

# BRONX, MEET YOUR WATERFRONT PLAN

# BX

**SPRING 2011 SITE & ENVIRONMENTAL SYSTEMS PLANNING**  
DEPARTMENT OF URBAN STUDIES & PLANNING  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY



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**DUSP**



MIT  
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For more information, please visit the project website:

<http://bronx.mit.edu>

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**BX**



# THE BRONX PRACTICUM

## GOALS

The eight-mile stretch of waterfront (green) along the Harlem River in the Bronx.

### **IN 2011, THE SITE AND ENVIRONMENTAL SYSTEMS PLANNING COURSE AT MIT'S SCHOOL OF ARCHITECTURE AND PLANNING EXAMINED FUTURE POSSIBILITIES OF THE BRONX SIDE OF THE HARLEM RIVER WATERFRONT.**

This report describes the issues to be addressed in the design and planning of this part of the Bronx and presents the investigations and proposals for the site that were prepared by student teams.

This course is part of a long-running series of site planning practica offered by MIT's City Design and Development group. Each year, the course has investigated and made proposals about current planning and city design issues in urban and rural settings. In recent years, the course has put forward ideas for various sites in Tokyo, Barcelona, Biloxi, and Boston. In each case, these proposals have been based on serious field study followed by systematic exploration of designs for places, natural systems, alternative infrastructure, and possible public activities.

The teaching objectives of this course have been to introduce students from a variety of backgrounds to issues in cities that can be addressed through environmental planning, landscape architecture, and urban design, and to make the students conversant with the bodies of knowledge, techniques, and values that must be engaged in these tasks.

Additionally, thanks to the interests of the local community and public officials, there has also been a wider civic objective attached to the practicum. Typically, this objective has been to stimulate public understanding and debate about a pertinent issue in that locale such as a major urban planning policy, siting choices for facilities, or the

design and location of a significant open spaces or infrastructure. The final work of the course has been published in public reports, on the Web, and in some cases has been the subject of exhibitions.

For the Bronx Practicum, the New York City Department of City Planning, the Bronx Borough President's Planning Office and community advocates from the Harlem River Working Group and the Bronx Council on Environmental Quality, assisted with compiling a briefing package for the course participants during the winter of 2010.

In February 2011, twelve graduate students and their professor visited the Bronx where they met with stakeholders and community activists. Students gathered feedback from these stakeholder groups and other planning professionals during midterm and final presentations.

This report details the context of this project and the team proposals. First, the overall approach and themes are presented to establish a design and planning framework for the Harlem River waterfront. Then each of the teams' individual proposals are described and illustrated. The report concludes with some suggested implementation strategies as well as references and resources.

The ideas put forward in this report are wholly the product of the course's activities, stimulated by others in the Bronx and elsewhere who have thought about these same issues. Thus, while the support of the Planning Offices in New York City and the comments and input of stakeholders have been essential to create the *Bronx, Meet Your Waterfront Plan*, the views and ideas proposed here are exclusively the responsibility of the class, its students, and its faculty.

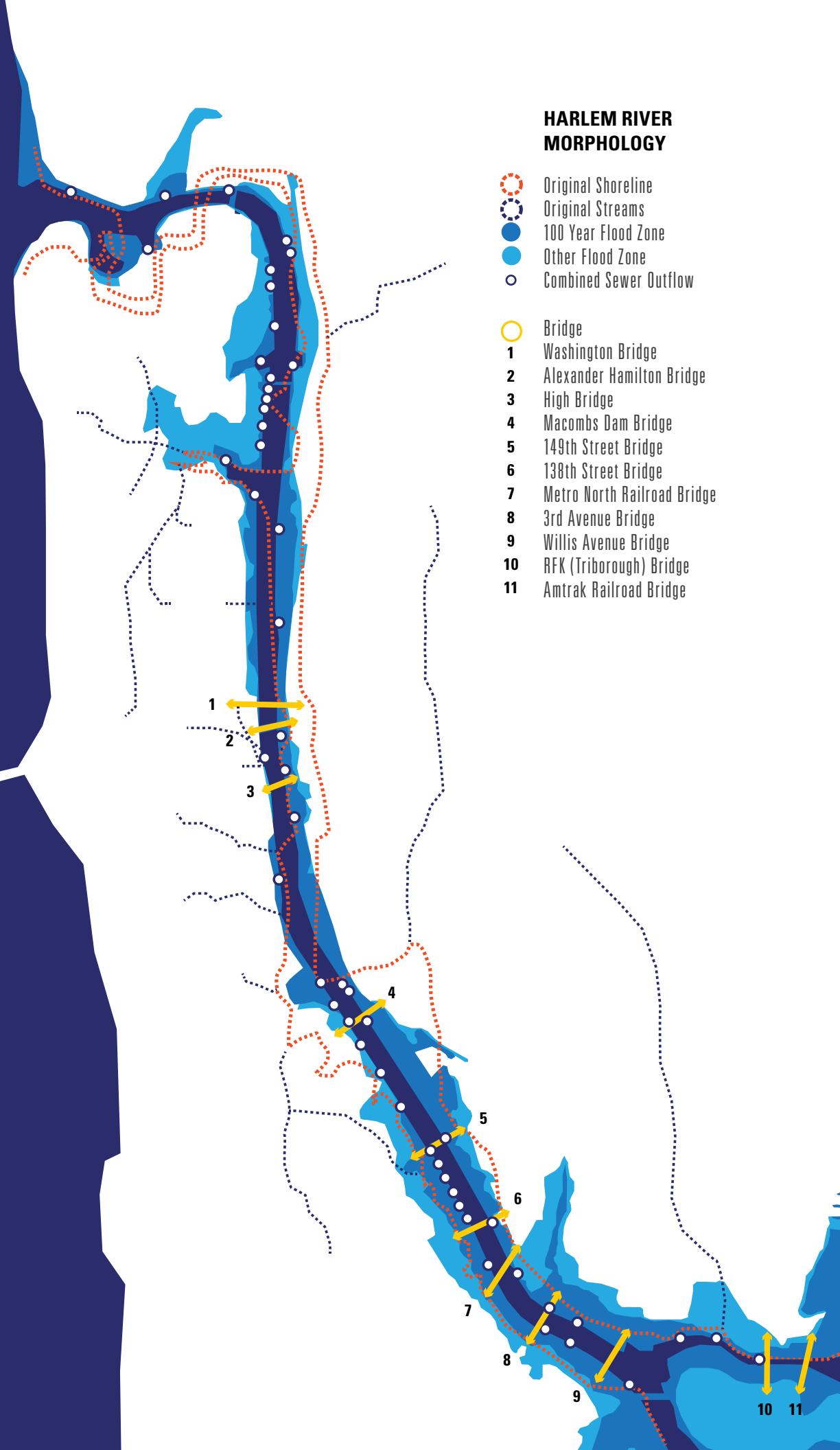
MIT project team members on the 161st Street Pedestrian Bridge.

# BX

## HARLEM RIVER MORPHOLOGY

- Original Shoreline
- Original Streams
- 100 Year Flood Zone
- Other Flood Zone
- Combined Sewer Outflow

- Bridge
- 1 Washington Bridge
- 2 Alexander Hamilton Bridge
- 3 High Bridge
- 4 Macombs Dam Bridge
- 5 149th Street Bridge
- 6 138th Street Bridge
- 7 Metro North Railroad Bridge
- 8 3rd Avenue Bridge
- 9 Willis Avenue Bridge
- 10 RFK (Triborough) Bridge
- 11 Amtrak Railroad Bridge



# HARLEM RIVER HISTORY

The Harlem River is a tidal estuary connecting the Hudson and East Rivers. A number of streams feed the river, though most of these are now below grade. The map on the facing page shows these streams, how the river has changed course over time, and the current flood zones.

**THE HARLEM RIVER WAS FORMED 18,000 YEARS AGO BY THE LAURENTIDE ICE SHEET. UNTIL THE AMERICAN INDUSTRIAL AGE THE RIVER MEANDERED WITH VARIATIONS IN WIDTH AND DEPTH. OVER THE COURSE OF THE 19TH AND 20TH CENTURIES SEAWALLS, BULKHEADS, AND LANDFILL WERE ALL USED TO MAKE THE RIVER EASIER TO NAVIGATE AND THE EDGES EASIER TO ACCESS. TODAY, THE VAST MAJORITY OF THE RIVER EDGE IS MAN-MADE.**

One of the earliest manipulations of the river was the construction of the Macombs Dam in 1813. This was controversial because it prevented trade vessels from using the river, an issue that took on new urgency with the opening of the Erie Canal in 1825. Ultimately the courts ruled in favor of unimpeded navigable waters and the dam was removed.

The next major development was the construction of the Croton Aqueduct over the river in the late 1830s. The complex water system brought fresh water from Westchester County to Manhattan and included the High Bridge to carry the pipe across the Harlem River. The High Bridge was completed in 1848 and is the oldest bridge in New York City. While its primary purpose was to move water, it also provided an additional pedestrian link between Manhattan and the Bronx.

In the twentieth century, the river was dredged and deepened to accommodate larger trade vessels. However, river traffic diminished in the 1920s as

the city reoriented toward land travel. Over the century, a series of rail and vehicle bridges were built to connect Manhattan to the Bronx.

Although an Edward Hopper painting portrays the Macombs Dam Bridge as a pastoral scene, the riverfront has primarily been a working industrial landscape. Fire insurance maps from the early twentieth century already show a tangled web of infrastructure, including rail lines and turnarounds, storage facilities, piers, and bridges. Many of the rail lines are still in use, though they have been supplemented by highway and road infrastructure. Storage continues to be a major activity in the area, though now mostly consumer self-storage. The piers on the other hand have been rendered largely obsolete.

In the late 20th and early 21st Centuries recreation has increasingly become part of the Harlem River story. Roberto Clemente State Park opened in 1973 and currently sees over a million visitors a year. Mill Pond Park opened in 2009 and has been highly successful in its years of operation. Both parks have indoor and outdoor recreation facilities that keep them active year-round. Several additional ideas for waterfront recreation access have been proposed by students and professionals and are discussed further on page 17.

The Bronx Practicum's Harlem River Greenway proposal seeks to find harmony between the river's natural heritage, and industrial character, and the borough's growing interest in recreational uses on the waterfront.

Macomb's Dam Bridge  
by Edward Hopper 1935





## IMMIGRANT COMMUNITIES

The Bronx is a gateway city. More than half of all Bronx residents are not yet citizens. The Highbridge neighborhood is home to a growing West African immigrant community and the West Bronx houses several Latino communities from South America and the Caribbean.



## HOUSING

Like the other boroughs, the Bronx has a vacancy rate lower than the rest of the country. Most homes are rented (78%) and the Bronx has the lowest home ownership rate of the five boroughs. For nearly half of all residents, rent consumes more than 35% of their monthly income.



## SCHOOLS

There are 43 schools within half a mile of the Bronx's Harlem River edge. Additionally, Highbridge is getting a new middle school near the base of the High Bridge itself. There are currently no local middle schools in the area and students commute long distances to other schools.



## NYC DEPARTMENT OF EDUCATION BUS YARD

New York City provides daily bus service for a small percentage of students, and the bus yard on the Harlem River serves schools far beyond the immediate area. Easy access to the highway is important for the bus yard. Because this land is publicly owned and is not a water-related use, this 6½ acre parcel may be easier to redevelop than others on the waterfront.



## YANKEE STADIUM

Yankee Stadium is the Bronx's primary attraction, and is mere blocks from the river. When the stadium moved one block north in 2009, the Yankees helped finance the conversion of its former site and several surrounding parcels into parkland. The stadium reconstruction also introduced two new transit routes to the Harlem Riverfront. A new Metro North station at 153rd Street operates year-round and a ferry brings Yankees fans from Lower Manhattan up the Harlem River to the stadium on game days.

