

**DESIGN THE EDGE:  
HALLETS COVE  
LONG ISLAND CITY, NY**



New York City Economic Development Corporation

in partnership with



**Metropolitan Waterfront Alliance**

prepared by

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ECOLOGY



ACTIVITY



CONNECTION

#### ACKNOWLEDGEMENTS

Astoria Houses Tenants Association  
Goodwill Industries  
Greater Astoria Historical Society  
Greenshores NYC  
Long Island City Community Boathouse  
New York City Department of City Planning  
New York City Department of Environmental Protection  
New York City Department of Parks and Recreation  
Office of Council Member Peter Vallone  
Office of Representative Carolyn Maloney  
Queens Community Board 1  
Socrates Sculpture Park  
The Trust for Public Land

#### FUNDING

This document was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund.



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## EXECUTIVE SUMMARY

Hallets Cove is the part of Queens' East River coastline that stretches from Socrates Sculpture Park in the south to NYC Housing Authority's Astoria Houses in the north. Funded by New York State Department of State, Design the Edge: Hallets Cove focuses on improving waterfront access and ecological conditions at a small, disused, publicly owned parcel at the north end of the cove.

Waterfront improvements to Hallets Cove have previously been suggested in NYC's Vision2020 and in the Waterfront Vision Plan for Astoria and Long Island City, Queens, developed in 2011 by Green Shores NYC and The Trust for Public Land, both of which found demand for boating amenities and passive recreation space. A Design the Edge: Hallets Cove public workshop on June 27, 2012 confirmed local stakeholders' interest in improving waterfront ecology, providing boating amenities, and creating space for passive recreation.

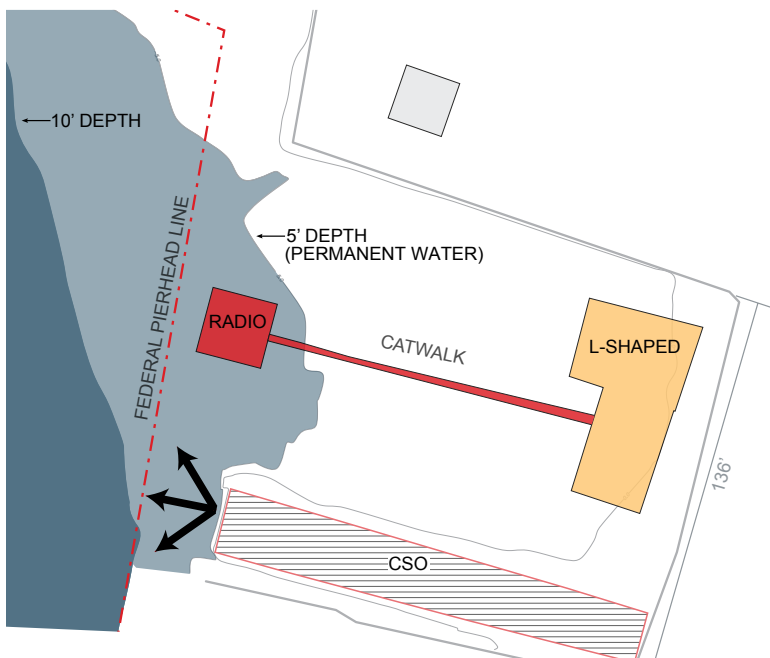
Stakeholder interests and site investigations shaped the conceptual design. A little more than 1/2 acre in size, the project site largely comprises protected intertidal wetland, has shallow water, and hosts a combined sewer outflow, all of which limit its potential for development and use. Design the Edge: Hallets Cove worked with representatives of the Department of Environmental Protection (DEP) and the Department of Parks and Recreation (DPR) to create a conceptual design that fulfills public desires while respecting unavoidable site constraints.

The resulting design restores the intertidal wetland, expands and improves habitat areas, creates large and small spaces for socializing and relaxing, and appeals to local boating enthusiasts by incorporating boat storage and a floating dock for water access during low tides. The design creates strong connections with Vernon Boulevard, inviting neighbors to see and use their waterfront.

If begun in the next 3 years, implementation of the entire project could

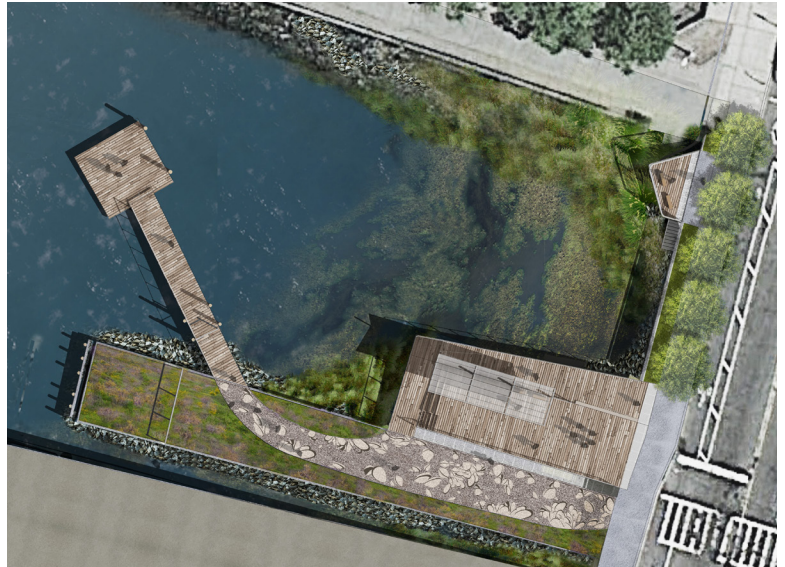


16 stakeholders and 12 representatives of elected offices worked together to express a vision for the project site. Ecological restoration, boat storage, boat launching, and passive recreation were all enthusiastically supported.



Predominantly protected intertidal wetland, the project site's shallow water depth and 5' daily tidal variation limit its use for active water recreation. The integrity of the CSO on the southern edge of the site must be protected; its discharge affects water quality. The federal pierhead line marks the furthest allowable extent for any built structures. To the north, a Department of Parks and Recreation esplanade is slated to host a designated waterfront greenway.

The concept plan incorporates the community's most desired elements, while respecting regulatory and inter-agency priorities: ecological restoration results in a transect of intertidal and upland habitats; salt-tolerant plantings above the CSO expand habitat; a shaded overlook creates intimate seating; a floating dock creates low-tide recreational access; and an accessible deck incorporates gathering space, shade, seating, and built-in boat storage while preserving and opening up views over the water.



be completed for \$4 million. With the consent of State Department of Environmental Conservation (DEC), the design could be implemented in three phases, providing the community with benefits even while funding is still being acquired:

Phase 1: Removal of existing structures, environmental restoration of the north part of the project site, and construction of the overlook  
Cost: \$1.1 million

Phase 2: Raising top of the CSO; paving and planting; creating floating dock, Cost: \$750,000

Phase 3: Construction of the boat storage deck; habitat restoration south of the CSO. Cost: \$2.6 million

View of the redesigned cove, looking south: a small overlook adjoining Vernon Boulevard provides intimate social space, while an expansive deck to the south provides seating, boat storage, and access to a floating dock.

The next steps in implementing a waterfront design at Hallets Cove are discussions with DEC, followed by full design. While final designs may differ markedly from those shown here, Design the Edge: Hallets Cove clearly demonstrates the feasibility of enacting a community-supported program for a renewed waterfront.





On the southern side of Halletts Point, the project site is a protected cove of the East River, separated from the river's main shipping channel by Roosevelt Island.

## CONTEXT

Funded by a New York State department of State Environmental Protection Fund grant, this project, led by NYC Economic Development Corporation (EDC) in association with the Metropolitan Waterfront Alliance (MWA), applies Design the Edge principles for the revitalization of a city-owned waterfront property at Halletts Cove in Queens.

Design the Edge advocates for the creation of an integrated waterfront that provides simultaneous support for marine life and active recreation. Ten design principles help ensure that new waterfront developments meet the criteria:

- Install Varied Surfaces
- Incorporate Living Water Filtration Systems
- Reduce Wave/Wake Energy
- Reduce Velocity of Fast Moving water
- Build with Porous Surfaces
- Install Gabions
- Build with Durable Materials
- Incorporate Bioremediation
- Accommodate Safe Access
- Accommodate Visiting Boats

Design the Edge: Halletts Cove builds off of previous community-based planning work while addressing ecological and recreational goals. Past plans addressing the Queens waterfront include the Vision 2020 waterfront plan, and Green Shores NYC / Trust for Public Land's 2011

The site offers striking views of Manhattan and Roosevelt Island.





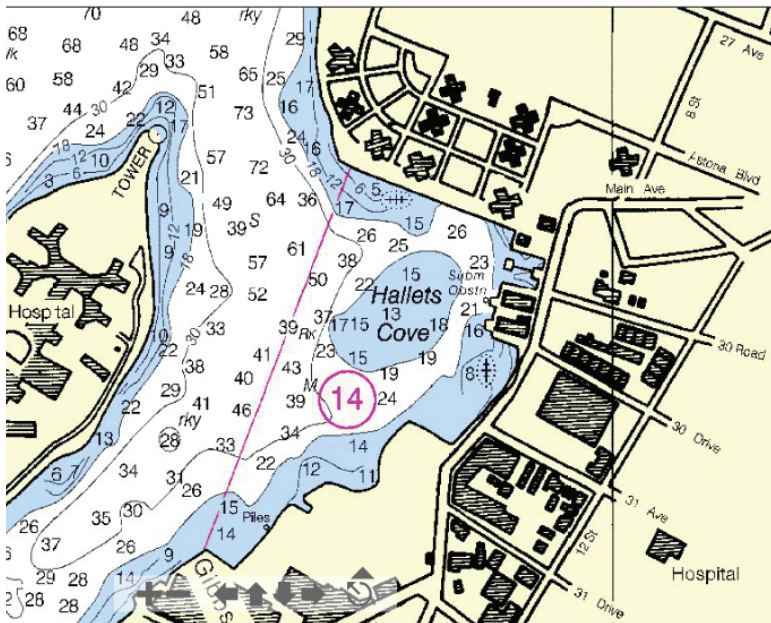
Tidal variations of 5' inundate the site daily, but leave the muddy bottom exposed for hours each day.

Waterfront Vision Plan for Astoria & Long Island City, Queens. The latter imagined “a continuous, landscaped, and accessible waterfront greenway” for the waterfront stretching from Newtown Creek to Bowery Bay that would connect waterfront spaces and provide access from inland areas. Articulated hopes for Hallets Cove included spaces for relaxation and passive recreation, as well as areas for boat storage and launching. Vision2020 also cited access for in-water recreation at Hallets Cove as a goal.

Hallets Cove was one of the first settlements in Queens, originally claimed by Jacques Bentyn in 1638. William Hallett received the land subsequently from the Dutch in 1652, and the site bears his name.



Hallets Cove, later Astoria, was one of the earliest settlements in Queens, with established landholders by 1840. The cove itself was a series of public and private wharves.



