Kingston Rotary Park, the site

contains a variety of amenities such as a public beach with parking, naturalized areas, trails, and picnics shelters surrounded by a freshwater tidal wetland to the south.

The project primarily intends to prioritize the already present habitat in the Kingston Point to stabilize and enhance it, bringing in new habitat zones if necessary. Areas with already intact habitats will be preserved rather than amended. In the southern point, preservation measures include shoreline elevation and grading of sites for suitability of migration of wetlands and floodplains inwards. The northern shorelines and beach of Kingston Point are formed by sandy river deposits which serve as a potential location for grassland habitat. The project intends to stabilize these regions using native, deep-rooting grasses, shrubs and trees, focusing on creating a habitat for migratory birds.

Figure 1: Map of Site's Area



1.1.3 Project Description

This project involves the implementation of nature-based practices in conjunction with resilience planning and habitat restoration. After the initial site reconnaissance and a review of concepts developed by the Cornell CAD studios, proposed infrastructure and design include the stabilization of northern Kingston Point by creating a living shoreline along the beach front, and sea level rise adaptation of southern Kingston Point. The goal is to promote resiliency in natural habitats through the protection of their present natural resources and sensitive ecosystems. Additionally, this plan will prioritize enhancing present ecosystems by adding new plantings to stabilize submerged sediment along the shore. These proposed measures may include the

5.1 QUALITY ASSURANCE PROJECT PLAN (QAPP)

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planting of a coastal forest of native species in areas needing a higher degree of stabilization. This would focus on trees suited for foraging habitat and nesting locations for migratory birds, as well as a lower canopy cover consisting of rhizome-colonizing shrubs. Sea level rise adaptation in the southern shore may utilize cut and fill techniques, with the addition of native plants to stabilize sediment. Soil quality testing and wetland habitat assessment will indicate high quality areas of Kingston Point that are suitable for preservation; these will have hydrological, light and soil regimes that should not be changed. Areas that are not of the same quality will be evaluated for enhancement and/or restoration. Additionally, soil quality in both areas will determine the need for importation of loamy sand or other recommended substrate, allowing the region to be restored into a grassland and restoring habitat for migratory birds through deep-rooting grass plantings.

To assess the soils, the project team will use a soil sampling protocol to analyze the horticultural potential of the natural areas. The project team will also review available survey data regarding previous city planning, GIS data and any existing and notable land history and condition, assess the need for any additional survey data collection and perform and oversee any collection of survey data, as needed. If determined that additional survey data collection will be required, the QAPP will be amended with any surveying activities that will be used. Available survey data used will represent the Kingston Point location between 1961 to 2016, using data collected on soil moisture, soil texture, pH, contours, composition and land use. GIS Data Layers obtained from the Cornell CAD studio between the years 2015 to 2018 will be used to generate inventory and create maps to inform the planning and design of the project; known boundaries, elevation values (DEM), flood data, land use, rail and trail way sites, SLR and street locations will be identified. Both survey data and Cornell CAD Studio data will be representative geographically of the location and information used will be within the geographic constraints of the project, as the locations are specific to the City of Kingston and Kingston Point.

In preparation for these tasks, EDD has prepared this QAPP for submission to NEIWPCC and NYSDEC.

1.2 Project Schedule

All collection of environmental data will be performed as part of Phase 1 of the project. The following table outlines the tasks and schedule associated with the data review and collection.

TABLE 1 - Description of Task and Project Schedule

Task #	Description of Task	Scheduled Completion Date
1	Stakeholder Engagement Strategy	8/31/19
1	QAPP	8/31/19
1	Kickoff Meeting	8/2/19
2	Site Reconnaissance	9/19
2	Stakeholder Interviews	9/19

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2	Review Existing Documents	9/19
2	Data Analysis	9/19
2	CAD Concept Review	9/19
2	Kickoff Community Presentation	9/19
3	Overall Concept Framework Plan	11/19
3	Opportunities and Priorities Matrix	11/19
3	Community Presentation and Work Session	11/19
4	Preliminary Design Alternatives	1/20
4	Community Presentation and Work Session	1/20
5	Final Preliminary Design	3/20
5	Development Budget	3/20
5	Pre-application Meeting	3/20
5	Community Presentation	3/20
6	Draft Preliminary Design Report	4/20
6	Final Preliminary Design Report	5/20

1.3 Project Organization and Responsibility

TABLE 2 – Project Staff and Responsibilities

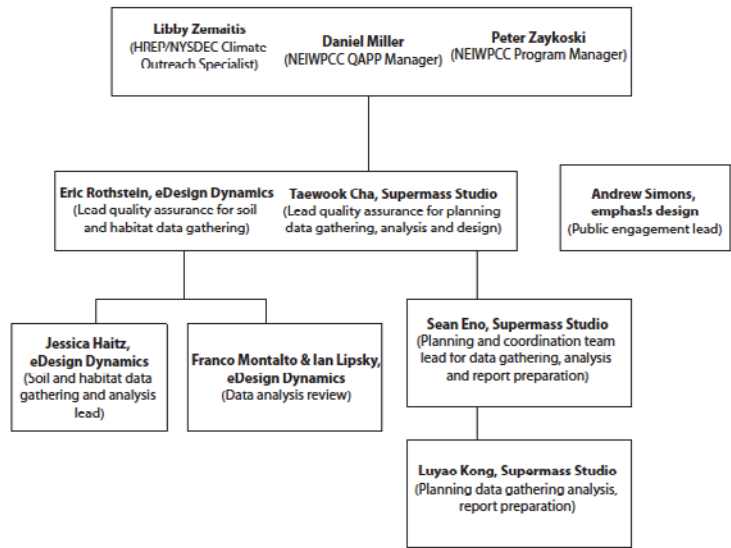
Staff and email	Project Role	Company	Responsibility
Taewook Cha Taewook.cha@supermassstudio.com	Supermass QA Manager	Supermass Studio	Lead quality assurance for planning data gathering, analysis, and design.
Sean Eno sean.eno@supermassstudio.com	Supermass Project Manager	Supermass Studio	Planning and coordination team lead for data gathering and analysis, report preparation.
Luyao Kong Luyao.kong@supermassstudio.com	Project Designer	Supermass Studio	Planning data gathering and analysis, report preparation.
Franco Montalto FMontalto@edesigndynamics.com	Data Analysis Review	EDD	Data analysis reviewer
Eric Rothstein ERothstein@edesigndynamics.com	QAPP Author/EDD Project QA Manager	EDD	Lead quality assurance for soil and habitat data gathering

5.1 QUALITY ASSURANCE PROJECT PLAN (QAPP)

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Ian Lipsky ILipsky@edesigndynamics.com	Data Analysis Review	EDD	Data analysis reviewer
Jessica Haitz jhaitz@edesigndynamics.com	EDD Project Manager, QAPP Manager	EDD	Soil and habitat data gathering and analysis lead.
Andrew Simons andrews@emphasisdesign.com	Public Engagement	emphas!s design	Public engagement lead.
Daniel Miller	NEIWPCC Project Manager	NEIWPCC	NEIWPCC QAPP management.
Libby Zemaitis	HREP/NYSDEC	HREP/NYSDEC	Climate Outreach Specialist
Peter Zaykoski	NEIWPCC Program Manager	NEIWPCC	Quality Assurance Program Manager
Susan Bailey	Admin Assistant	NEIWPCC	QAPP inventorying at: gapps@neiwpcc.org (978) 323-7929

Figure 2 – Organizational Chart of Authority and Reporting Responsibilities



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2 Sampling, Transport, Analytical and Calibration Processes

Sampling will be conducted in the area identified as the most preferred project area from the Overall Concept Framework Plan developed in Task 3 of the Kingston Point CAD Project Scope (referred to as the “preferred project area”; see APPENDIX C).

2.1.1 Soil Sampling Procedures

The EDD Project Manager will sample site soils for evaluation of suitability for habitat enhancements and resiliency-design installations. Samples will be tested for pH, texture and nutrients. No environmental testing will be completed, however, any odor or visual inspection that indicates contamination during field work will be reported. During this procedure, soil cores will be taken for laboratory soil analysis in order to determine suitability of existing substrate for potential design elements. To guarantee representative samples, 12-16 subsamples will be taken per a pre-determined interval throughout the preferred project area, measured to a depth of 6-12” from ground surface. The subsamples will be evenly distributed amongst each pre-determined interval. Sampling and laboratory testing procedures will be in accordance with the Rutgers’ Soil Analysis Lab. (See APPENDIX B). Laboratory analysis will be conducted at the Rutgers’ Soil Testing Laboratory. Locations determined for sampling will be noted by their coordinates using GPS technology. Even distribution of subsamples per interval will be determined using existing maps and GIS data, based on the surface area of the interval.

This method of sampling and investigation utilizes the approach developed and implemented by EDD for similar work in partnership with NYS DEC, the New York City Department of Environmental Protection and the New York City Department of Transportation. The data that will be collected using this method will provide an overview of the types of soils found in the preferred project area, and will allow EDD in conjunction with Supermass Studio to create a basic assessment of the feasibility of habitat restoration/creation and nature-based practices. The findings from these investigations will provide enough background to make informed decisions regarding in-situ soils and their suitability for design elements.

2.1.2 Vegetation Monitoring Procedures

In order to assess existing vegetation at Kingston Point, the EDD Project QA Manager will perform a walkthrough and visual inspection of the preferred project area, partitioning the area into high-quality areas to be left unchanged for preservation and locations for ecological enhancement, creation, and/or restoration. The EDD Project QA Manager’s qualifications include 23 years of onsite natural resource surveys and habitat restoration.

The visual inspection and note taking will be performed according to the vegetation monitoring procedure component of the Army Corps Wetland Delineation Manual guidelines (see

5.1 QUALITY ASSURANCE PROJECT PLAN (QAPP)

APPENDIX A). Areas within the preferred project area deemed suitable for the implementation of restorative measures will be characterized by a dominance of 75% or more of invasive and/or exotic species. This will be done in order to prioritize a fundamental tenet of habitat restoration followed by EDD: preservation over restoration and creation. The EDD Project QA Manager will annotate an aerial image of the preferred project area based on these criteria.

2.2.1 Soil Sampling Equipment

The following list describes the equipment that EDD will use during soil analysis investigations:

- a. Soil core sampler and/or trowel
- b. 1-gallon Ziploc bags
- c. Powderless, disposable nitrile gloves
- d. Large plastic bucket for compositing samples (5 gallon)
- e. Distilled water (at least two gallons)
- f. Towel for cleaning off trowel or sampler between samples.
- g. Sampling containers/bags
- h. Permanent marker for labeling sample bags
- i. Cooler and ice

2.2.2 Vegetation Sampling Equipment

N/A.

2.3.1 Soil Sample Handling, Preservation, Storage and Custody

The EDD Project Manager will pack the samples in Ziploc bags according to the Rutgers’ sampling protocol (APPENDIX B), and label the samples with the sample ID, GPS coordinates of the sampling location, time, and date. Although not required per the Rutgers’ soil sampling protocol, samples will be stored over ice in a cooler. The EDD Project Manager will ensure that all samples are properly packed and secured in the cooler in order to prevent any spillage or breakage of equipment during transport to the Rutgers’ laboratory for analysis. The EDD Project Manager will transfer the samples by vehicle either on the same day the samples are collected or the following day.

2.3.2 Vegetation Sample Handling, Presentation, Storage and Custody

No vegetation samples will be collected, handled, or stored.

2.4.1 Soil Sample Transport Procedure

Samples once packaged will be transported to the Rutgers’ laboratory within the allotted holding time specified in APPENDIX B. Soil samples will be collected and stored in accordance with the procedure specified by the laboratory performing the analyses as specified in APPENDIX B.

2.4.2 Vegetation Sample Transport Procedure

No vegetations samples will be collected or transported.

2.5.1 Soil Sampling Analytical Procedures

Analytical procedures for soil sample analysis will be followed as per the Rutgers’ laboratory analytical guidelines, determining pH, texture and nutrient content in soil samples. (See APPENDIX B).

2.5.2 Vegetation Analytical Procedures

No laboratory analysis will be conducted in association with vegetation monitoring. Figure 3 displays the data sheet to be used during data collection. The data sheet is from the ACOE’s Wetland Delineation Manual.

FIGURE – 3 Vegetation Determination Data Form

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: _____ Applicant/Owner: _____ Investigator: _____		Date: _____ County: _____ State: _____
Do Normal Circumstances exist on the site?	Yes No	Community ID: _____
Is the site significantly disturbed (Atypical Situation)?	Yes No	Transect ID: _____
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes No	Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. _____	_____	_____	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OSL, FACW or FAC
(excluding FAC-)

Remarks:

2.6.1 Soil Sampling Calibration Requirements

No calibrations will be required.

2.6.2 Vegetation Sampling Calibration Requirements

5.1 QUALITY ASSURANCE PROJECT PLAN (QAPP)

No calibrations will be required.

2.7 Sources of Secondary Data

The project team intends to use the following existing data, if available, to plan nature-based practices and resilience planning in the project area: soil moisture, soil texture, pH, contours, composition and historical land use, in addition to the GIS data layers obtained from the Cornell CAD Studio. Existing data will provide the necessary background to determine the optimal practices and locations for the design plan. Sources specified in this QAPP are NYS DEC, the City of Kingston, and NYS Parks Recreation & Historic Preservation, in addition to the Cornell CAD Studio. Sources of secondary data are separated into Plans and Reports, which will be used to create a base project background review containing relevant information about the history, physical conditions and previous resilience planning measures; GIS Data Layers from the CAD Studios, providing data that can be combined and projected to generate inventory and analysis maps; and Cornell CAD Studio Materials, which are collected sources from the Cornell University Landscape Architecture Climate Adaptive Design Studios focused on approaches and strategies to be explored for implementation in the preliminary design at Kingston Point.

TABLE 3 – Secondary Data Sources

Plans & Reports	GIS Data Layers	Cornell CAD Studio Materials
Kingston Comprehensive Plan 1961	Boundaries	Kingston Studio I - Block Park Studio - Fall 2016 - All final student presentation boards
Kingston Urban Cultural Park Management Plan 1987	Elevation (DEM)	Kingston Studio II – Kingston Point Studio - Spring 2017 – All final student presentation boards
Kingston Economic Base Diversification Master Plan Report 1998	Flood Data	Kingston Studio III - Rondout Creek Studio - Spring 2018 – All final student presentation boards
Map of Historical and Cultural Assets of Kingston, NY	Hudson River Estuary	Piermont Studio – Piermont Waterfront - Fall 2017 – All final student presentation boards
City of Kingston, NYS Parks Recreation and Historic Preservation Master Plan 2013	Land Use	Catskill Studio – Downtown Area - Fall 2015 – All final student presentation boards
City of Kingston, Brownfield Opportunity Area Step 3 – Implementation Plan Vols. 1 and 3, 2015 City of Kingston, Comprehensive Plan 2025 (2016) NYS DEC – Hudson River Estuary Action Agenda 2015-2020 Hudson Landing Promenade Site Plans 07/16/2014	Rail/Trail SLR Streets	Studio Lecture PowerPoints - Climate Smart Community Spotlight, Kingston, NY – Sep 2016 - J. Noble (Kingston) - Possible Flood Adaptation Strategies for the City of Kingston – Oct 2016 – L. Zemaitis (DEC) - Waterfront Adaptive Strategies – Feb 2018 - L. Zemaitis (DEC) - Supporting the City of Kingston as Climate Adaptive Leader – Jan 2018 - L. Zemaitis (DEC)

The listed secondary sources will be utilized for data analysis and project planning. Secondary data source hierarchy will place emphasis on recent plans in direct involvement with Kingston Point, highest resolution data and the Kingston Studio Materials. These sources will be used for this project due to their pertinence in information regarding soil moisture, soil texture, pH,

contours, composition and previous land use. The secondary sources identified in this QAPP will be identified in any future project deliverable.

3 Quantitative QA Objectives: Precision, Accuracy, Method Detection Limit and Completeness.

The objective for data quality is for the data to be sufficient quality to confirm and establish the present environmental conditions and soil characteristics of the Kingston Point site in project locations, looking for soil moisture, texture, pH, composition, vegetation, climate data, nutrient content, and existing GIS data layers. Data Quality Indicators (DQIs), which are qualitative and quantitative descriptors will be used to assess the quality of data. The DQIs that will be used are precision, comparability, representativeness, and completeness.

3.1 Precision

Precision is defined as the comparability between repeated measurements to one another. When using secondary sources for geolocation, precision will be measured by the differences between the latitude and longitude locations of EPA, NYS DEC, and HREP data to those of the site. These points should be within a three-digit precision in order to be acceptable. Any other existing survey data or information regarding Kingston Point, such as land or utility surveys, current or past city plans, and any available historical documentation will be regarded with the same factor.

For soils, all analysis will be done in Rutgers’ Lab with best professional judgement and accuracy and in accordance with procedures found in APPENDIX B.

For vegetation, all analysis will be best professional judgement by visual inspection and be in accordance with the vegetation monitoring procedure component of the Army Corps Wetland Delineation Manual guidelines (see APPENDIX A for further information).

3.2 Comparability

Comparability is the degree to which the data collected from the study can be compared to other relevant data sets. Because this project will be using standard testing measures outlined in numerous past studies, the collected data and results will be comparable to other data sets collected using the same methods.

In existing secondary source data, comparability will be taken as the cross examination of data obtained through existing survey data categorized into Plans and Reports, GIS Data Layers and CAD Studio Materials.

3.3 Representativeness

The representativeness of a study is the degree to which the data can represent an entire system. Soil samples taken from the Kingston Point locations will be taken from representative locations

5.1 QUALITY ASSURANCE PROJECT PLAN (QAPP)

at the sites intended for potential amendment, specified by an even distancing and landscape region appropriate locations between the sampling locations. If visual inspection of the soil and the plant communities growing within the sample locations are determined to be homogeneous by an experience team member, samples initially sent for testing may be reduced. If testing shows heterogeneity, additional samples shall be sent for testing.

Representativeness for the existing secondary source data will be affirmed if the area covered by the secondary source data surveys if the entire Kingston Point area is considered in evaluation. Additionally, the entire region of the Kingston Point project should be covered by City of Kingston Plans and Reports, as well as GIS layers from CAD Studio Designs.

3.4 Completeness

The completeness is the amount of data that must be collected in order to adequately serve its intended purpose for the project. For this study, all data from the City of Kingston, CAD Studio and GIS databases pertaining to the Kingston Point project area will be obtained to map the locations of soil moisture, texture, pH, composition and GIS data layers. Missing or incomplete data will be supplemented by physical sampling. Data completeness for lab analysis will be considered completed when each soil sample taken is analyzed using the methods outlined.

Overall completeness is defined as the total number of tested samples divided by the number of samples planned for collection. Acceptable percent completeness for soil samples will be based on field determinations of homogeneity. If soils are homogeneous, fewer samples will be sent to the laboratory. See Section 3.3 for further detail.

For secondary data source completeness, all data related to the soil moisture, soil texture, pH, contours, composition and land use will be obtained in order to adequately describe the existing land conditions to be used for potential nature-based implementations.

3.5 Appropriateness

The methods of soil and habitat investigation used for this project will provide the necessary information for the development of the initial assessment of a project design model to be implemented at the sight. The samples taken and the data gathered from the visual inspection of the site will create a reasonable level of accuracy for use in the preliminary planning and design by the project team. The performance and decision for necessity of resilience planning and habitat restoration are dependent upon the quality of habitat already present in the site, and the assessments used will give the team adequate resources to decide the extent and measures of the design.

3.6 Qualitative QA Objectives: Comparability and Representativeness

EDD intends to use data from the soil analysis to evaluate the quality and composition of the soil. Soil samples will be taken from evenly spaced locations representative of the locations sampled and will be inspected using the methods of analysis from the Rutgers’ lab.

The team will also use data from the secondary sources from the City of Kingston, NYS DEC, and the Cornell CAD studio.

3.7 QA/QC Checks

- Quality of secondary source data will be analyzed by the Supermass Project QA Manager and the EDD Project QA Manager.
- The Supermass Project QA Manager will review results of any GIS analysis.

Also, NEIWPCC may implement, at their discretion, various audits or reviews of this project to assess conformance and compliance to the quality assurance project plan in accordance with the NEIWPCC Quality Management Plan. NEIWPCC may issue a stop work order and require corrective action(s) if nonconformance or noncompliance to the quality assurance project plan is found.

3.8 Data Evaluation and Quality Requirements

All data will be gathered from existing research and documents, on site visual inspection for wetland vegetation, and a soil sampling protocol. The quality of the data will be assessed by Eric Rothstein to judge if it meets the specified guidelines throughout section 3. If any issues with the data are discovered, The EDD Project QA Manager and the Supermass Project QA Manager will develop a method to correct the error. The error and corrective action will be reported to the appropriate organization and the QAPP will be revised accordingly. Any revisions to the QAPP initiated due to anticipated changes in the data collection process that will impact the data or its quality will be approved before implementation.

3.9 Quality of Secondary Data

The quality of secondary data will be determined by the EDD Project QA Manager and the Supermass Project QA Manager to be from acceptable, credible sources. This will involve a list of the data sources and their origins, the person or group affiliated with collecting it and a general description of each piece of secondary data used. The team will review and analyze the secondary data obtained from the City of Kingston, NYS DEC, and Cornell CAD studio. Our review will be qualitative.

3.10 Certification and Training

Lab analysis will be performed by qualified persons at the Rutgers Soil Testing Laboratory. Certification and training will be in accordance with that of the facility.

4 Reporting Procedures

4.1 Data Reporting/Management Procedures

5.1 QUALITY ASSURANCE PROJECT PLAN (QAPP)

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Data collected from existing sources will be compiled for use by project team. The data from this project will consist of electronic files. The EDD Project Manager will be responsible for ensuring the documents and records are up to date and are distributed to and received by the project personnel listed in the “Distribution List”. Any necessary revisions to the QAPP will be made and the most recent file will be sent to all project personnel and all versions will be available on file.

In addition to coordinating the habitat resilience measures of the project, the EDD Project Manager and their supporting staff will summarize the existing data used in the project. The summary of the data will both discuss the findings and conclusions, which include the best suited climate adaptation methods and locations.

All data will be reported from physical samples in accordance with the Rutgers Soil Testing Laboratory standards.

4.2 Data Retention

All secondary data belongs to the existing organization. All original field data sheets (as shown in Figure 3 – Vegetation Determination Data Form) will be kept on file for an indefinite amount of time with a minimum of 7 years. The project team will transfer all data to appropriate documentation format such as an Excel spreadsheet where it will be kept on file in the Supermass computer system for an indefinite period with a minimum of 7 years. All reports quarterly and final reports will be printed, and hard copies placed in the Supermass office location and kept for an indefinite period with a minimum of 7 years.

4.3 Data Reduction Procedures

Data reduction procedures will cover any calculations or reduction procedures used to analyze and utilize the secondary resources provided by Supermass Studios. For the project purposes, there will not be any manipulation of data using calculations: data will be used as a background for informed assumption and design planning.

4.4 Data Validation

The Supermass Project QA Manager will review any secondary resources and ensure accurate reporting of any project data used. This will involve reviewing the sources cited as well as the method and use of the cited data.

4.5 Quarterly and Final Reports

As required by the Supermass Studio, EDD, and emphasis design contract with NEIWPCC, brief (1-2 page) quarterly reports updating the project status, completed outputs, problems encountered and anticipated, including but not limited to the means of responding to those problems, a statement of activity anticipated during the next reporting period, and a comparison of the percentage of the Project completed to the project schedule, will be submitted covering the previous three months. Upon completion of the project a final report will be developed for

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submission to NEIWPCC. The final report will present all generated data found during the project period, describe any issues that had occurred, indicate any limitations of the data collected and describe the habitat restoration and resilience planning measures that were implemented through the project. Once approved, the final report will be distributed to all those on the distribution list.