**COLLECTED HERE ARE SOME OF THE OBSERVATIONS STUDENTS MADE DURING THE INITIAL RESEARCH PHASE.**

Research involved studies of such topics as Bronx demographics, history, ecology, education, cultural assets, and regulations. Additional material from these investigations is in Appendices B.1-6.



**PARKLAND**

One third of Bronx land is parkland, mostly concentrated in Pelham Bay Park, Van Cortlandt Park, and the Botanical Gardens. The neighborhoods along the Harlem River have some of the worst access to parkland in the five boroughs. Mill Pond Park is very well used, and the sports fields at Macombs Dam Park are almost always booked.



**THE SOUTH BRONX CULTURAL CORRIDOR**

The South Bronx Cultural Corridor encompasses several neighborhoods including the section of the Harlem River Waterfront in this report. The Bronx Council on the Arts operates the Bronx Culture Trolley throughout this area with stops at local galleries, museums, and theaters. Bruckner Boulevard is the center of this growing arts community and is where many artists live, work, and display their creations.



**MAJOR DEEGAN EXPRESSWAY**

The Major Deegan Expressway follows the Harlem River for much of its length and blocks access from the inland neighborhoods to the waterfront. The Deegan was completed in 1956 and the land trapped between the expressway and the waterfront was almost entirely devoted to industrial activity. The highway separates residential from industrial uses, but also blocks residents from the water.



**EDGE CONDITIONS**

There is little natural edge to the Harlem River. Much of the edge is concrete or corrugated steel. These perfectly vertical edges allow water to flow very quickly through the river, making it very difficult for plants and wildlife to survive. The CSX freight rail line poses an additional barrier to on-water access for recreational activities.



**COMBINED SEWER OUTFLOWS**

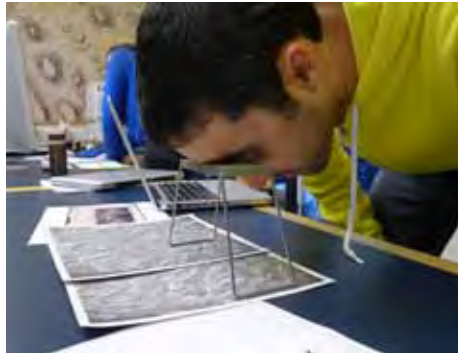
The Bronx sewer system includes several Combined Sewer Outflows (CSO) along the Harlem River. In storms and heavy rains excess street runoff mixes with raw sewage and overflows untreated into the river. One of the best ways to reduce the harmful effects of CSOs on water quality is to reduce the stormwater flowing into the system in the initial 20 minutes of a storm. Slowing the water down and detaining it for even a little while reduces the chances of outflow events and can dramatically improve water quality.

## INITIAL FIELD OBSERVATIONS



In February, the MIT class visited the Bronx. This trip gave students firsthand introductions to the site, public officials, and relevant stakeholders.

## PRODUCTION



Back at MIT, the practicum researched case studies and collected data about the site and adjacent neighborhoods. Research topics included prototype waterfront development patterns, social characteristics, educational opportunities, alternatives for infrastructure adaptation, and economic development techniques. This phase also enabled the creation of a database that was available to the class as a whole.

## THEMATIC ANALYSIS



In March, representatives from the New York City Department of City Planning, the Bronx Borough President's Office, and Columbia University came to MIT to critique and provide feedback.

## BACK AT MIT



Students used the responses from the formal critique and meeting with the community to develop more specific design strategies.

## FINAL PRESENTATION IN CAMBRIDGE



At the final presentation in Cambridge, the students' proposals were critiqued by faculty and practitioners.

The students in Site and Environmental Systems Planning visited the Bronx in February of 2011, where they met with community leaders, stakeholders, members of the Bronx Borough President's Office, and representatives from the New York City Department of City Planning. Several city employees were present to give their feedback at a midterm review in March, and a

group of students travelled back to the Bronx to present to members of the community in April. At the completion of the project in May, the MIT class returned to the Bronx to give final presentations to the Bronx Borough President's Office, community members, and the Department of City Planning.

#### MIDTERM PRESENTATION IN THE BRONX



Students returned to the Bronx to present their ideas to members of the Harlem River Working Group at the Highbridge Community Life Center.

#### COMMUNITY MEMBERS LOOK AT PROPOSAL



Residents gave feedback on the proposals and did a mental mapping exercise with MIT students.

#### FINAL PRESENTATION AT BRONX BOROUGH COUNCIL



On May 18th, students presented final proposals to a room full of interested community members at the Bronx Borough Courthouse. The following day, they presented to the New York City Department of City Planning.



Mill Pond Park Plan



High Bridge Restoration Project



Riverfront Urban Planning Studio, Columbia GSAPP



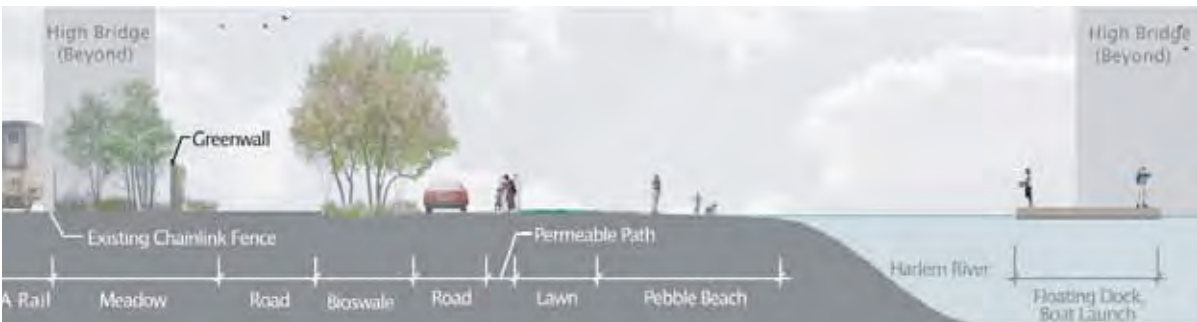
Regatta Greenway, Thesis by Marie Damsgaard



Bronx-Grand Concourse Studio, Harvard GSD



Harlem River Promenade Plan, Starr Whitehouse



High Bridge Cove Section, Starr Whitehouse

# EXISTING EFFORTS & PLANS

## **THE HARLEM RIVER WATERFRONT HAS RECENTLY RECEIVED ATTENTION FROM THE CITY, THE BOROUGH, SEVERAL CONSULTANTS, AND OTHER ACADEMIC INSTITUTIONS.**

Mill Pond Park, depicted in the upper left, was completed in 2010 with funds from the Yankee Stadium redevelopment project. The park includes twelve tennis courts, nine of which are covered by a bubble in winter, waterfront walking paths and viewing platforms, barbecues, and areas for informal play. All stormwater is managed on-site and a restored power station with a new green roof serves as a community center.

The High Bridge Restoration Project, depicted top right, is an ongoing renovation sponsored by the City of New York. The \$55 million project is expected to be completed in 2013, at which point the bridge will reopen a missing pedestrian link between Manhattan and the Bronx. Plans also call for architectural lighting and programming to activate the bridge over time.

A 2010 studio course at the Graduate School of Architecture, Planning and Preservation (GSAPP) at Columbia University also tackled the challenges of the Harlem River waterfront

in a studio in 2010. The GSAPP project focused on the area north of Roberto Clemente State Park and included proposals for zoning, street improvements, and strategies for preparing properties for redevelopment, and provided ideas for industrial brownfield cleanup.

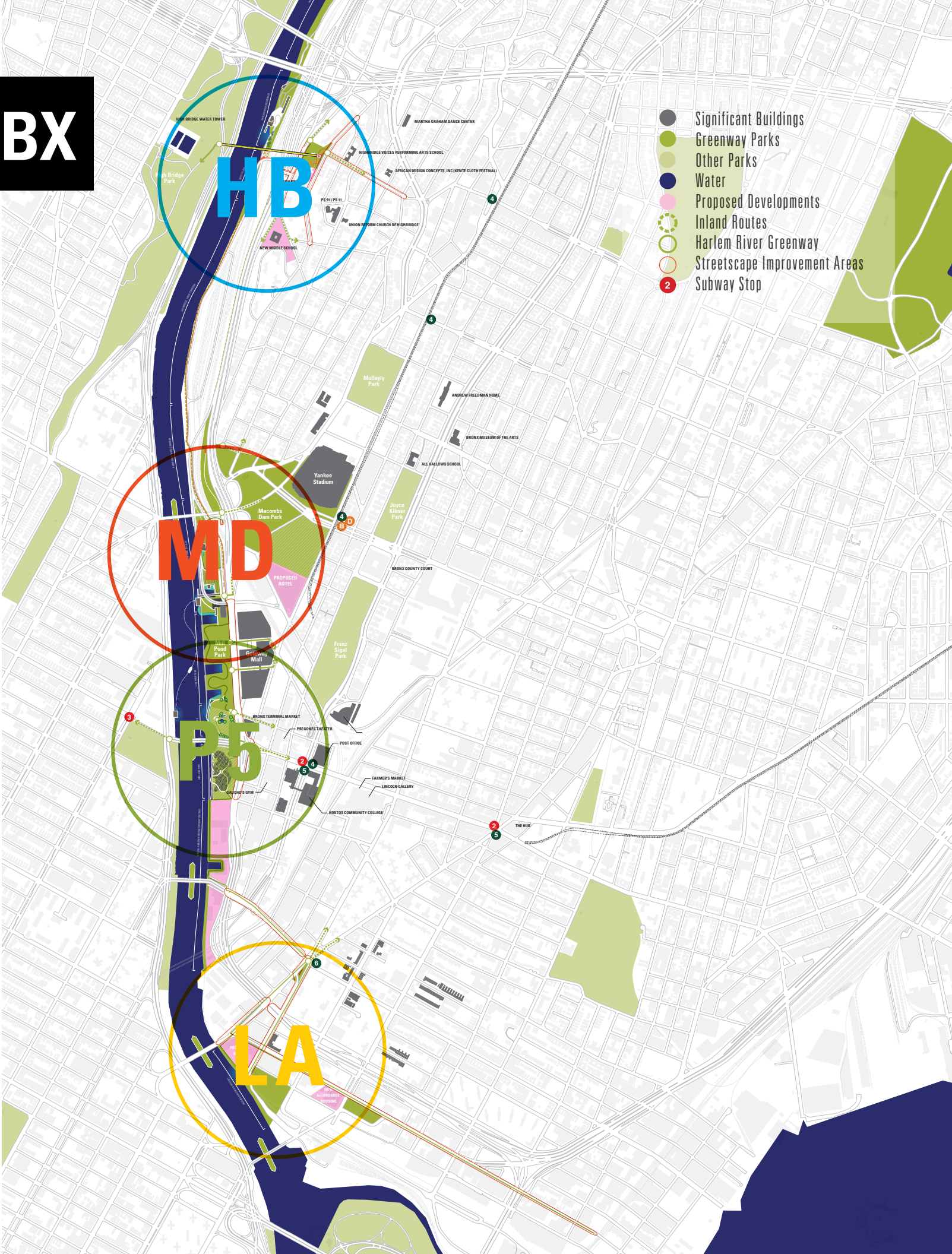
An undergraduate thesis by Marie Damsgaard at the University of Copenhagen proposed a greenway running along the length of the Bronx's Harlem River waterfront.

A Harvard Graduate School of Design studio reimagined the Grand Concourse, with an emphasis on incorporating and reclaiming the connection between the Concourse and the waterfront.

Most promisingly, the landscape architects and planners at Starr Whitehouse prepared a schematic plan for a Harlem River Promenade on a stretch of city-owned land just north of the High Bridge, with a proposed scheme for greening and activating the space. Their proposal included a boathouse, with a deck and boat launch, demonstration garden, and a vegetated wetland edge.

Renderings from existing plans and proposals display a variety of visions for the Harlem River Waterfront.