Halletts Cove is a legal anchorage for the Port of New York, enabling small ships to anchor at will. The anchorage extends east from the pink line marked on the map at right. Source: NOAA

In 1839, Steven Halsey, a fur merchant, founded a village at Halletts Cove (later to be renamed Astoria in honor of John Jacob Astor) and started ferry service to Manhattan's 92nd Street pier. The historic ferry ran from the western-most extent of what is now the Astoria Houses esplanade. A map from 1840 shows several wharves, including a public wharf, in the Halletts Cove inlet. While no longer a wharf, Halletts Cove currently serves as legal anchorage number 14 of the Port of New York. The anchorage pertains to waters east of a line extending from a point slightly east of the corner of the Astoria Houses esplanade to Gibbs Point, at the corner of the Costco lot, which forms the southernmost point of the cove.

#### SITE CONDITIONS

The project site is a 27,750 square foot lot (approximately 1/2 acre) of city-owned waterfront west of Vernon Boulevard, bounded to the north by the Astoria Houses Esplanade and to the south by a line that would extend 30th Road to the west. Set back from the East River, the site is a shallow coastal shelf protected from wave energy by jetties to the north and south. With Roosevelt Island as an additional buffer to the shipping channel, wake energy has very little impact on the site. 75 percent of the site fully drains during low tides, allowing a twice daily inundation of clean water. At high tide, the basin fills nearly to the Vernon Boulevard retaining wall, which does get wet during certain coastal storms.

Below, the mud of the project site bears items both illegally dumped and washed out of the river.





Located in the intertidal zone, the project site is primarily a mud flat, home to macroalgae and a variety of bottom-dwelling organisms that serve as food for larger species, like migratory fish.



Low tide exposes the intertidal mud flat, which appears to be healthy, with abundant growth of fucus, a brown macroalgae that provides habitat and feeding areas for small fish, crabs, and invertebrates. Along the wetland's upland edge, *spartina alterniflora*, a native sea-grass, grows. The site provides habitat for a mix of mussels, tunicates, clams, crustaceans, and migratory fish, and anecdotal evidence indicates the presence of blue crabs. However, the underlying health of the bottom condition is undermined by ongoing use of the site for illegal dumping, and the proliferation of trash detracts from the site's appearance and environmental potential. The upland edge of the site, adjacent to the seawall, has been effectively filled with illegally dumped soil and other debris, out of which invasive phragmites and ailanthus trees now grow. This dumped material is of very low quality, modifies the expected slope of an intertidal wetland, and curtails growth of native vegetation, reducing the overall area of useful habitat on the site.

Fence conditions, from north to south: a low iron rail on the Astoria Houses esplanade; a chain-link fence along Vernon Boulevard ; and a wall blocking views and access south of the project site.

The project site is fenced off on all sides and does not admit public access. Along Vernon Boulevard, a continuous chain link fence prevents public site access, although it allows passersby to look across the water at the Eastern shores of Manhattan and Roosevelt Island. Along the Astoria Houses esplanade, a low iron rail prevents physical access but





does not forestall illegal dumping; the mud below holds shopping carts, wheeled chairs, and bicycles, in addition to debris that likely washed ashore from the river.

The half-acre site holds three structures dating to historic radio transmission, and a combined sewer outflow.

Three structures on the site remain from its historic use in the 1950s and 60s as a radio transmission site. None of the structures are suitable for reuse without extensive rehabilitation.

About 150 feet offshore from Vernon Boulevard, the former radio tower base is a square 30'x30' platform constructed with steel pipe piles, steel pipe and angle cross braces, a concreted deck, and a timber fendering system. Constructed in 1952, the platform held a 212' high radio transmitting tower that was permanently shut down in 1967. While observation from shore revealed no corrosion openings in the pipe piles, many of the angle steel cross braces appear to have completely corroded and can no longer serve as cross-bracing. Hardware holding the fender system together seems to have failed. The seven timber fender piles show no visible defects.



The radio tower platform at high tide. Many of the cross braces have completely corroded

A few feet from the retaining wall at Vernon Boulevard sits an L-shaped concrete platform that used to hold radio transmitter equipment. The platform has a 7" thick, cast-in-place concrete deck reinforced with

L-shaped platform with catwalk beyond.  
None of the structures are suitable for reuse.



mild steel, and is supported by 40 10 to 12” diameter plumb timber piles, a number of which have suffered erosion loss near the mudline, resulting in advanced deterioration. The piles are assembled in groups of two and three, and are laterally restrained by timber cross braces, many of which have failed at one end. Concrete pilecaps, connected by concrete cap beams, appear to be in satisfactory condition. The concrete deck, which extends typically 1.25’ beyond the perimeter cap beams, exhibits minor to moderate cracks, scaling, pop-outs, and spalling. A 1” thick concrete topping slab is missing in some places.

Connecting the two structures is a 125’ timber catwalk, ranging from 2’ to 4’ in width, which is supported by pairs of timber piles spaced at roughly 20’ intervals. A number of the piles show significant section loss, and sections of timber boards are missing from the walkway.

Together, these three structures cover 6,543 square feet of open water. Foreclosure processes on the lot returned the land and the structures to city ownership in 1979.

One other significant structure exists on the site. A Combined Sewer Overflow (CSO) facility, designated by NYC DEP as BB-030, is located at the southern edge of the project site, in line with the streetbed of



DEP’s CSO BB-030 lies at the south edge of the site. A wrack line of flotsam on the landward side indicates that the structure is inundated on a regular basis.



30th Road. Regulator chambers and tide gates for the CSO are located beneath the streetbed of Vernon Boulevard, and are visible on the surface as a series of maintenance access panels and manhole covers. An irregular alignment of the western curb of Vernon Boulevard is assumed to be part of the NYCDEP construction. The outfall facility of the CSO extends approximately 160 feet west of the retaining wall that supports the Vernon Boulevard sidewalk. Engineering design drawings indicate a double-barrel sewer with a rectangular-cross-section, leading to a vertical headwall. The sewer structure is constructed of reinforced concrete supported on a field of below-grade pilings, topped by a layer of compacted stone and covered with a concrete topping slab. The long sides of the structure are stabilized by a slope of riprap.

The visible portions of the CSO structure appear to be in good condition; the outfall pipe is surrounded by a chain link fence in very good repair. According to the site survey, the top elevation of the outfall pipe is 2.72' (Queens datum) next to Vernon boulevard, descending to 2.0' next to the outfall. A rack line of debris next to Vernon Boulevard, indicates that inundation levels rise over the top of the outfall pipe at very high or storm tide conditions.

#### PROGRAM GOALS AND CONSTRAINTS

An integrated cove will offer a wide range of waterside experiences and activities that engage a broad stakeholder base. Mindful of this, the planning process for Halletts Cove was designed to identify a program for the project site that would augment current activities in the cove to satisfy the community's desires without duplicating existing programming.

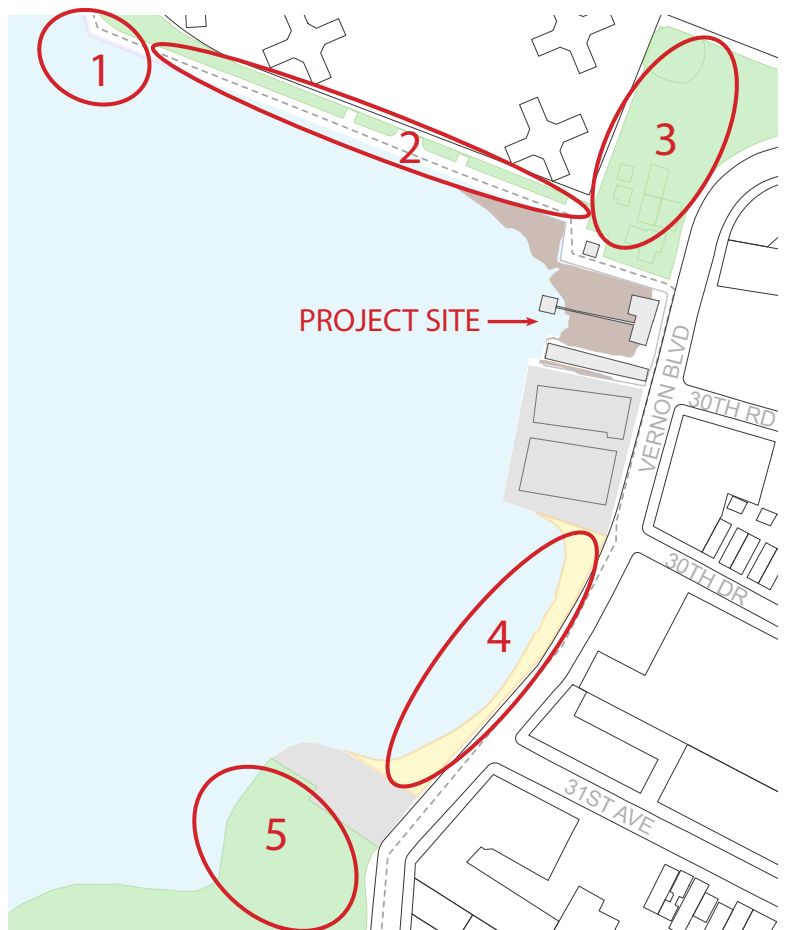
A number of recreational opportunities currently exist in the larger



The Astoria Houses esplanade, heavily used by residents for picnicking and relaxing, will soon host a segment of the Queens East River North Shore Greenway.

1. FISHING AREA
2. PICNICKING & PASSIVE RECREATION,  
BICYCLING, JOGGING, STROLLING
3. PLAYGROUND
4. KAYAK LAUNCH, PASSIVE RECREATION
5. PASSIVE RECREATION, ART

PROJECT SITE IS UNUSED



The Socrates Sculpture Park Beach offers opportunities to get down next to the water, and hosts the Long Island City Community Boathouse's seasonal public kayaking program.

cove. To the south, Socrates Sculpture Park invites visitors to stroll the grounds and enjoy a frequently-changing array of art installations, some of which invite viewers close to the water's edge. A parcel of private land stands between the park and a shallow sand beach to the north. The beach, maintained by the NYC Department of Parks and Recreation (DPR) and officially known as the Socrates Sculpture Park Beach, is almost entirely submerged at high tide, but at low tide offers a stretch of dry sand for strolling and sitting. The beach appears popular with dog-walkers, and is used as a put-in location for the Long Island City Community Boat House, which operates free public kayaking programs on summer weekends. The beach is adjoined to the north by a large private parcel, which houses the art studio of local sculptor Mark DiSuvero, some of whose pieces can be seen along the edge of his bulkhead. North of Mr. DiSuvero's property is the project site. North of the project site is a DPR-owned and maintained public esplanade and playground adjacent to the Astoria Houses, a public housing complex home to over 3,000 people. The esplanade is heavily used by residents of the Astoria Houses for picnicking on special occasion days, and sees consistent use by joggers. The esplanade provides benches for passive recreation, and a comfort station. In the future, the esplanade is slated to host a section of the Queens East River North Shore Greenway, which currently passes by the project site on Vernon Boulevard. At the western end of the esplanade, where the ferry to Manhattan once ran, local residents take advantage of access to deeper water for fishing and crabbing. Nearby Astoria and Rainey parks offer playgrounds, basketball courts, and space for strolling and passive recreation.