5.2 CORNELL CAD STUDIO CONCEPTS REVIEW - KINGSTON II STUDIO



There has been a total of six completed Climate Adaptive Design studios within the Landscape Architecture Department at Cornell University at the onset of the project. Three studios were at the graduate level and three studios were at the undergraduate level. Three of the six studios utilized waterfront sites in Kingston, including Kingston Point, to investigate and explore climate adaptive design strategies.

As part of Task 2, the project team reviewed materials generated by these studios with a focus on developing an inventory of various conceptual proposals developed by the students. A summary of key ideas, strategies, and designs are presented. To the extent possible, the designs are organized into three categories with some overlap: 1) sea level rise and flood resilient strategies; 2) ecological and natural resources strategies; and 3) public access / recreation / program opportunities.

2017 Spring MLA Studio - KINGSTON II_KINGSTON POINT

LA 6020: URBAN RESILIENCE + ECOSYSTEM SERVICE DESIGN

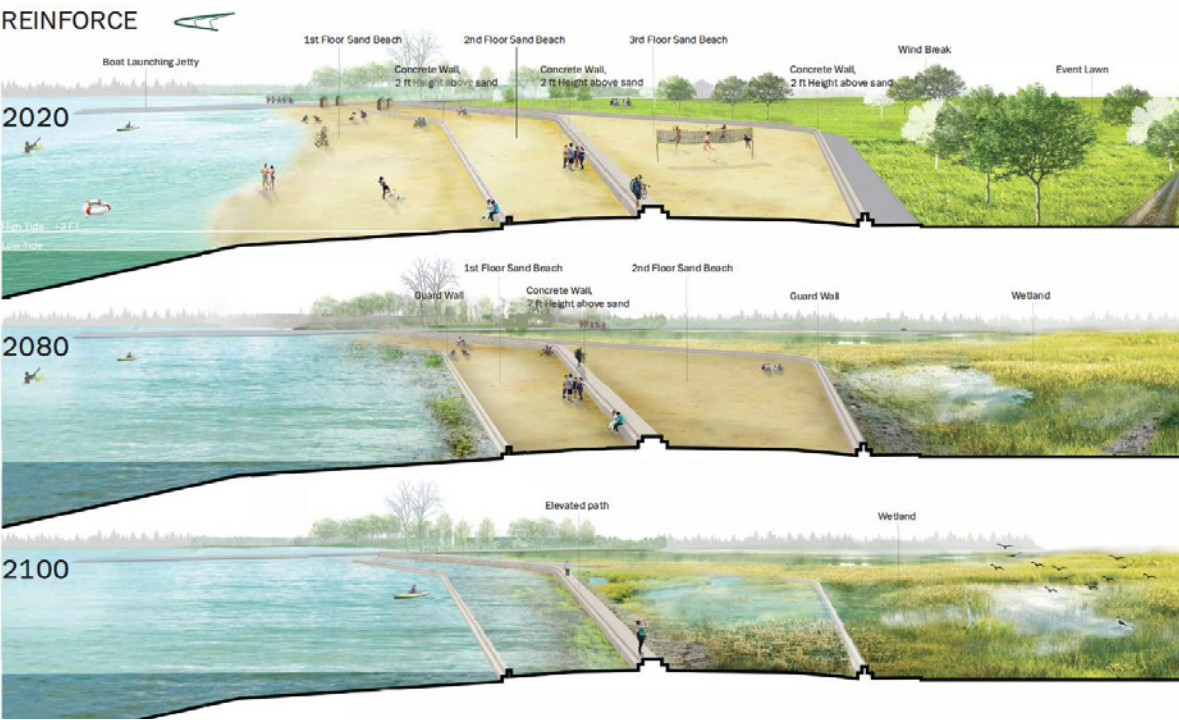
Studio focus: sea level rise and other climate risks

Studio site: Kingston Point area, Kingston, NY

Key Studio Themes:

- Access and circulation
- Ecology + marsh migration
- Ecological resilience and habitat diversity
- Recreation + interpretation
- Tourism + historic preservation
- Flood adapted landscape

KINGSTON II_Sea Level Rise/ Flood Resilient Strategies



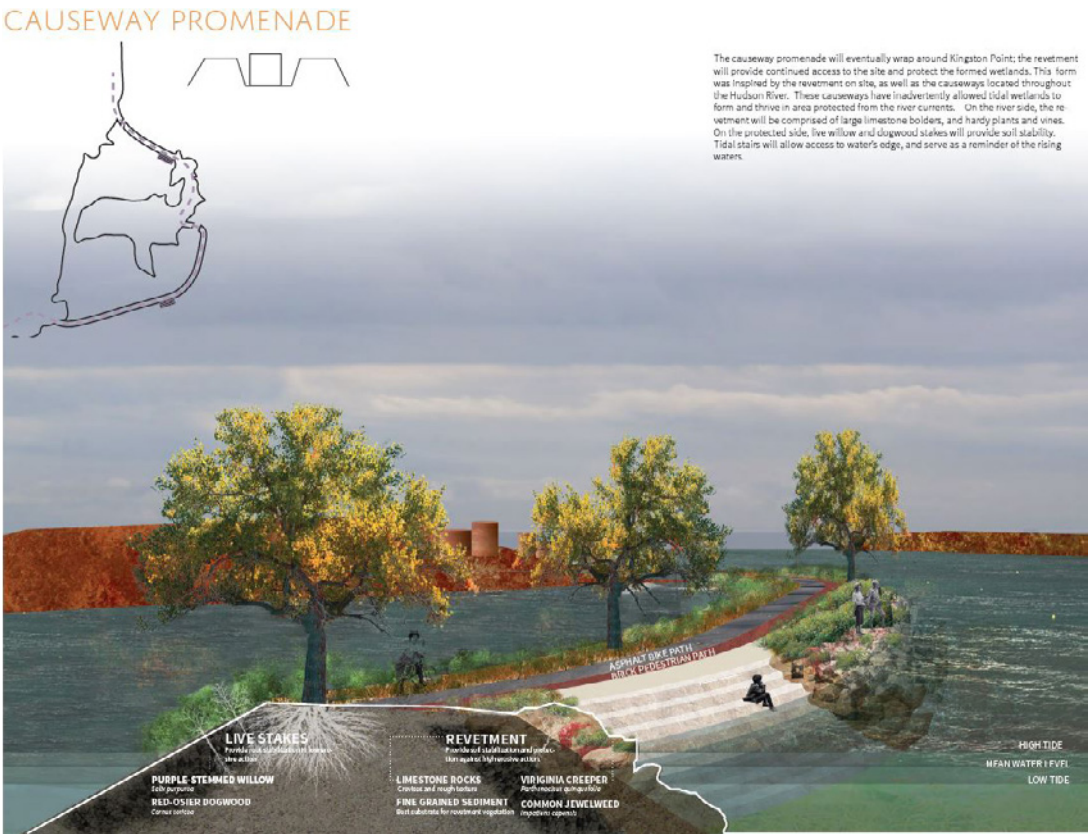
Project Name: Weaving the Waterfront
Kong, Gao, Feng

Terraced beach concept to protect the important recreational asset from tidal erosion and future sea level rise.



Project Name: Actipelago
Kang, Yuan

Floodable playground that enhance the recreational feature at the beach area while serving as a flood resilient structure.



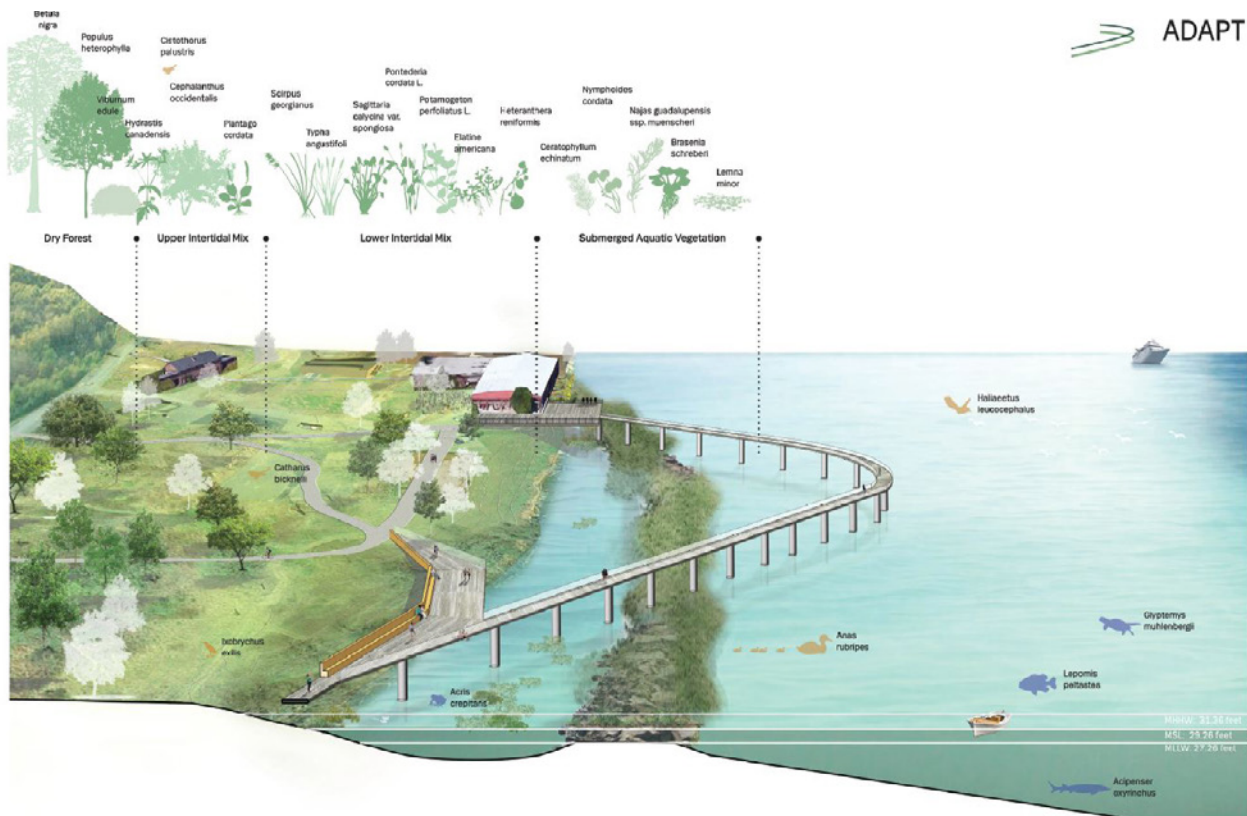
Project Name: Tracing Temporality
Russwick, Hoyt

The revetment (causeway promenade) will provide continuous access to the site while protecting the future wetland habitat area from river currents and future sea level rise.

KINGSTON II_Ecological/ Natural Resource Strategies

Project Name: Weaving the Waterfront
Kong, Gao, Feng

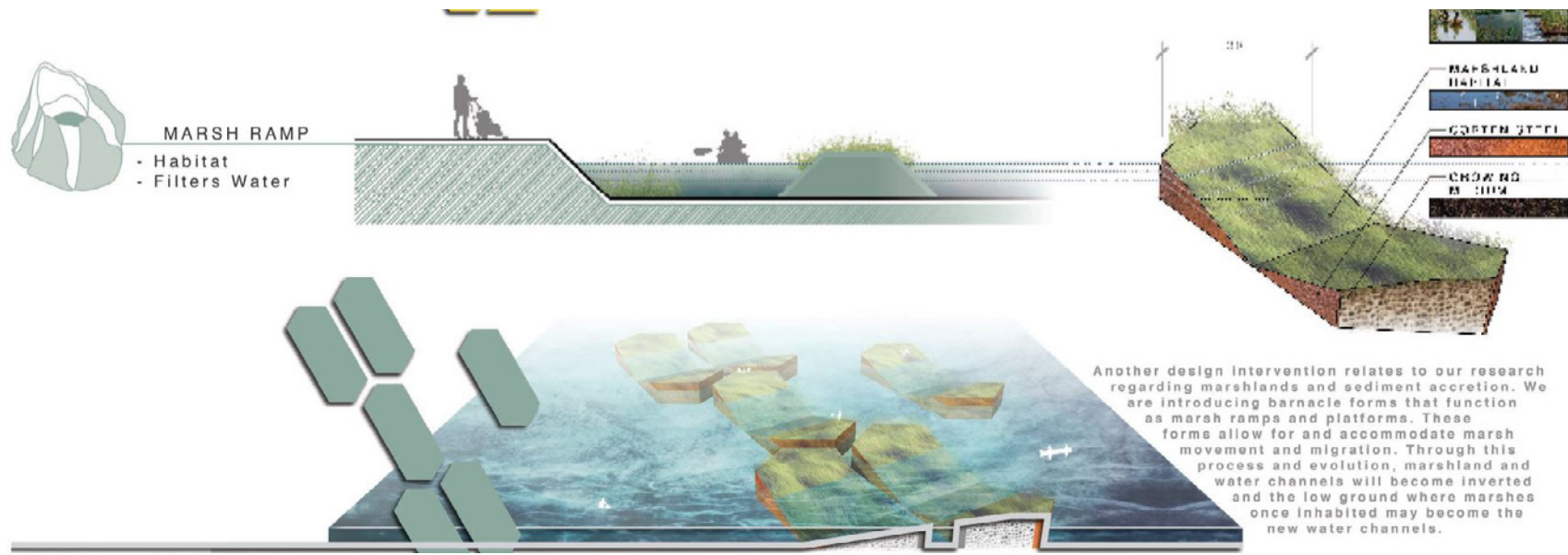
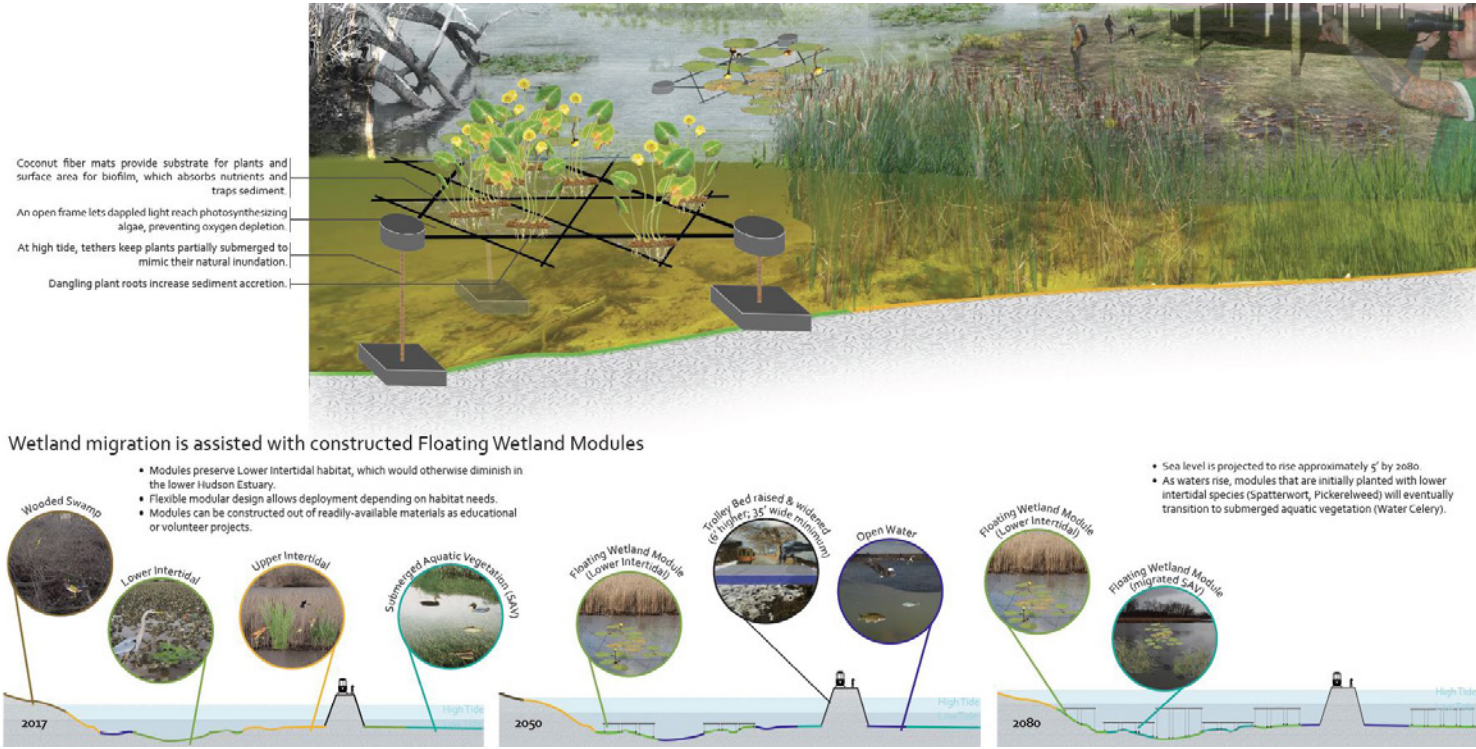
Constructed living shorelines will help stabilize the water edge while adding more ecological resources such as wetland habitats and submerged aquatic vegetations.



ADAPT

Project Name: Floating with the Tides
Farrell, Liu

New wetland habitats created with floating wetland modules. This is a flexible modular system that allows for deployment depending on habitat needs and sea level rise conditions.

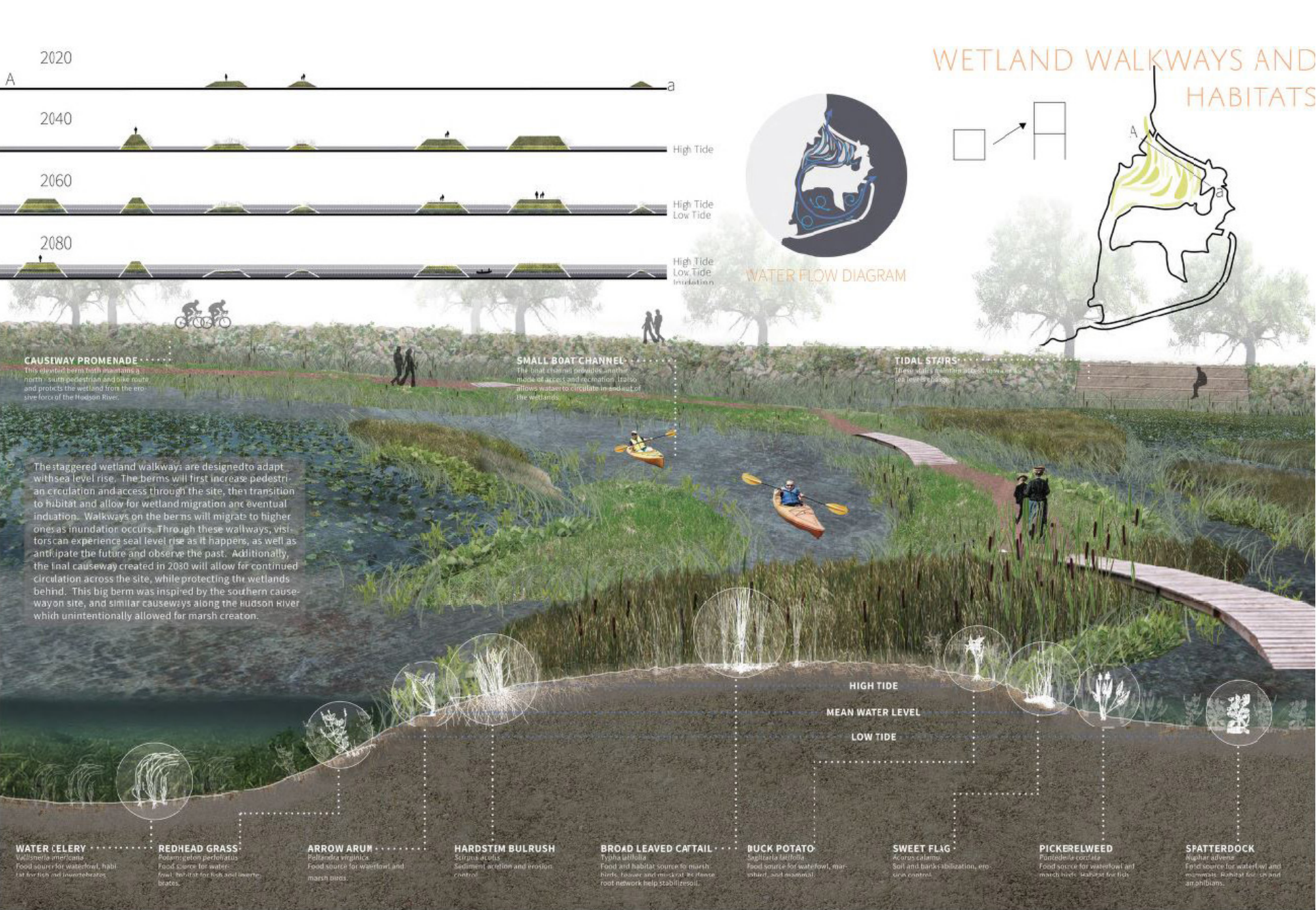


Project Name: Set Into Motion
Crandall, Chan

Barnacle formations that function as marsh ramps and platforms. The structure accommodates marsh migration and movement.

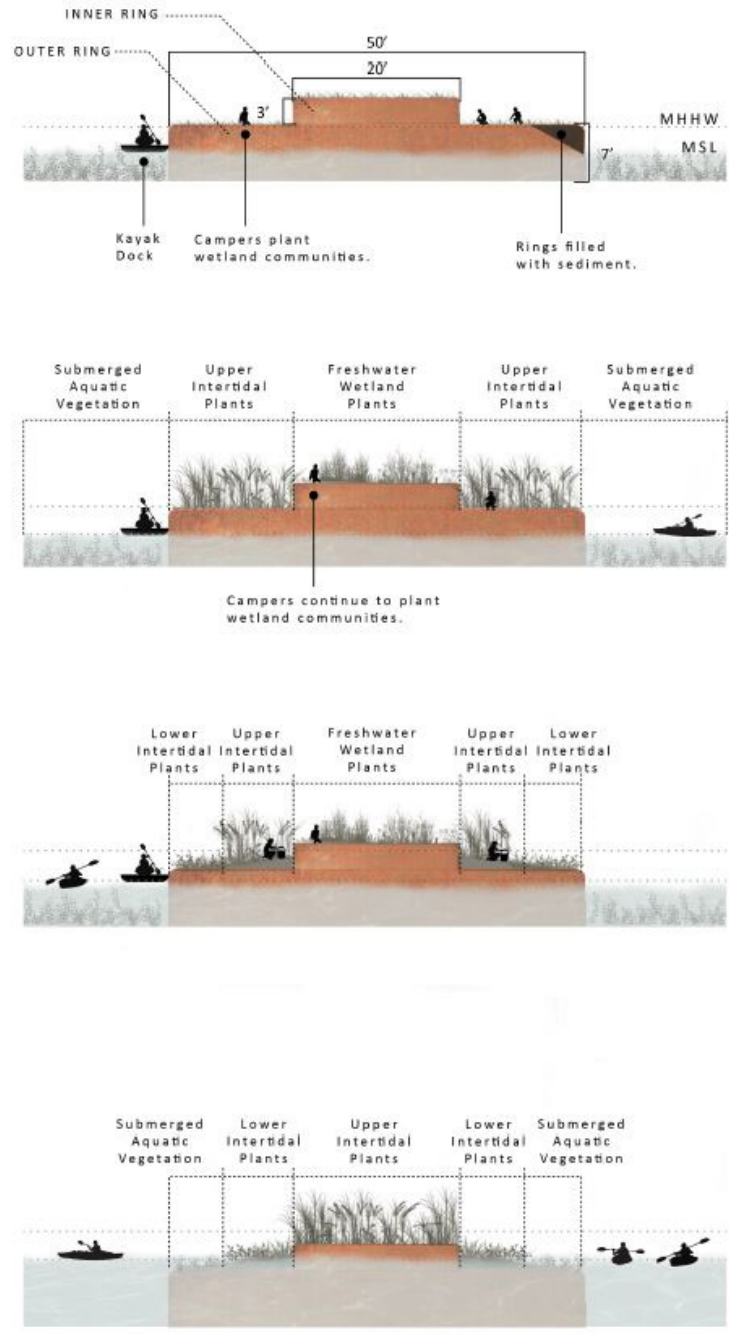
Project Name: Tracing Temporality
Russwick, Hoyt

Wetland walkways will help the northern Kingston Point area to gradually transition into a wetland reserve along with future sea level rise.