**BX**



# BRONX, MEET YOUR WATERFRONT PLAN

## OUR MASTERPLAN FOR THE HARLEM RIVER GREENWAY PRESENTS A VISION FOR HOW THE FOUR OVERARCHING THEMES – ECO-PUNCTURE, TEMPORARY ACTIVATION, WATERFRONT ACCESS, AND INFRASTRUCTURE ADAPTATION – MIGHT BE INTEGRATED INTO SPECIFIC CONTEXTS ALONG THE WATERFRONT.

Through targeted investments in particular locations, the Bronx will see an expansion of and compliment to the existing open spaces and activity centers along the Harlem River in the Bronx. A non-traditional waterfront greenway with new off-street pedestrian paths and improved streetscapes will connect the waterfront to inland destinations and to the surrounding neighborhoods. This series of connected but diverse waterfront spaces responds to and celebrates the infrastructure, culture, and history of the area, and provides a unique waterfront experience for neighborhood residents and visitors alike.

Our plan focuses on four sites along the waterfront that we feel have the greatest potential: the High Bridge, Macombs Dam, Pier Five, and Lincoln Avenue. Each of the four sites emphasizes different themes.

In the area around the High Bridge, the proposal builds on the momentum of the High Bridge restoration with suggestions of further

infrastructure and path improvements and temporary activations to bring attention to this historic bridge.

The area around Yankee Stadium and the Macombs Dam Bridge has undergone a lot of changes in connection with the new stadium. New parking garages mean that the older waterfront parking lots are less heavily used. The proposal for their redevelopment includes infrastructure adaptation through semi-permanent activations and expanded public access to the water's edge.

Pier 5 uses eco-puncture strategies to develop a spectrum of structured and natural recreation areas along the Harlem River. The Pier 5 site has a particular focus on environmental restoration, but also improves waterfront access and provides opportunities for temporary activation.

Finally, the terminus of Lincoln Avenue at the Harlem River edge provides an opportunity for environmental remediation while also making an area that has been dominated by industrial infrastructure accessible to people. The plan seeks to involve the neighborhood's burgeoning artist community.

Each of the sites has a different focus, and emerged from individual contexts, but together they integrate the four themes for a greenway experience with something for every user.

The full project brings targeted improvements to four locations along the Harlem River. Together they form the Harlem River Greenway.

(SEE APPENDIX FOR A LARGER VERSION OF THE MASTER PLAN)



**HIGH BRIDGE**



**MACOMBS DAM**

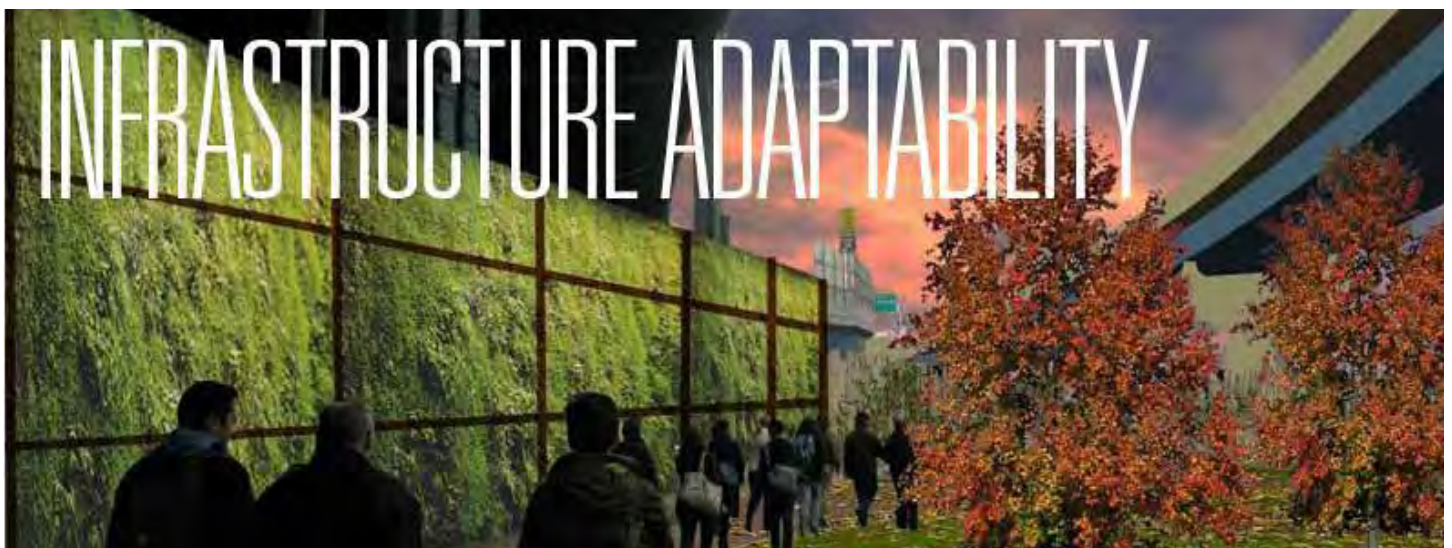
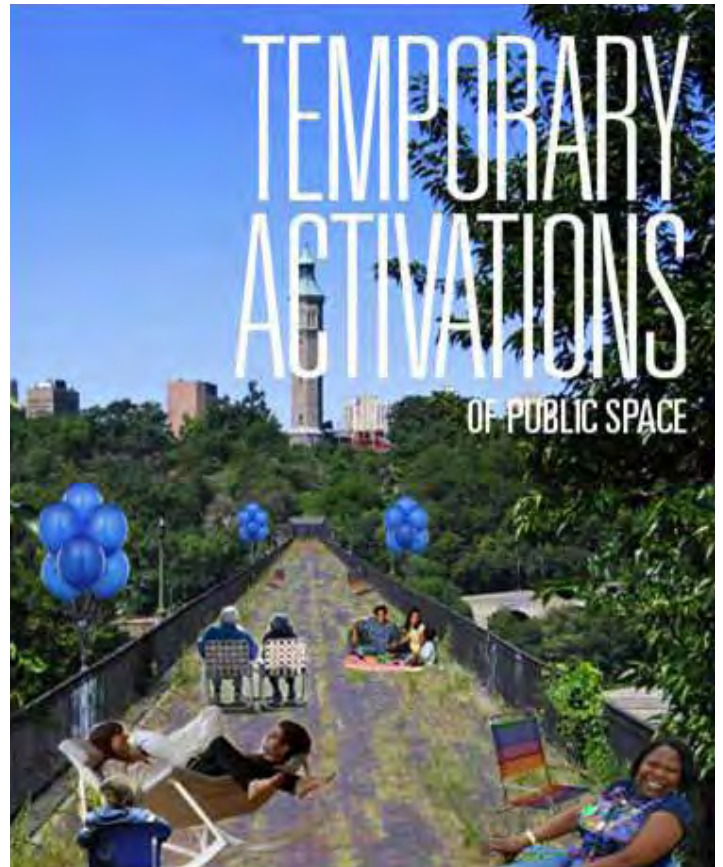


**PIER FIVE**



**LINCOLN AVENUE**

**BX**



# PRIMARY THEMES: GREENWAY TO WATERWAY

## **FOUR PRIMARY THEMES DIRECT THE PROPOSED INTERVENTIONS ALONG THE LENGTH OF THE RIVER.**

### **ECO-PUNCTURE**

The river's ecology can be improved by the repetition of a series of targeted improvements dubbed "eco-puncture." Like acupuncture, small injections (in this case, of wetland or marsh habitat) enhance the well-being of the entire river. Proposals include a new rubble-construction gabion seawall, pocket wetlands, and small eco-islands under the Harlem River's many bridges.

### **TEMPORARY ACTIVATIONS**

Activity on the waterfront can be catalyzed by encouraging residents to embrace the Harlem River as part of their neighborhood, rather than viewing the water as a dividing line between boroughs. Temporary activations can bring residents of both boroughs to spaces that are currently overlooked, rehabilitating underused

portions of the waterfront and capitalizing on current investments like the re-opening of the High Bridge.

### **WATERFRONT ACCESS**

Getting people to the water is at the very core of the project. Providing access means developing existing and new routes between neighborhoods and the river. Paths can be improved in terms of connectivity, safety, maintenance, and comfort.

### **INFRASTRUCTURE ADAPTABILITY**

All of the transformation sites incorporate former industrial spaces and all are faced with the challenges of large-scale infrastructure like the Major Deegan Expressway. Infrastructure can be reconceptualized as a community asset, and proposals include innovative lighting under and around bridges, tunnels, and highways; layering in new water cleaning machinery; and rethinking the role of parking lots.

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# ECO-PUNCTURE

## **TACKLING EDGE CONDITIONS AND WATER QUALITY ISSUES ON THE HARLEM RIVER CAN BE DONE INCREMENTALLY.**

The Bronx side of the Harlem River has a wide variety of land owners and stakeholders, ranging from industrial facilities to residential towers, and including private, municipal, regional, and state owned property. There are also a variety of edge treatments along different properties, further complicating ecological restoration. A singular, comprehensive ecological approach to the Harlem River waterfront would be incredibly difficult to implement and generally impractical. On the other hand, this provides great opportunities for experimenting with smaller transformations, ranging in scale from a few square feet to a few acres. Proposed strategies are designed to be scaled up, starting with a pilot version in one location and then applied in many locations along the river.

The cumulative effect of a system of small interventions would allow the Bronx to retain its working waterfront and avoid an expensive property acquisition process, while also facilitating the regeneration of the water's edge and of the water itself. Such a system would improve the quality of the Harlem River; would create a series of landscapes hospitable to people and animals alike; and would allow for educational opportunities in an area with high numbers of school children.

### **ECO-ISLANDS**

The struts of the bridges over the Harlem River can be utilized to create small wetlands. These inaccessible locations would serve migratory birds

and other wildlife without any chance of human interference. The inaccessibility of the eco-islands also makes them good spots for rhizofiltration beds, where hearty oysters are used to filter river water.

### **CONSTRUCTED WETLANDS**

Wetlands can be constructed to reduce flood risks, restore natural habitat, and manage stormwater. Wetlands constructed for stormwater management are designed to remove pollutants from stormwater runoff via microbial breakdown, plant uptake, retention, settling, and absorption. The dual function of detaining and naturally cleaning runoff will reduce the chances of CSO events on the Harlem River.

### **PARKING LOT ADAPTATION**

The paved expanses of parking lots generate high quantities of concentrated runoff. Strategies for adapting parking lots include shade trees, detention planters, and permeable paving. The parking lots along the Harlem River near Macombs Dam Bridge are excellent candidates for adaptation because they are used seasonally for Yankees Stadium patrons and could be converted during the off-season.

### **URBAN ECOLOGICAL-FINGERS**

A series of "urban eco-fingers", green street designs, connect the ecological improvements of the river upland into neighboring communities. Streetscape improvements along key corridors will treat stormwater where it falls on roadways reducing pressure on local storm sewers.

A new seawall design reduces water speed, allowing plants to grow and in turn creates new habitat for fish and other wildlife.

**BX**



# TEMPORARY ACTIVATIONS

**PHYSICAL CHANGES CAN ONLY GO SO FAR. THERE ARE A NUMBER OF BEAUTIFUL WATERFRONT SPACES ALONG THE HARLEM RIVER, BUT THEY ARE CURRENTLY HARD TO REACH AND UNDERUTILIZED. PROGRAMMING CAN GENERATE INTEREST IN THE WATERFRONT AND ENCOURAGE LOCAL RESIDENTS TO THINK MORE POSITIVELY ABOUT THE RIVER.**

**SUMMER SUNDAYS ON THE 149TH STREET BRIDGE** would be a series that highlights the diversity of the West Bronx and East Harlem and the rich food traditions of local communities. By locating the event on the bridge, residents would be encouraged to contemplate the water from above and to explore cross-borough connections.

**BRING YOUR CHAIR TO THE HIGH BRIDGE DAY** could be accomplished at virtually no cost. This event focuses on the bridge as an attraction and encourages residents to stay and enjoy the views.