The larger cove offers recreational and waterfront amenities, but the overall waterfront experience is disjointed. Although Socrates Sculpture Park and the esplanade behind Costco provide ample space for strolling, their lack of seating limits opportunity for passive recreation. Waterside access, available at the sand beach, is limited due to the level of submersion during high tide. Meanwhile, use of the beach for kayaking is limited, as the full low tide exposes a field of thick, sticky mud that prevents boating use for 5 hours per tidal cycle.

In 2010, Green Shores NYC and The Trust for Public Land conducted seven neighborhood listening sessions and two area-wide brainstorming sessions as part of the planning process for the Waterfront Vision Plan. They engaged hundreds of residents, and discerned that future waterfront planning should result in a waterfront that is:

- healthy and vibrant, with enhanced and protected natural landscapes and increased use of the river as an educational resource;
- connected, to provide a continuous sequence of waterfront spaces and improve water access; and
- appropriate for the 21st Century, with amenities, lighting, comfort stations, and pathways that are inviting and modern.

Stakeholders identified Halletts Cove in particular as an ideal location for relaxation and passive recreation, fishing, and boating.

Building on these preferences, initial proposals for Design the Edge: Halletts Cove included a wide range of programmatic options, separated into three categories: Ecology, Activity, and Connection. Ecology considered a range of ecological restoration options; Activity looked at different options for recreation facilities; and Connection explored ways of creating physical and social connection between adjoining sites and uses.

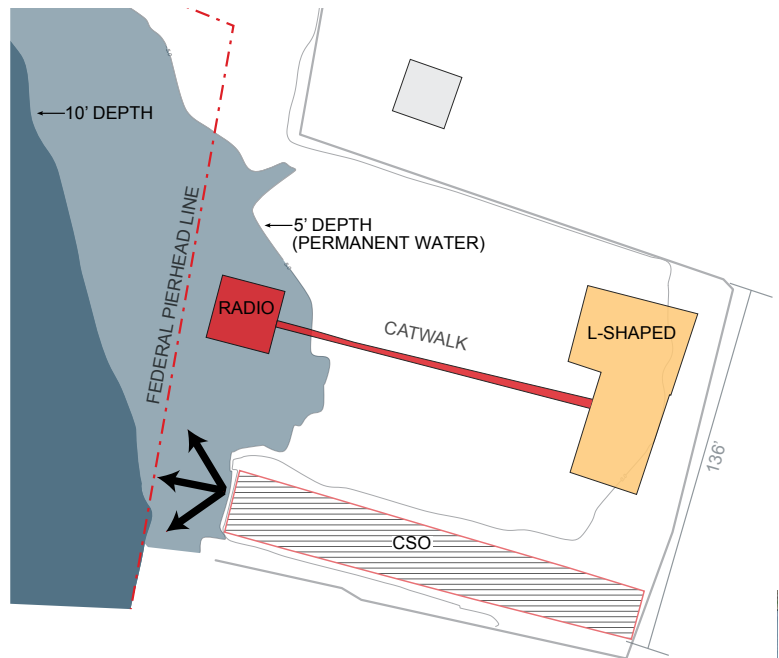
Before presenting a range of possibilities to the public, the project team evaluated the program options against the known constraints of the project site:



The Long Island City Community Boathouse organizes free public kayaking on summer weekends. Their programming is limited by deep mud at low tide.

Intertidal habitat is prized for its ability to support marine life and help the city weather storms.

The site is home to three structures leftover from its history as a base of radio transmissions, and a CSO. Water depths on the site are quite shallow; there is a limited area available to provide full-time boating access.



**Intertidal Zone Regulations:** intertidal habitat and landscapes are highly prized for marine food production, wildlife habitat, flood and storm control, recreation, cleansing ecosystems, sedimentation control, education and research, and open space and aesthetic appreciation. Identified by the state as a littoral zone, the project site is subject to intertidal zone regulations that limit the types of activities that may be undertaken there. Uses that require permits in the littoral zone include: establishing plantings, erecting structures, dredging or filling, etc. In order to secure permits, the petitioner must demonstrate that the activities will not have an adverse impact on the present or potential value of the affected wetland area, are compatible with public health and welfare, are reasonable and necessary, comply with all applicable restrictions, and will be compatible with the preservation, protection, and enhancement of the present and potential value of the tidal wetland. In practice, these regulations necessitate careful avoidance of increasing the shaded area of the water (doing so can effectively reduce habitat for marine life) and potentially reducing the area of the intertidal zone.

**Site Bathymetry:** the project site has shallow water depth. Although west of the pierhead line (a federal designation marking the furthest legal extent of any structure into the river) the water level drops precipitously, allowing barge access to the private site to the south, east of the pierhead line most of the project site has mean water depth of less than 5'. The shallow water limits active recreational use; for dependable boat launching or other in-water use, it is necessary to obtain access to an area of permanent water near the western edge of the site, which retains roughly 3' depth at low tide.

**CSO BB-030:** CSO BB-030 serves a large catchment area and has an approximated average annual outflow of 19 million gallons. The impact of the CSO on project design at Halletts Cove is twofold: the CSO must be protected, in that its functionality may not be impaired, and the responsible agency (NYC DEP) must be able to



According to DEP, most internal CSO maintenance can occur from the water side. The possibility of future repairs or reconstruction means that the top of the structure must also remain reasonably accessible.

access the structure for maintenance and repairs; and the public must be protected from coming in contact with contaminants present in nearby waters.

**CSO Structure and Maintenance:** The CSO structure is constructed of reinforced concrete supported on a field of below-grade pilings. This structure was not intended to support large loads, therefore any design involving the CSO must avoid structural loading. While some fill and pavement may be feasible, depending on engineering, there may be no structures or trees placed on the CSO structure. In addition, any modifications to the CSO must be designed with the understanding that NYC DEP's ability to maintain and (if necessary) repair the CSO is of manifest importance. Paving, fill, or low plantings atop the CSO may be destroyed during the process of conducting necessary repairs. Maintenance of the CSO can be conducted from the water side; to facilitate maintenance, the outfall of the CSO may not be obstructed.

**Public Health:** Proximity to a CSO has water quality implications that limit the range of appropriate in-water activities. The NYC DEP's 2012 Public Access Guidelines establish best practices for creating boat access areas in proximity to CSOs. The guidelines advise a multi-faceted approach to protecting the public health and safety, with signage and education, physical barriers and secured entry points, active management of the site, and strategic closures during and immediately following rain events, when water contaminant levels will be higher.

**Public Safety:** In addition to public health concerns, bringing the public into close proximity to the water invokes safety issues that can be addressed through physical barriers, secure entry points, and active management.

**On-Going Planning:** As the goal of the project is to enhance opportunities for recreation and access at the project site without



unnecessarily duplicating activities available elsewhere in Hallets Cove, program elements must be evaluated in light of plans for other locations. The Department of Parks and Recreation has long been interested in expanding opportunities for recreational, human-powered boating, and has been working to identify an ideal access point in Hallets Cove. As a site with better access could emerge at a later date, designs for this site should enhance experience of the waterfront for more than just the boating community. In addition, plans for the site cannot interfere with ongoing plans to route the Queens East River North Shore Greenway along the Astoria Houses esplanade.

Before making the draft designs public, the project team approached the Department of Parks and Recreation (DPR) and the Department of Environmental Protection (DEP) to vet the designs for feasibility. DPR requested that any designs avoid directly affecting other facilities in the area, namely the Astoria Houses esplanade and the Hallets Cove Playground. DPR is engaged in internal discussion about the best location for boat storage and access in the cove, for which they recognize there is community demand.

DEP emphasized their need to access, maintain, and, if necessary, repair the CSO at any time, as well as the importance of not structurally loading the CSO pier. Additionally, DEP advised incorporating appropriate precautions when introducing public water use in proximity to a CSO. Final designs will need to be reviewed for feasibility by DEP's engineering department.

The CSO on the site, BB-030, has an estimated annual outflow of 19 million gallons.

By comparing the wide initial range of program options with applicable site constraints, permitting restrictions, agency preferences,



maintenance needs, and potential alternate locations, the team winnowed the options. The remaining options fulfilled unmet community desires (particularly for boat storage and access), avoided duplicating other programming in the cove, were feasible given the physical constraints of the site, did not conflict with intertidal regulations, and had reasonable anticipated maintenance needs. Program options discarded during this process included: tie-up visiting docks, a full-service marina, and ferry service (for each of these, the water is too shallow and adjacent land inadequate to meet operational needs).



	DESCRIPTION	BENEFIT	WETLAND IMPACTS	REQUIRED PERMITS	STRUCTURES	AGENCY JURISDICTION	MAINTENANCE REQUIREMENT	ALTERNATE LOCATION
SHORELINE CLEANUP	REMOVE TRASH PARTNER FOR LONG-TERM MAINTENANCE	IMPROVE HABITAT; MORE ATTRACTIVE EDGE EDUCATIONAL OPPORTUNITY	-	-	-	-	LOW COST	-
REMOVAL OF EXISTING STRUCTURES	REMOVE ALL STRUCTURES ON SITE	IMPROVE HABITAT; REMOVE SHADOWS; POTENTIAL CREDIT FOR NEW STRUCTURES	-	DEC	REMOVE EXISTING	-	REDUCES MAINTENANCE	-
ENHANCE UPLAND HABITAT	REGRADE EDGE; CREATE UPLAND PLANTING AREA	INCREASED VARIETY OF HABITAT; MORE ATTRACTIVE EDGE; EDUCATIONAL OPPORTUNITY; ACCESS OPPORTUNITY	REDUCES INTERTIDAL WETLAND AREA	DEC	REMOVE EXISTING	-	DPR OR OTHER PARTNER REQUIRED	-
ENHANCE IN-WATER HABITAT	INSTALL REEF BALLS OR OTHER HABITAT-SUPPORTING STRUCTURES	INCREASED HABITAT AREA	-	DEC	COULD ATTACH TO NEW STRUCTURE	-	?	-
CREATE PLANTING ON CSO STRUCTURE	CREATE BIOSWALE OR OTHER PLANTING ON CSO PIER	MAKE USE OF CSO AREA; MORE ATTRACTIVE CONDITIONS; HIGHLIGHT TRENDS IN STORMWATER TREATMENT; EDUCATIONAL OPPORTUNITY	DIVERTS SOME WATER FROM WETLAND	DEC	REUSES CSO PIER	DEP	DPR OR OTHER PARTNER REQUIRED	-
DEBRIS FENCE	SUSPEND DEBRIS FENCE FROM OVERWATER STRUCTURE	ELIMINATE TRASH WASHING INTO SITE; OPPORTUNITY TO INCREASE HABITAT WITH REEF BALLS; IMPROVE HABITAT; REDUCE LONG-TERM MAINTENANCE COSTS;	-	DEC	REQUIRES NEW STRUCTURE	-	?	-