Project Name: Kingston Coves - Rising together
Spiegelhalter, Goodrich

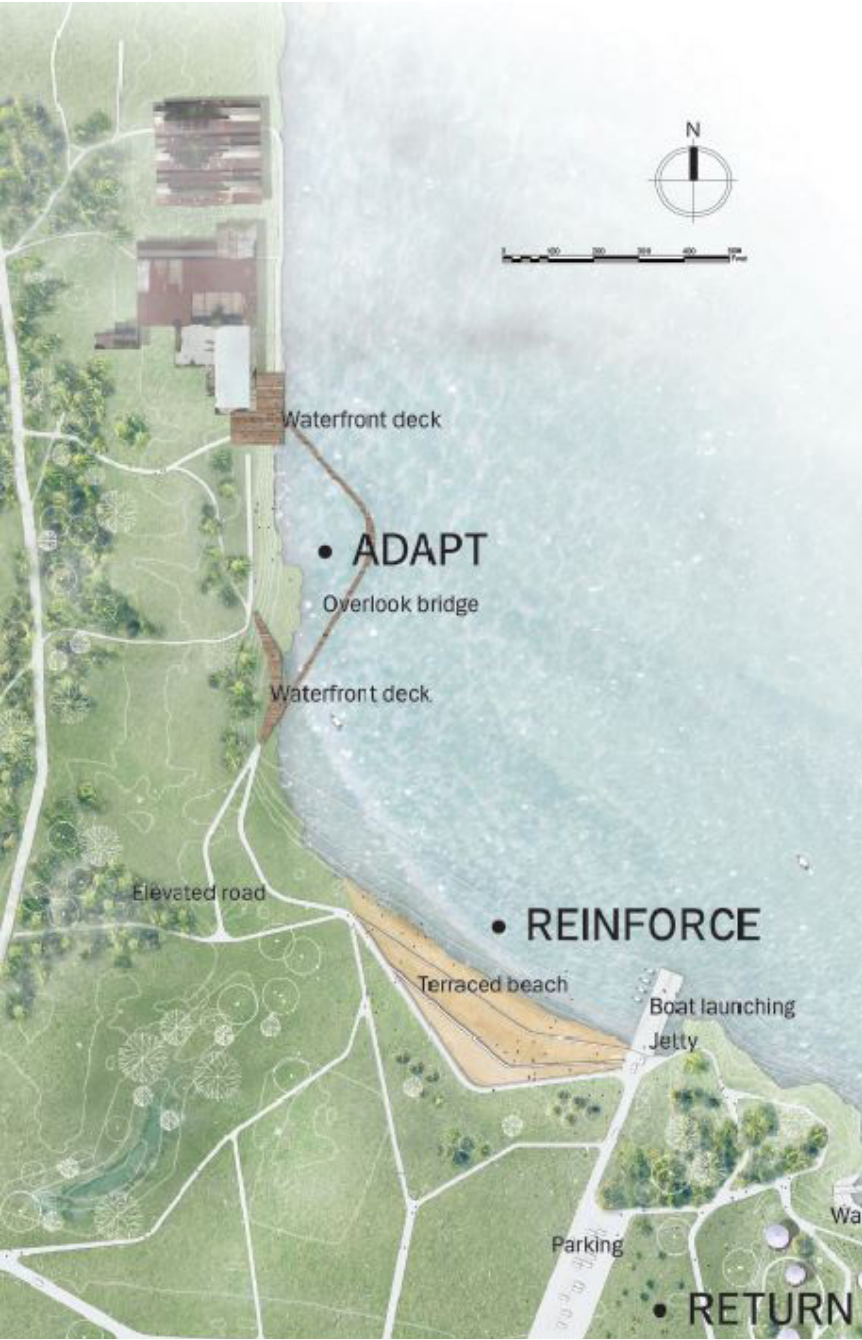
Marsh Migration Station Over Time



KINGSTON II_Public Access/ Recreation/ Program Opportunities

Project Name: Weaving the Waterfront
Kong, Gao, Feng

Connecting the newly developed Hutton Brick Yards area to Kingston Point beach, promote the north waterfront area into an outdoor activity zone with new public attractions such as fishing areas, a bird watching zone and a market space.



Project Name: Actipelago
Kang, Yuan

A floodable playground that enhances the recreational value around beach area while serving as a piece of flood resilient infrastructure.



Project Name: Tracing Temporality
Russwick, Hoyt

The revetment (causeway promenade) will provide continuous access to the site while protecting the future wetland habitat area from river current and future sea level rise.

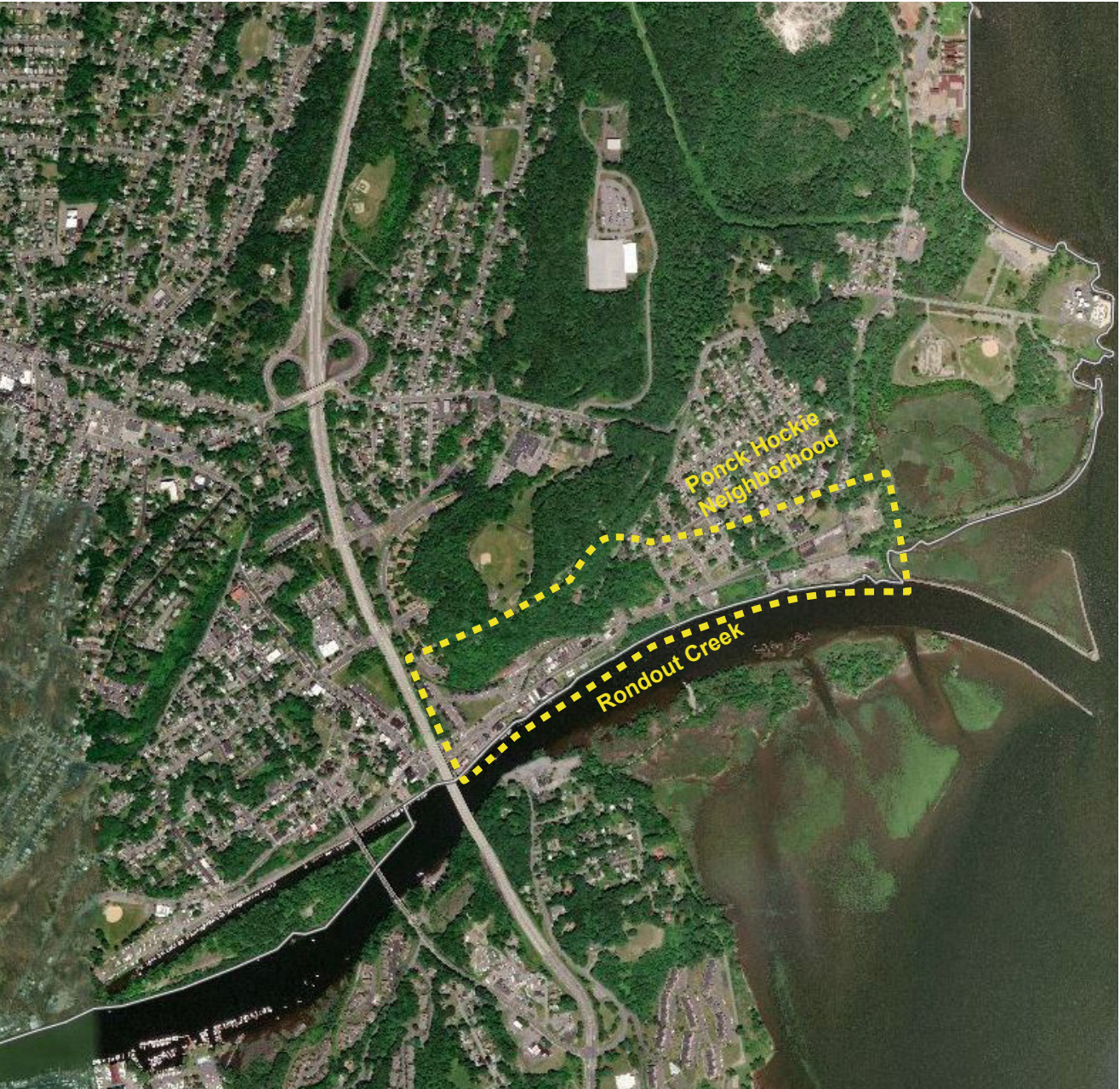


Project Name: Blue: Kingston's New Green
VandenBroek, Divekar

Cultural programming ideas including an amphitheater, lookouts, and bandshell.



5.2 CORNELL CAD STUDIO CONCEPTS REVIEW - KINGSTON III STUDIO



2018 Spring MLA Studio - KINGSTON III_RONDOUT CREEK EAST STRAND

LA 6020: URBAN RESILIENCE + ECOSYSTEM SERVICE DESIGN

Studio focus: sea level rise and other climate risks

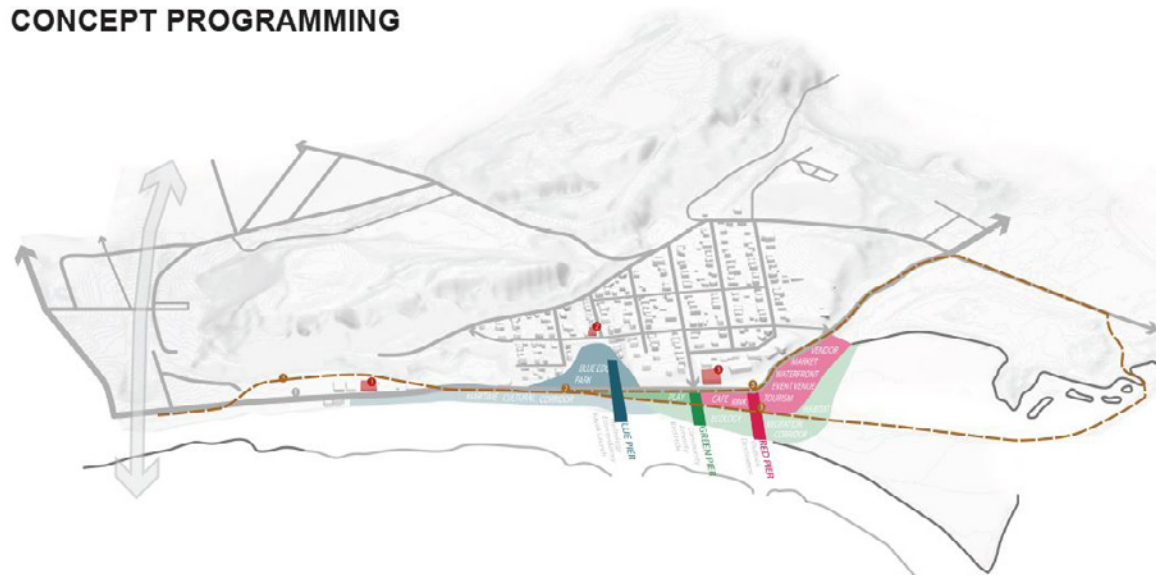
Studio site: Rondout Creek area and east Strand, Kingston, NY

Key Studio Themes:

- Design for marsh migration
- Innovative green infrastructure
- Resilient planting design/ecological resilience
- Ecological connectivity and habitat quality
- Urban heat island mitigation
- Circulation
- Community capacity-building and social resilience
- Flood-adapted landscapes and structures
- Options for reinforcement, adaptation, and retreat

KINGSTON III_Sea Level Rise/ Flood Resilient Strategies

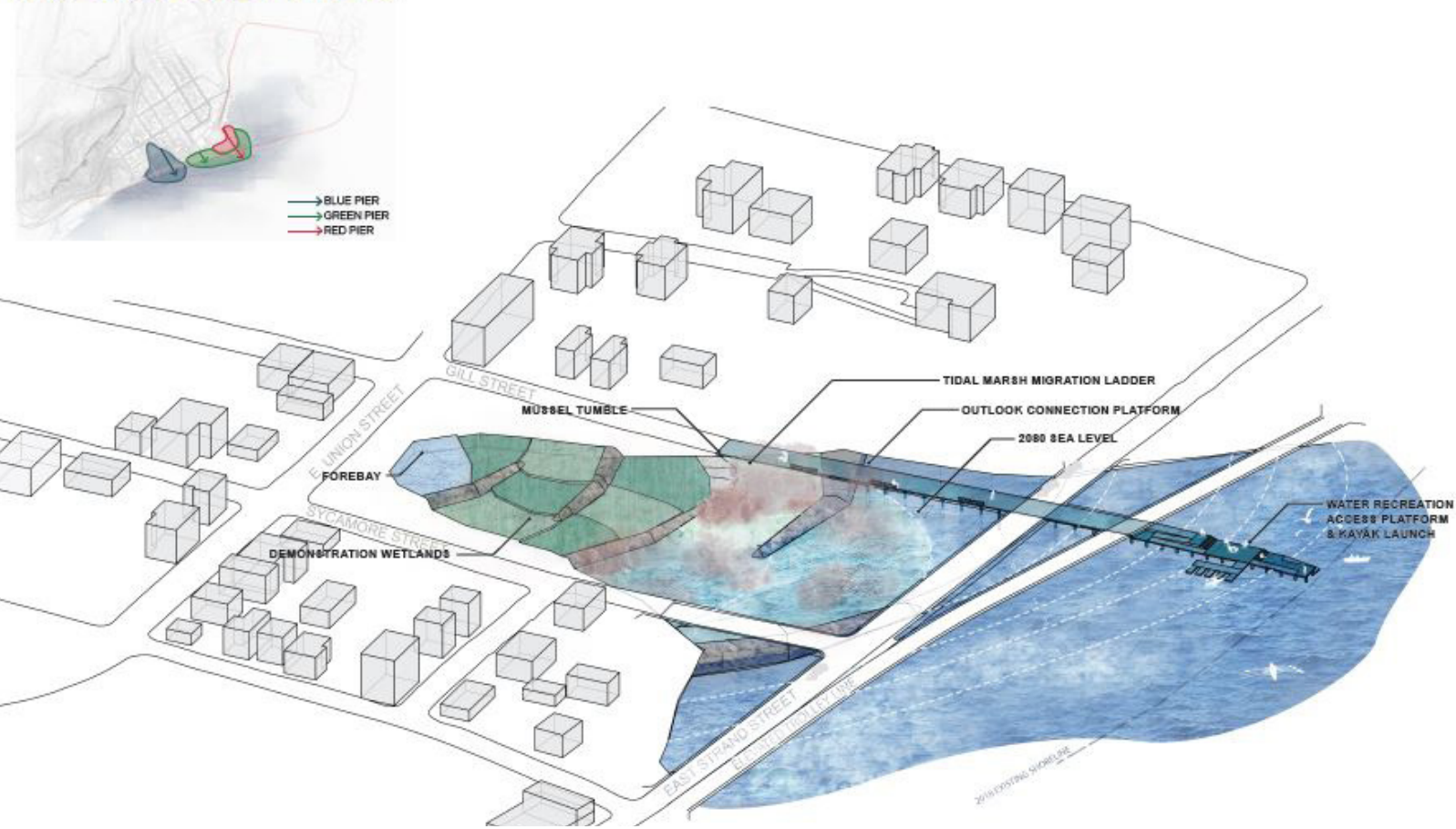
CONCEPT PROGRAMMING



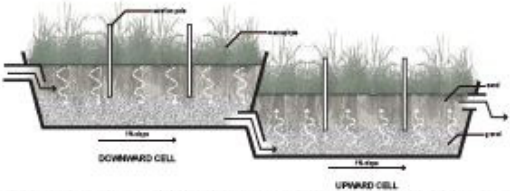
Project Name: Interlace
Chen, Hidalgo

A system of constructed wetland cells that help treat wastewater while promoting new wetland habitats.

HYDROLOGY PIER



DEMONSTRATION WETLAND OPTION ONE:
INTEGRATED VERTICAL FLOW WETLAND CELLS



THE SELECTION OF WASTEWATER TREATMENT WETLAND TYPES HINGE ON ITS LOCAL CONTEXT AND CONDITIONS. AFTER SURVEYING ALL OPTIONS, FROM OPEN WATER WETLANDS, HORIZONTAL FLOW SUBTERRANEAN WETLANDS AND DIFFERENT TYPES OF VERTICAL FLOW SUBTERRANEAN WETLANDS, THE SYSTEM WE'VE SELECTED IS THE INTEGRATED VERTICAL FLOW WETLAND CELLS. THE REASON WE CHOOSE THIS SYSTEM IS BECAUSE (1) IT IS X3 TIMES AS EFFICIENT AS OPEN WATER WETLANDS, (2) IT ELIMINATES ODOORS BECAUSE THE TREATMENT PROCESS TAKES PLACE UNDERGROUND, AND (3) THE TREATMENT PROCESS CAN TAKE PLACE YEAR-ROUND.

Site Conditions: Ponckhockie Neighborhood	
Current Number of Buildings	about 230
Target Treatment Capacity (Households)	500
Avg. Household Size	2.36
Total Number of People	1180
Integrated Vertical Flow Wetland Area Ratio	22 ft ² /person
Total Treatment Area	31755 ft ²
Designed Treatment Area	34438 ft ²

THIS WETLAND DESIGN AIMS TO BE A LOCALIZED WASTEWATER SOLUTION AND THE SIZE OF THE CELLS ARE DESIGNED TO TREAT DOUBLE THE TARGET CAPACITY.

DEMONSTRATION WETLAND OPTION TWO:
STORMWATER TREATMENT WETLAND CELLS



IN THE EVENT THAT COMBINED SEWERS ARE NOT SEPARATED IN TIME TO IMPLEMENT THE WASTEWATER TREATMENT WETLAND DUE TO OVERWHELMING FLOW DURING STORMS EVENTS, AN ALTERNATIVE IS TO CREATE STORM WATER TREATMENT WETLANDS INSTEAD USING THE SAME DESIGNATED AREA. BASED ON THE CONVENTIONAL RATIO OF 10:1 TREATMENT CAPACITY, THE STORM WATER WETLAND IS LARGE ENOUGH TO TREAT THE IMPERVIOUS AREAS OF THE ENTIRE SUB-BASIN.

KINGSTON III_Ecological/ Natural Resource Strategies

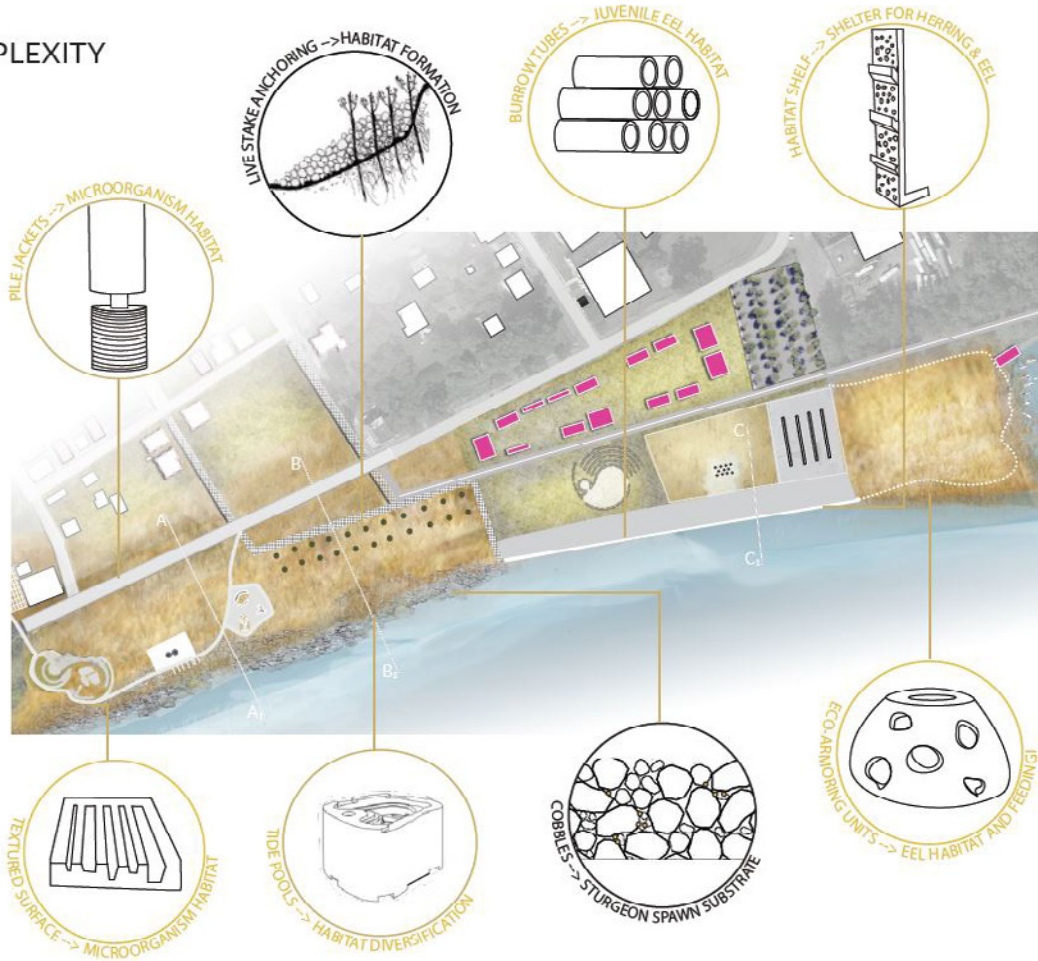
STRATEGIES FOR HABITAT COMPLEXITY

Our design utilizes a series of site-specific strategies that stabilize the shoreline while encouraging the proliferation of future pioneer ecologies. Executed in tandem with flood-adaptive projects, these strategies may encourage wetland migration and create opportunities for Increased habitat diversity, beginning at the microorganism level. To supplement traditional shoreline stabilization techniques, our concept draws on new eco-concrete technology to texturize existing & future hard infrastructure.

WHAT IS ECO-CONCRETE?

CONCRETE TECHNOLOGY THAT ALLOWS FOR ECOLOGICAL COMPLEXITY BY MODIFYING:

- CHEMICAL COMPOSITION for improved biological opportunities
- SURFACE TEXTURE to mimic natural features & enhance ecological complexity
- STRUCTURAL FORMS with specific designs that target and match biological needs



Project Name: Ponckhockie’s Working Waterfront
Anderson, Fabis

Various strategies that stabilize the shoreline while increasing habitat diversity.