**DANCING ON THE HIGH BRIDGE** could be a way to attract people to the bridge on summer evenings. The High Bridge offers amazing nighttime views that deserve an audience. A variety of events could be held catering to different tastes on evenings throughout the summer: bachata, salsa, swing, drumming, and even a zumba class.

**MOVIES ON PIER 5** would be a low-cost evening event that can attract an economically diverse audience. Pier 5 is a great location for this because there is plenty of open space for seating, an existing structure from which to project. It is conveniently near the 149th St Bridge, several transit stops, and plenty of parking.

**SHWEEB** from Yankee Stadium would be a semi-permanent installation in an abandoned subway tunnel by Yankee Stadium. A shweeb is basically a recumbent bicycle on a monorail. The first shweeb was built in New Zealand as a human powered roller coaster, but it might also be used to get from place to place. Yankee Stadium is already a regional and national attraction. Introducing the Shweeb to the tunnel is a way of activating an underutilized space while adding a secondary attraction that can be enjoyed in all seasons.

In sum, it matters less what the activations are, and more about using programming in an innovative way to bring the community together. The Harlem River is something to rally around, but not everyone will see the river in the same way. Some will see its possibilities for water sports, some for the views, some for the activities on the water's edge, and some for the economic opportunities that go along with the greenway and waterfront parks. Programming and temporary activations are great ways to cater to specific groups in the community and to encourage everyone to use the waterfront.

Bring Your Chair to the High Bridge Day: a no-cost activity that celebrates the bridge as a destination.

# WATERFRONT ACCESS



**AN URBAN WATERFRONT PATH IS BOTH A MEANS TO AN END AND AN END IN AND OF ITSELF.**

Waterfront greenways can be used to get from one place to the next, but are also destinations for recreational walking, running, biking, and casual enjoyment of water views. Precedents show that through relatively simple improvements in fencing, lighting, and signage, pedestrian paths can become safe, attractive, enjoyable spaces. The paths connecting to and from the greenway need to feel just as welcoming as the waterfront itself for the recreational area to reach its full potential.

In connection with the reopening of the High Bridge, there is an opportunity to establish a

strong and clear connection to the waterfront along the historic Highbridge Stairs and a transformed Depot Place. Depot Place could become a multi-modal route with space for pedestrians, cyclists, and vehicles. From here the greenway would connect north to the proposed boat launch area, Roberto Clemente State Park, and the northern West Bronx.

The greenway south from Depot Place would be a continuous off-street pedestrian and bicycle path through the MTA property to 161st Street, and onward to Mill Pond Park. There are limited opportunities for inland connections in this section but the existing pedestrian bridge over the Major Deegan Highway is an asset to this network.



Unique destinations draw people to the waterfront and improved paths make getting there an enjoyable experience in and of itself.

Circulation around Mill Pond Park and the Yankee Stadium parking areas is confusing for drivers, cyclists, and pedestrians. The intersection of Sedgwick Avenue and the Macombs Dam Bridge can be simplified with a pedestrian and bicycle passage under the bridge, which would strengthen the north-south greenway. A new inland link in this area is the passageway between the Metro North Station and Mill Pond Park. This path is direct but would be more appealing with an infusion of artwork, greenery, and lighting.

South of Mill Pond Park, a lack of available land makes it more difficult to continue the greenway along the river. Until land opens up, the greenway could turn inland, along either 149th or 138th Streets and then south along Lincoln Avenue back to the waterfront.

In the long run, it may be possible to work with property owners to develop pieces of waterfront paths that would link up to the greenway. Fencing would be an important aspect of these parts of the route on private land. Unique and interesting fencing can provide visual interest and resting places for pedestrians, while offering participating property owners a secure barrier between their operations and the public space.

The inland connections will make the Harlem River Greenway a more integrated urban path than many other city greenways. It will provide connections for Bronx residents to access the waterfront and offer visitors an opportunity to experience the Bronx's transforming neighborhoods as well as its waterfront.



**BX**

# INFRASTRUCTURE ADAPTABILITY

**TO MANY THE BRONX IS A PLACE OF PASSING THROUGH, AND THE INFRASTRUCTURE THAT FACILITATES THIS MOVEMENT PROVIDES BOTH CHALLENGES AND OPPORTUNITIES.**

For a hundred years the Bronx side of the Harlem River has been a working waterfront. The industry that thrived here left the water polluted and the soil contaminated, yet also provided greater connectivity. Barges, then railroads, and finally highway infrastructure have all provided easy transportation access for Harlem River manufacturers and wholesalers.

Today, the Major Deegan Expressway is the dominating structure on the waterfront. It follows the Harlem River from its southward bend near Marble Hill to where it joins the East River. The highway cuts between the former industrial waterfront and residential communities in the upland areas. The areas under the Deegan are rife with opportunities to develop innovative transition zones with new lighting and artwork. The Deegan also collects vast quantities of stormwater that flow into the Harlem River watershed. Partnerships between local advocates and the Federal Highway Administration could produce innovative stormwater management pilot programs.

The path under the Major Deegan is transformed into an open park space. A vertical garden wall directs the visitor's path, provides a buffer from storage areas under the highway, and tackles the dual environmental challenges of contaminated water and poor air quality associated with highways.



Lighting and safety were frequent topics in conversations with local planners and community members. There have been many innovations in lighting technology in the last decade and designers are increasingly turning to lighting as a way to give a place distinction. Lighting the greenway and pedestrian paths with colorful, interactive, or technologically advanced lighting will not only improve safety, but also make the greenway visible from the river and the Deegan at night. Fun lighting is a great opportunity to promote the greenway to visitors and show off the project to the city at large.

Each site transformation proposed in this report takes a multipronged approach to complex infrastructure challenges. In several proposals, available underutilized space around infrastructure is activated as public space. In others, the stormwater impacts of infrastructure are the impetus for developing and testing new mitigation techniques. Infrastructure near the Harlem River is an accepted part of the site program; it is never designed out of the project or rendered unusable. It is always treated as an exciting part of the South Bronx landscape that provides opportunities for innovation.

HB



# HIGH BRIDGE & DEPOT PLACE

# HRB

**THE HIGH BRIDGE, NEW YORK CITY'S OLDEST SURVIVING BRIDGE, IS SET TO REOPEN TO PEDESTRIANS IN 2013. THIS IS AN OPPORTUNITY TO MAKE STRONGER CONNECTIONS TO THE WATER'S EDGE.**

ALREADY THERE ARE PLANS DEVELOPING TO RECONSTRUCT THE CRUMBLING HIGH

BRIDGE STAIRCASE AND TO DEVELOP A WATERFRONT PROMENADE. OUR PROPOSALS USE THESE DEVELOPMENTS AS A CATALYST TO CREATE A HARLEM RIVER GREENWAY BETWEEN ROBERTO CLEMENTE STATE PARK AND MACOMBS DAM BRIDGE AND TO STRENGTHEN UPLAND CONNECTIONS TO THE HIGHBRIDGE RESIDENTIAL NEIGHBORHOOD.

- Significant Buildings
- Greenway Parks
- Other Parks
- Water
- Proposed Developments
- Inland Routes
- Harlem River Greenway
- Streetscape Improvement Areas
- 2 Subway Stop

HIGH BRIDGE WATER TOWER

HARLEM RIVER PROMENADE

DEPOT PLACE

HIGH BRIDGE STEPS

PS 91 / PS 11

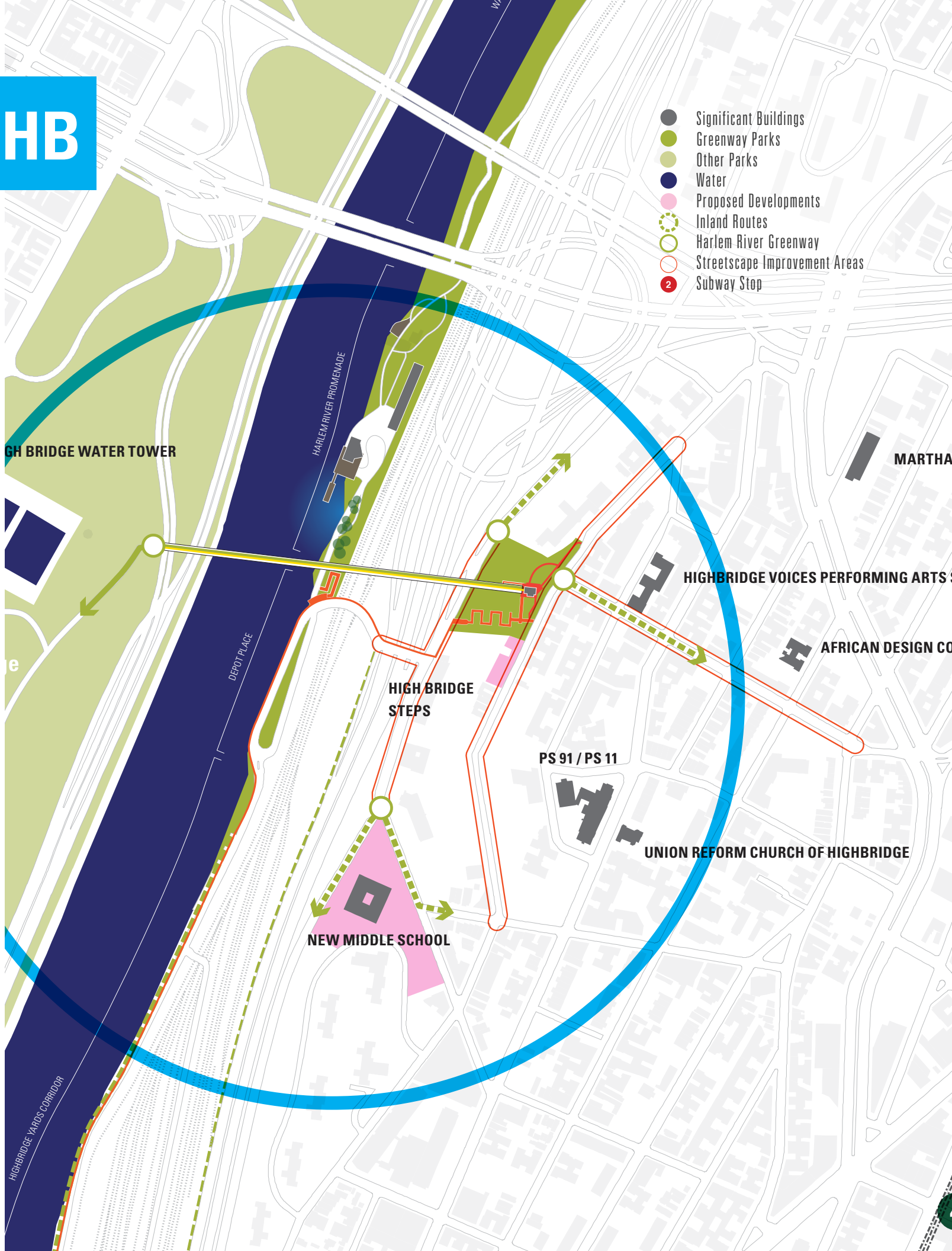
NEW MIDDLE SCHOOL

HIGHBRIDGE VOICES PERFORMING ARTS

AFRICAN DESIGN CO

UNION REFORM CHURCH OF HIGHBRIDGE

HIGHBRIDGE YARDS CORRIDOR



# OVERVIEW

The historic and majestic High Bridge is an important focal point for the northern portion of the greenway. Currently, a steep slope and major transportation infrastructure block the neighborhood from having anything more than visual access to the water. This location will soon experience major investments that will make the Greenway possible. The City is planning to renovate the High Bridge and its historic stone steps, and a Harlem River Promenade is proposed to replace the several uninviting uses between the High Bridge and the southern edge of Roberto Clemente State Park. Even with these major investments over the next few years, there are a number of changes to this area that will complete the greenway and strengthen connections to local Highbridge residents.