	DESCRIPTION	BENEFIT	WETLAND IMPACTS	REQUIRED PERMITS	STRUCTURES	AGENCY JURISDICTION	MAINTENANCE REQUIREMENT	ALTERNATE LOCATION
FISHING SUPPORT	PROVIDE CLEANING TABLES, MONOFILAMENT DISPOSAL, ETC.	SUPPORT EXISTING USE; IMPROVE HABITAT BY MITIGATING FISHING IMPACTS	-	-	REUSES OR REQUIRES NEW	DPR (IF USING EXISTING ESPLANADE)	TRASH REMOVAL & CLEANING	DPR ESPLANADE
FISHING ACCESS	CREATE NEW ACCESS TO DEEP-WATER AREA FOR FISHING	SUPPORT AND ENHANCE EXISTING USE	WATER DEPTH	DEC	REQUIRES NEW STRUCTURE	FEDERAL IF PASS PIERHEAD LINE	MAINTENANCE OF STRUCTURE	DPR ESPLANADE
BOAT STORAGE	STORAGE FOR SMALL, HUMAN-POWERED CRAFT	SUPPORT EXISTING USE; MEET COMMUNITY DESIRE	-	DEC (IF NEW STRUCTURE)	REUSES OR REQUIRES NEW STRUCTURE	DPR (IF USING ESPLANADE)	REQUIRES OPERATIONAL PARTNER	-
BOAT LAUNCH	CREATE PUT-IN FOR HUMAN-POWERED CRAFT	SUPPORT EXISTING USE	WATER DEPTH	DEC	REQUIRES FLOATING DOCK OR OTHER STRUCTURE	-	DPR OR OTHER PARTNER REQUIRED	SOCRATES BEACH (LIMITED BY TIDE)
VISITING/PUBLIC DOCK	PUBLIC DOCK WITH TIE-UPS	PROVIDE NEW TPE OF WATER ACCESS	WATER DEPTH	DEC	REQUIRES NEW STRUCTURE	FEDERAL IF PASS PIERHEAD LINE	DPR OR OTHER PARTNER REQUIRED	-
MARINA	FULL-SERVICE PUBLIC MARINA	PROVIDE NEW TPE OF WATER ACCESS	WATER DEPTH	DEC	REQUIRES NEW STRUCTURE	FEDERAL IF PASS PIERHEAD LINE	REQUIRES OPERATOR	-



	DESCRIPTION	BENEFIT	WETLAND IMPACTS	REQUIRED PERMITS	STRUCTURES	AGENCY JURISDICTION	MAINTENANCE REQUIREMENT	ALTERNATE LOCATION
OVERWATER ACCESS	BUILD A STRUCTURE PROVIDING PEDESTRIAN OVERWATER ACCESS	DIRECT CONNECTION BETWEEN NYCHA AND VERNON BLVD; NEW EXPERIENCE OF WATER/SITE; ACCESS TO DEEPER WATER FOR FISHING / VIEWS	SHADES NEW AREA	DEC	NEW STRUCTURE; REMOVE OLD	-	DPR OR OTHER PARTNER	-
PASSIVE RECREATION	CREATE SPACE FOR STROLLING, SITTING, ENJOYING VIEWS; SUPPLEMENT EXISTING ESPLANADE WITH A VARIED EXPERIENCE	EXPAND AVAILABLE SPACE FOR PASSIVE RECREATION; MEET COMMUNITY DESIRE; CREATE ACCESS TO VIEWS; CREATE RECREATION AREAS IN PROXIMITY TO WATER	SHADES NEW AREA	DEC	NEW STRUCTURE; REMOVE OLD	-	DPR OR OTHER PARTNER	-
FERRY SERVICE	REINSTATE FERRY SERVICE TO MANHATTAN	DIRECT CONNECTION TO MANHATTAN	WATER DEPTH; STRUCTURE WOULD SHADE NEW AREA	DEC, OTHERS?	NEW STRUCTURE; REMOVE OLD	FEDERAL IF PASS PIERHEAD LINE	REQUIRES OPERATOR	-

The project team examined a wide range of options to meet each of the three main programmatic goals.

## PUBLIC OUTREACH AND FINAL PROGRAM DEVELOPMENT

Sixteen stakeholders and twelve representatives of elected officials' offices attended a public workshop held on June 27, 2012. Nine of the stakeholders had attended previous meetings about the Queens waterfront, likely as part of the Green Shores/Trust for Public Land planning process. The meeting consisted of a brief presentation followed by a series of interactive exercises intended to gather information about the greater cove and provide an opportunity for feedback on three draft designs.

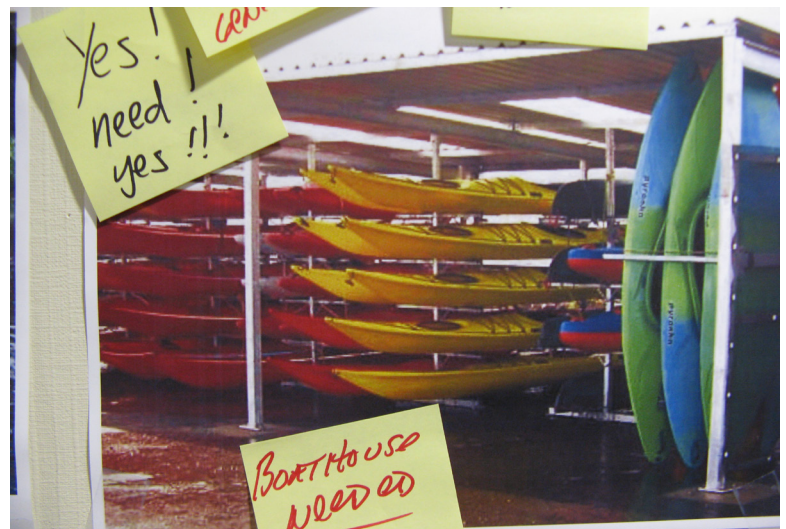
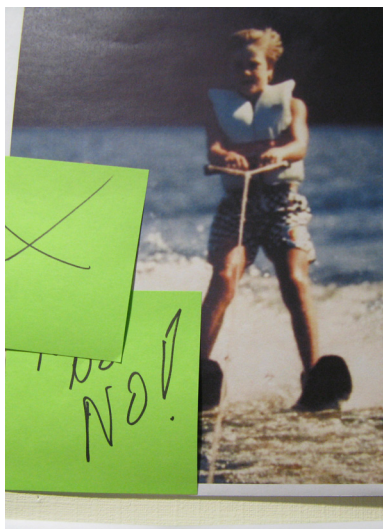
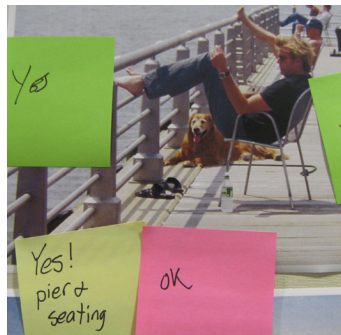
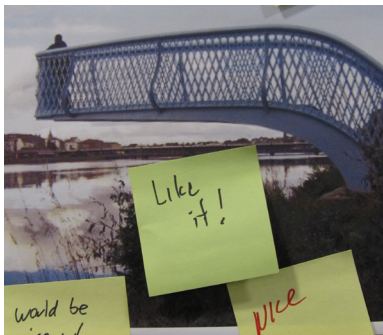
An "Inspiration Wall" of approximately 90 photographs depicting options for program and design elements greeted participants as they arrived. Attendees wrote notes on the pictures to express their thoughts. Images of waterskiing, jet skis, dining/food concessions, and a full-service marina drew negative comments, while nature, ecological restoration, boat storage, seating, dancing, interpretive signs, overlooks, and shade received favorable reactions. Images of ferries received equal numbers of positive and negative comments, with several people indicating that while restored ferry service would be desirable, the project site is not an appropriate location.

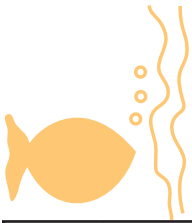
After a short presentation detailing the project provenance and goals, site conditions, programmatic opportunities, and site constraints, workshop attendees were introduced to three draft concept designs. Intended to solicit commentary on individual thematic areas of the proposed program, the three concepts were each targeted to a particular program focus: Ecology, Activity, or Connection.



The inspiration wall gave community members a chance to comment on specific activities, program elements, and design ideas.

Workshop participants responded enthusiastically to images of boat storage, and were pleased by pictures of overlooks, seating, and shade. They emphatically rejected activities dependent on motorized watercraft that would interfere with the natural condition of the protected cove.