SHORELINE TYPOLOGIES

SILL AND WETLAND PLANTING

- existing edge: vertical timber bulkhead
- proposed edge: sill and wetland planting, cobbles, textured surfaces
- conditions created: shallow water habitat, slower water velocity
- species attracted:

HERRING SPECIES HABITAT, FEEDING

STURGEON SPECIES SPAWNING

LIVE STAKE CRIB WALL

- existing edge: vertical timber bulkhead
- proposed edge: live stake crib wall, tide pools
- conditions created: shallow water habitat, slower water velocity
- species attracted:

HERRING SPECIES HABITAT, FEEDING

MODIFIED BULKHEAD WITH HABITAT SHELVES

- existing edge: vertical metal bulkhead
- proposed edge: bulkhead modified with habitat shelves
- conditions created: shelter habitat for prey species
- species attracted:

JUVENILE AMERICAN EEL HUNTING

STURGEON SPECIES HUNTING

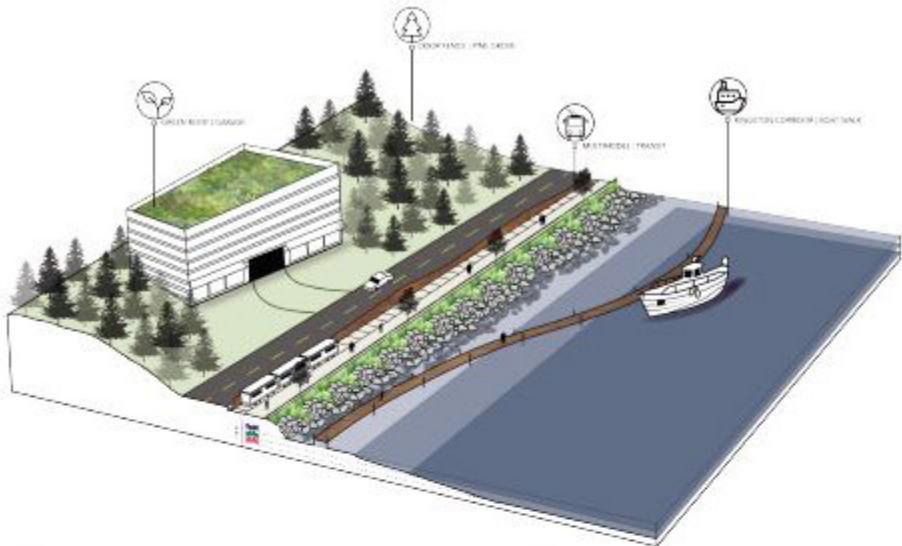
Ecological alternatives to replace existing bulkheads.

KINGSTON III_Public Access/ Recreation/ Program Opportunities

Project Name: Interlace
Chen, Hidalgo



ENHANCING KEY ACCESS ROUTES



- | | |
|--|--|
|  KINGSTON CORRIDOR BOAT WALK
CONNECTING COMMUNITY WITH MARITIME RELICS |  MULTIMODEL TRANSIT
INCREASING ACCESSIBILITY ACROSS THE RONDOUT RIVERFRONT |
|  ODOR FENCE PINE GROVE
MITIGATING SMELLS EMITTED FROM THE WWTP |  GREEN ROOF GARAGE
CLIMATE ADAPTIVE MIXED USE DEVELOPMENT |

5.2 CORNELL CAD STUDIO CONCEPTS REVIEW - KINGSTON I STUDIO



2016 Fall BLA Studio - KINGSTON I_BLOCK PARK

LA 4010: URBAN RESILIENCE + ECOSYSTEM SERVICE DESIGN

Studio focus: flooding and other climate risks

Studio site: Block Park and Island Dock area, Kingston, NY

Key Studio Themes:

- Access and circulation
- Ecology + marsh migration
- Economic development + historic preservation
- Recreation + interpretation
- Tourism + community opportunities

KINGSTON I_Sea Level Rise/ Flood Resilient Strategies

Project Name: Hydrophilic Kingston
Zhang, Chang

Diagrams illustrating possible future stormwater management strategies and habitat connections.



HABITAT FRAGMENTATION
Rondout lies in between two areas of high biodiversity; this creates a potential for habitat connectivity of the area, which is executed in the form of stepping stones for birds and especially aquatic biodiversity to thrive around the marshes.



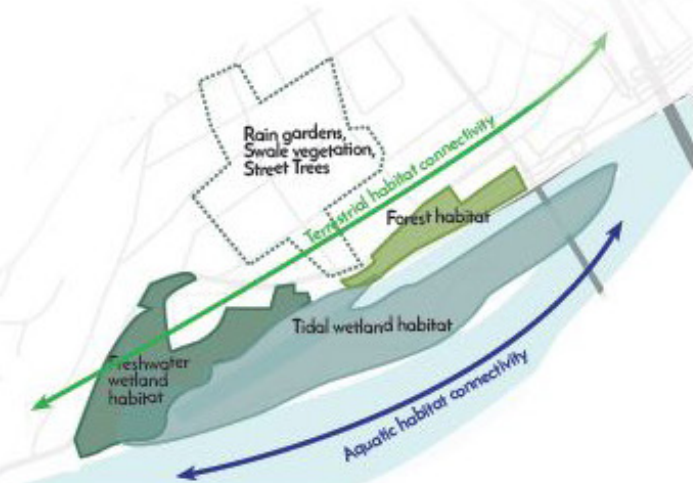
COMBINED SEWER OVERFLOWS (CSO)
Acknowledging the problem of combined sewer overflows, a stormwater management system seeks to slow down runoff conveyance and retain water and treat stormwater through green infrastructure. This proposal also adapts to sea level rise, flooding and promotes marsh migration and accretion through tides.



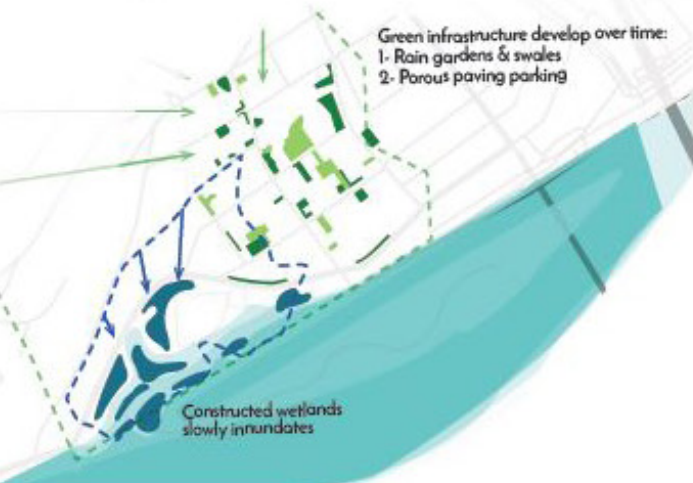
CLIMATE CHANGE IMPACTS: FLOODING, SEA LEVEL RISE (SLR)
The design should ensure that Kingston waterfront is resilient to climate change impacts by designing for mitigation and adaptation. The 2020, 2050 and 2080 inundation and 50 year flood event is studied.



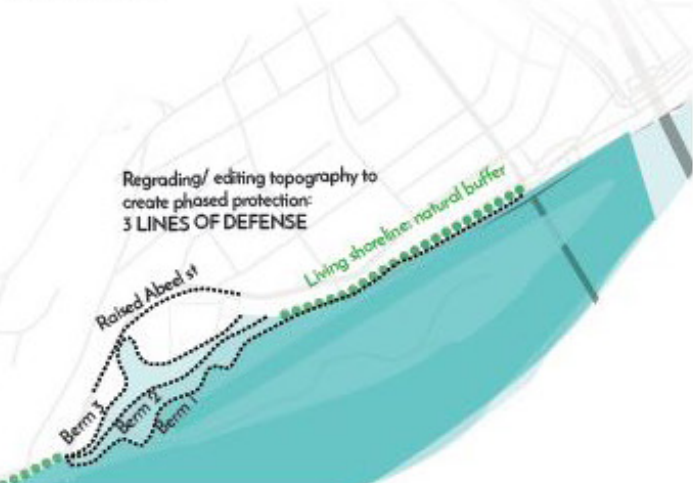
CONTEXT, CHARACTER
From the rich industrial history of Island Dock, the historic neighbourhood of Rondout, the recreational softball tournaments that Black park is known for, to the adaptation to climate change of a vulnerable waterfront area, we seek to incorporate and enhance the character of the area, by proposing a variety of interactions with water, the environment, and history.



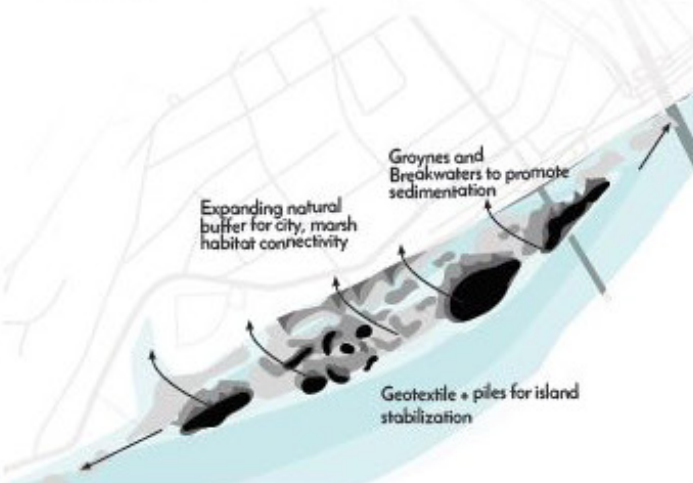
HABITAT CONNECTIVITY



STORMWATER MANAGEMENT



SEA LEVEL RISE ADAPTATION

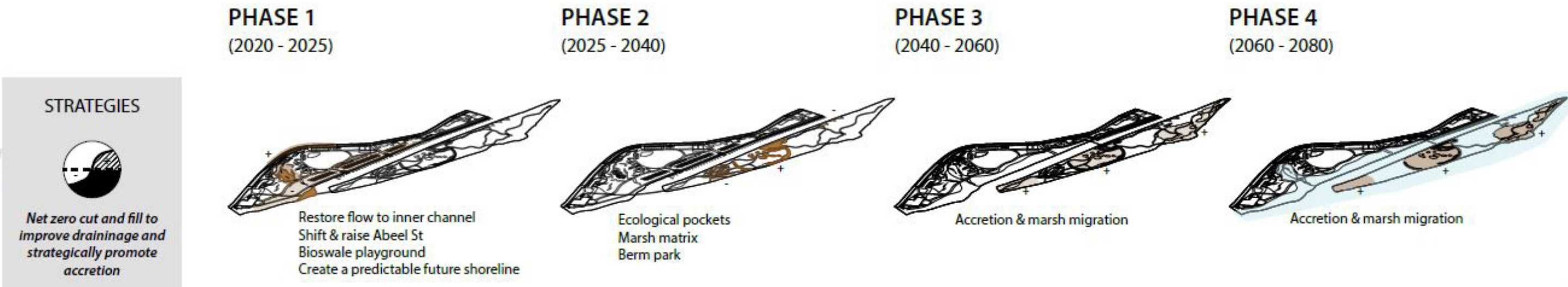


ACCRETION DIAGRAM

KINGSTON I_Ecological/ Natural Resource Strategies

Project Name: Revelatory Kingston
Liu, Packer, Phodes

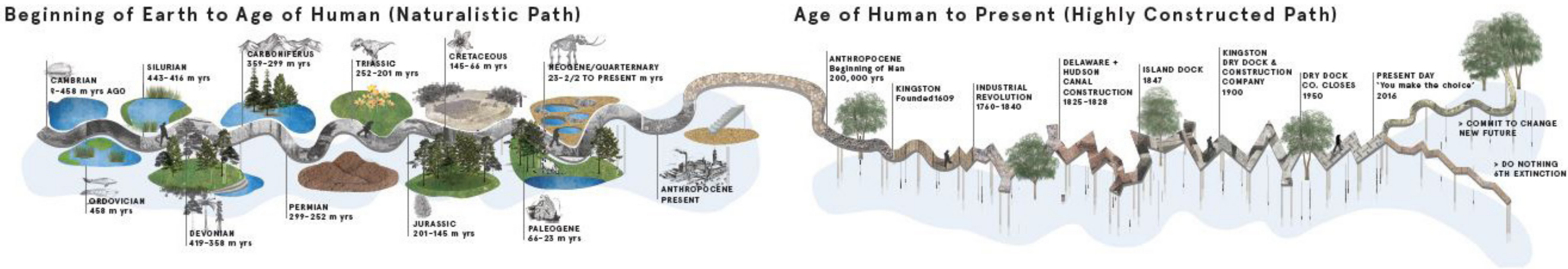
Creation of ecological pockets through net zero cut and fill to promote sand accretion and marsh migration.



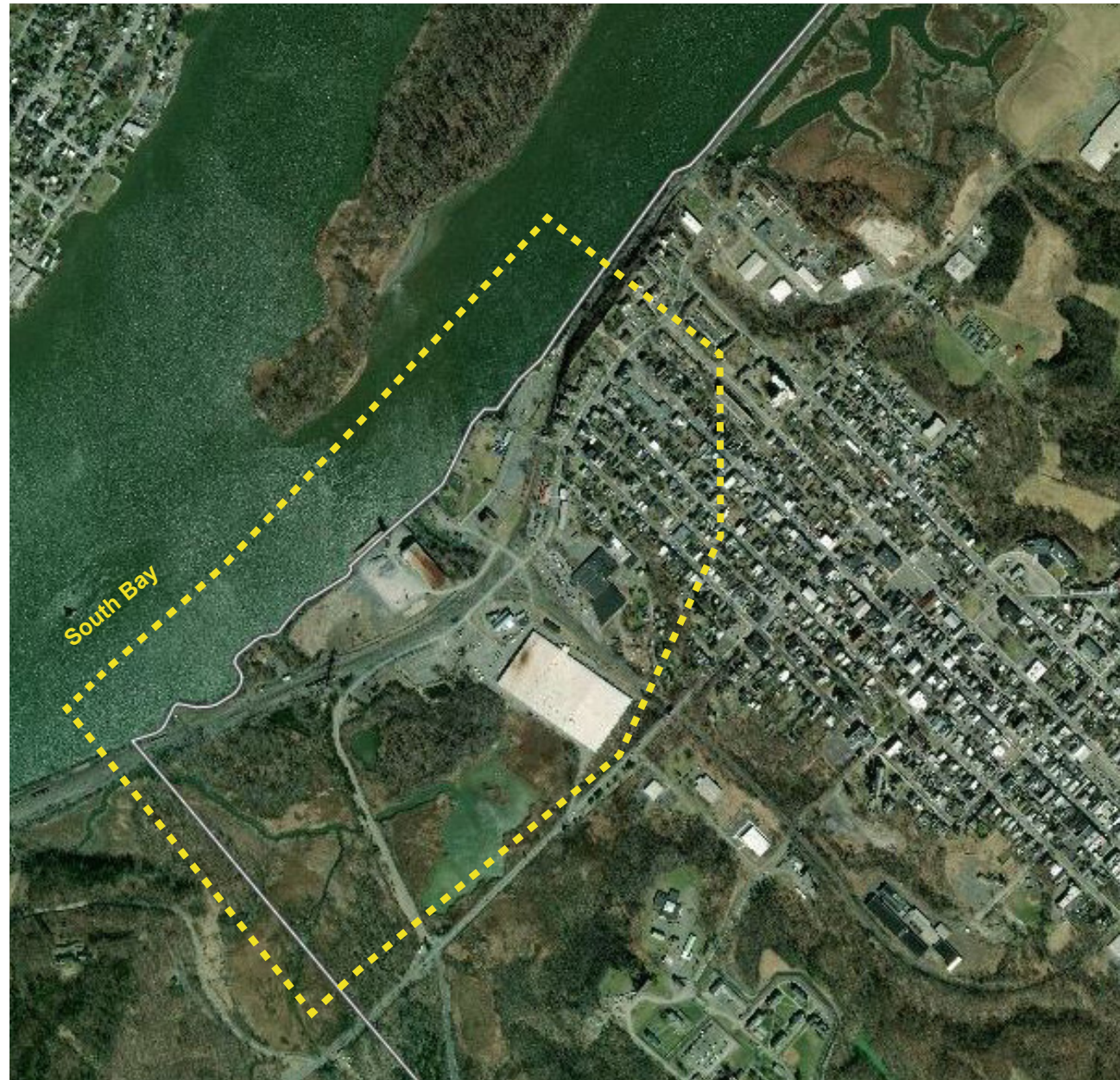
KINGSTON I_Public Access/ Recreation/ Program Opportunities

Project Name: Kingston Rising
Blacutt, Wong

Allegorical path: a pathway that functions as an outdoor museum.



5.2 CORNELL CAD STUDIO CONCEPTS REVIEW - CITY OF HUDSON STUDIO



2016 Spring MLA Studio

LA 6020: URBAN RESILIENCE + ECOSYSTEM SERVICE DESIGN

Studio focus: sea level rise and other climate risks

Studio site: South Bay waterfront area of Hudson, NY

Key Studio Themes:

- Industry
- Access and circulation
- Ecology + marsh migration
- Economic development + historic preservation
- Recreation + interpretation

CITY OF HUDSON_Public Access/ Recreation/ Program Opportunities

Project Name: Unsinkable
Chirico, Smith

Programming inspirations.

unsinkable: the WETLAND INDUSTRIAL COMPLEX
alisa chirico & graham smith

- 1
- Promenade Hill Park Redesign
- Park redesign with more thoughtful plantings and user-centric features
- 2
- Promenade-Waterfront Connector
- Switchback park connector descending the slope from Promenade Hill, bridging tracks and connecting with rise near Ferry St
- 3
- State Boat Launch + Lot Redesign
- Reduction of paved parking area, implementation of vegetated shoreline in preparation for sea level rise
- 4
- Power Boat Association Relocation
- Relocate PBA Clubhouse function to higher ground (currently sheds and storage)
- 5
- Henry Hudson Riverfront Park Redesign
- Realignment of Water Street, replacement of retaining wall with gentle slope for better connectivity, planting redesign to define open and closed spaces and views
- 6
- Dunn Warehouse Wet Floodproofing
- Raise floor of Dunn Warehouse above 100-yr flood elevation, except for future Sloop Club workshop
- 7
- New Street Grid
- Realign streets following KAZ teardown to accommodate new development, creating visual connection between Robert Taylor House and Basilica Hudson
- 8
- Flour Mill Market Triangle
- New plaza and small market pavilion in triangle island framed by ADM and CSX rail, creating patch of pedestrian interest
- 9
- Canopy Pay-Parking
- Redesign of parking lot with strategic pattern and CU-structural soil to increase canopy coverage
- 10
- New Lighthouse View Park
- Conceptually mirroring historic slips, excavate shoreline southwest of deep water dock to create new public park that drastically changes form with sea-level rise
- 11
- Basilica Wet Floodproofing
- Implement sub-floor radiant heating in Basilica Hudson to be used to speed flood-water evaporation after floods recede
- 12
- Basilica/LB Shared Canopy Parking
- Redesign and unification of parking for Basilica and LB Warehouse with strategic pattern and structural soil, maximizing canopy coverage, ameliorating derelict, uninviting, impermeable expanses
- 13
- Overflow Parking Meadow
- Structural soil and strategic planting to create a meadow to be mown seasonally for event overflow parking
- 14
- LB Warehouse Green Roof and Murals
- Extensive (3-4" deep) sedum green roof on LB Warehouse and commissioned murals to expand upon area's cultural and ecological signature
- 15
- Woodland Trails
- Foot trails through current ruderal forest to East Basin and Central Pond overlooks
- 16
- Causeway Trail and Overlooks
- Conversion of causeway to pedestrian use, with overlooks at critical vantage points
- 17
- Anti-Phragmites Plantings
- In advance of sea-level rise related marsh migration, hydroseed and live-stake wetlands around *Phragmites australis* with species that can slow progression
- 18
- Colarusso Truck Reroute
- Work with A Colarusso & Son to establish new route from quarry to port around LB Warehouse
- 19
- 9G Elevation
- Elevate 9G to 14' above NTDE Mean Sea Level