## **THE HIGH BRIDGE, NEW YORK CITY'S OLDEST STANDING BRIDGE, IS A BEAUTIFUL NEIGHBORHOOD ASSET THAT CONNECTS MANHATTAN AND THE BRONX.**

Its tall masonry arches transform the surrounding industrial waterfront, creating majestic spaces beneath (where the archways intersect rail and highway infrastructure) and an unparalleled view of the Harlem River, the Bronx, and Manhattan

from above. The dramatic topography of this site is a challenge, but also an opportunity to create unique spaces for Bronx residents approaching and at the Harlem River.

Planned renovations of the High Bridge and its stone steps will make it easier for residents to enjoy this asset. Additionally, a recent plan by Starr Whitehouse landscape architects presents a vision for a Harlem River Promenade under the High Bridge, featuring a boathouse, greenhouse, and other spaces for active recreation. Our proposals seek to strengthen connections between the Bridge, the promenade, and the neighborhood.

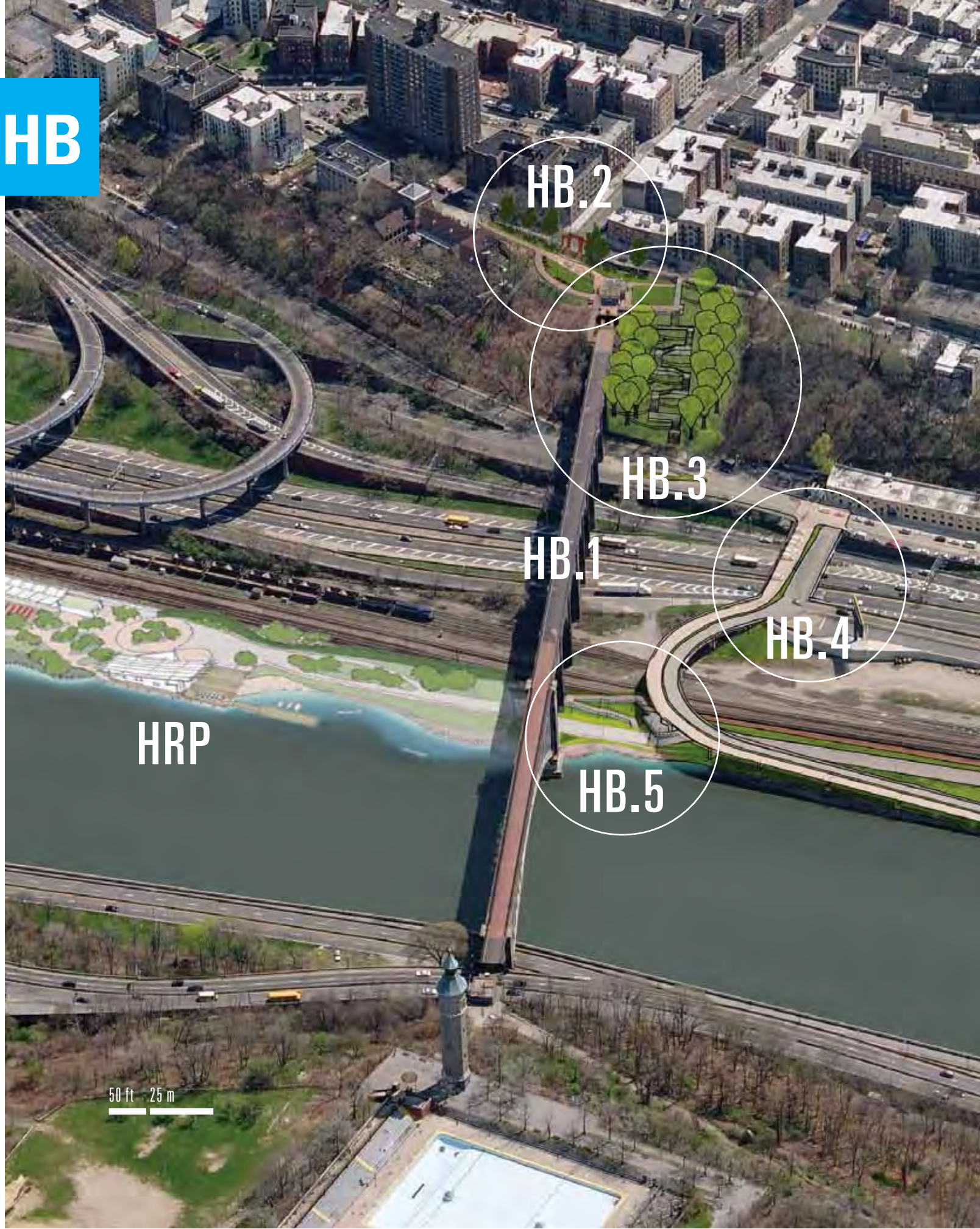
Proposals at the bridge itself include a new landscaping strategy for the stone steps, a new gateway into High Bridge Park at University Avenue and 170th St, and events to mark the opening of the bridge in 2013.

Additional ideas include changes to Depot Place and Sedgwick Avenue that will improve access to the waterfront and the creation of a north-south path along the MTA rail yard that will establish the waterfront greenway between Roberto Clemente State Park and Macombs Dam Bridge.

(BELOW) View from Depot Place of the High Bridge, with the High Bridge Water Tower in Manhattan in the background.



# HB



HB.2

HB.3

HB.1

HB.4

HB.5

HRP

50 ft 25 m



CONNECTING NEIGHBORHOOD  
TO WATERFRONT

HBMS

HB.6

- HB.1 High Bridge Activations
- HB.2 High Bridge Plaza Gateway
- HB.3 High Bridge Stone Steps
- HB.4 Sedgwick Streetscaping
- HB.5 Depot Place Pedestrian Ramp
- HB.6 Harlem River Greenway Connection
- HRP Harlem River Promenade
- HBMS Future High Bridge Middle School



**HB**

# HIGH BRIDGE STONE STEPS

The High Bridge is a dramatic piece of infrastructure and architecture. A set of historic stone steps connects the bridge at the top of the ridge to the riverfront at the base of this huge hill. Clearing out the underbrush and thinning out the trees will highlight the staircase and the elevation change that makes the high arches of the High Bridge so necessary and impressive.

HB.3



HB

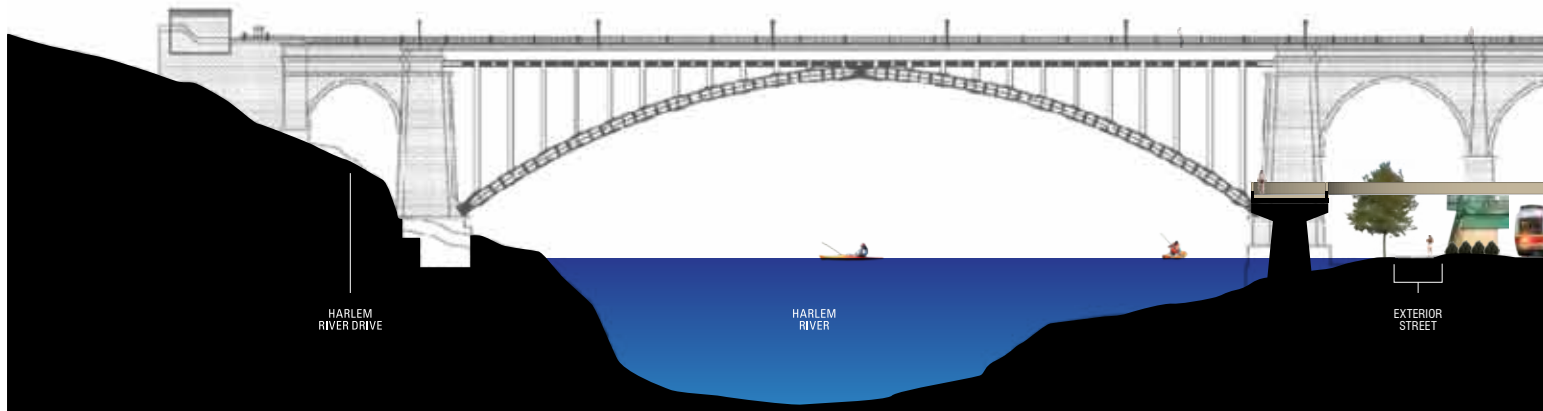


The proposed gateway at 170th Street is reminiscent of the archways of the High Bridge itself. This will extend the visibility of the High Bridge to visitors coming from the Grand Concourse or subway stations.

HB.2



A dramatic elevation change separates the High Bridge entrance from the waterfront. Inviting and clearly marked paths will make this transition easier to navigate.



# HIGH BRIDGE PLAZA AND STAIRS

(BELOW) This 1886 drawing shows the High Bridge Stairs without the overgrown landscape that currently surrounds them. Clearing out the tangled vegetation will create a dramatic vision from Manhattan and make legible the connections between the bridge and Harlem River waterfront activities.

(BELOW, RIGHT) Salsa Night on the bridge is an extremely low-cost event that could attract residents of the High Bridge and Washington Heights neighborhoods.

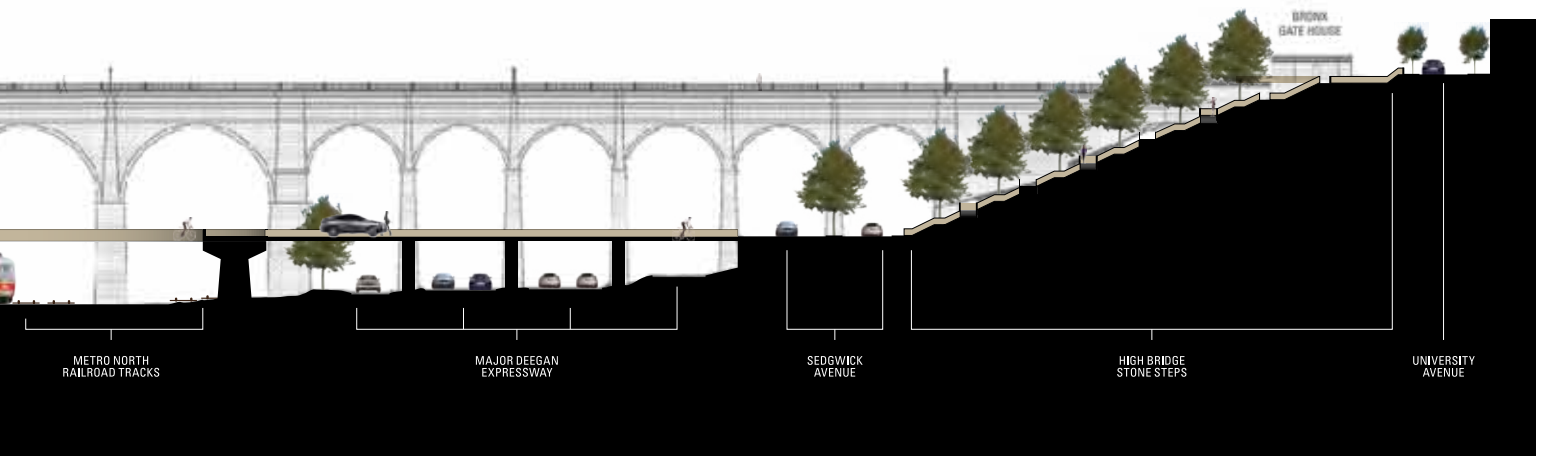
The Bronx entrance to the High Bridge is not well marked. Visitors pass through High Bridge Park, a simply-designed sitting park that was renovated in 2002. The park sits at the intersection of University Avenue and 170th Street, a direct route to the subway, but the ramped park entrance is offset almost an entire block from the center of the park and the bridge itself. The park is popular, but sits lower than University Avenue, and thus suffers from low visibility which impedes evening use.