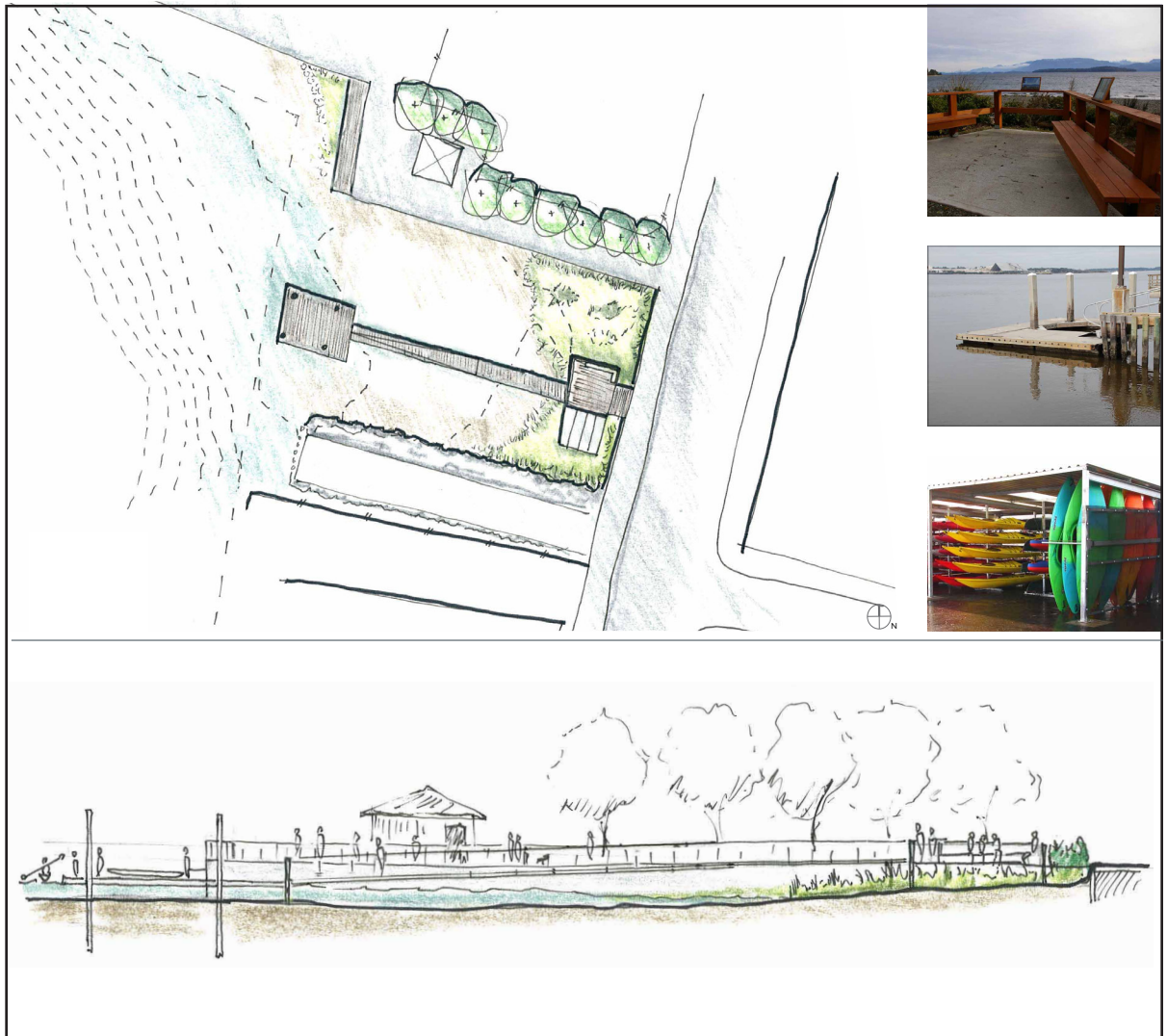
# ALTERNATIVE 1: ECOLOGY



Alternative 1: Ecology explored maximum ecological remediation of the project site, showing in-water grading and development of a transect of progressive intertidal and upland habitat zones, salt-tolerant plantings atop the CSO, and a viewing platform accessible from Vernon Boulevard. Existing structures were removed to reduce the shaded area of the water and increase functional habitat area. Piles were left standing in the water and supplemented with nesting platforms for birds, while street tree plantings created a more welcoming edge, with potential to incorporate enhanced tree pits or bioswales. Planned partnership with interested community groups would control trash proliferation and increase local investment in the site.



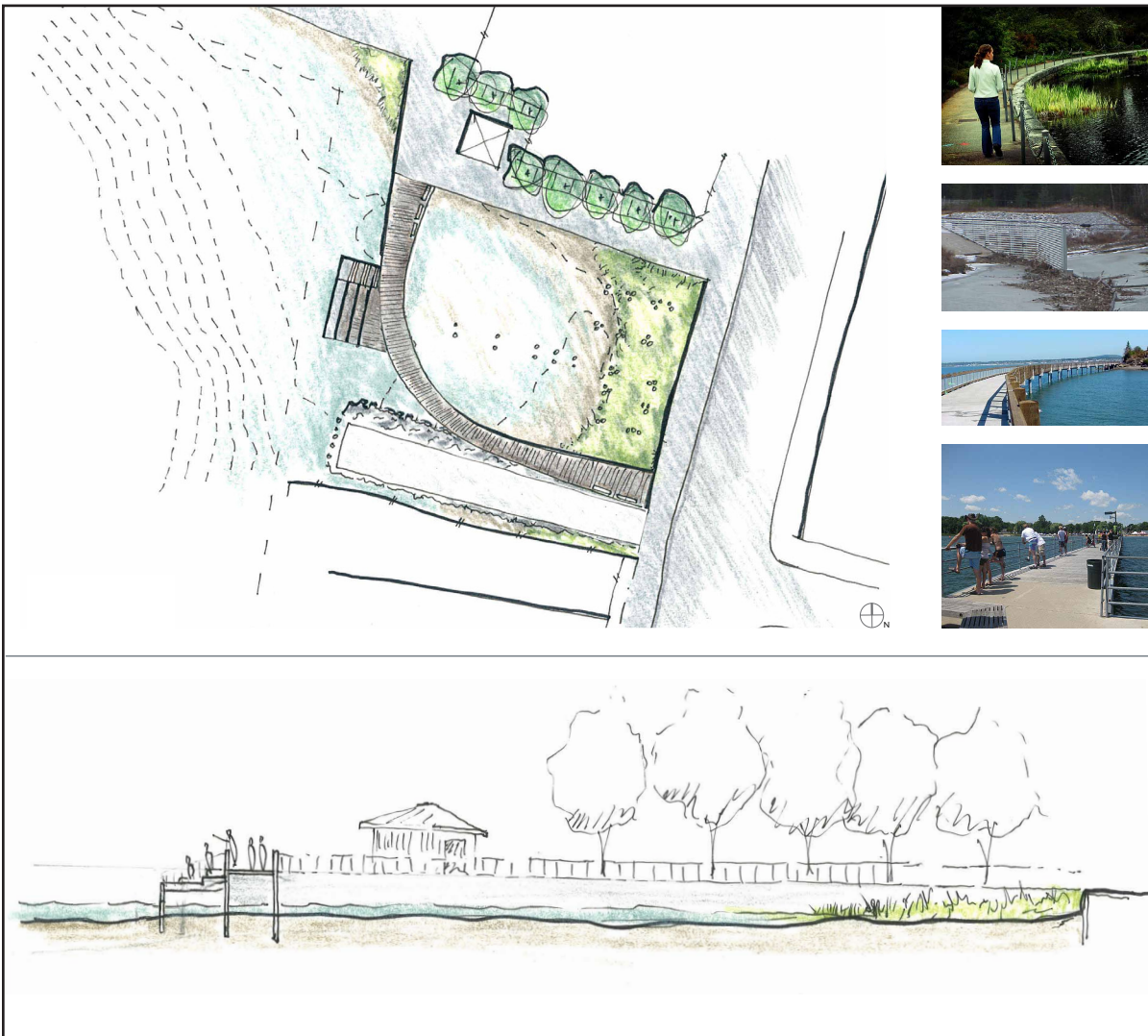
## ALTERNATIVE 2: ACTIVITY



Alternative 2: Activity incorporated some ecological remediation components from Ecology, while focusing primarily on active use of the project site. Steering clear of the CSO entirely, this alternative proposed creation of an overlook deck with integrated boat storage accessible from Vernon Boulevard, incorporated a gangway to a floating dock situated in an area of permanent water for boat access, and extended a corner of the Astoria Houses esplanade to create either a seating area or a step-down to the water's edge where visitors could relax and enjoy the views.



# ALTERNATIVE 3: CONNECTION



Alternative 3: Connection removed existing structures, physically connected the esplanade to Vernon Boulevard via an over-water boardwalk, and included some of Ecology's in-water remediation and habitat creation. New space for strolling and enjoying the view responded to the community's desire for passive recreation. A step-down to the deeper water created seating and opportunity for fishing or boating, while a debris fence suspended from the underside of the structure focused on preventing flotsam from entering the site.

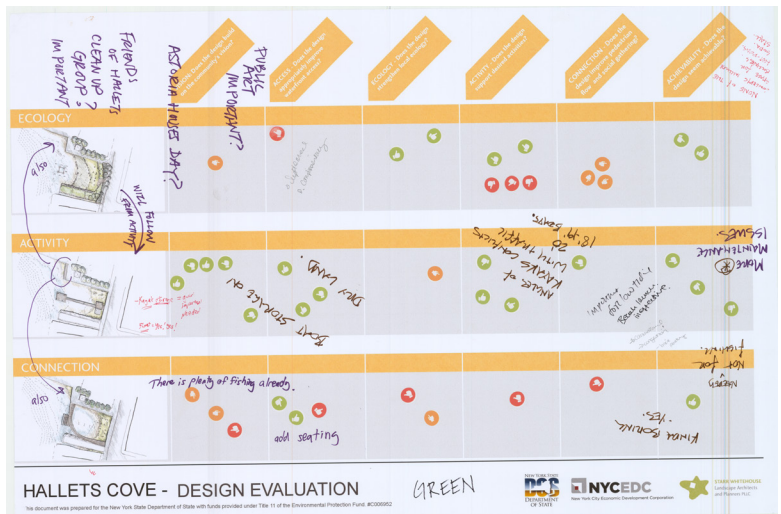


Workshop participants collaborated to review and rank the features of each conceptual design.

Participants discussed the designs at tables and then “voted” for their preferences with thumbs up/thumbs down stickers, before reporting back to the group the opinions of their tables.

- Activity was the most popular design concept, with 32 thumbs-up stickers and no thumbs-down; Ecology and Connection each had 13 thumbs-up; Ecology had 12 thumbs-down and Connection had 11.
- Ecology was regarded as easy to implement, achievable, and green: an oasis promoting wildlife habitat and education. It was critiqued as lacking activity, being no more than a beautification project, having limited use, and looking unsafe or desolate.
- The floating dock proposed in Activity was particularly popular among boat enthusiasts for making low-tide boat launching possible where the current beach launch is unusable at low tide.
- Activity was popular for boat access and storage, although people felt it dealt inadequately with ecological restoration. Comments indicated that participants would have liked the concept to include a step-down to the water, and wanted gathering space.
- Connection was found insufficiently interesting. While some liked the idea of bridging the cove, others found it artificial. Responses requested gathering spaces, step-downs, and planting on the CSO. Some worried that although the design looked good, it seemed expensive and possibly infeasible.
- Responses also expressed general concern about access after dark, desire for bike parking, and concern about parking and traffic congestion (particularly among kayak enthusiasts).

Many of the workshop participants responded negatively to the separation of the program themes in the concept designs, but separation did enable people to focus on particular elements of each that they liked.





		IMPORTANT? YES/NO	PRIORITY HI-MED-LOW	COMMENTS
SHORELINE CLEANUP	REMOVE TRASH PARTNER FOR LONG-TERM MAINTENANCE			
ENHANCE UPLAND HABITAT	CONTOUR COVE EDGE; PLANT UPLAND COASTAL HABITAT			
CREATE PLANTING ON CSO STRUCTURE	CREATE BIOSWALE OR OTHER PLANTING ON CSO PIER			
DEBRIS FENCE	SUSPEND DEBRIS FENCE FROM OVERWATER STRUCTURE			



FISHING SUPPORT	PROVIDE CLEANING TABLES, MONOFILAMENT DISPOSAL			
FISHING ACCESS	CREATE NEW ACCESS TO DEEP-WATER AREA			
BOAT STORAGE	CREATE STORAGE FOR SMALL, HUMAN-POWERED CRAFT			
BOAT LAUNCH	CREATE PUT-IN FOR HUMAN-POWERED CRAFT			
VISITING/PUBLIC DOCK	CREATE PUBLIC DOCK WITH TIE-UPS			



OVERWATER ACCESS	BUILD A STRUCTURE PROVIDING PEDESTRIAN OVERWATER ACCESS			
PASSIVE RECREATION	CREATE SPACE FOR STROLLING, SITTING, ENJOYING VIEWS			

OTHER:

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1) PLEASE INDICATE WHETHER EACH PROGRAM ITEM IS IMPORTANT OR NOT.  
 2) FOR IMPORTANT ITEMS, INDICATE THEIR PRIORITY: HIGH, MEDIUM, OR LOW.  
 3) IF YOU FEEL AN IMPORTANT ITEM IS MISSING, PLEASE WRITE IT IN NEXT TO "OTHER"

YOUR COMMENTS WILL HELP US UNDERSTAND YOUR RESULTS.  
 PLEASE GIVE YOUR COMPLETED WORKSHEET TO YOUR TABLE FACILITATOR BEFORE YOU LEAVE.