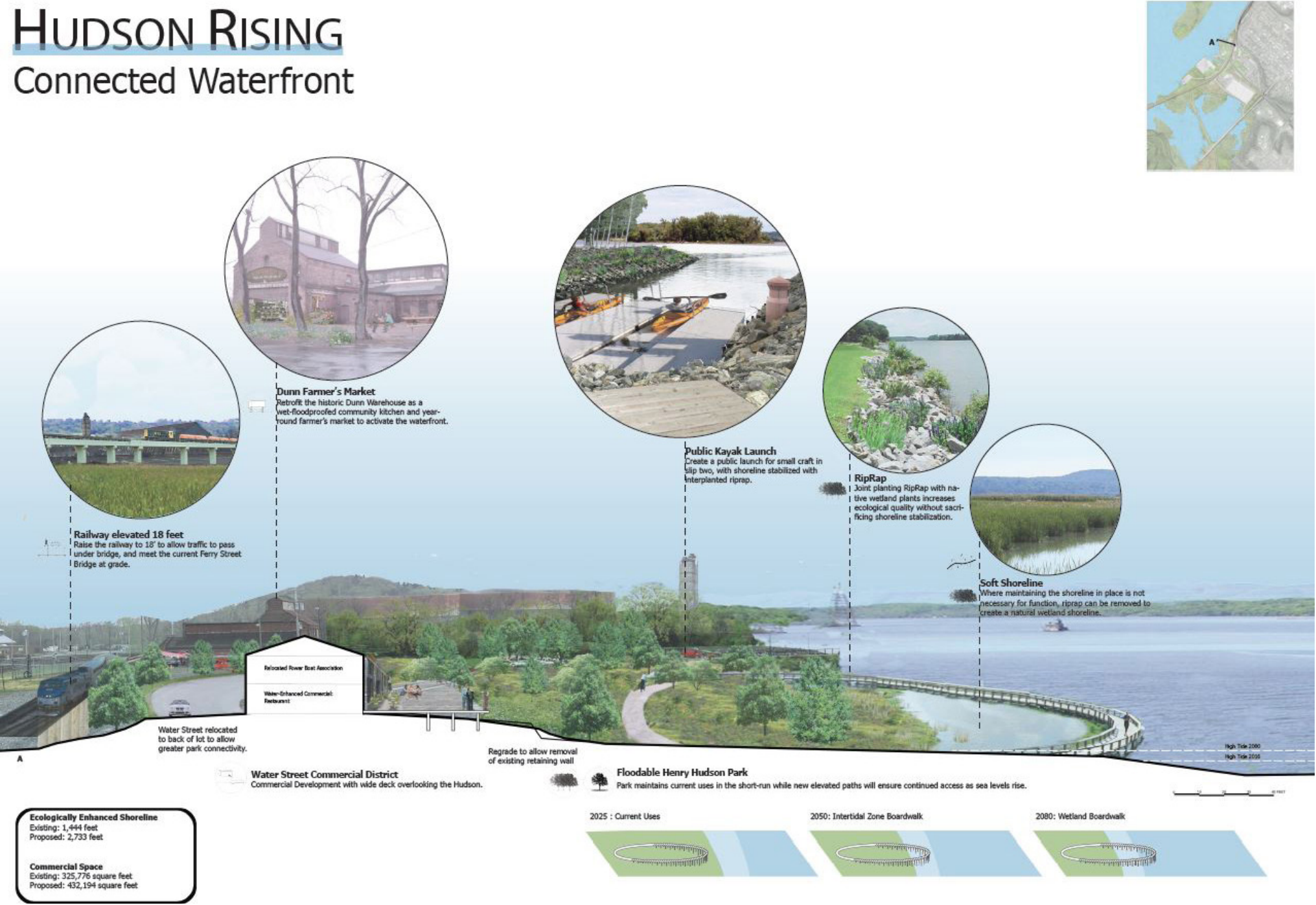


Project Name: Hudson Rising
Hirsch, Sitzman, Strum

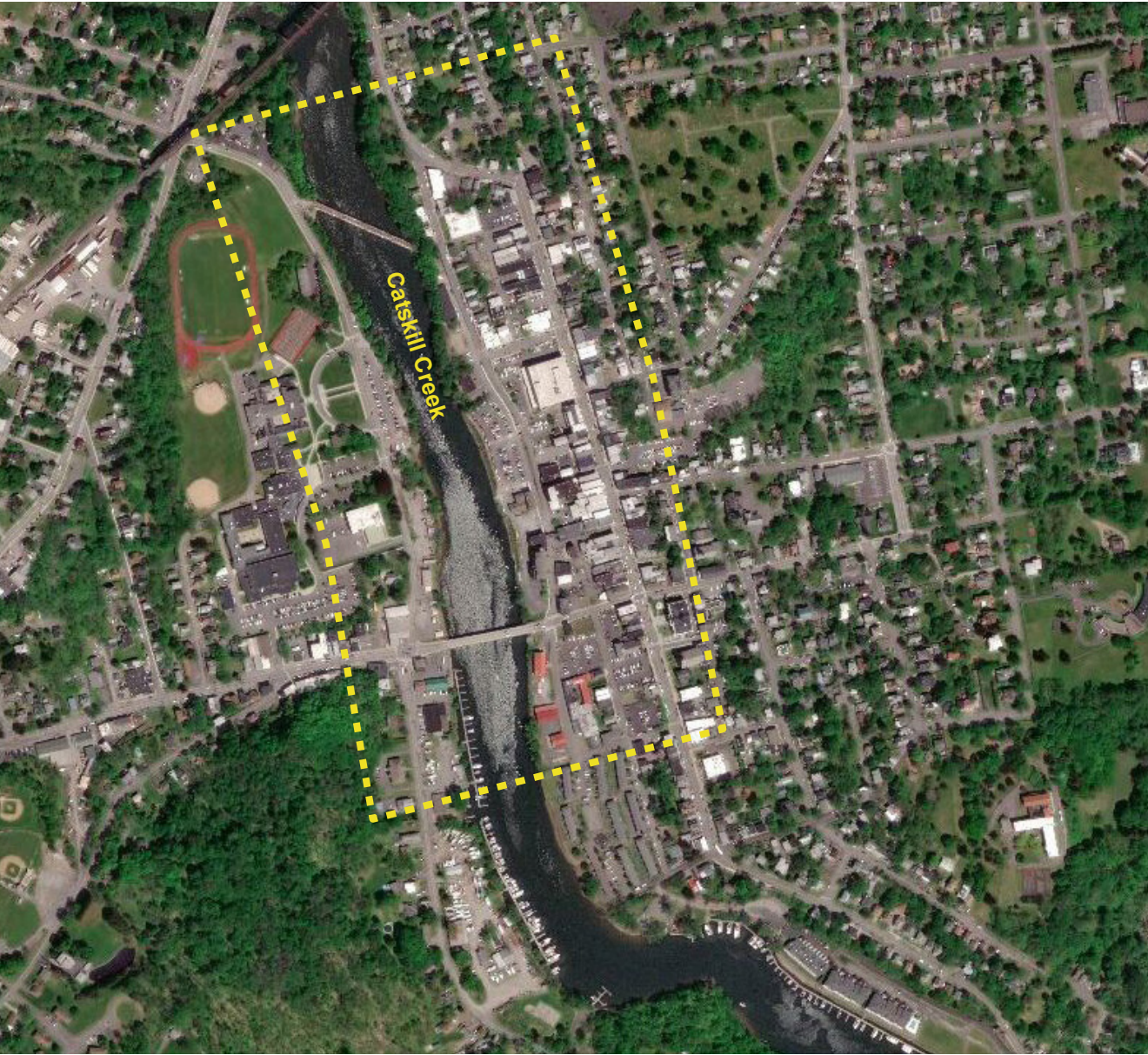
Programming inspirations,
Boardwalk over shifting landscapes.

HUDSON RISING

Connected Waterfront



5.2 CORNELL CAD STUDIO CONCEPTS REVIEW - CITY OF CATSKILL STUDIO



2017 Fall BLA Studio - CATSKILL

LA 4010: URBAN RESILIENCE + ECOSYSTEM SERVICE DESIGN\

Studio focus: sea level rise and other climate risks

Studio site: Downtown area of Village of Catskill, NY

Key Studio Themes:

- Historical downtown preservation
- Flooding and inundation
- Flood resilient landscape
- Reinforcing community identity

5.2 CORNELL CAD STUDIO CONCEPTS REVIEW - CITY OF PIERMONT STUDIO



2017 Fall BLA Studio - PIERMONT

LA 4010: URBAN RESILIENCE + ECOSYSTEM SERVICE DESIGN

Studio focus: sea level rise and other climate risks

Studio site: Piermont waterfront, NY

Key Studio Themes:

- Post industrial waterfront
- Regional destination for recreation and leisure
- Current residential area facing SLR challenges
- Climate adaptation providing a combination of adaptation, reinforcement, and relocation approaches

5.3 ECOLOGICAL SURVEY SUPPLEMENTAL INFORMATION

Survey Methodology and Discussion



402 West 40th Street New York, NY 10018
phone +1.646.688.3113 / fax +1.646.688.3664
www.edesigndynamics.com



MEMO

October 7, 2019

To:
Taewook Cha, Supermass Studio

From:
Eric Rothstein, eDesign Dynamics

Copies:
Sean Eno, Supermass Studio
Luyao Kong, Supermass Studio
Jess Haitz, eDesign Dynamics

Subject: Kingston Point Climate Adaptive Design – Task 2.1 Site Reconnaissance

Task 2.1 Site Reconnaissance: Vegetation Survey – Ecological Master Plan

Background

eDesign Dynamics (EDD) performed a vegetation survey throughout Kingston Point in Kingston, NY (“the site”) on 9/16/2019 and 9/26/2019. EDD traversed the site to assess the vegetation at multiple points¹, focusing on the forested regions, the emergent wetland in the central parking lot, and the wetland in the southern portion of the site. At each point, EDD identified species in the canopy stratum within 50-80 feet, in the shrubs/vines stratum within 30-50 feet, and in the ground cover stratum within 30-50 feet. The following data was recorded for each identified plant species:

- Latin name
- Identification as a native or non-native species
- Identification as an invasive or non-invasive species
- Prevalence (percent cover)

Results

Following the vegetation survey, EDD performed an analysis to assess the percentage of native species at each point versus the percentage of non-native species. EDD also ranked the native species, giving invasive, native species a value ranking of 50% of native, non-invasive species. Please see Attachment A for the results of the analysis.

Discussion

Based on the results of the vegetation survey analysis, EDD recommends the following alternatives for the Climate Adaptive Design (CAD) project, namely:

1. Forest Enhancement

- EDD recommends removing invasive species from the shrubs/vines and ground cover stratum and enhancing these forest layers with native species.
2. Conversion of the Central Parking Lot to a Wetland
EDD recommends converting the centrally located parking lot into an emergent wetland, based on existing conditions and sea level rise projections.
 3. Replacement of Existing Non-Habitat Areas with Swamp Forest
EDD recommends replacing non-forested areas with swamp forests i.e. the baseball field.
 4. Creation of Freshwater Reefs in the Hudson River
EDD recommends creating freshwater reefs (i.e. using reef balls) along the Hudson River shoreline adjacent to the site to foster fish habitat and to create a barrier for increased storm surge intensity as a result of climate change.
 5. Creation of Eco-Parking Lots
EDD recommends partnering with existing design efforts to create eco-parking lots by redesigning the existing parking lots to include closed canopy forest for the purpose of adding habitat value, mitigating the heat island effect, providing cooling/shading in the summer, managing stormwater, and sequestering carbon.

¹ The site was assessed via multiple transects. Points were located a minimum distance of 75 feet apart along each transect.

5.4 MISC. MEETING MINUTES

Supermass Studio

Kingston CAD Development Project

Meeting Minutes

Meeting Date: 8/2/2019

Location: Kingston City Hall Conference Room 1, 420 Broadway, Kingston, NY, 12401

Present: Dan Miller (NEIWPCC); Libby Zemaitis (HREP); Julie Noble, Kristen Wilson, Kevin Gilfeather, Sean Koester, Ruth Ann Frank (City of Kingston); Eric Rothstein (eDesign Dynamics); Andy Simons (emphasis Design); Taewook Cha, Sean Eno, Luyao Kong (Supermass Studio).

Distribution: Those Present

Subject: **Project Kickoff Meeting**

Prepared by: Taewook Cha (TC)

Issued: 8/5/2019

- NEIWPCC/NYS DEC:
 - Dan Miller (DM) and Libby Zemaitis (LZ) gave an overview of NYS DEC/NEIWPCC CAD initiative. The goal is having all towns along the Hudson River to be fully adapted by 2050.
- City of Kingston:
 - Julie Noble (JN) gave an overview of City's planned project initiatives at Kingston Point. These projects include the ADA access mat installation at the beach area; installation of youth-sized soccer field and climate-adaptive improvements at the softball field and the parking lot; shoreline stabilization along the Kingston Point Rail Trail.
 - JN noted that the regularly flooded parking lot was recently designated as a wetland. The parking lot will have to be relocated instead of being raised.
 - JN noted the master plan scope in the City's current Kingston Point Improvement project and expressed concerns about redundancy with CAD project scope. Taewook Cha (TC) clarified the CAD project team's Overall Framework Plan to be a high-level conceptual master plan and recommended the City's master plan consultant pick up the Framework Plan when it is completed and continue on to complete it as a full master plan. Kristen Wilson (KW) will review both project's scope and make a decision on how to proceed.
 - JN and KW confirmed that a complete survey of the Kingston Point was one of the required scopes for the City's Kinston Point Improvement Project. The City will make the survey available to the CAD project team when it's completed.
- Consultant Team:
 - TC presented the team's initial proposal diagram and explained the overall project procedure by each task.
 - TC presented a list of secondary source data that the consultant team currently obtained through web search and Cornell CAD studio (through former CAD studio student Luyao



Department of
Environmental
Conservation

This document was prepared for the Hudson River Estuary Program, New York State Department of Environmental Conservation, with support from the New York State Environmental Protection Fund, in cooperation with the New England Interstate Water Pollution Control Commission. The viewpoints expressed here do not necessarily represent those of NEIWPCC or NYS DEC, nor does mention of trade names, commercial products, or causes constitute endorsement or recommendation for use.

Supermass Studio

- Kong (LK)).
 - KW and JN will review the list and advise the consultant team on potential gaps, and any additional data that are available.
 - Eric Rothstein noted that a draft QAPP was submitted to DM for preliminary review. DM clarified that only environmental data would be the subject of QAPP.
 - LK presented her Cornell CAD studio project on Kingston Point "Weaving the Waterfront."
- Stakeholder Engagement Strategy
 - The overall Stakeholder Engagement Strategy was discussed to begin identifying potential community/civic leaders, public agencies, and property owners.
 - LZ will provide a list of stakeholders from the Cornell CAD studio to the consultant team.
 - JN and KW will provide a summary list of the recommended community leaders, public agencies, and property owners to the consultant team.
 - Andy Simons (AS) will set up a separate meeting to discuss engagement strategy with JN, KW and LZ.
 - Site Visit:
 - JN, DM, LZ, ER, AS, SE, LK and TC did a site walkthrough at Kingston Point on the following areas:
 - Hutton Brickyards and trail area between the beach and the Hutton Brickyards
 - Beach
 - Parking lot
 - Kingston Point Park & wetland area
 - Rondout Creek shoreline and downtown waterfront area

END OF MINUTES

These minutes represent Supermass Studio's understanding of all items discussed in the meeting. These minutes shall stand as the correct and complete record of the meeting unless written corrections are received by Supermass Studio within (5) days from the date issued.



Department of
Environmental
Conservation

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5.4 MISC. MEETING MINUTES

Kingston Weaving the Waterfront October Public Outreach Meeting

Meeting Minutes

Meeting Date: 0917/2019

Conference Call

Present: Libby Zemaitis (HREP); Julie Noble, Kristen Wilson, Andy Simons (emphasis Design), Luyao Kong (Supermass Studio), People from McLaren (Reuben?), People from Weston Sampson (Dan & Norman?) and People from Kingston Point Park Project (Dennis?)

Subject: **October Public Outreach**

1. Event Overall Introduction (by Andy):
 - Open House event for all the ongoing Kingston Waterfront Project on 10/26. This event will probably be named "Weaving the Waterfront". Tours and exhibitions will be held to attract public and generate public feedback.
 - Major events: Boat tour to the boathouse, Trolley line tour and exhibitions at the Kingston Maritime Museum.
 - Event goal: attract 200-500(?) people to join the event and generate excitement for general public
2. Intention of Today's Conference Call (by Kristen and Andy)
 - An opportunity for each team to specify their detail requirement, what kind of public input each team would like to receive.
 - Q&A for each team
3. Each Project Team:
 - Weston Sampson asked how to tie all those projects together without confuse the general public. Andy answers there will be or may be 2 ways: First is to held a site tour from the beginning to the end of Kingston point, and the projects are introduced one by one along the way. The second method is to give each team a session for more detailed introductions to the general public.
 - McLaren mentioned that each project is at different stage of design right now, and their projects are in the phase that cannot be changed or re-designed, so their team will be focused on project introduction.
 - Andy mentioned that CAD project are in data collecting phase
 - Dennis(?) from Kingston Point Park Project mentioned they are also in the beginning phase of the project and probably will offer illustrative, primary design concept drawing at the Public Outreach for public input.
4. Andy asks each team to submit
 - A summary or a list of questions, including what input you expected from the public
 - Missed this one due to phone connection problem, please ask Andy.
 - What level of community engagement are you targeting?
5. Funding Source
 - Andy: Still working on the funding, there will be tent rental and balloons...some of the boat tour fees will be covered by Maritime museum. The City are trying to cover a small part of the fee as well. Boat tour and Trolley tour are in general not very expensive
 - Each team's outreach budget

END OF MINUTES

Kingston Weaving the Waterfront

Meeting Minutes

Meeting Date: 10/21/2019

Conference Call

Present: Steve Noble, Julie Noble, Kevin Gilfeather, Ryan Coon (City of Kingston); Taewook Cha (Supermass Studio); Dennis Larios (Brinnier & Larios)

Subject: **Stakeholder Outreach**

Current Programming (Kevin):

- Beach volleyball runs from May to September for 2 nights/week.
- Kayak program runs from Memorial Day to early September. Guided kayak tours, wind board and paddle board programs are also offered.
- Kayak Festival in June is offered by local businesses and led by city staff and mayor.
- Environmental education program is offered in fishing, water quality testing and various school programs.
- Rotary Park offers bird watching program.

Current Beach Program (Mayor):

- Loss of sand due to tidal movement is an issue.
- Protect sand by reducing water shift.
- Amenity and accessibility is important.
- Prefer to keep the current parking where it is.

Beach Maintenance (Kevin):

- Beach sand is replenished every 3 – 4 years.
- ADA accessibility is needed for parking.
- Beach volleyball is a popular program.
- Currently there are no weekend maintenance staff on the beach.
- There is a maintenance building at the beach.

Beach Maintenance (Julie):

- Sand movement is an issue in beach maintenance.
- City prefers not having to add sand.

Boat Launch (Kevin):

- Boat launch is heavily used and is for non-motorized boats only.
- No dredging of water so far.
- Jet skis are standing issue at boat launch/beach.

Rotary Park Maintenance (Kevin)

- Currently there are no maintenance on trolley track.
- City provides grass cutting and weed whacking maintenance.

END OF MINUTES

5.4 MISC. MEETING MINUTES

Key Bullet Points and Some Thoughts from Pre-Pre-App Meeting, 6/22/2020, Kingston Point Design

Attending:
Christopher Lang, DEC Region 3, Environmental Analyst
Angela Schimizzi, DEC Region 3, Project Impact (Analyst?)
Daniel Miller, DEC
Libby Zemaitis, DEC
Julie Noble
Taewook Cha
Sean Eno
Luyao Kong
Eric Rothstein

- DEC regulates to top of bank but no further than 50' from Mean High Water (MHW).
- MHW is a critical line to establish as the permit application will focus on excavation, filling, and over-water structures on the river side of the MHW line.
- For impacts that involve excavation, filling, or shading, the benchmark for approval will be to establish that the measures are "reasonable and necessary." A reasonable measure determination should be tied to a water dependent use. A necessary measure should indicate that the measure is the least impactful among design options. Impacts evaluations will be for during construction or permanent structures and will not only focus on the final product but also the means, methods, and timing of installation. Timing is tied to breeding seasons of critical species.
- While we are working in the intertidal zone, we will not be filing for a tidal wetlands permits. Those are for marine (salt water/ brackish water) systems.
- DEC Region 3 has little to no focus on mitigation. (This runs counter to my previous statements. DEC Region 2 has a strong focus on mitigation.)
- Any proposed habitat in the water will be considered fill, however approval is possible if the designers can show, utilizing scientific papers and proof of concept, that the structures are serving a purpose. **NOTE: The design team may wish to reintroduce some fish structures into the design or at minimum reference their potential.**
- For the wetland cove area, the evaluation will primarily fall under a "stream disturbance review." So long as we are not excavating or filling below the MHW line, the permit review will focus on ensuring that no harm will occur to the river during construction or upon completion of the project.
- If the pier structure does not extend past the MHW line, it will also fall under a stream disturbance review.

- If the pier structure does extend past the MHW line, it will not only fall under a stream disturbance review, but also, more critically, an excavation and fill permit review where we must show that the pier is reasonable and necessary. If the water dependent use is for fishing, we will further need to justify the width, height, and depth of the pier. DEC will be looking to minimize the size, so minimum ADA requirements will likely be the limit for most and then I can imagine the end of pier expanding to accommodate fishing demand. Expansion beyond ADA dimensions would need to be justified-- perhaps through discussing fishing demand and related safety requirements for spacing of anticipated anglers.
- For piers, DEC historically prefers pile supported structures vibrated into place to limit in water disturbance. DEC also emphasized to confirm in-water land ownership.
- The minimum pier elevation should be 4' above MHW. **Note: If we are designing for 2080, I suggest we target 4' above MHW for 2080.**
- DEC will require that all design elements are built to withstand climate risks.
- For permitting, the project will also need to comply with Army Corps of Engineers and Department of State Requirements. This would happen in the next phase of work.
- DEC, in general, prefers softer engineering methods over concrete. When concrete is required, pre-cast is better in terms of approvals.
- For live stakes, DEC likely has no jurisdiction for a stand alone project. If live staking is included as part of a larger project, it will be reviewed. **Note: I think this would allow us to do a pilot project with community groups. For a couple thousand dollars, we could install stakes and have citizen scientists monitor them over the 2021 growing season. Something to discuss. To Julie's point regarding brick depth, I could go out and see if it is feasible to do pilot holes with rebar and a mallet.**
- A pre-app meeting should be conducted during the schematic design phase for further input from DEC.
- The permit application should be filed around 50% DD. This is my estimate. DEC needs the design plans to be far enough along to indicate materials and means and methods of installation at the time of permit submittal. Timing of installations may also come into play to avoid breeding seasons.

Targeted Highlights / Take Aways from Design Review Meeting:

- We need to fix datum issue. We need to find out the lidar datum. My team should be able to take it from there.
- We should discuss cost implication of Econcrete in what is now upland.
- Use econcrete between river and wetland cove? This may be the best use.
- Dan said final structure height should be 2.5 feet above MHHW... but permits mentioned 4 feet above MHW. ...and if this is addressing climate, would push for 4' above 2080 MHW...for at least the pier. The divide between river and cove could be designed for future additional barriers. (Adaptive design).
- We must consider ice flows at our biggest threat to structures.
- **We should schedule a call with Econcrete and invite Dan and Libby. Focus should be on obtaining proof of concept in freshwater environments.**
- Julie wants shade structures on beach
- Brick fill is present at great depths in our area, not just on surface.
- We need a divide between the wetland cove and beach to prevent people and pets from entering the wetland along with prevention of sediment transport into the wetland cove.
- Need to tie final grading of wetland cove into existing rock outcrop conditions.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE

WW WEAVING THE WATERFRONT KINGSTON SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name _____ (optional)

Zip code _____

E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☐ Social Media

☐ Word of mouth

☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.

☐ Affordable housing

☐ Beach

☐ Cultural events

☐ Historic structures

☐ Hotels and accommodations

☐ Lighthouse access

☐ Marina

☐ Museums

☐ Nature exploration and interpretation

☐ New housing development

☐ Parks/Open space

☐ Restaurants and shops

☐ Small boat access (canoe/kayak)

☐ Trolley

☐ Walking and bicycling infrastructure

☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):

___ Sports/recreation

___ Park amenities

___ Nature preservation

___ Flood control

___ Other _____

5. Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

☐ Bird watching

☐ BMX track

☐ Boathouse

☐ Canoe/kayak/boat launch

☐ Multi-use concert space

☐ Multi-purpose field (soccer/lacrosse/football)

☐ Nature walk/interpretation

☐ Outdoor fitness station

☐ Playground

☐ Skateboard park

☐ Swimming/sunbathing

☐ Other _____

6. Please choose the top three park amenities you would like to see.

☐ BBQ grill

☐ Benches/seating

☐ Bike racks

☐ Boat launch

☐ Concessions stand

☐ Dog park

☐ Picnic tables/picnic shelter

☐ Restrooms

☐ Water fountain

☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☐	☐	☐	☐
Grasslands	☐	☐	☐	☐
Gardens	☐	☐	☐	☐
Forests	☐	☐	☐	☐
Wetlands	☐	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):

___ Aquifers & soils contamination

___ Flooding

___ Loss of recreational space and parking

___ Loss of trolley causeway

___ Plant/wildlife habitat loss

___ Shoreline loss

Want to take the survey on-line? Just point your phone's camera here.

Who will pay to maintain these projects?

Is there a plan in place?

Think Canopy Uptown etc!