An arched entrance announcing the park at 170th Street will make the entrance easier to see and more appealing to access. On 170th Street banners or changes in paving will indicate to visitors that they are approaching the High Bridge. Current improvements to the High Bridge include construction of a handicapped accessible ramp to enter the bridge from the plaza, and

viewing stations at key points on the bridge. The renovation celebrates the use of the bridge from both sides, and the plaza should evolve to serve this purpose.

This emphasis on use and cross-borough activity also leads to proposals for temporary activations, including Salsa Night and Bring Your Chair to the High Bridge Day. To further activate the area the vegetation around the stone steps down to Sedgwick Avenue will be trimmed back to allow clear views up and down the steep hill.

**BY MAKING THE CONNECTION SAFER AND EASIER TO FIND, WATERFRONT ACTIVITIES AT THE HARLEM RIVER PROMENADE WILL DRAW VISITORS UP AND DOWN THE STAIRS BETWEEN THE BOATHOUSE AND GREENHOUSE AND THE HIGHBRIDGE VIEWS.**



HB

HB.6



HB.6

# DEPOT PLACE

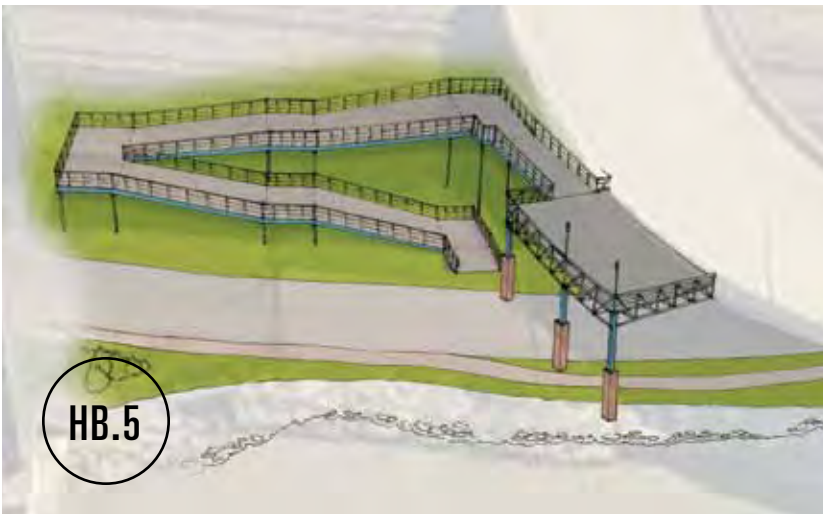
(OPPOSITE) There are two possible routes for the greenway going south from Depot Place. The top image is of the ideal waterfront route. The second is the alternate route between the MTA property and the Major Deegan Expressway.

**PEDESTRIANS WHO REACH THE BOTTOM OF THE HIGH BRIDGE STAIRS ARE CURRENTLY GREETED BY SPACES INHABITED BY FAST-MOVING TRAFFIC AT ALL HOURS OF THE DAY. PROPOSED CHANGES WILL MAKE THIS AREA A MORE APPROPRIATE ENTRANCE TO A WATERFRONT PARK.**

Sedgwick Avenue, which parallels the expressway, is currently unfriendly to pedestrians. There are no places to cross safely and only a few narrow sidewalks. Adding a visible crosswalk will improve the transition between the High Bridge and Harlem River.

Depot Place has more space for vehicles than is really needed. By removing the informal parking and adding lane markings, Depot Place could easily accommodate its current low levels of traffic, a wide bike lane, and a sidewalk.

Depot Place widens as it curves south, which allows boat trailers and other vehicles to access the promenade. For those walking, a shortcut ramp will wind down to the promenade from the top of the Depot Place helix. The ramp will extend briefly over the water and is intended to be a whimsical and water-focused way down to river level.



(ABOVE) New sidewalks and crosswalks make it safe and pleasant to cross Sedgwick Avenue.

(LEFT) A widened pedestrian and bicycle path hugs the northern edge of Depot Place. Though the path curves south to join the greenway, a northern connection could also be added to facilitate connections to the Harlem River Promenade and Roberto Clemente State Park.

MD



# MACOMBS DAM

# M D

**NEW PARKING GARAGES AT YANKEE STADIUM GIVE THE BOROUGH A CHANCE TO RETHINK OLDER WATERFRONT PARKING LOTS.**

NEW TRANSIT SERVICES AND PARKING GARAGES ASSOCIATED WITH THE YANKEE STADIUM RECONSTRUCTION HAVE RENDERED OLDER SURFACE LOTS LESS IMPORTANT. ADDITIONALLY, THE AREA AROUND THE

STADIUM IS CONFUSING AND DANGEROUS TO PEDESTRIANS AND CARS ALIKE. BY SIMPLIFYING CIRCULATION PATTERNS AND RETHINKING THE NATURE OF PARKING AROUND YANKEE STADIUM, THE MACOMBS DAM PARK-IT PLACE RECONFIGURES AN OLD WATERFRONT SURFACE LOT AS SOCIAL SPACE, ULTIMATELY CREATING BETTER PATHS TO BETTER PLACES.

- Significant Buildings
- Greenway Parks
- Other Parks
- Water
- Proposed Developments
- Inland Routes
- Harlem River Greenway
- Streetscape Improvement Areas
- 2 Subway Stop



Yankee Stadium

Macombs Dam Park

PROPOSED HOTEL

Mill Pond Park

Gateway Mall

Franz Sigel Park

HIGHBRIDGE YARDS CORRIDOR

MACOMBS DAM PARK-IT PLACE

MILL POND PARK

4  
D  
B

# OVERVIEW

Midway along the Harlem River is a collection of citywide and regional amenities: Yankee Stadium, the Gateway Center, and Mill Pond Park. Yankee Stadium is the Bronx's most popular visitor attraction, with upwards of 50,000 people attending each game. Even though the Gateway Center and Mill Pond Park are more local attractions, the park's covered tennis courts are frequented by high schools and university teams from around New York City.

**BECAUSE THIS AREA ALREADY HAS SO MANY VISITORS, IT IS A PERFECT ANCHOR FROM WHICH TO EXPAND RECREATION ALONG THE WATERFRONT.**

Existing surface lots can be easily reconfigured to create appealing areas for tailgating while reducing impervious surfaces.

The Yankee Stadium reconstruction recently brought many changes to the area between 149th and 161st Streets, including several new parking garages, a new Metro North station at 153rd Street, and ferry access between Lower Manhattan

and Mill Pond Park. These developments have made it much easier for visitors to get to and from the stadium and reduced demand for parking.

Few remaining surface parking lots are still popular for game day tailgating. Just north of Mill Pond Park is a lot on New York City Parks and Recreation land that is tucked beneath a tangle of on- and off-ramps for the Major Deegan Expressway. In our proposal the lot is activated year-round as the Macombs Dam Park-IT Place – part parking lot, part marketplace, and part park.

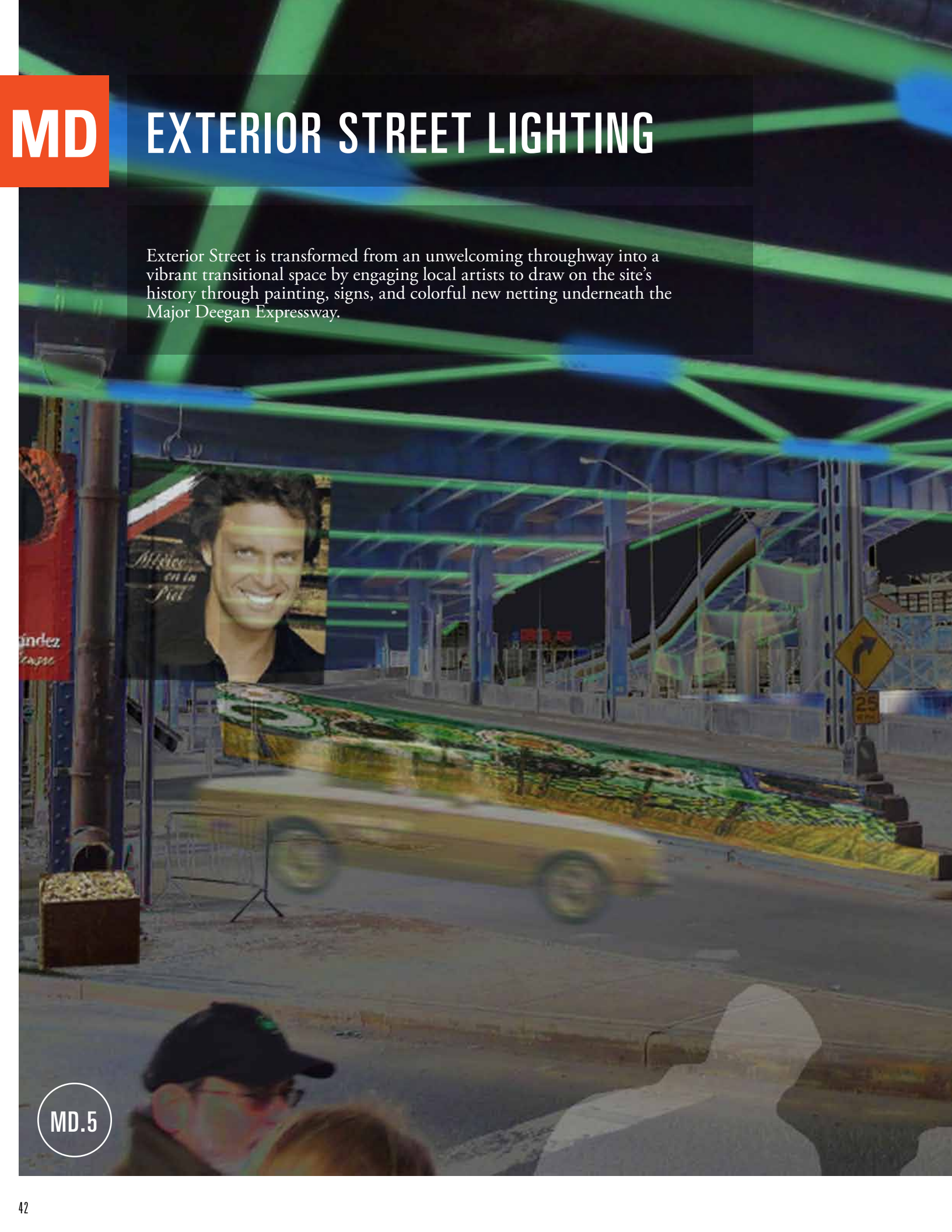
Along with this design the routes between the lot and nearby destinations are simplified and redesigned. New paths are already being established between the ferry, train station, and stadium. All of these routes are ready for more permanent and inviting designs.