In addition to rating assembled concepts, participants worked individually to rate program elements on the basis of importance and priority, with an opportunity to add their own ideas.

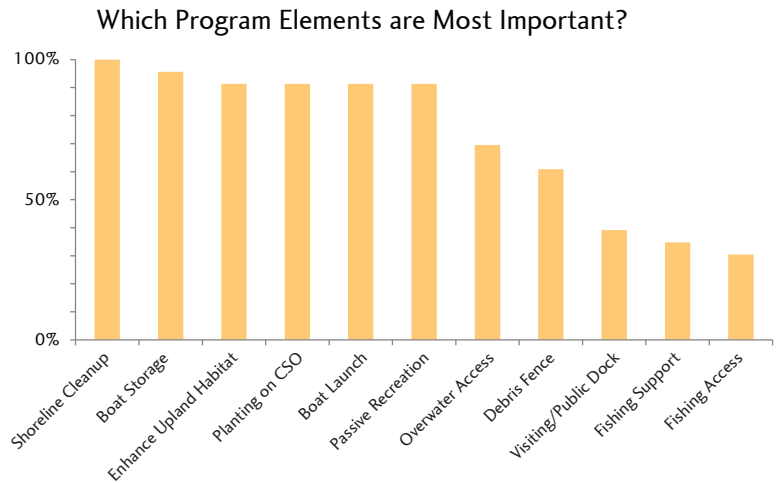
Participants worked individually to evaluate the importance and priority of proposed program elements.

- Shoreline cleanup was universally regarded as important, with 100% support.
- Boat storage was the second-most-popular element, with 96% finding it important.
- Upland habitat, CSO planting, boat launch, and passive recreation were each declared important by 91% of participants.
- Of the six elements widely considered important, shoreline cleanup, boat storage, boat launch, and passive recreation were accounted high priority items by more than 60% of respondents. Upland habitat enhancement and CSO planting were considered of medium importance.
- Comments supported planting on CSO, questioned the advisability of fishing in proximity to a CSO or boats, and highlighted the importance of seating and passive recreation for seniors. The debris fence was not well understood.
- One person questioned the importance of boat storage, saying that a “relatively small group would benefit, but this would occupy a large amount of space.”
- Write-in suggestions proposed:
  - o An area for music/plays
  - o Ecological/historical education with signs and guest lecturers
  - o Ferry access

The project team noted that although fishing was seen as largely unimportant by the workshop attendees, it is a popular activity in the area. Plastic bags tied to the iron railing of the esplanade, an improvised method of securing fishing poles, are evidence of a strong user base. However, the western end of the esplanade offers better access to deep water than the project site possibly can and appears to be the location



Workshop responses showed strong support for shoreline cleanup, boat storage, boat launching, passive recreation, enhanced upland habitat, and planting on the CSO.



avored by anglers. Since the focus of the project is toward creating a wealth of recreational opportunities across an integrated cove, providing further (less desirable) access for fishing was not a priority for the project site.

After the June 27 meeting, it seemed apparent that the final design should include ecological restoration, including upland habitat development and CSO planting; development of community partnerships for shoreline cleanup; boat storage, whether short-term or long-term; a floating dock to provide boat access to water during low tide; and a seating area or overlook, accessible from the street, with interpretive signs about the cove's history and/or ecology, nice views, and shade.

On September 19, NYC EDC conducted targeted outreach to the tenants' association of the Astoria Houses. This group was particularly interested in the efficacy of wetland restoration to reduce flooding along the esplanade by attenuating wave and wake energy. While the public housing population was not a tremendous user group for the kayak program, they anticipated that moving the program in closer proximity could increase likelihood of participation. Finally, the group was concerned about site maintenance, and safety and security.

NYC EDC and Metropolitan Waterfront Alliance also met with Queens Community Board 1 to discuss the project on August 28, 2012. The community board shared the Astoria Houses' concern about site maintenance and ensuring that the site will be well cared-for in future years. The board members in attendance had no objections to the design elements shown, but also stressed their desire to improve water quality by addressing the CSO. While this project assumes that the CSO will remain in place, it does address water quality through development of wetlands that will provide some degree of natural filtration to water on-site.

Careful evaluation of public input, project goals, and site constraints led to development of the final schematic design for the project.

## SCHEMATIC DESIGN

The final concept design for Halletts Cove unites elements from Ecology, Activity, and Connection into a single scheme that embraces community desires and City and State priorities. The result is a streamlined design that improves and enlarges habitat areas, creates opportunities for educational forays into ecology and history, and finds space for boating, fishing, gathering, and relaxing.

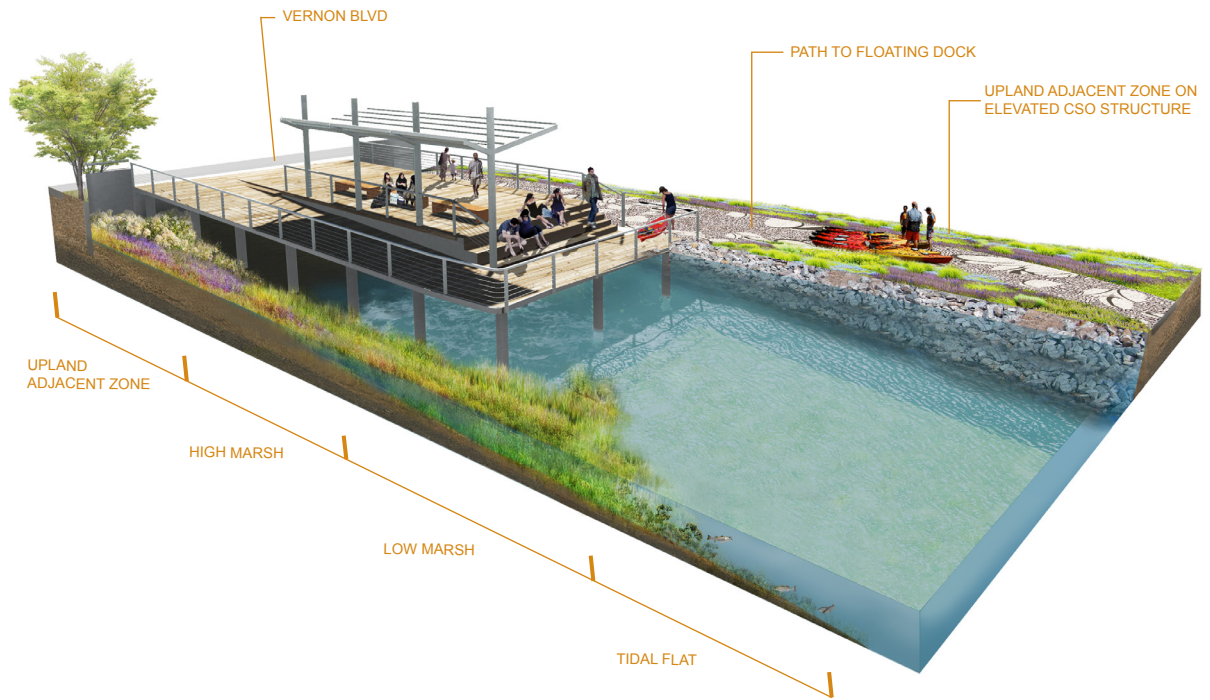


Plan showing key areas of the proposed design. A) Site re-grading creates a transect of intertidal and upland habitats; B) Reef balls offer increased interest and habitat area for fish; C) Native upland plantings above the CSO expand habitat, while a paved path connects boat storage to a floating dock D) A sidewalk-level overlook platform incorporates shaded seating and educational materials; E) A floating dock over permanent water facilitates kayak access during low tides; F) An accessible deck incorporates gathering space, shade, seating, and built-in boat storage while preserving and opening up views over the water.

## ECOLOGY

Ecological restoration was universally accorded high importance by community members at the September 27 workshop, and is a fundamental part of the final concept design. Site remediation focuses on improving water flow, reducing sedimentation, and introducing a natural slope to the site that can support three zones of native intertidal and upland vegetation.

The first step toward ecological improvement on the site is trash



[Looking southeast] The proposed design creates a transect of habitat areas in the water and above the existing CSO structure.

removal. Currently, illegally dumped trash in the mud flat encourages accretion of sediment and inhibits native plant growth. Dumped fill along the streetwall is of low quality and supports only the hardest invasive species. Removal of dumped material and re-grading the site makes it possible to implement specific elevation zones that can support a transect of native intertidal and upland habitats, specifically low marsh, high marsh, and upland.

Low marsh marks the transition from the fully-inundated area at the mouth of the inlet to a zone that sees some period of full exposure during each tidal cycle. According to the New York State Salt Marsh Restoration and Monitoring Guidelines, *spartina alterniflora*, a characteristic native low-marsh species, thrives in zones that are inundated between 9 and 11 hours per tidal cycle. Because *spartina alterniflora* is already present in the project site, the appropriate elevation range can be precisely identified and expanded.

Sloping toward the upland edge, low marsh gives way to high marsh, an area that is flooded for only an hour per tidal cycle, and flooded during spring tides or storms. The high marsh hosts a different community of plants, including *spartina patens* and *distichlis spicata*.

At the upland edge of the site, and in elevated beds constructed over the CSO, the high marsh transitions into a native upland landscape. Proposed vegetation in the transition area includes black grass (*Juncus gerardi*), rushes (*Scirpus* sp.), marsh elder (*Iva frutescens*) and groundsel bush (*Baccharis halimifolia*). Potential shrub plantings in the upland include beach plum (*Prunus maritima*), Northern bayberry (*Myrica pensylvanica*) and Sweet pepperbush (*Clethra alnifolia*). No trees are allowed on the CSO structure, but other portions of the upland edge are suitable for salt tolerant trees such as Shadbush (*Amelanchier canadensis*), Sweet bay magnolia (*Magnolia virginiana*) and Pitch pine (*Pinus rigida*).



Reef balls create areas of refuge and feeding grounds for fish.

This new transect of coastal vegetation, from the increased wetland planting through to the creation of a viable upland landscape edge, will increase the site's resilience against wave action and storm surges. The gradient of planting is expected to reduce the velocity and energy of storm-driven waves to help protect the urban infrastructure on the edges of the project site.

In order to re-grade the site and maximize its habitat potential, existing structures must be removed. These structures have degraded past the point of usability, block water flow in and out of the site, encourage sedimentation, and cover 6,543 square feet of water, impairing the quality of marine habitat. These structures should be removed, and their piles cut to the mudline, to improve the local intertidal habitat.

In the deeper water adjacent to the project site, strategic installation of reef balls may increase local fish activity. Reef balls are perforated hollow concrete structures that create protected spaces where fish and other small marine creatures can find shelter. The rough surface of the balls make them attractive to algae and other invertebrates, creating a feeding ground for larger organisms. Installation of reef balls near the wall of the Astoria Houses esplanade could increase fish activity in the area and improve fishing conditions.