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 121 84
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☒ Social Media
☐ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☒ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☒ Museums
☒ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☐ Trolley
☐ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
4 Sports/recreation
2 Park amenities
2 Nature preservation
1 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☒ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☒ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☒ BBQ grill
☐ Benches/seating
☐ Bike racks
☒ Boat launch
☐ Concessions stand
☐ Dog park
☒ Picnic tables/picnic shelter
☐ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☒	☐	☐	☐
Gardens	☒	☐	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
5 Aquifers & soils contamination
1 Flooding
2 Loss of recreational space and parking
3 Loss of trolley causeway
3 Plant/wildlife habitat loss
5 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
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E-mail address _____ (optional)

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☒ New housing development
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☐ Small boat access (canoe/kayak)
☐ Trolley
☐ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
____ Sports/recreation
____ Park amenities
____ Nature preservation
____ Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☒ Baseball/softball field
☐ Basketball court
☒ Beach volleyball
☒ Bird watching
☐ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
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☐ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☐ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☒ Benches/seating
☐ Bike racks
☐ Boat launch
☒ Concessions stand and Food Trucks
☐ Dog park
☐ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☒	☐	☐	☐
Gardens	☒	☐	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
____ Aquifers & soils contamination
____ Flooding
____ Loss of recreational space and parking
____ Loss of trolley causeway
____ Plant/wildlife habitat loss
____ Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☒ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
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☒ Beach
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☒ Historic structures
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☒ Lighthouse access
☐ Marina
☐ Museums
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☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☒ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
3 Sports/recreation
1 Park amenities
2 Nature preservation
4 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☒ Bird watching
☐ BMX track
☒ Boathouse
☐ Canoe/kayak/boat launch
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☐ Other _____

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☐ Other _____

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Grasslands	☐	☒	☐	☐
Gardens	☒	☐	☐	☐
Forests	☐	☒	☐	☐
Wetlands	☐	☒	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
5 Aquifers & soils contamination
4 Flooding
4 Loss of recreational space and parking
1 Loss of trolley causeway
2 Plant/wildlife habitat loss
3 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☒ City website
☐ Posters
☐ Radio
☐ Social Media
☐ Word of mouth
☒ Other Newspaper (Freeman)

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☒ Beach
☒ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☒ Lighthouse access
☐ Marina
☐ Museums
☒ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☒ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
4 Sports/recreation
2 Park amenities
1 Nature preservation
3 Flood control
4 Other Bicycle access

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☒ Beach volleyball
☒ Bird watching
☐ BMX track
☐ Boathouse
☒ Canoe/kayak/boat launch
☒ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☒ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☒ Benches/seating
☐ Bike racks
☒ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☒	☐	☐	☐
Gardens	☒	☐	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
____ Aquifers & soils contamination
____ Flooding
____ Loss of recreational space and parking
____ Loss of trolley causeway
1 Plant/wildlife habitat loss
____ Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE

WW WEAVING THE WATERFRONT KINGSTON SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401-8731
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☒ Radio
☐ Social Media
☐ Word of mouth
☒ Other Daily Freeman

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☐ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☒ Nature exploration and interpretation
☐ New housing development
☐ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☒ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
4 Sports/recreation
3 Park amenities
1 Nature preservation
2 Flood control
Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☒ Bird watching
☐ BMX track
☐ Boathouse
☒ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☒ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☒ Benches/seating
☒ Bike racks
☐ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.
Very Important Important Somewhat Not Important
Beaches/dunes ☒ ☐ ☐ ☐
Grasslands ☒ ☐ ☐ ☐
Gardens ☐ ☒ ☐ ☐
Forests ☒ ☐ ☐ ☐
Wetlands ☒ ☐ ☐ ☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
4 Aquifers & soils contamination
2 Flooding
6 Loss of recreational space and parking
5 Loss of trolley causeway
1 Plant/wildlife habitat loss
3 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

WW WEAVING THE WATERFRONT KINGSTON SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☒ Social Media
☐ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☒ Beach
☐ Cultural events
☒ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☒ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☐ Small boat access (canoe/kayak)
☐ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
4 Sports/recreation
3 Park amenities
1 Nature preservation
2 Flood control
Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☒ Canoe/kayak/boat launch
☒ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☒ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☐ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☒ Bike racks
☒ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.
Very Important Important Somewhat Not Important
Beaches/dunes ☒ ☐ ☐ ☐
Grasslands ☒ ☐ ☐ ☐
Gardens ☐ ☒ ☐ ☐
Forests ☒ ☐ ☐ ☐
Wetlands ☒ ☐ ☐ ☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
2 Aquifers & soils contamination
6 Flooding
4 Loss of recreational space and parking
3 Loss of trolley causeway
5 Plant/wildlife habitat loss
1 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name

Zip code

E-mail address

(optional)

(optional)

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☐ Social Media

☒ Word of mouth

☐ Other

3) Please choose your top five waterfront area amenities now or in the future.

☐ Affordable housing

☒ Beach

☐ Cultural events

☐ Historic structures

☐ Hotels and accommodations

☐ Lighthouse access

☐ Marina

☐ Museums

☒ Nature exploration and interpretation

☐ New housing development

☒ Parks/Open space

☐ Restaurants and shops

☒ Small boat access (canoe/kayak)

☐ Trolley

☒ Walking and bicycling infrastructure

☐ Other

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):

3

Sports/recreation

2

Park amenities

1

Nature preservation

4

Flood control

Other

5. Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

☐ Bird watching

☐ BMX track

☐ Boathouse

☐ Canoe/kayak/boat launch

☐ Multi-use concert space

☐ Multi-purpose field (soccer/lacrosse/football)

☒ Nature walk/interpretation

☐ Outdoor fitness station

☒ Playground

☐ Skateboard park

☒ Swimming/sunbathing

☐ Other

6. Please choose the top three park amenities you would like to see.

☐ BBQ grill

☐ Benches/seating

☒ Bike racks

☐ Boat launch

☐ Concessions stand

☐ Dog park

☐ Picnic tables/picnic shelter

☒ Restrooms

☒ Water fountain

☐ Other

7. Please rank the importance of protecting natural features.

Very Important

Important

Somewhat

Not Important

Beaches/dunes

Grasslands

Gardens

Forests

Wetlands

☒

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8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):

2

Aquifers & soils contamination

1

Flooding

4

Loss of recreational space and parking

6

Loss of trolley causeway

2

Plant/wildlife habitat loss

3

Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name

Zip code

E-mail address

(optional)

(optional)

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☐ Social Media

☒ Word of mouth

☐ Other

3) Please choose your top five waterfront area amenities now or in the future.

☐ Affordable housing

☒ Beach

☐ Cultural events

☐ Historic structures

☐ Hotels and accommodations

☒ Lighthouse access

☐ Marina

☐ Museums

☒ Nature exploration and interpretation

☐ New housing development

☒ Parks/Open space

☐ Restaurants and shops

☐ Small boat access (canoe/kayak)

☐ Trolley

☒ Walking and bicycling infrastructure

☐ Other

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):

4

Sports/recreation

3

Park amenities

2

Nature preservation

1

Flood control

Other

5. Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

☐ Bird watching

☐ BMX track

☐ Boathouse

☒ Canoe/kayak/boat launch

☐ Multi-use concert space

☐ Multi-purpose field (soccer/lacrosse/football)

☒ Nature walk/interpretation

☐ Outdoor fitness station

☒ Playground

☐ Skateboard park

☐ Swimming/sunbathing

☐ Other

6. Please choose the top three park amenities you would like to see.

☐ BBQ grill

☒ Benches/seating

☐ Bike racks

☒ Boat launch

☐ Concessions stand

☐ Dog park

☐ Picnic tables/picnic shelter

☒ Restrooms

☐ Water fountain

☐ Other

7. Please rank the importance of protecting natural features.

Very Important

Important

Somewhat

Not Important

Beaches/dunes

Grasslands

Gardens

Forests

Wetlands

☒

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8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):

1

Aquifers & soils contamination

2

Flooding

6

Loss of recreational space and parking

5

Loss of trolley causeway

3

Plant/wildlife habitat loss

4

Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☒ Social Media
☐ Word of mouth
☐ Other Kristen Wilson

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☒ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☒ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☐ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
3 Sports/recreation
2 Park amenities
1 Nature preservation
4 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
☐ Multi-use concert space
☒ Multi-purpose field (soccer/lacrosse/football)
☐ Nature walk/interpretation
☒ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing - if water quality improved
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☒ Benches/seating
☒ Bike racks
☒ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☐ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☒	☐	☐	☐
Gardens	☒	☐	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
1 Aquifers & soils contamination
2 Flooding
3 Loss of recreational space and parking
5 Loss of trolley causeway
4 Plant/wildlife habitat loss
6 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☐ Word of mouth
☒ Other on city commission

3) Please choose your top five waterfront area amenities now or in the future.
☒ Affordable housing
☒ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☒ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☐ Trolley
☐ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
4 Sports/recreation
3 Park amenities
2 Nature preservation
1 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☒ Bird watching
☐ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☒ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☐ Bike racks
☒ Boat launch
☐ Concessions stand
☐ Dog park
☒ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☐	☒	☐	☐
Grasslands	☒	☐	☐	☐
Gardens	☐	☒	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
1 Aquifers & soils contamination
3 Flooding
5 Loss of recreational space and parking
6 Loss of trolley causeway
2 Plant/wildlife habitat loss
4 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information. _____ (optional)
Name _____
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☒ City website
☐ Posters
☐ Radio
☐ Social Media
☒ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☒ Affordable housing
☐ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☒ Lighthouse access
☐ Marina
☒ Museums
☐ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☐ Trolley
☐ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
1 Sports/recreation
3 Park amenities
2 Nature preservation
____ Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☒ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
☐ Multi-use concert space
☒ Multi-purpose field (soccer/lacrosse/football)
☐ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☐ Bike racks
☐ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☐ Restrooms
☒ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☐	☐	☐	☐
Grasslands	☐	☐	☐	☐
Gardens	☒	☐	☐	☐
Forests	☐	☒	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
4 Aquifers & soils contamination
2 Flooding
5 Loss of recreational space and parking
6 Loss of trolley causeway
1 Plant/wildlife habitat loss
3 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information. _____ (optional)
Name _____
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☒ Radio
☐ Social Media
☐ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☐ Beach
☒ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☒ Lighthouse access
☐ Marina
☐ Museums
☒ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☐ Trolley
☐ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
1 Sports/recreation
4 Park amenities
3 Nature preservation
2 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
☒ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☐ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☐ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☒ Benches/seating
☐ Bike racks
☐ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☐	☒	☐	☐
Gardens	☐	☐	☒	☐
Forests	☐	☐	☒	☐
Wetlands	☐	☐	☐	☒

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
1 Aquifers & soils contamination
2 Flooding
3 Loss of recreational space and parking
4 Loss of trolley causeway
5 Plant/wildlife habitat loss
6 Shoreline loss

PREFER
ALT # 1
Layout



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12460
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☒ Radio
☐ Social Media
☐ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☒ Beach
☒ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☒ Lighthouse access
☐ Marina
☐ Museums
☐ Nature exploration and interpretation
☐ New housing development → NO
☐ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☒ Trolley
☐ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
2 Sports/recreation
3 Park amenities
1 Nature preservation
4 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☒ BMX track
☐ Boathouse
☒ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☒ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☒ Bike racks
☐ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☐	☐	☐	☐
Grasslands	☐	☐	☐	☐
Gardens	☐	☐	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
4 Aquifers & soils contamination
1 Flooding
2 Loss of recreational space and parking
3 Loss of trolley causeway
5 Plant/wildlife habitat loss
____ Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☒ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☒ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☐ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☐ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
2 Sports/recreation
1 Park amenities
3 Nature preservation
4 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☒ Nature walk/interpretation
☐ Outdoor fitness station
☒ Playground
☐ Skateboard park
☐ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☒ BBQ grill
☐ Benches/seating
☒ Bike racks
☒ Boat launch
☐ Concessions stand
☐ Dog park
☒ Picnic tables/picnic shelter
☐ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☐	☒	☐	☐
Gardens	☐	☒	☐	☐
Forests	☐	☒	☐	☐
Wetlands	☐	☒	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
____ Aquifers & soils contamination
____ Flooding
☒ Loss of recreational space and parking
____ Loss of trolley causeway
☒ Plant/wildlife habitat loss
☒ Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE

WW WEAVING THE WATERFRONT KINGSTON SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☒ Posters
☐ Radio
☐ Social Media
☐ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☒ Beach
☒ Cultural events
☒ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☐ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☐ Small boat access (canoe/kayak)
☐ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
4 Sports/recreation
3 Park amenities
2 Nature preservation
1 Flood control
Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☒ Canoe/kayak/boat launch
☐ Multi-use concert space
☒ Multi-purpose field (soccer/lacrosse/football)
☐ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☒ Bike racks
☐ Boat launch
☐ Concessions stand
☐ Dog park
☒ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.
Very Important Important Somewhat Not Important
Beaches/dunes ☒ ☐ ☐ ☐
Grasslands ☒ ☐ ☐ ☐
Gardens ☒ ☐ ☐ ☐
Forests ☒ ☐ ☐ ☐
Wetlands ☒ ☐ ☐ ☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
4 Aquifers & soils contamination
6 Flooding
3 Loss of recreational space and parking
5 Loss of trolley causeway
2 Plant/wildlife habitat loss
1 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

WW WEAVING THE WATERFRONT KINGSTON SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12545
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☒ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☐ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☐ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☐ Trolley
☐ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
1 Sports/recreation
2 Park amenities
2 Nature preservation
4 Flood control
Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☒ Bird watching
☐ BMX track
☐ Boathouse
☒ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☐ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☐ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☒ BBQ grill
☐ Benches/seating
☐ Bike racks
☐ Boat launch
☐ Concessions stand
☐ Dog park
☒ Picnic tables/picnic shelter
☐ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.
Very Important Important Somewhat Not Important
Beaches/dunes ☐ ☒ ☐ ☐
Grasslands ☒ ☐ ☐ ☐
Gardens ☐ ☐ ☒ ☐
Forests ☐ ☒ ☐ ☐
Wetlands ☒ ☐ ☐ ☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
4 Aquifers & soils contamination
2 Flooding
6 Loss of recreational space and parking
5 Loss of trolley causeway
3 Plant/wildlife habitat loss
1 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☒ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☒ Beach
☐ Cultural events
☒ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☐ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☐ Small boat access (canoe/kayak)
☒ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
3 Sports/recreation
2 Park amenities
1 Nature preservation
4 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☒ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☐ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☒ Other bike trails

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☒ Bike racks 3
☐ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☐	☒	☐	☐
Gardens	☐	☒	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
1 Aquifers & soils contamination
2 Flooding
3 Loss of recreational space and parking
1 Loss of trolley causeway
3 Plant/wildlife habitat loss
____ Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☒ City website
☒ Posters
☐ Radio
☒ Social Media
☐ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☒ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☒ Lighthouse access
☒ Marina
☐ Museums
☐ Nature exploration and interpretation
☐ New housing development
☐ Parks/Open space
☒ Restaurants and shops
☐ Small boat access (canoe/kayak)
☒ Trolley
☐ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
4 Sports/recreation
2 Park amenities
3 Nature preservation
1 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☒ Canoe/kayak/boat launch
☒ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☐ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☒ Benches/seating
☒ Bike racks
☒ Boat launch
☐ Concessions stand
☐ Dog park
☒ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☐	☒	☐	☐
Gardens	☒	☐	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☐	☒	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
6 Aquifers & soils contamination
4 Flooding
1 Loss of recreational space and parking
3 Loss of trolley causeway
5 Plant/wildlife habitat loss
1 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE

WW

WEAVING THE
WATERFRONT
KINGSTON

SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name _____ (optional)

Zip code _____

E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☐ Social Media

☐ Word of mouth

☒ Other Friends @ Kingston Land Trust

3) Please choose your top five waterfront area amenities now or in the future.

☐ Affordable housing

☐ Beach

☒ Cultural events

☐ Historic structures

☐ Hotels and accommodations

☐ Lighthouse access

☐ Marina

☐ Museums

☐ Nature exploration and interpretation

☐ New housing development

☒ Parks/Open space

☐ Restaurants and shops

☐ Small boat access (canoe/kayak)

☐ Trolley

☒ Walking and bicycling infrastructure

☐ Other TRAILS

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):

☒ Sports/recreation

☒ Park amenities

☒ Nature preservation

☒ Flood control

☐ Other _____

5. Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

☐ Bird watching

☐ BMX track

☐ Boathouse

☐ Canoe/kayak/boat launch

☒ Multi-use concert space

☒ Multi-purpose field (soccer/lacrosse/football)

☒ Nature walk/interpretation

☒ Outdoor fitness station

☐ Playground

☐ Skateboard park

☐ Swimming/sunbathing

☐ Other _____

6. Please choose the top three park amenities you would like to see.

☐ BBQ grill

☐ Benches/seating

☒ Bike racks

☐ Boat launch

☐ Concessions stand

☒ Dog park

☐ Picnic tables/picnic shelter

☐ Restrooms

☒ Water fountain

☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☐	☐	☐	☐
Grasslands	☐	☐	☐	☐
Gardens	☐	☐	☐	☐
Forests	☐	☐	☐	☐
Wetlands	☐	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):

☒ Aquifers & soils contamination

☒ Flooding

☒ Loss of recreational space and parking

☒ Loss of trolley causeway

☒ Plant/wildlife habitat loss

☒ Shoreline loss

Want to take the survey on-line? Just point your phone's camera here.

WW

WEAVING THE
WATERFRONT
KINGSTON

SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name _____ (optional)

Zip code 12545

E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☐ Social Media

☒ Word of mouth

☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.

☐ Affordable housing

☐ Beach

☒ Cultural events

☒ Historic structures

☒ Hotels and accommodations

☒ Lighthouse access

☒ Marina

☒ Museums

☐ Nature exploration and interpretation

☐ New housing development

☒ Parks/Open space

☒ Restaurants and shops

☒ Small boat access (canoe/kayak)

☐ Trolley

☒ Walking and bicycling infrastructure

☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):

☒ Sports/recreation

☒ Park amenities

☒ Nature preservation

☒ Flood control

☐ Other _____

5. Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

☐ Bird watching

☐ BMX track

☐ Boathouse

☒ Canoe/kayak/boat launch

☐ Multi-use concert space

☐ Multi-purpose field (soccer/lacrosse/football)

☒ Nature walk/interpretation

☐ Outdoor fitness station

☒ Playground

☐ Skateboard park

☐ Swimming/sunbathing

☐ Other _____

6. Please choose the top three park amenities you would like to see.

☐ BBQ grill

☒ Benches/seating

☒ Bike racks

☐ Boat launch

☐ Concessions stand

☐ Dog park

☒ Picnic tables/picnic shelter

☐ Restrooms

☐ Water fountain

☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☒	☐	☐	☐
Gardens	☐	☒	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):

☒ Aquifers & soils contamination

☒ Flooding

☒ Loss of recreational space and parking

☒ Loss of trolley causeway

☒ Plant/wildlife habitat loss

☒ Shoreline loss

Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE

WW WEAVING THE WATERFRONT KINGSTON SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code _____
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront?
☐ City website
☐ Posters
☐ Radio
☒ Social Media
☐ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☐ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☐ Nature exploration and interpretation
☐ New housing development
☐ Parks/Open space
☐ Restaurants and shops
☐ Small boat access (canoe/kayak)
☐ Trolley
☐ Walking and bicycling infrastructure
☐ Other _____

4) Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
____ Sports/recreation
____ Park amenities
____ Nature preservation
____ Flood control
____ Other _____

5) Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☐ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☐ Swimming/sunbathing
☐ Other _____

6) Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☐ Bike racks
☐ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☐ Restrooms
☐ Water fountain
☐ Other _____

7) Please rank the importance of protecting natural features.
Very Important Important Somewhat Not Important
Beaches/dunes ☐ ☐ ☐ ☐
Grasslands ☐ ☐ ☐ ☐
Gardens ☐ ☐ ☐ ☐
Forests ☐ ☐ ☐ ☐
Wetlands ☐ ☐ ☐ ☐

8) Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
____ Aquifers & soils contamination
____ Flooding
____ Loss of recreational space and parking
____ Loss of trolley causeway
____ Plant/wildlife habitat loss
____ Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

It would be great if all this information could be put in a brochure.

WW WEAVING THE WATERFRONT KINGSTON SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront?
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☐ Word of mouth
☒ Other Newspaper

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☒ Beach
☐ Cultural events
☒ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☒ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☐ Small boat access (canoe/kayak)
☐ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4) Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
____ Sports/recreation
4 Park amenities
1 Nature preservation
2 Flood control
3 Other Access w/out driving car

5) Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☒ Nature walk/interpretation
☐ Outdoor fitness station
☒ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☐ Other _____

6) Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☐ Bike racks
☐ Boat launch
☐ Concessions stand
☒ Dog park
☐ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☒ Other Natural playscape

7) Please rank the importance of protecting natural features.
Very Important Important Somewhat Not Important
Beaches/dunes ☐ ☐ ☐ ☐
Grasslands ☒ ☐ ☐ ☐
Gardens ☐ ☐ ☒ ☐
Forests ☒ ☐ ☐ ☐
Wetlands ☒ ☐ ☐ ☐

8) Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
3 Aquifers & soils contamination
1 Flooding
5 Loss of recreational space and parking
5 Loss of trolley causeway
2 Plant/wildlife habitat loss
4 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE

WW

WEAVING THE
WATERFRONT
KINGSTON

SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name _____ (optional)
Zip code 12571
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☒ Social Media

☐ Word of mouth

☒ Other John Schultheis

3) Please choose your top five waterfront area amenities now or in the future.

☐ Affordable housing

☐ Beach

☒ Cultural events

☐ Historic structures

☐ Hotels and accommodations

☐ Lighthouse access

☐ Marina

☐ Museums

☒ Nature exploration and interpretation

☐ New housing development

☒ Parks/Open space

☒ Restaurants and shops

☐ Small boat access (canoe/kayak)

☐ Trolley

☒ Walking and bicycling infrastructure

☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):

3

Sports/recreation

1

Park amenities

2

Nature preservation

4

Flood control

Other _____

5. Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

☐ Bird watching

☐ BMX track

☐ Boathouse

☒ Canoe/kayak/boat launch

☐ Multi-use concert space

☐ Multi-purpose field (soccer/lacrosse/football)

☒ Nature walk/interpretation

☐ Outdoor fitness station

☐ Playground

☐ Skateboard park

☒ Swimming/sunbathing

☐ Other _____

6. Please choose the top three park amenities you would like to see.

☐ BBQ grill

☐ Benches/seating

☐ Bike racks

☐ Boat launch

☐ Concessions stand

☐ Dog park

☒ Picnic tables/picnic shelter

☒ Restrooms

☒ Water fountain

☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☐	☒	☐	☐
Gardens	☐	☐	☒	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):

5

Aquifers & soils contamination

1

Flooding

4

Loss of recreational space and parking

6

Loss of trolley causeway

2

Plant/wildlife habitat loss

3

Shoreline loss

Want to take the survey on-line? Just point your phone's camera here.

WW

WEAVING THE
WATERFRONT
KINGSTON

SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name _____ (optional)
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☐ Social Media

☒ Word of mouth

☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.

☒ Affordable housing

☐ Beach

☐ Cultural events

☐ Historic structures

☐ Hotels and accommodations

☐ Lighthouse access

☐ Marina

☐ Museums

☒ Nature exploration and interpretation

☐ New housing development

☒ Parks/Open space

☐ Restaurants and shops

☐ Small boat access (canoe/kayak)

☒ Trolley

☒ Walking and bicycling infrastructure

☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):

4

Sports/recreation

3

Park amenities

2

Nature preservation

1

Flood control

Other _____

5. Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

☐ Bird watching

☐ BMX track

☐ Boathouse

☒ Canoe/kayak/boat launch

☐ Multi-use concert space

☒ Multi-purpose field (soccer/lacrosse/football)

☐ Nature walk/interpretation

☒ Outdoor fitness station

☐ Playground

☐ Skateboard park

☐ Swimming/sunbathing

☐ Other _____

6. Please choose the top three park amenities you would like to see.

☐ BBQ grill

☐ Benches/seating

☒ Bike racks

☐ Boat launch

☒ Concessions stand

☐ Dog park

☐ Picnic tables/picnic shelter

☒ Restrooms ← Kingston needs more!

☐ Water fountain

☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☒	☐	☐	☐
Gardens	☐	☒	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):

1

Aquifers & soils contamination

2

Flooding

5

Loss of recreational space and parking

6

Loss of trolley causeway

3

Plant/wildlife habitat loss

4

Shoreline loss

Want to take the survey on-line? Just point your phone's camera here.