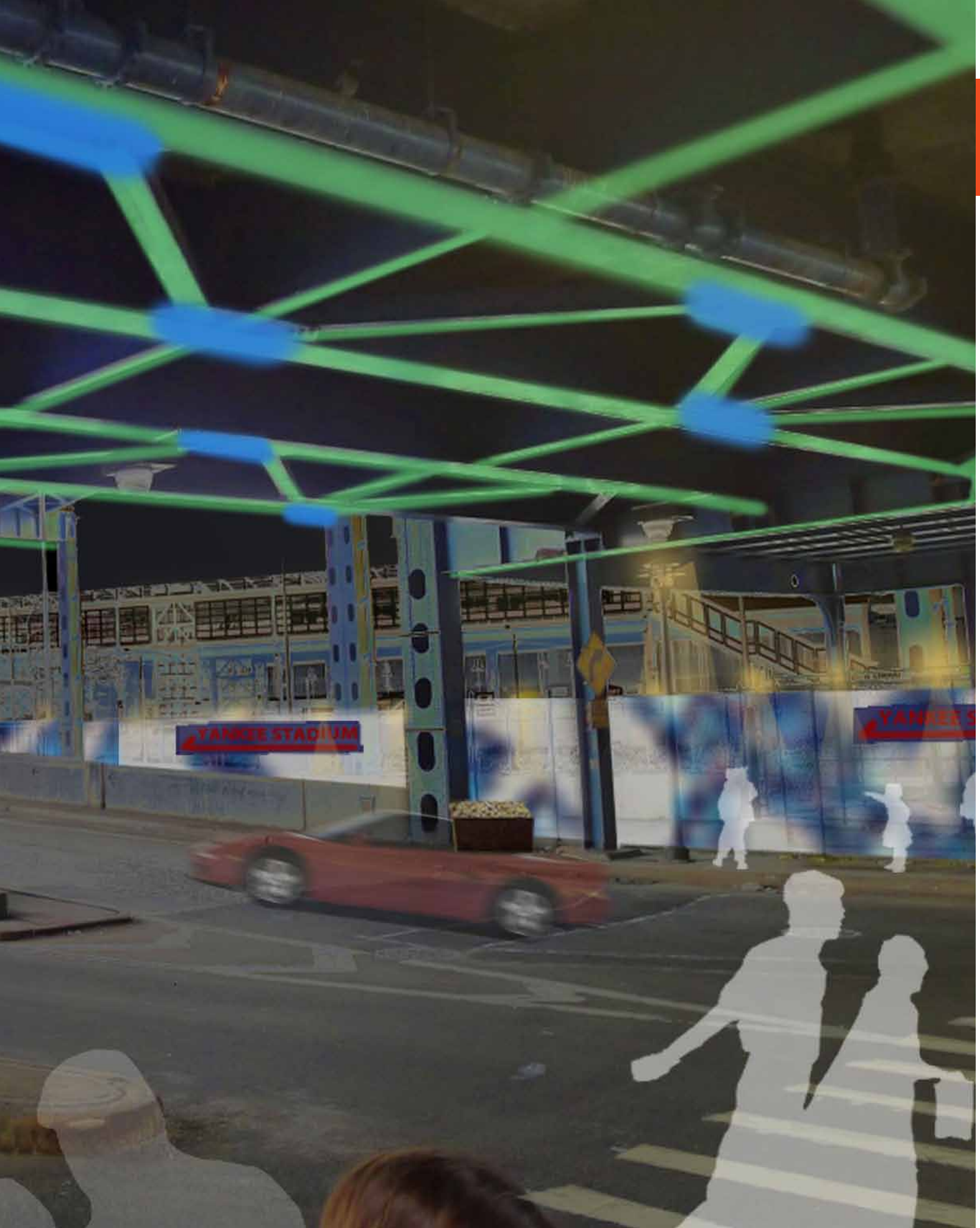
MD

# EXTERIOR STREET LIGHTING

Exterior Street is transformed from an unwelcoming thoroughway into a vibrant transitional space by engaging local artists to draw on the site's history through painting, signs, and colorful new netting underneath the Major Deegan Expressway.



MD.5



MD.1

MD.2

MD.3

MD.1 Harlem River Greenway Connection  
 MD.2 Highbridge Yards Corridor  
 MD.3 Macombs Dam Pedestrian Ramp

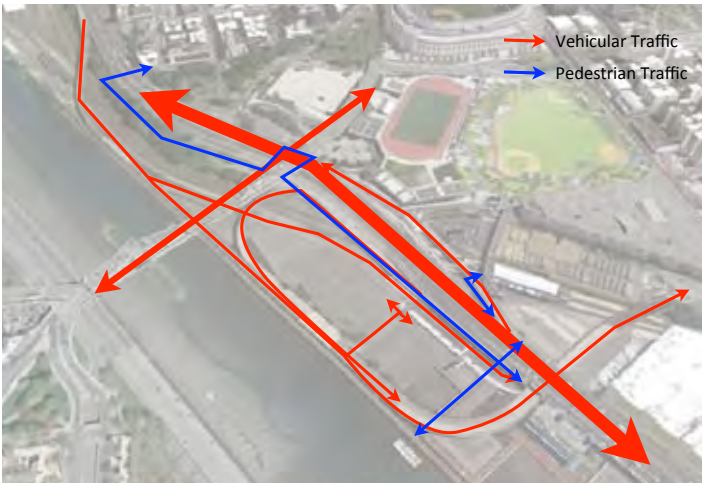
**CURRENT CIRCULATION PATTERNS AROUND THE MACOMBS DAM BRIDGE ARE COMPLICATED AND UNINTUITIVE FOR PEDESTRIANS AND DRIVERS ALIKE. WHAT FEW PEDESTRIAN AMENITIES EXIST ARE TREATED AS AN AFTERTHOUGHT.**

Through a series of targeted improvements, this tangle of abandoned paths can become part of a larger greenway. In our proposal, the visual lan-

guage of Mill Pond Park is extended between the 161st St. Pedestrian Bridge and the 153rd Street Metro North Station. Most of the route needs only simple material changes and improved lighting and maintenance to be an attractive path. The next few pages detail the points at which investment will yield the greatest return. Any of improvements would make a difference if implemented individually, but taken together they will have a huge impact on the walkability and safety of the area.



**MD.4** Park-IT Place  
**MD.5** Exterior Street Improvements  
**MD.6** Connection to Metro North Station



Existing circulation is confusing and favors vehicles over pedestrians.



Pedestrians have to cross three times to travel north or south along Sedgwick Avenue at the intersection with the Macomb's Dam Bridge.

# A SLIVER OF PARK

There are few places to cross the Major Deegan Expressway. One rare pedestrian-only crossing exists at 161st Street. This connects to a sliver of parkland sunk between the highway and rail lines. An existing path passes through this space, but it is unlit and poorly maintained.

**ADDING A MORE INVITING PATH WOULD IMPROVE CONNECTIVITY AROUND THE ENTIRE NEIGHBORHOOD.**

A well-maintained multi-use path allows pedestrians and joggers to travel north and south without



MD.1



Thick plantings greet visitors stepping off of the 161st Street Pedestrian Bridge into the linear park between the Major Deegan Expressway and MTA rail yard.

encountering the confusing traffic patterns on Sedgwick Avenue where sidewalks are narrow or nonexistent and traffic speeds are high.

Creating safe, attractive spaces for pedestrians does not have to be complicated or expensive. By mimicking the style of path and lighting used in

the nearby Mill Pond Park, residents and visitors will experience a coherent, continuous path along the water that is separate from automobile traffic. While the path's proximity to the Major Deegan poses a challenge, adequate vegetation can substantially reduce air and noise pollution.



This sliver of parkland is treated with the same materials as in Mill Pond Park: red asphalt paving, wooden benches, and modern lighting.

# MACOMBS DAM BRIDGE

The pedestrian crossing on the Bronx side of the Macombs Dam Bridge currently necessitates three separate crossings to get across two lanes of traffic. Each crossing requires the pedestrian to wait for a signal, so that the entire experience can take minutes for what ought to take less than thirty seconds. The construction of a pedestrian ramp provides a safe, direct, and highly visible method

for residents and visitors to travel north and south across Macombs Dam Bridge.

**TAKING ADVANTAGE OF AN EXISTING BUT INCOMPLETE SIDEWALK, THE RAMP ALLOWS PEDESTRIANS AND CYCLISTS TO AVOID THE COMPLICATED AND DANGEROUS INTERSECTION ON MACOMBS DAM BRIDGE.**



The dangerous Macombs Dam Bridge crossing is improved by adding a pedestrian and bicycle underpass below the bridge.

(OPPOSITE) The Greenway continues into the Macombs Dam Park-IT Place that activates a parking lot that is empty most days of the year.

# PARK-IT PLACE

The Harlem River Greenway passes from the proposed Macombs Dam Bridge Underpass through the Macombs Dam Park-IT Place and on to Mill Pond Park. The parking lot is currently an all-or-nothing place, either full of tailgaters or completely empty. Most of the year, it is the latter. The Park-IT Place aims to rectify that by creating

a multipurpose space, enjoyable year-round for all types of visitors.

**CREATING AN EXCITING EVERYDAY FOOD EXPERIENCE WILL ATTRACT VISITORS TO STAY AROUND ENJOY THE WATERFRONT.**



# PARK-IT PLACE

Redesigned surface parking lots integrate ecological features, reduce runoff and accommodate cultural and commercial uses.



The Macombs Dam Park-IT Place incorporates a diverse program on a complex site. Right now it is a blank slate, a more-or-less empty expanse of asphalt. Four aspect of the project combine to make this a unique place unlike any other in the Bronx or the city.

## POCKET WETLAND

At the northern edge of site, under the entrance ramp from the Deegan into the lot, a pocket wetland replaces parking spaces. The spaces here were difficult to navigate and the least desirable parking spots in this lot. The pocket wetland serves to clean the rain water that collects in the



parking lot before releasing it into the Harlem River. Not only is total impervious surface area reduced, but all stormwater can then be managed on-site. A network of walking trails will also make this a pleasant recreational space.

## PARKING LOT

Park-IT Place offers a great setting for tailgating with ample space to maneuver and set up equipment. Users could be charged a premium to participate in game day festivities, but the rest of the time – when the site would otherwise sit empty – the neighborhood can use it for short-term recreation.



### **FOOD TRUCK COURT**

The marketplace aspect of the project takes the form of a food truck court. Currently, the routes between transit and the stadium encourage visitors to eat at the game. Not only is this costly, but transit users are also discouraged from visiting the waterfront and participating in tailgating. The food truck court provides options for those who are not grilling themselves to join in the tailgating experience. A patio area with ample seating and pleasant plantings encourage visitors to enjoy



the river. On the 284 days of the year when the Yankees aren't playing at home, this can still be an active place. Mill Pond Park and the Gateway Center are even closer than the stadium and there are limited options for food in the area.

### **BOATING**

There are no places to get on the water at Mill Pond Park. By enclosing the inlet with a net, bumper or paddle boats could be brought in for the enjoyment of children and adults alike.

# EXTERIOR STREET

Exterior Street, below the Major Deegan Expressway, connects the Gateway Center with Mill Pond Park. Gateway Center mall opened in 2009 and includes several big-box retailers with a few smaller stores and restaurants. The shopping center is oriented around a central court and completely turns its back on Exterior Street, and by extension on Mill Pond Park and the Harlem River. As Exterior Street is the only way to access Mill Pond Park, it is important that it is a bright and inviting street.

**BY ADDING LIGHTING, IMPROVED SIGNAGE, AND NEW PEDESTRIAN AMENITIES, EXTERIOR STREET FEELS LIKE A VIBRANT AND IMPORTANT PUBLIC SPACE RATHER THE BY-PRODUCT OF OTHER INFRASTRUCTURE.**

The underside of the Major Deegan Expressway is covered in black fabric that prevents pigeons from nesting below the highway. The material is functional, but not beautiful. Local artists



MD.5



Local artistry brighten Exterior Street with colorful designs for the netting under the highway.

would be invited to create colorful designs to be painted on the nets. Exterior Street was also once lined with murals relating to the Bronx Terminal Market and a few well-restored murals remain. Combined with new artwork along the route and on the nets above, these will enhance this street as a vibrant link on the Harlem River Greenway and encourage use of Mill Pond Park.

An additional pedestrian connection off of Exterior Street to the 153rd Street Metro North Station further enhances access to the water. Currently an afterthought, this path could become an attractive means of directing people towards the river through artwork that celebrates rather than ignores the surrounding infrastructure. Extending the material choices of Mill Pond Park here will also contribute to a continuous visitor experience.



Lighting, greenery, and murals will make the path between Mill Pond Park and the Metro North Station more pleasant.