While trash and structure removal, site regrading, planting, and installation of reef balls are good steps toward fostering improved ecological conditions on the site, it is absolutely vital that they be supported by ongoing maintenance. Partnerships with community groups like Green Shores NYC to conduct regular site cleanups and ongoing trash removal will increase local commitment to the site and ensure that it remains a valuable educational and recreational resource for years to come.

#### ACTIVITY

While the community universally supported ecological restoration, their most enthusiastic responses were reserved for options that opened the site up for active and passive recreation. Past plans and public



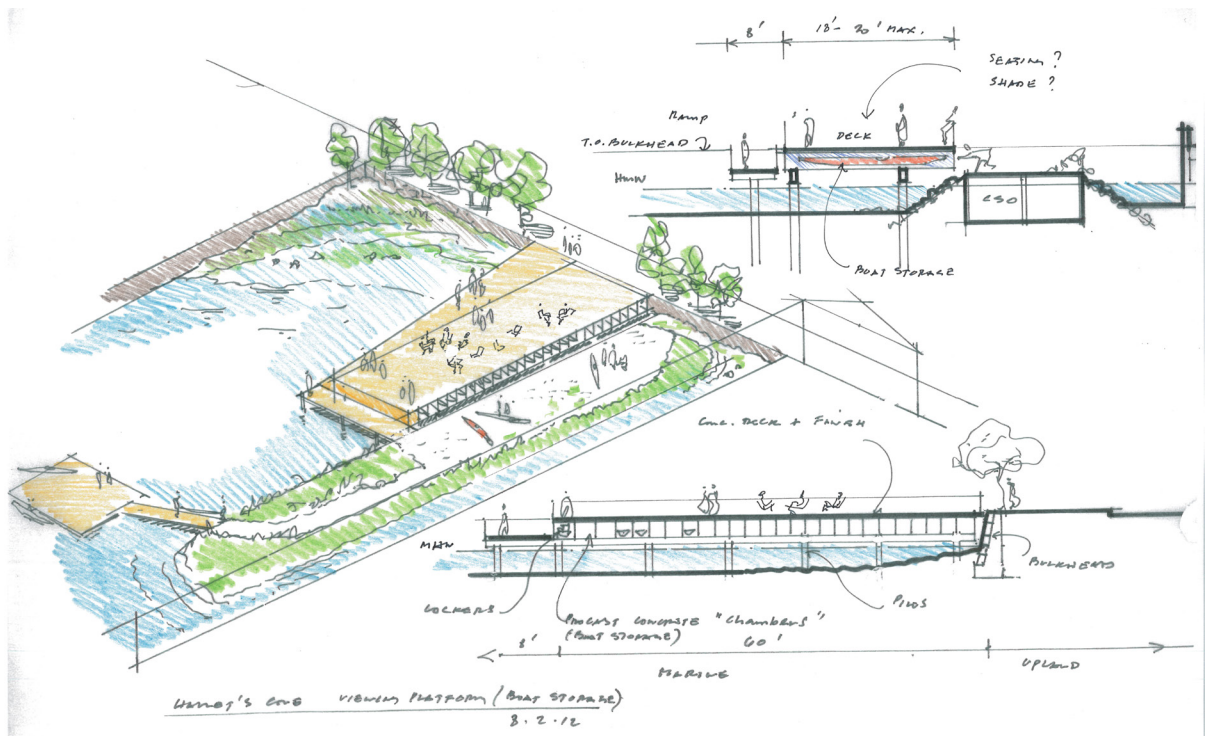
A gangway to a floating dock provides boat access throughout the tidal cycle. Minimizing the number of spud piles fosters free water flow and minimizes sedimentation.

visions have documented consistent desire for boat storage, boat access, gathering space, seating, fishing, education, and more. Three new structures proposed for the site create space for all these program elements, while preserving views and decreasing the total square footage of shaded aquatic habitat.

At the north end of the project site, a small overlook deck cantilevers over the upland zone. Easily accessible from Vernon Boulevard, the overlook features benches shaded by street trees, creating a quiet space for experiencing the intertidal marsh below. Educational materials enrich the experience with information about site ecology and history, while a tide clock allows visitors to observe patterns in the tidal cycle and draw their own conclusions. Gated stairs provide access to the intertidal zone for volunteer groups performing site maintenance.

Proceeding south along Vernon Boulevard, a low parapet railing removes visual obstacles while separating passersby from the project site. Just north of the CSO outfall pier, a 1,250 square foot open-topped deck invites people out over the water, for an experience unique along the cove. Shaded steps and benches at the west end of the street-level deck beckon passersby further into the site; a fully accessible ramp encircles the deck, inviting all visitors down onto the lower level. The deck structure provides both a new focus for passive enjoyment of the waterfront and integrated infrastructure for community boating.

Four and a half feet below street level, a raised surface atop the CSO creates space for plants and people. Inexpensive, lightweight fill raises the surface of the top of the CSO above mean high water, to create an area for salt-tolerant plantings and a paved walking path. The path provides access to the underside of the deck, within which 20 built-



A preliminary design sketch established the programming for the south edge of the project site.



in lockers offer storage for kayaks or canoes. The paved surface atop the CSO is wide enough to enable boaters with craft up to 20' long to easily maneuver their boats in and out of the lockers.

On the deck's upper level, a small hinged gate allows boaters transporting vessels to or from other locations to easily pass craft up or down. The unique, low-profile design of the boat storage deck makes it an attractive community asset for boaters and non-boaters alike, preserving views and providing much-needed social space.

Construction of the deck adjacent to the CSO structure requires special measures. While the northern edge of the deck can be supported as a conventional pier structure on pilings, the southern edge must be supported without compromising the CSO structure or its buttressing embankment of riprap. Supporting the southern edge of the deck on columns with caisson foundations, rather than driven piles, protects the CSO structure. Connecting elements that join the boat storage deck with the CSO pier should be easily separable, to limit damage incurred to the deck during CSO maintenance.

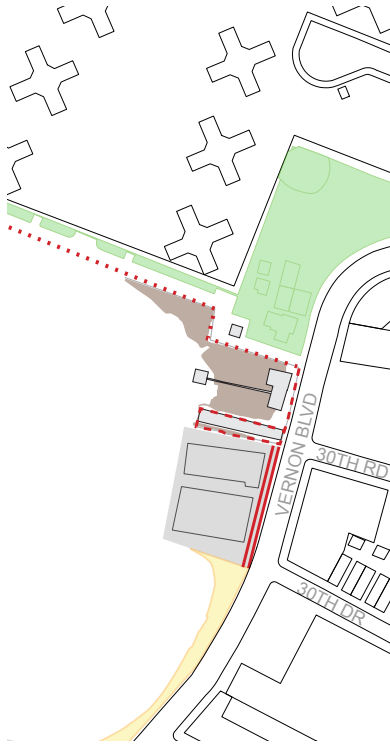
50 feet from the western end of the CSO outfall, the paved walking path curves north to meet a 50 foot, restricted-access gangway that connects to a floating dock in the deeper water. The 20' by 22' floating dock, secured by spud piles, is offset 37' from the CSO outfall, and allows local kayakers to launch craft during low tide, when existing put-ins are inaccessible due to mud. For the Long Island City Community Boathouse, which provides free public kayaking in the cove, this increased access could double the current programming hours.

## CONNECTION

The proposed design increases connectivity of this currently isolated site in multiple ways.

The design embraces Vernon Boulevard, where installation of street

A street-level deck at the south end of the project site provides gathering and seating space with integrated subsurface storage for kayaks.



Existing waterfront access near the project site. Dotted lines indicate visual access only; solid lines indicate a complete barrier. Access at the beach is unrestricted.

[Looking south] An overlook accessible from Vernon Boulevard provides shaded seating, educational materials, and a chance to quietly experience the change of the tides.

trees and removal of the chain-link fence create a welcoming experience that reminds passersby of their connection to the water.

The northern overlook offers easily-accessed respite from the busy street, with educational materials that foster connection to the tidal cycle and the site's history. The space, offset from the sidewalk but visible to the street and the Astoria Houses complex, responds to a community desire to accommodate seniors, creating a quiet nook where neighbors can socialize.

The restricted-access stair descending from the overlook's south side creates a direct connection to the site's restored salt marshes for community members engaging in ongoing site maintenance, and potentially for educational groups studying the intertidal zone. Community stewardship of the site promises to reinforce connection to the land, and visible acts of stewardship will strengthen the idea that tidal wetlands are valuable, vital, and worth maintaining.

At the south end of the site, the seating platform and accessible ramp of the boat storage deck adjoin the sidewalk directly, at grade. The shaded seating areas on the deck, set furthest from the street, entice visitors out to explore the cove from a new vantage point. The 1,250 square feet of the deck provide ample space to bring neighbors together for a variety of events, and even small performances.

The built-in boat storage and, most visibly, the floating kayak platform connect boaters to the water. Community support for kayaking in the area is very strong, and organizers of the existing boating program at the Long Island City Community Boathouse were enthusiastic about the ability to launch boats during low tides. Providing these amenities on-site creates a built-in site constituency, connecting to preexisting groups, and increasing incentives to take care of the site once constructed.

Moving the boating programs closer to the Astoria Houses complex





could increase the programs' visibility and appeal among housing tenants, forging connections between segments of the community, and increasing residents' connection to the water.

Finally, as the site draws more people out onto the water, it has the potential to foster a better understanding of the city's infrastructure systems, and their integration with natural systems. Educational materials on-site will educate visitors about both CSOs and wetlands, and their respective effects on water quality.

## SAFETY & SECURITY

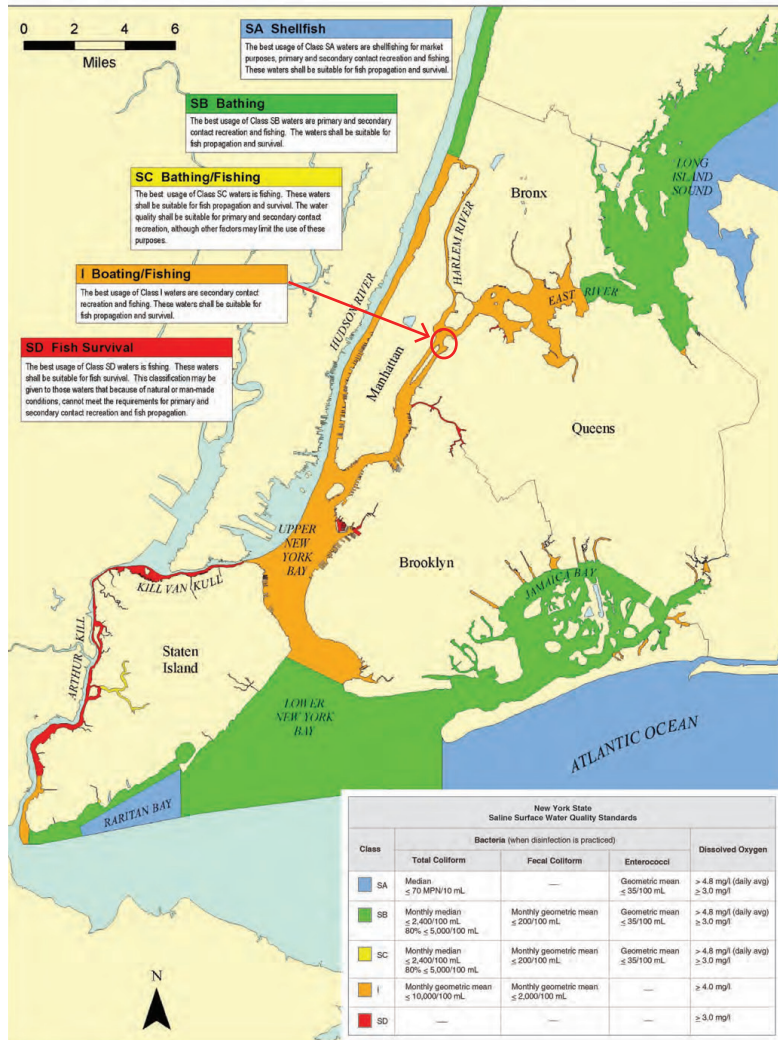
Access to the water for recreational and educational use is a priceless amenity in New York, but one that requires attention to safety and security. While many visitors to the site may be adept boaters, some may be engaging in their first waterborne adventure. Adequate management, thoughtful design, and incorporation of appropriate educational materials can combine to create a waterfront amenity that safely accommodates visitors with a wide range of experience.