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5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code _____
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☒ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☒ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☒ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☐ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
4 Sports/recreation
3 Park amenities
1 Nature preservation
2 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☐ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☐ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☒ Bike racks
☐ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☒ Restrooms
☒ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☐	☐	☒	☐
Gardens	☐	☒	☐	☐
Forests	☐	☒	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
4 Aquifers & soils contamination
1 Flooding
6 Loss of recreational space and parking
5 Loss of trolley causeway
2 Plant/wildlife habitat loss
3 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☒ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☐ Beach
☐ Cultural events
☒ Historic structures
☐ Hotels and accommodations
☒ Lighthouse access
☐ Marina
☐ Museums
☐ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☐ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
2 Sports/recreation
4 Park amenities *already pretty good.*
3 Nature preservation
1 Flood control !!
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
☐ Multi-use concert space
☒ Multi-purpose field (soccer/lacrosse/football)
☐ Nature walk/interpretation
☐ Outdoor fitness station
☒ Playground
☒ Skateboard park
☐ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☒ Bike racks
☐ Boat launch
☐ Concessions stand
☐ Dog park
☒ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☐	☒	☐	☐
Grasslands	☐	☒	☐	☐
Gardens	☐	☒	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
4 Aquifers & soils contamination
1 Flooding
5 Loss of recreational space and parking
6 Loss of trolley causeway
3 Plant/wildlife habitat loss
2 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE

WW WEAVING THE WATERFRONT KINGSTON SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12401
E-mail address gill.com (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☒ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☐ Beach
☒ Cultural events
☒ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☒ Museums
☐ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak)
☐ Trolley
☐ Walking and bicycling infrastructure
☐ Other working waterfront

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
____ Sports/recreation
____ Park amenities
____ Nature preservation
____ Flood control
____ Other Flood adaptation / no new flood plain development

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☒ Boathouse
☒ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☒ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☐ Other Waterfront/public

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☐ Bike racks
☒ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☐ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.
Very Important Important Somewhat Not Important
Beaches/dunes ☒ ☐ ☐ ☐
Grasslands ☒ ☐ ☐ ☐
Gardens ☐ ☒ ☐ ☐
Forests ☒ ☐ ☐ ☐
Wetlands ☒ ☐ ☐ ☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
____ Aquifers & soils contamination
☒ Flooding
____ Loss of recreational space and parking
____ Loss of trolley causeway
☒ Plant/wildlife habitat loss
____ Shoreline loss

Want to take the survey on-line? Just point your phone's camera here.

WW WEAVING THE WATERFRONT KINGSTON SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12457
E-mail address gill.com (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☐ Word of mouth
☒ Other Rondout Rowing Club email

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☐ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☒ Museums
☐ Nature exploration and interpretation
☐ New housing development
☐ Parks/Open space
☐ Restaurants and shops
☒ Small boat access (canoe/kayak) shells
☐ Trolley
☒ Walking and bicycling infrastructure
☐ Other water dependent commercial

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
1 Sports/recreation
2 Park amenities
3 Nature preservation
4 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☒ Boathouse
☒ Canoe/kayak/boat launch shells
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☒ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☐ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☐ Bike racks
☒ Boat launch
☒ Concessions stand or food trucks
☐ Dog park
☐ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.
Very Important Important Somewhat Not Important
Beaches/dunes ☒ ☐ ☐ ☐
Grasslands ☐ ☒ ☐ ☐
Gardens ☐ ☒ ☐ ☐
Forests ☒ ☐ ☐ ☐
Wetlands ☒ ☐ ☐ ☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
2 Aquifers & soils contamination
3 Flooding
4 Loss of recreational space and parking
5 Loss of trolley causeway
6 Plant/wildlife habitat loss
7 Shoreline loss

Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12601
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☐ Word of mouth
☒ Other Today from Trolley Ride

3) Please choose your top five waterfront area amenities now or in the future.
☒ Affordable housing
☒ Beach
☒ Cultural events
☒ Historic structures
☐ Hotels and accommodations
☒ Lighthouse access
☒ Marina
☒ Museums
☒ Nature exploration and interpretation
☐ New housing development
☒ Parks/Open space
☐ Restaurants and shops
☐ Small boat access (canoe/kayak)
☒ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
4 Sports/recreation
2 Park amenities
1 Nature preservation
3 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☒ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
☒ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☒ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☐ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☒ Benches/seating
☐ Bike racks
☐ Boat launch
☐ Concessions stand
☐ Dog park
☒ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☒	☐	☐	☐
Gardens	☒	☐	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
____ Aquifers & soils contamination
1 Flooding
2 Loss of recreational space and parking
3 Loss of trolley causeway
4 Plant/wildlife habitat loss
5 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12496
E-mail address randy@trot.com (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☒ Social Media
☐ Word of mouth
☒ Other Email from Julie Noble

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☐ Beach
☐ Cultural events
☒ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☐ Nature exploration and interpretation
☐ New housing development
☐ Parks/Open space
☐ Restaurants and shops
☐ Small boat access (canoe/kayak)
☒ Trolley
☐ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
4 Sports/recreation
2 Park amenities
1 Nature preservation
3 Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
☒ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☐ Nature walk/interpretation
☒ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☒ Benches/seating
☒ Bike racks
☐ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☒	☐	☐	☐
Gardens	☐	☐	☒	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
____ Aquifers & soils contamination
2 Flooding
____ Loss of recreational space and parking
____ Loss of trolley causeway
1 Plant/wildlife habitat loss
3 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code _____
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☐ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☐ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☐ Nature exploration and interpretation
☐ New housing development
☐ Parks/Open space
☐ Restaurants and shops
☐ Small boat access (canoe/kayak)
☐ Trolley
☐ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
____ Sports/recreation
____ Park amenities
____ Nature preservation
____ Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☐ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☐ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☐ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☐ Bike racks
☐ Boat launch
☐ Concessions stand
☐ Dog park
☐ Picnic tables/picnic shelter
☐ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☐	☐	☐	☐
Grasslands	☐	☐	☐	☐
Gardens	☐	☐	☐	☐
Forests	☐	☐	☐	☐
Wetlands	☐	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
____ Aquifers & soils contamination
____ Flooding
____ Loss of recreational space and parking
____ Loss of trolley causeway
____ Plant/wildlife habitat loss
____ Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.
Name _____ (optional)
Zip code 12561
E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.
☐ City website
☐ Posters
☐ Radio
☐ Social Media
☒ Word of mouth
☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.
☐ Affordable housing
☒ Beach
☐ Cultural events
☐ Historic structures
☐ Hotels and accommodations
☐ Lighthouse access
☐ Marina
☐ Museums
☒ Nature exploration and interpretation
☐ New housing development
☐ Parks/Open space
☒ Restaurants and shops
☒ Small boat access (canoe/kayak)
☒ Trolley
☒ Walking and bicycling infrastructure
☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):
____ Sports/recreation
____ Park amenities
____ Nature preservation
____ Flood control
____ Other _____

5. Please choose the top three recreational features you would like to see.
☐ Baseball/softball field
☐ Basketball court
☐ Beach volleyball
☐ Bird watching
☐ BMX track
☐ Boathouse
☒ Canoe/kayak/boat launch
☐ Multi-use concert space
☐ Multi-purpose field (soccer/lacrosse/football)
☒ Nature walk/interpretation
☐ Outdoor fitness station
☐ Playground
☐ Skateboard park
☒ Swimming/sunbathing
☐ Other _____

6. Please choose the top three park amenities you would like to see.
☐ BBQ grill
☐ Benches/seating
☐ Bike racks
☒ Boat launch
☐ Concessions stand
☐ Dog park
☒ Picnic tables/picnic shelter
☒ Restrooms
☐ Water fountain
☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☒	☐	☐	☐
Gardens	☒	☐	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):
____ Aquifers & soils contamination
____ Flooding
____ Loss of recreational space and parking
____ Loss of trolley causeway
____ Plant/wildlife habitat loss
____ Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name _____ (optional)

Zip code _____

E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☐ Social Media

☒ Word of mouth

☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.

☐ Affordable housing

☐ Beach

☒ Cultural events

☒ Historic structures

☐ Hotels and accommodations

☐ Lighthouse access

☒ Marina

☐ Museums

☐ Nature exploration and interpretation

☐ New housing development

☐ Parks/Open space

☒ Restaurants and shops

☐ Small boat access (canoe/kayak)

☒ Trolley

☐ Walking and bicycling infrastructure

☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):

5 Sports/recreation

4 Park amenities

2 Nature preservation

2 Flood control

1 Other economic stimulus

5. Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

☐ Bird watching

☐ BMX track

☐ Boathouse

☒ Canoe/kayak/boat launch

☒ Multi-use concert space

☐ Multi-purpose field (soccer/lacrosse/football)

☐ Nature walk/interpretation

☒ Outdoor fitness station

☐ Playground

☐ Skateboard park

☐ Swimming/sunbathing

☐ Other _____

6. Please choose the top three park amenities you would like to see.

☐ BBQ grill

☒ Benches/seating

☐ Bike racks

☒ Boat launch

☐ Concessions stand

☐ Dog park

☒ Picnic tables/picnic shelter

☐ Restrooms

☐ Water fountain

☐ Other _____

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☒	☐	☐	☐
Gardens	☒	☐	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):

1 Aquifers & soils contamination

2 Flooding

3 Loss of recreational space and parking

3 Loss of trolley causeway

4 Plant/wildlife habitat loss

2 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.



Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name _____ (optional)

Zip code 12433

E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☐ Social Media

☒ Word of mouth

☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.

☐ Affordable housing

☐ Beach

☒ Cultural events

☐ Historic structures

☐ Hotels and accommodations

☐ Lighthouse access

☐ Marina

☐ Museums

☒ Nature exploration and interpretation

☐ New housing development

☒ Parks/Open space

☒ Restaurants and shops

☐ Small boat access (canoe/kayak)

☐ Trolley

☒ Walking and bicycling infrastructure

☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):

4 Sports/recreation

2 Park amenities

3 Nature preservation

1 Flood control

Other _____

5. Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

☐ Bird watching

☐ BMX track

☐ Boathouse

☒ Canoe/kayak/boat launch

☒ Multi-use concert space

☒ Multi-purpose field (soccer/lacrosse/football)

☒ Nature walk/interpretation

☐ Outdoor fitness station

☐ Playground

☐ Skateboard park

☐ Swimming/sunbathing

☐ Other _____

6. Please choose the top three park amenities you would like to see.

☐ BBQ grill

☒ Benches/seating

☐ Bike racks

☐ Boat launch

☐ Concessions stand

☐ Dog park

☐ Picnic tables/picnic shelter

☒ Restrooms

☐ Water fountain

☒ Other Sculptures

7. Please rank the importance of protecting natural features.

	Very Important	Important	Somewhat	Not Important
Beaches/dunes	☒	☐	☐	☐
Grasslands	☒	☐	☐	☐
Gardens	☒	☐	☐	☐
Forests	☒	☐	☐	☐
Wetlands	☒	☐	☐	☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):

1 Aquifers & soils contamination

2 Flooding

3 Loss of recreational space and parking

3 Loss of trolley causeway

3 Plant/wildlife habitat loss

6 Shoreline loss



Want to take the survey on-line? Just point your phone's camera here.

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE

WW

WEAVING THE
WATERFRONT
KINGSTON

SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name _____ (optional)

Zip code _____

E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☐ Social Media

☐ Word of mouth

☒ Other we walked by

3) Please choose your top five waterfront area amenities now or in the future.

☐ Affordable housing

☒ Beach

☐ Cultural events

☐ Historic structures

☐ Hotels and accommodations

☒ Lighthouse access

☐ Marina

☐ Museums

☐ Nature exploration and interpretation

☐ New housing development

☒ Parks/Open space

☒ Restaurants and shops

☐ Small boat access (canoe/kayak)

☐ Trolley

☐ Walking and bicycling infrastructure

☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):

4

Sports/recreation

3

Park amenities

1

Nature preservation

2

Flood control

Other _____

5. Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

☐ Bird watching

☒ BMX track

☐ Boathouse

☒ Canoe/kayak/boat launch

☐ Multi-use concert space

☐ Multi-purpose field (soccer/lacrosse/football)

☒ Nature walk/interpretation

☐ Outdoor fitness station

☐ Playground

☐ Skateboard park

☐ Swimming/sunbathing

☐ Other _____

6. Please choose the top three park amenities you would like to see.

☐ BBQ grill

☐ Benches/seating

☒ Bike racks

☒ Boat launch

☐ Concessions stand

☐ Dog park

☒ Picnic tables/picnic shelter

☐ Restrooms

☐ Water fountain

☐ Other _____

7. Please rank the importance of protecting natural features.

Very Important

Important

Somewhat

Not Important

Beaches/dunes

☐

☐

☒

☐

Grasslands

☒

☐

☐

☐

Gardens

☐

☒

☐

☐

Forests

☐

☒

☐

☐

Wetlands

☒

☐

☐

☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):

1

Aquifers & soils contamination

1

Flooding

5

Loss of recreational space and parking

6

Loss of trolley causeway

1

Plant/wildlife habitat loss

2

Shoreline loss

Want to take the survey on-line? Just point your phone's camera here.

WW

WEAVING THE
WATERFRONT
KINGSTON

SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name _____ (optional)

Zip code 11572

E-mail address _____ (optional)

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☐ Social Media

☒ Word of mouth

☐ Other _____

3) Please choose your top five waterfront area amenities now or in the future.

☐ Affordable housing

☒ Beach

☐ Cultural events

☒ Historic structures

☒ Hotels and accommodations

☒ Lighthouse access

☐ Marina

☐ Museums

☐ Nature exploration and interpretation

☐ New housing development

☐ Parks/Open space

☐ Restaurants and shops

☐ Small boat access (canoe/kayak)

☐ Trolley

☒ Walking and bicycling infrastructure

☐ Other _____

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):

4

Sports/recreation

3

Park amenities

2

Nature preservation

1

Flood control

Other _____

5. Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

☐ Bird watching

☐ BMX track

☐ Boathouse

☐ Canoe/kayak/boat launch

☒ Multi-use concert space

☐ Multi-purpose field (soccer/lacrosse/football)

☒ Nature walk/interpretation

☐ Outdoor fitness station

☐ Playground

☐ Skateboard park

☒ Swimming/sunbathing

☐ Other _____

6. Please choose the top three park amenities you would like to see.

☐ BBQ grill

☒ Benches/seating

☒ Bike racks

☐ Boat launch

☐ Concessions stand

☐ Dog park

☐ Picnic tables/picnic shelter

☒ Restrooms

☐ Water fountain

☐ Other _____

7. Please rank the importance of protecting natural features.

Very Important

Important

Somewhat

Not Important

Beaches/dunes

☒

☐

☐

☐

Grasslands

☒

☐

☐

☐

Gardens

☒

☐

☐

☐

Forests

☒

☐

☐

☐

Wetlands

☒

☐

☐

☐

8. Please rank the most critical impacts of sea level rise at Kingston Point. (1 being the most critical impact):

3

Aquifers & soils contamination

2

Flooding

5

Loss of recreational space and parking

6

Loss of trolley causeway

1

Plant/wildlife habitat loss

1

Shoreline loss

Want to take the survey on-line? Just point your phone's camera here.

170

5.5 COMPLETED SURVEY SHEETS FROM KINGSTON POINT OPEN HOUSE

WW

WEAVING THE
WATERFRONT
KINGSTON

SURVEY

Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

1) Please provide the following information.

Name

Zip code

E-mail address

2) How did you hear about Weaving the Waterfront.

☐ City website

☐ Posters

☐ Radio

☒ Social Media

☐ Word of mouth

☒ Other

Kingston Times + FB

3) Please choose your top five waterfront area amenities now or in the future.

☒ Affordable housing

☐ Beach

☐ Cultural events

☒ Historic structures

☐ Hotels and accommodations

☐ Lighthouse access

☒ Marina

☐ Museums

☐ Nature exploration and interpretation

☐ New housing development

☒ Parks/Open space

☐ Restaurants and shops

☒ Small boat access (canoe/kayak)

☐ Trolley

☐ Walking and bicycling infrastructure

☐ Other

city dock?

rowing

4. Please rank the following in order of importance to the future of Kingston Point. (1 being the most important):

3

4

2

4

Sports/recreation

Park amenities

Nature preservation

Flood control

Other

sewage plant?

5. Please choose the top three recreational features you would like to see.

☐ Baseball/softball field

☐ Basketball court

☐ Beach volleyball

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☐ BMX track

☐ Boathouse

☐ Canoe/kayak/boat launch

☒ Multi-use concert space

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☐ Outdoor fitness station

☐ Playground

☐ Skateboard park

☐ Swimming/sunbathing

☐ Other

ROWING

6. Please choose the top three park amenities you would like to see.

☐ BBQ grill

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☐ Bike racks

☒ Boat launch

☐ Concessions stand

☐ Dog park

☐ Picnic tables/picnic shelter

☒ Restrooms

☐ Water fountain

☐ Other

rowing boat house?

for small canoes/kayaks

7. Please rank the importance of protecting natural features.

Very Important

Important

Somewhat

Not Important

Beaches/dunes

Grasslands

Gardens

Forests

Wetlands

☒

☒

☐

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Aquifers & soils contamination

Flooding

Loss of recreational space and parking

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Plant/wildlife habitat loss

Shoreline loss

WW

WEAVING THE
WATERFRONT
KINGSTON

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Kingston Point Climate Adaptive Design & Park Infrastructure Improvements

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gahoo.com

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☐ Other

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Gardens

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Wetlands

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2

1

3

4

5

6

Aquifers & soils contamination

Flooding

Loss of recreational space and parking

Loss of trolley causeway

Plant/wildlife habitat loss

Shoreline loss

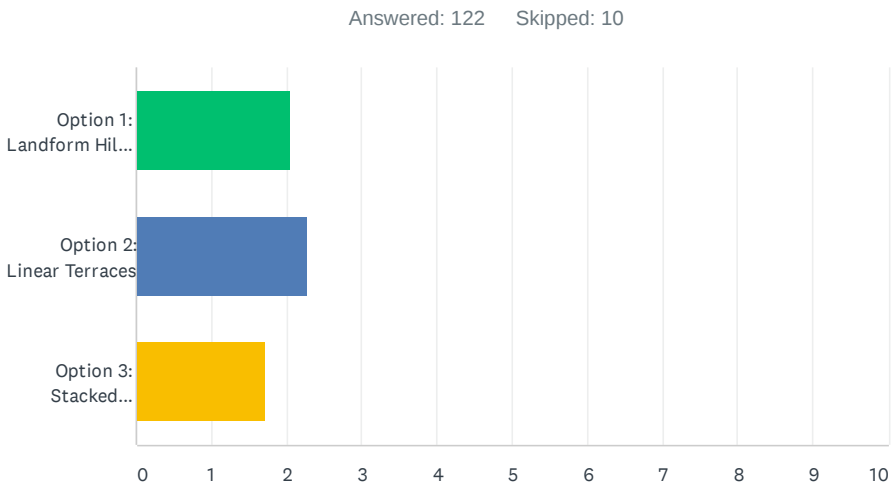
Want to take the survey on-line? Just point your phone's camera here.

Want to take the survey on-line? Just point your phone's camera here.

5.6 KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY RESULTS

Kingston Point Beach Climate Adaptive Design

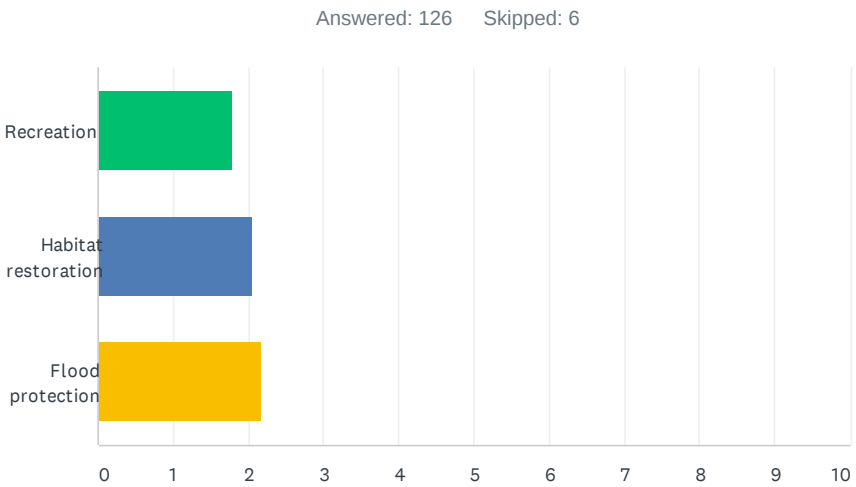
Q1 Please rank the following designs for Kingston Point Beach in order of preference, 1 being your most preferred option.



	1	2	3	TOTAL	SCORE
 Option 1: Landform Hill & Berm	35.34% 41	33.62% 39	31.03% 36	116	2.04
 Option 2: Linear Terraces	49.17% 59	29.17% 35	21.67% 26	120	2.27
 Option 3: Stacked Terraces	17.95% 21	35.04% 41	47.01% 55	117	1.71

Kingston Point Beach Climate Adaptive Design

Q2 Please rank the following in order of importance, 1 being the most important.

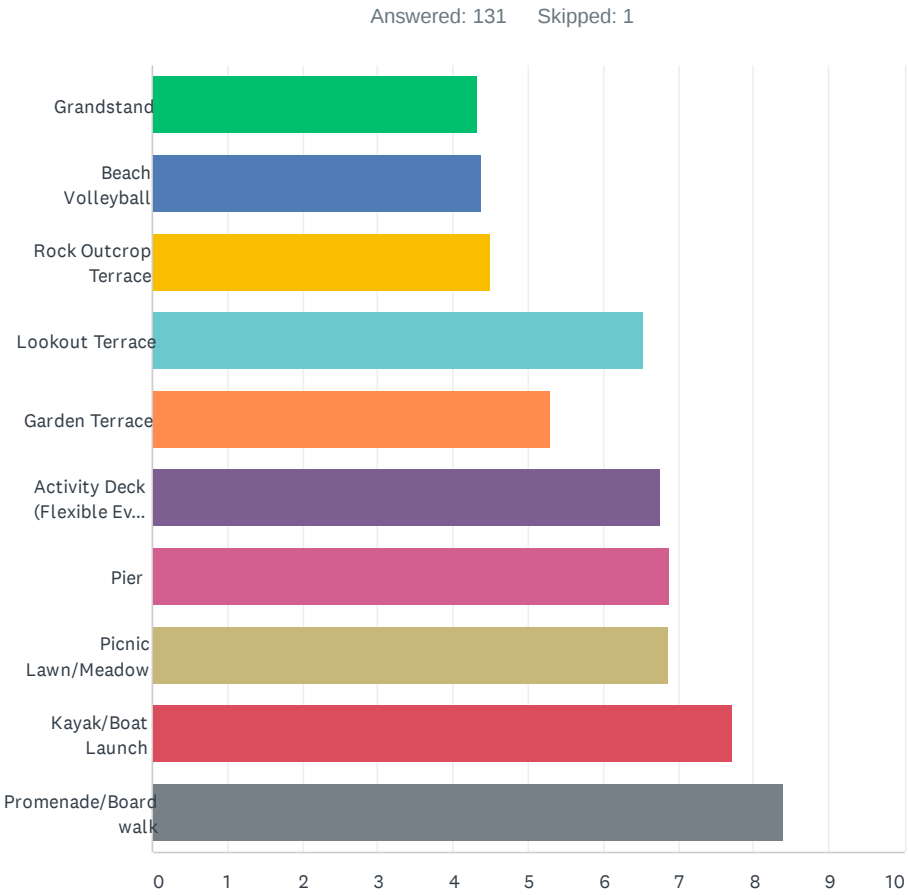


	1	2	3	TOTAL	SCORE
Recreation	28.23% 35	21.77% 27	50.00% 62	124	1.78
Habitat restoration	36.80% 46	32.80% 41	30.40% 38	125	2.06
Flood protection	36.59% 45	44.72% 55	18.70% 23	123	2.18

5.6 KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY RESULTS

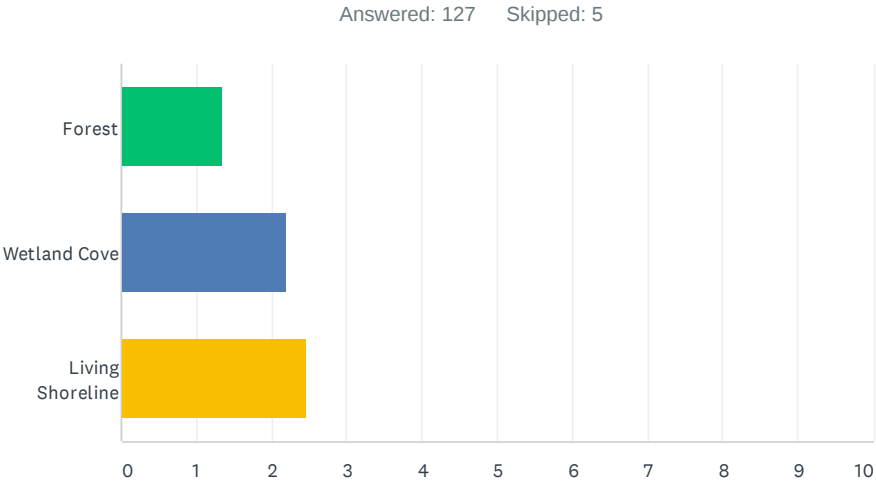
Kingston Point Beach Climate Adaptive Design

Q3 Please select your top five recreational features (in addition to sunbathing and swimming) in order of importance, 1 being the most important feature.



	1	2	3	4	5	6	7	8	9	10	TOTAL
Grandstand	0.00% 0	6.94% 5	5.56% 4	9.72% 7	12.50% 9	11.11% 8	13.89% 10	9.72% 7	12.50% 9	18.06% 13	72
Beach Volleyball	1.32% 1	10.53% 8	3.95% 3	6.58% 5	11.84% 9	9.21% 7	11.84% 9	14.47% 11	14.47% 11	15.79% 12	76
Rock Outcrop Terrace	3.70% 3	4.94% 4	9.88% 8	4.94% 4	19.75% 16	9.88% 8	4.94% 4	6.17% 5	12.35% 10	23.46% 19	81
Lookout Terrace	4.30% 4	16.13% 15	22.58% 21	10.75% 10	18.28% 17	8.60% 8	6.45% 6	6.45% 6	3.23% 3	3.23% 3	93
Garden Terrace	7.69% 7	4.40% 4	5.49% 5	18.68% 17	14.29% 13	7.69% 7	12.09% 11	9.89% 9	16.48% 15	3.30% 3	91
Activity Deck (Flexible Event Space)	14.58% 14	15.63% 15	13.54% 13	21.88% 21	7.29% 7	5.21% 5	7.29% 7	5.21% 5	4.17% 4	5.21% 5	96
Pier	14.43% 14	13.40% 13	25.77% 25	9.28% 9	13.40% 13	5.15% 5	4.12% 4	5.15% 5	4.12% 4	5.15% 5	97
Picnic Lawn/Meadow	12.07% 14	14.66% 17	14.66% 17	18.97% 22	17.24% 20	5.17% 6	7.76% 9	6.03% 7	2.59% 3	0.86% 1	116
Kayak/Boat Launch	31.58% 36	11.40% 13	19.30% 22	13.16% 15	8.77% 10	4.39% 5	2.63% 3	5.26% 6	1.75% 2	1.75% 2	114

Q4 Please rank the following natural/ecological features in order of importance, 1 being most important.



	1	2	3	TOTAL	SCORE
Forest	7.20% 9	19.20% 24	73.60% 92	125	1.34
Wetland Cove	35.48% 44	49.19% 61	15.32% 19	124	2.20
Living Shoreline	57.48% 73	31.50% 40	11.02% 14	127	2.46

5.6 KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY RESULTS

Kingston Point Beach Climate Adaptive Design

Q5 Please list any other feature you would like to see at Kingston Point Beach that was not listed above.

Answered: 73 Skipped: 59

#	RESPONSES	DATE
1	As sea level rises provide a swimming area in deeper water, similar but larger than the swimming beach as Minnewaska State Park with docks on 3 sides.	5/26/2020 8:54 AM
2	Covered areas for sitting; way-off station(s) for removing sand or washing hands (no soap- just water)	5/25/2020 6:12 PM
3	Comment: I picked option# 2 partly on cost over option #3 based on cost. Hopefully option #2 would leave open the possibility to consider option # 3 at a future date. An additional feature could include a community garden.	5/25/2020 5:24 PM
4	parking	5/25/2020 11:10 AM
5	I'd like to see a shuttle service to Kingston Point Park connected to the Kingston Corridor Shuttle Bus to bring people to the beach. I would like to see how you plan to integrate this work with the Green Line and the Sharrows for bikes, and the existing causeway that carries the trolley line. I think the trolley would be a good substitute to a shuttle to the Kinston Point park park with more frequent service and cheaper. You don't show the costs and you don't suggest how you believe your designs might increase the use of the area, and that gets back again to transportation. Then too there is the whole area that Scenic Hudson is developing. Again, some costs need to be shown and the funding, and public transportation and tax implications. Basically, the least expensive and most sustainable solution would I think prove to be best given the extensive waterlines we have. thank you very much for the excellent video you presented. From a city planner point of view, I would like to see the plan you would recommend for Kingston, costs, and anticipate usage.	5/24/2020 4:58 PM
6	Access for non-motored boat launching: water sports such as windsurfing, sailing, and kayaking.	5/24/2020 10:22 AM
7	existing parking is too close to the beach and most (if not all) of the beach is gone by 2080. giving the expected introduction of driverless cars and the continued growth of the sharing economy in the next decade, I strongly suspect such a large parking lot will prove itself unnecessary and we should plan on relocating parking where the EST parking will be and turning the existing parking lot into more beach.	5/21/2020 9:38 AM
8	Not so much at the beach but at the Point in general, many trees have been lost along the walkway. Would be nice to replace with some kind of plantings adapted for waterfront setting. also considering the current pandemic and economic hardship of the state and city not sure making a landfill at the the beach is a priority. What's great about KP is the confluence of nature and recreation and how they each complement the other--this is the relationship that should be preserved.	5/21/2020 9:36 AM
9	Direct connector to the Empire Trail	5/21/2020 9:21 AM
10	Parking with retained river view.	5/21/2020 12:10 AM
11	A digital high tide clock	5/20/2020 10:19 PM
12	Playground	5/20/2020 10:18 PM
13	Beach terraces that transition to secure swimming locations and wetlands as future water level rises. Also I do not think a fishing pier is compatible with swimming area.	5/20/2020 9:01 PM

14	Further developed accessible trail along the water.	5/20/2020 7:55 PM
15	Not sure	5/20/2020 1:50 PM
16	Hotdog stand.	5/20/2020 12:03 PM
17	water views from the pavillion	5/20/2020 11:42 AM
18	Futsal court (5 v 5 soccer, all-weather surface, similar to a tennis court surface.	5/20/2020 10:52 AM
19	ability to view the river from your car	5/20/2020 10:14 AM
20	Interpretive displays on general and local river history, Kingston waterfront, and ocean rise located along the promenade.	5/20/2020 8:13 AM
21	outdoor cafe	5/20/2020 8:09 AM
22	Boat trailer parking	5/20/2020 7:28 AM
23	Eco kids area, not a plastic playground. Something that can incorporate the river and play, maybe swings over the water or a climbing wall in the water.	5/19/2020 10:35 PM
24	Restrooms. Not mentioned in presentation.	5/19/2020 3:33 PM
25	Bathrooms separate for male and female, not shared by both	5/19/2020 2:20 PM
26	Outdoor shuffleboard courts	5/19/2020 1:14 PM
27	Pickleball courts	5/19/2020 12:56 PM
28	HANDICAPPED BEACH ACCESS WITH RAMP ON TO SAND . SPECIAL HANDICAPPED AREA ON BEACH	5/19/2020 11:27 AM
29	Adequate parking and facilities to support increased usage. I would also like to see it staffed to ensure it is cleaned and maintained unlike our parks now. They are a disgrace. If the plan does not include the required staffing, don't do it. We don't need another unkempt public spot in Kingston.	5/19/2020 11:21 AM
30	Bike Path	5/19/2020 10:50 AM
31	Solar/sustainable bathrooms	5/19/2020 10:31 AM
32	Extend the beach wider but as concrete wall for fishing for all with a disability area access too	5/19/2020 10:31 AM
33	Glass bottomed marine habitat viewing area	5/19/2020 10:25 AM
34	interpretive information that explains the design and implementation	5/19/2020 10:15 AM
35	Rowing boat launch -- floating deck for kayakers and rowers.	5/18/2020 9:21 PM
36	Retain the current opportunities to windsurf and kitesurf from KP.B. No mention of this in the report even with a 35 year history of windsurfing at KP.B. One of the most popular windsurfing venues on the Hudson River. And, the most popular venue on the occasion of Northeast winds. Popular enough that sailors will travel to visit Kingston specifically for those prime NE wind conditions.	5/17/2020 1:36 PM
37	Connection to larger hiking and biking trail networks	5/16/2020 1:20 PM
38	Water chestnut removal	5/15/2020 7:37 PM
39	I love the accessibility right now. I would like to see some elements of that ease of access maintained for the mobility impaired. The ramps don't look quite as easy. I would also like to see the design include an emphasis on resilience to large storm events, not just sea level rise. Additionally, I love the open feeling that the beach has currently. I would hate to have it be more closed off.	5/15/2020 6:49 PM
40	I can not emphasize enough, the importance of preserving an area for regular beach activity - swimming, sunbathing, relaxing, and play area. Thank You	5/14/2020 11:06 AM

5.6 KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY RESULTS

41	I am concerned that the terraced solution will create sharp drop-offs which, when submerged, will be dangerous to swimmers and waders	5/13/2020 2:59 PM	68	Less flooded parking across the street	5/11/2020 3:01 PM
42	Can you have a pier with Option 2 ?	5/13/2020 2:45 PM	69	N/a	5/11/2020 2:15 PM
43	hard sheltered benches /vistas	5/13/2020 2:33 PM	70	I can really see the grandstand being used for hanging out. Perhaps design #1 could include one tier in which the hard barrier was a grandstand/rock step construction. The beach is really not that big, so the design plans that propose to chop it up into a bunch of small tiers/beaches would make it feel cramped. Also, would segment off hangout spots from one another adding the vibe that users would stake out territory and not get too close to each other. Whereas presently, with the whole beach being one span, people/families/types of recreation activities mingle and overlap. It's really free and open! One last request, I would REALLY love to see more cottonwood trees planted on the beach. It's so nice to have the shade and also the beautiful shadows and light patterns of the leaves on the sand. The existing cottonwoods themselves create little activity coves and recreational variety.	5/11/2020 2:05 PM
44	More parking across the street	5/13/2020 1:21 PM	71	making sure that people in their cars (there seem to be a lot of them) can still see the river from the parking lot I would also say that I support approaching the first alternative, the least manipulated at this time, One, it would be the least costly at a time when funding will be very tight for the foreseeable future, and 2nd, seems it would give the most flexibility in the future (20-30-years from now) to reassess the SLRise situation and take additional steps then if and as needed.	5/11/2020 1:50 PM
45	perennial pollinator plantings	5/13/2020 1:10 PM	72	soccer field	5/11/2020 1:30 PM
46	I would have appreciated the costs attached to each of the alternatives to be able to do a real cost/benefit analysis.	5/13/2020 12:14 PM	73	Great presentation!	5/8/2020 4:55 PM
47	Area for launch of windsurfers and stand up paddle boards with grassy spot for sails near water: preferably to the West of the boat launch. Area to compost beach debris and seaweed: preferably to the East of the beach.	5/13/2020 10:05 AM			
48	KPB is an important windsurfing location for a northeast breeze. Having a grassy rigging area to rig sails and the ability to easily walk from the rigging area to the beach launch is important. Also I didn't see swimming as a choice in your activities. We used to be able to rig more to the North until it became a dumping ground for beach debris. It would be nice to reclaim this and turn it into a grassy rigging area, that could also be an open grassy space for children to play.	5/13/2020 9:57 AM			
49	Playground	5/13/2020 8:58 AM			
50	amusement things like ferris wheel or a pier that has shops on it like in beach towns. Even if it is seasonal vendors renting the shops, hot dogs, ice cream, pizza, cold drinks etc. A nice mini golf place like Pirates Cove.	5/12/2020 10:05 PM			
51	I watched the video, but I don't know if I understood the things I was ranking in #3 and #4 (Grandstand--is this the steps where you can sit?, What is Rock Outcrop Terrace vs. Lookout Terrace?, Garden Terrace? , Living Shoreline vs Wetland Cove). I think returning the area to its more natural state is more important than recreation areas. For example, the grassy areas on either side of the entrance drive get flooded already; the playground is often too muddy to play; and the parking lot at the BMX track is always flooded.	5/12/2020 8:52 PM			
52	Sit down restaurant	5/12/2020 8:44 PM			
53	Basketball courts	5/12/2020 6:03 PM			
54	BBQ Grills, picnic tables	5/12/2020 4:31 PM			
55	So happy you are planning for the future of our parks. Thank you.	5/12/2020 11:01 AM			
57	THANKS!	5/12/2020 7:49 AM			
58	Splash pad	5/12/2020 6:45 AM			
59	Skatepark nearby	5/11/2020 9:30 PM			
60	emergency call boxes, non-light pollution lighting, food pantry distribution	5/11/2020 9:01 PM			
61	Thoughtful areas for sitting and gathering.	5/11/2020 7:27 PM			
62	fishing platform or pier	5/11/2020 6:49 PM			
63	Skate park, expanded playground, year round bathroom facilities or port-a-potty	5/11/2020 5:00 PM			
64	Concert /Bandstand	5/11/2020 4:30 PM			
65	Fishing dock permitting separation of fishermen from other activities.	5/11/2020 4:13 PM			
66	Playground and an increased number of picnic table and shade options	5/11/2020 3:07 PM			
67	It looks like the architect has never been to the site. All of the views are backward. Instead of looking out at the river they have built the view-sheds back to the land. This makes no sense. The whole design is backward and should be angled out at the river not backward to the land.	5/11/2020 3:05 PM			

5.6 KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY RESULTS

Additional Correspondence to the City

Robert Burhans

I could not determine the elevations of the terraces that were proposed. As sea level rises the water level will submerge some of the terraces. This will create a hazard for small children. If they step off the terrace they maybe in water over their head or panic as they step off the terrace. Section 6-2.19 (4.5) of Subpart 6-2 of the NYS Sanitary Code has requirements for bathing beach slopes.

Hi Julie,

No action required. Just thought I'd mention my thoughts in the spirit of: "If I didn't notice or misunderstood then I probably wasn't alone" and "Boat launching can be a sensitive topic".

After reviewing the zoom session and responding to the online questionnaire on EngageKings-ton site, I realized that during the zoom session, I had no idea what was being proposed for the kayak launch. During the zoom presentation, I assumed that the concrete launch would remain. But when I took a second look at the presentation on the site, I noticed that the kayak ramp appeared to be a raised, perhaps temporary, structure that went over the promenade. Also the term switch between "Boat Launch" and "Kayak Launch" became salient only on the second pass. I didn't pick up on these details during the live zoom presentation. Is the intent of the alternatives proposals to carry or cart kayaks over the promenade and prohibit vehicles and trailers? Fine with me, I actually prefer to cart my kayak or carry with a friend. In hind sight, silly me to think during the zoom event that the concrete launch would remain since it would allow water behind the raised area defeating the purpose of the design, and if raised over the promenade it would become a safety hazard for folks on the promenade.

Thank you for inviting me to participate. The designs were surprisingly artistic and thoughtful.

stay safe and well,
Diane Dintruff

Don Tallerman (Ward 5 Alderman):

Nice job Julie. Good presentation from Supermass Studio. The biggest downside is that it's hard to see the 3 design ideas on the computer screen. They are very detailed and would be better on large posters - but obviously that's not possible.

I would also like to know more about the proposed Event Field & proposed Soccer field. We can discuss another time.

While I do have a favorite, I'll ask Judy leave comments on EngageKingston (probably not appropriate for me to do so).

Thanks again for the great effort!

Emilie Hauser

I tried to ask questions that were more engineering related, as that is the big expense, not programming and tried to think longer term (50 years). I think that the drawings that have the launch labeled only as kayak will raise questions by the public b/c they will be concerned about trailered launches. The same b/c there is no swimming depicted. Making it clear that more programming will be accommodated is important to let folks know. Maybe ask a question in survey monkey that has public think in the next 20 years... 2040. Such as think about coming to the beach in 2040, which designs best fits your desires and needs?
emilie

5.6 KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY RESULTS

Additional Correspondence to the City

Hi Julie, I just took the survey. A little feedback:

I admit, I should know enough by now to answer these questions myself, but I have not given it a deep dive. Here are osme thoughts:

I did not understand option 3.

I tried viewing the PDF version to see if it explained it better, but the PDF is just the slides with-out the explanation. You might want to add text to the PDF

The habitat piece wasn't that clear to me, and the survey question on that topic seemed out of the blue. How did it relate to the presentation and the choices? How would I decide which habitat I prefer?

The connection of the three choices to the points made at the beginning of the presentation about the future of the point wasn't that obvious.

- Are you saying that all three options protect the main road from flooding through 2080?
- How are the various SLR scenarios (channel island etc.) connected to the design choices?

That said, I enjoyed it and would like to share it more widely. I'm really excited to see the project progress.

FD

Fran Dunwell, DEC HREP Director

Hi Julie, it's Geri Breen. I am needing to know what the plan is for my house in this grand plan? In case you don't know, I'm at 162 North Street, the wet side, with my backyard touching this park. I don't see the details in regards to my house \ the few houses on my corner. Please let me know how I can get this extremely important information.Thank you very much

Thank you. Can you please help me with other information? Are there plans to reinstall the playground equipment at Kingston point beach,that's gone, back where it was? Hoping for a great playground, this time with benches!

On the plan, the gentleman presented a very clear and thorough and meticulously planned presentation and we very much appreciate the effort put forth so I could view it. I want to vote for the most environmentally friendly plan, do you know which one that would be? Thank you.

From: Karl Slovin [mailto:kslovin@mwestholdings.com]
Sent: Monday, May 11, 2020 5:47 PM
To: Noble, Julie <JulieLNoble@kingston-ny.gov>
Subject: [EXTERNAL EMAIL] Re: Kingston Point Climate Adaptive Design Feedback

Julie,

Thanks for sharing. I'm happy to jump on a call if you like. I understand why this is being studied now, and see how the beach park can become a great attraction along the Empire State Trail. Getting the design to something which can be built within budget and makes the expenditure worth it, is obviously essential.

The thing that struck me very strongly is that the design is backward. The amazing cross Hudson River view-sheds could make the park truly exceptional, but they have the park turning to the shore not across the river.

If the City (State?) is going to spend the money reworking the park, essentially from scratch, the views diagonally across the river are within your grasp.

The oil tanks seem to be missing from the presentation. If these are underwater will the company not abandon the site? Has a discussion with them taken place? Isn't the point, where the tanks are, the best location to expand the park into? Pleasure boats from the city could dock there once again, no? Connecting the two parks across the oil tank land would be amazing.

Lastly, the new proposed EST parking lot which is currently at a raised elevation (looks like it used to be paved) could easily be enlarged to accommodate all of the parking for the entire park.

Thus the beach could be more easily angled to face across the river and be greatly enlarged to the south over what is now the parking lot.

Let me know if you want to talk.

Best,

Karl

Karl Slovin
President | MWest Holdings | Polaris Property Management | Hutton Brickyards

5.6 KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY RESULTS

Additional Correspondence to the City

Dear Ms. Noble

I have watched the video of the preliminary designs for an adaptation project at Kingston Point Beach.
I registered on the ‘Engage’ web portal but did not see a survey or any other way to provide comments on the project.
Therefore I offer the following comments:

I would strongly urge the City of Kingston and the DEC Estuary Program not to do anything. Minimal to no interference!
This area should be allowed to return to the Hudson River.
There should be no further interference with trying to “engineer” the waterfront to meet human needs.
This area of the Hudson River waterfront should be allowed to return to its ‘natural’ state based on the sea-level changes and other ways we have already interfered with the natural cycles of the River.
There should be no reinforcing of the beach.
There should be no rip-rap.
There should be no more human interference.
There should be no more attempts to ‘engineer’ or ‘bioengineer’ nature.
Let the area flood if that is what is to happen.
The area should be closed to the public and allowed to return to a ‘natural’ a habitat as possible’.
Perhaps the only interference should be a habitat restoration plan - an effort to return this area to a natural habitat.
Put nature first!
Please stop trying to control nature!
Thank you

Rich Schiafo
294 4th Ave
Kingston NY

Comments to the May 2020 Public Presentation Webinar

Schultheis, John (to All):
Question- Is jet ski / motorboat access planned to continue or be removed?

To All:
We can raise our hands and you can call on us

Emilie Hauser (to All):
Will sand continue to be added to the beach as it is now?

Heather Blaikie (to All):
Would Alt 2 allow for future phases of bio-engineering for added protection as beach terraces become submerged over time?

nbmos (to All):
What are the pros and cons of each design with regard to resilience to storm surge? think another Irene/Lee or Sandy coming up to the pavilion area.

To All:
Thinking life guarding persepective.... Will we be able to move the guard stand as the sea level changes over time?

Emilie Hauser (to All):
Most of the imagery does not show swimming as an activity.

Emilie Hauser (to All):
Would there be changes to the swimming area?

Heather Blaikie (to All):
Do you anticipate the need to plant marsh grasses in the lower beach areas that become submerged or would they migrate themselves?

Schultheis, John (to All):
I suggest the compatibility for continued motorized / trailered boat should be evaluated. There are other nearby launch locations available for those types of craft whereas this site is best suited for kayaks, canoes, etc

Schultheis, John (to All):
further there is no trailer parking here now

5.6 KINGSTON POINT BEACH DESIGN ALTERNATIVES SURVEY RESULTS

Comments to the May 2020 Public Presentation Webinar

To All:
There is not a lot of motorized/trailerred boats launching

nbmos (to All):
what is the plan for the composting restrooms currently located next to the pavillion? don't see this in the designs? (Nancy Beard)

Emilie Hauser (to All):
The initial conditions assume that the location of the parking lot will remain. Was there any consideration of moving the parking lot back to allow more room for the beach?

Heather Blaikie (to All):
Sleightsburg is also limited and subject to SLR which may add pressure for users to find alternatives.

Diane Dintruff (to All):
I confess I'd prefer motorized vehicles to use Rider Park. However I haven't had problems launching kayaks there with trailer boats and jet skiies. However parked cars are a problem.

Diane Dintruff (to All):
Plan for playground?

katherine keegan-twombly (to All):
what is the plan for the space behind the parking lot?

Diane Dintruff (to All):
Will there be educational kiosks explaining high water rise, the design options chosen, and the park into the future, and link to Rotary Park? Similar to Long Dock Park at Beacon.

Heather Blaikie (to All):
How do you envision pedestrian connections through this site, around the parking lot and to other sections of Kingston Point and the Empire State Trail?

Emilie Hauser (to All):
Do you have ideas of price comparison between the three options? And will they all be built in one phase or or in several phases to spread costs over time?

Diane Dintruff (to All):

Width of walkway? Will bikes be allowed on?
Diane Dintruff (to All):
Will park be completely closed during construction, or will launch area remain available?

Emilie Hauser (to All):
Explain the earthwork of Alt 1? Is there a hard toe on the berm / promenade on beach side?

Diane Dintruff (to All):
What happened to fishing dock on alternatives shown. I like the fact that the fishing dock is one of the early slides was a distance from the launch area. but then conflict with swimming.

Heather Blaikie (to All):
I like Alt 2 as it possibly allows future/ alternative development and programming of the terraces such as shown in Alt 3. Was a perpendicular alignment of the parking lot considered that allows more flexibility to the other half and you are less constrained to the shoreline?

Emilie Hauser (to All):
Is there drawing of the brick living shoreline to the west ?

Emilie Hauser (to All):
How is the promenade in Alt 1 tied in to prevent flooding around the sides?