- **Restricted Access:** A system of railings and gates work to prevent accidents and restrict access to areas of the site that offer direct water contact. A locked gate on the gangway prevents unauthorized or after-hours use of the floating kayak platform, and a similar gate prevents spontaneous use of the maintenance stairs to the marsh. Kayak storage lockers are equipped with locking doors. Restricted-access features will be accessible only during times of active management, when groups are overseeing approved site programming. At all times, a permanent fence restricts access to the end of the CSO for all but authorized DEP personnel.
- **Active Management:** Appropriate community partners (such as Long Island City Community Boathouse, Green Shores NYC, or similar groups) could potentially manage and operate the kayak launch and site maintenance, ensuring that participants follow appropriate safety procedures and refrain from inappropriate activities.
- **Water Quality:** The waters of the East River near Halletts Cove are designated as Class I, appropriate for secondary contact (boating and fishing). However, presence of the CSO within the project

Signage and other educational materials informing visitors about CSO proximity, water quality, and appropriate access and activities are essential components of the site management.



Water quality at the site is generally appropriate for secondary contact, including boating and fishing. Since water quality fluctuates, however, educational materials on-site must advise users of how to obtain up-to-date information regarding water quality advisories. Signage should also deter people from consuming fish caught in proximity to the CSO.



area causes water quality to fluctuate, particularly in the days following wet weather. While restricted access to direct-contact areas and active site management will eliminate much opportunity for inappropriate water contact, additional steps must be taken to ensure that use of the water is appropriate given changing circumstances. Management partners should maintain awareness of water conditions by monitoring DEP waterbody advisories, DEC waterbody spill notifications, and tide and current conditions, and limit programming at times when the water quality is impaired.

- **Signage:** Signs at the site should educate visitors about water quality, appropriate recreational uses, and directions for monitoring DEP waterbody advisories. Signs should advise limiting activities that increase water exposure during and immediately after wet weather. Signs should also provide current advisories, minimally in English and Spanish, restricting the consumption of locally caught fish and shellfish.
- **Washing Facilities:** A city water service and hose connection incorporated into the kayak storage deck provides opportunity to rinse boats and bodies that have been in contact with the harbor water. The washing area should also include signage with information regarding proper hygiene.

## PHASING & COSTS

The project could be implemented at one time or in phases, as funding and public interest allow. For purposes of phasing, proposed design elements can be separated into three discrete segments:

- 1) Removal of existing structures, environmental restoration of the north part of the project site, and construction of the overlook;
- 2) Elevation of the CSO surface, CSO paving and planting, and creation of the floating dock; and
- 3) Construction of the boat storage deck, and habitat restoration of the slip of water south of the CSO.

A phased implementation will require up-front negotiations with the New York State Department of Environmental Conservation (DEC), and will incur additional costs; however, as the costs would be a small percentage of the overall project cost, a phased approach may make project implementation more feasible.

Implemented as a single unit, project costs are estimated to be \$4 million. Implemented in phases, costs are estimated as follows:

Phase 1 (Removal of existing structures, removal of illegal fill, restoration of habitat north of the planned location of the boat storage deck, construction of the overlook, sidewalk repairs and sidewalk tree installation on Vernon Boulevard): \$1.1 million.

Phase 2 (Raise level of CSO, pave and plant CSO, construct floating dock and gangway, erect fencing - plus additional costs to create temporary CSO access for boaters from Vernon Boulevard): \$750,000.

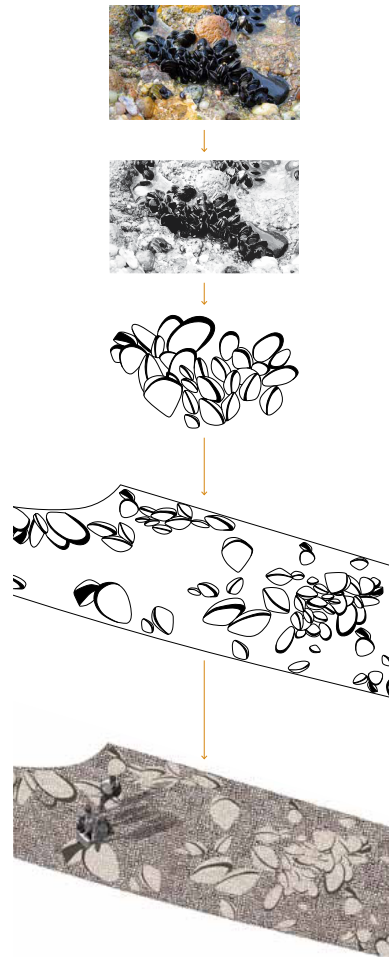
Phase 3 (Construct boat storage deck - plus additional costs to connect deck to earlier project phases and remove temporary connections from Phase 2): \$2.6 million.

Estimated costs include price escalations that reflect a reasonably timely implementation process, with construction beginning on the first phase within 3 years. Costs include allowances for design, construction administration, permitting, and contingencies. Additional funding for maintenance should be identified and secured prior to project implementation, to ensure the ongoing success of the project.

## IMPLEMENTATION

The design outlined in this report represents a vision of what could be achieved at Hallets Cove in terms of meeting the expressed desires of the community, fulfilling the goals of citywide plans, and improving the function and habitat value of on-site intertidal wetlands. It is illustrative of the site's potential, but not yet a shovel-ready plan. Realization of an improved waterfront at Hallets Cove will require regulatory approvals and a sequence of design and construction, either as a piece or in phases, as funding allows.

Proposed construction in the intertidal and marine environment will



Funding, agency needs, and community desire will influence final designs for the site. The CSO paving shown in renderings mimics the pattern of mussel shells, referencing nearby marine life. While planting on the CSO reduces the amount of runoff, additional use of permeable pavements could filter the remaining water before discharging into the wetlands below.

require permits from the Army Corps of Engineers and the New York State Department of Environmental Conservation (DEC). The DEC is concerned with protecting and preserving the integrity of intertidal wetlands; construction in a wetland is of major concern and prompts in-depth review. This project proposes reductions in square footage of water shaded by structures, removal of deteriorating structures, increase and improvement of viable habitat areas and restoration of a native ecology, in addition to providing community-requested recreational amenities and water access. It is a valuable project that could improve quality of life for area residents and marine species; however, the DEC has not yet reviewed it, and may request modifications in specific details of the plans or the timeline. The regulatory agencies—the Army Corps and the DEC—should be consulted early in the design process to confirm project parameters. The review process also involves coordination with NYS Department of State and NYC Department of City Planning, who are responsible for determining that proposed coastal work is consistent with waterfront policies. Formal permits from these agencies, typically granted based on measured schematic designs, will codify the project’s requirements for design and construction.

After the regulatory permits are obtained, the project’s design can be completed. Full design must incorporate the needs of the DEC and the DEP, and the project must be engineered to ensure that neither the wetland nor the CSO are negatively impacted. The current design proposes one solution for integrating the community’s desires with improvements to the wetland; however, the final design may differ from the current proposal considerably, based on evolving community priorities, agency input, feasibility of maintenance, costs, and other factors. Agency coordination and approvals for the project are expected to include, at a minimum, the following:

- NYC DEP: design review of work on and adjacent to the CSO structures; water service approval
- NYC DPR: design acceptance of trees in the public right-of-way; design review for operations and maintenance (in the event that DPR oversees maintenance)
- NYC Department of Small Business Services: code approval of waterfront structures
- NYC Public Design Commission: preliminary and final design review.

After design is complete, the progress of the project will depend on securing funding for construction. The amount of capital necessary depends on the final design and project phasing; it may be possible

When completed, the new waterfront at Halletts Cove can join other NYC Parks in creating a unique and engaging waterfront experience.



to raise capital in stages and implement the project gradually. Capital funding is not the only necessary element; it is crucial to obtain a commitment for long-term project maintenance. Maintenance includes daily and seasonal site maintenance and operations, as well as longer-term needs for repair and replacement of features, and maintenance and replacement of plantings. While the Department of Parks and Recreation may be charged with aspects of the site's upkeep, that department will require additional funding from an external source to support those activities. Active management of the site may produce a funding stream (for participation in activities) but will also be costly. If the site is to remain a vital, enticing, and functional asset to the city and the neighborhood, maintenance funding cannot be overlooked.

The final step to implementation of the site design is to find and create agreements with community partners regarding stewardship, access, and programming. Partnerships will build lasting community support, create a sense of local ownership, and ensure that the site remains an asset for years to come.

## DESIGN THE EDGE EVALUATION

The concept design for Halletts Cove embraces many of the Design the Edge principals espoused by the NYS Department of State and the Metropolitan Waterfront Alliance for creating an active, healthy waterfront. While details regarding surfaces and materials will hinge on final designs, the concepts explored here support marine life through development of a graded intertidal zone that reduces wave and wake energy, reduces the velocity of moving water, supports marine organisms that assist in cleaning the water and soils, and provides habitat for visiting fish. Reef balls installed along the north edge of the cove will provide rough surfaces for invertebrates and algae, as well as attractive, secluded areas for fish. Site designs create multiple opportunities for safe access to the water and the wetland, supporting different kinds of use in different areas, and allowing boat access to the water.

The final design for waterfront improvements at Halletts Cove may look quite different from what is proposed here. Permitting, affordability, and even public priorities may contribute to a range of changes in the final vision. Design the Edge: Halletts Cove proves, however, that there is strong public support for a range of programmatic options at the project site, and that those elements can be successfully integrated into a design solution that satisfies public desires while enhancing waterfront ecology. The opportunity clearly exists to turn this disused site into a public and ecological amenity that all can enjoy.