# PIER FIVE

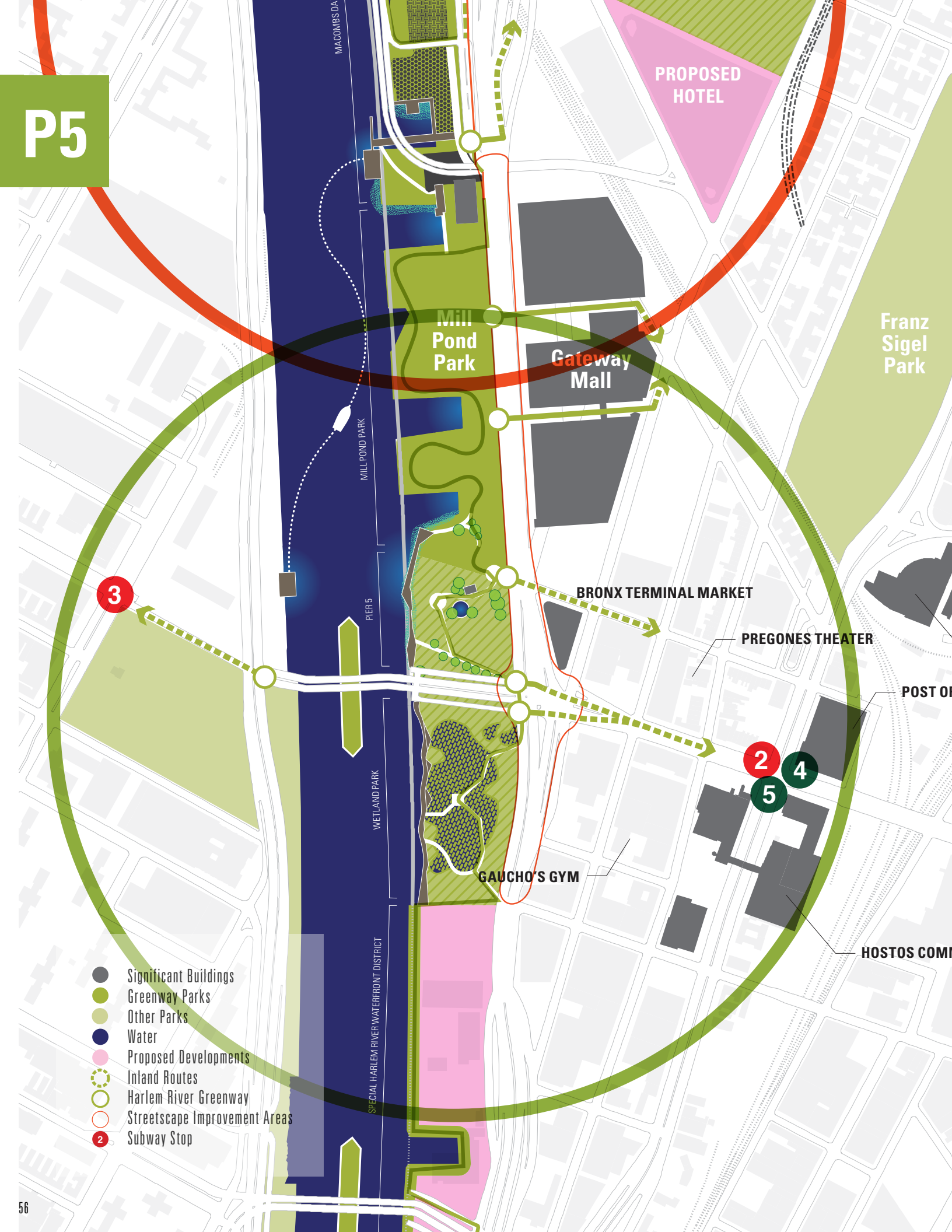
# P5

**PIER 5 REPRESENTS THE CITY'S MOST IMMEDIATE OPPORTUNITY AREA.**

**THE CURRENTLY VACANT PIER CONNECTS TO MILL POND PARK. IN OUR PROPOSAL, PIER 5 AND THE SITE IMMEDIATELY SOUTH OF THE**

**149TH STREET BRIDGE ARE CONVERTED INTO PARKLAND. THE NEW PARKS, PLUS A MORE NATURAL WATERFRONT EDGE, WILL IMPROVE WATER QUALITY AND REINTRODUCE WILDLIFE TO THE HARLEM RIVER.**

# P5



- Significant Buildings
- Greenway Parks
- Other Parks
- Water
- Proposed Developments
- Inland Routes
- Harlem River Greenway
- Streetscape Improvement Areas
- 2 Subway Stop

# OVERVIEW

**PIER 5 IS AN EMPTY LOT JUST SOUTH OF MILL POND PARK. IT IS OWNED BY THE CITY AND HAS ALREADY BEEN IDENTIFIED AS A FUTURE DEVELOPMENT SITE.**

Originally included in the plans for Mill Pond Park, Pier 5 was eliminated from the project when remediation costs rose higher than expected. The belated development of this site offers the city an opportunity to extend the park while creating a different type of visitor experience. In this way Pier 5 becomes part of the Harlem River Greenway and part of a continuum of park spaces ranging from highly programmed at Mill Pond Park to a very natural in a reconstructed wetland just south of the 149th St. Bridge, on the site of the Bronx Recycling Center.

To improve the river's water quality, Combined Sewer Outflow (CSO) event mitigation strategies are incorporated throughout the Pier 5 and Bronx Recycling Center designs. The Bronx experiences up to seventy CSO events a year, dumping sewage and contaminated stormwater into the Harlem River and other waterways. Highway runoff exacerbates CSO problems and the Major Deegan Expressway's runoff flows directly into the combined sewer system and the Harlem River. On Pier 5 some highway runoff will be collected, filtered, and used on-site. On the other side of the bridge, the wetland will naturally filter larger quantities of water before releasing it to the river.

Mill Pond Park currently ends abruptly at Pier 5 because the site's soil contamination was too costly to remediate during the park's construction. A single crane remains on the site as a remnant of the property's industrial past. An incremental remediation and redevelopment scheme is proposed for Pier 5.



(RIGHT) The Bronx Recycling Center is on city-owned property and could more easily be acquired for redevelopment than privately owned sites.



(FAR RIGHT) Stormwater runoff from the Major Deegan flows out of these large pipes and across the sidewalk to the city sewer drains.

**P5**

# GABION EDGES



**P5.1**

Gabions, arranged in a stepped down pattern will create new habitat for wetland plants and make the river a more hospitable home to wildlife. At the same time, they allow for more direct human access to the waterfront.



**P5**

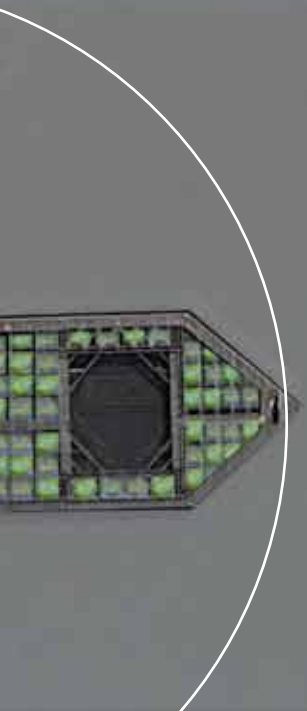


# PROJECT ELEMENTS



P5.6

- P5.1 Greenway & Boardwalk Paths
- P5.2 Comfort Station  
*(uses cleaned runoff water)*
- P5.3 Spray Park
- P5.4 Crane & Stage
- P5.5 Runoff Cleaning Pilot Project
- P5.6 Pocket Wetland & Nature Preserve
- P5.7 Eco-Island



P5



# IMPROVING WATER QUALITY

(OPPOSITE) Boardwalks along the gabion edges allow visitors to get close to the wetland landscape.

Pier 5 is envisioned as a place to test water-quality improvement strategies. This includes strategies related to the shoreline, the bridge struts under the nearby 149th Street Bridge, and the Major Deegan Expressway.

There is currently a smooth seawall along most of the Harlem River shoreline, which results in fast moving water along the edges that is not optimal for plant and animal health. Water quality in the river is decent but improvement would lead to a more hospitable habitat. It is suitable for boating but not yet fit for swimming.

provide surfaces from which wetland plants can grow, which in turn will provide habitat for fish and other animals.

The gabion seawall can also support paths that will allow visitors to get much closer to the water than they are currently allowed. Since the Harlem River is tidal, the water level will rise and fall creating a constantly changing environment for wildlife and park visitors. This proposal could be implemented anywhere along the river but has been suggested as a pilot program on Pier 5.

## THE SUPPORTS OF THE HARLEM RIVER'S FOURTEEN BRIDGES CAN BE TURNED INTO WATER CLEANING "ECO-ISLANDS."

While visually appealing from shore, the primary purpose of the mini-wetland eco-islands will be to filter river water and provide additional habitat for wildlife. Another feature of the eco-island is rhizofiltration, the use of oysters to improve water quality. In other cities, rhizofiltration has run up against the "attractive nuisance" problem of people attempting to harvest and eat the oysters. Placing these oysters in such an inaccessible location eliminates that risk.

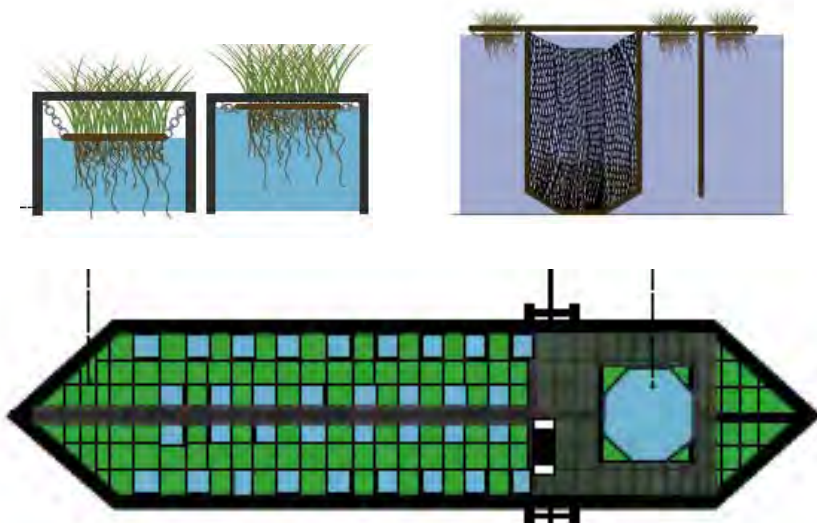
### P5.7

The green squares on the plan for an eco-island (BOTTOM) are filled with plants in a suspended wetland patch (BELOW).

(BELOW RIGHT) The larger pool on the eco-island is enclosed below the surface with a net for rhizofiltration.

### A NEW SEAWALL SYSTEM WILL SLOW WATER SPEEDS AND CREATE PLACES FOR RECREATION AT THE WATER'S EDGE.

The proposed system consists of rubble gabions, rectangular cages filled with fragments of concrete and other building materials. These are often used in retaining walls and will serve the same purpose here. Rather than simply stacking them into a wall, the gabions are arranged in an undulating pattern along the riparian edge to disperse wave motion and slow water speeds. The gabions will also



# MANAGING MAJOR DEEGAN EXPRESSWAY STORMWATER

The Major Deegan Expressway generates high volumes of stormwater. At present, all the water is funneled off the highway, down thick pipes, and across the Exterior Street sidewalk to storm drains. From there it mixes with the sewer system and enters the river through CSOs along the river edge. The highway collects so much water that when it rains, the sidewalk below becomes impassible. Several pilot projects on Pier 5 will help manage the vast quantities of stormwater coming from the highway.

## RAIN BARRELS

Large, monumental rain barrels will collect and store water from the highway, and in the process filter out debris and impurities. To create a sense of

place, the rain barrels could be decorated by local artists or be redecorated regularly by an artist-in-residence.

## COMFORT STATION AND SPRAY PARK

The water collected in the barrels will then pass through further purification and be recycled in a comfort station and spray park in the center of Pier 5. A municipal water hookup will supply additional water during high demand periods.

Most importantly, the spray park will serve young families of the West Bronx and East Harlem every summer. There are many children in these neighborhoods and the nearest pool is more than 20 blocks north, on the Manhattan side of the



High Bridge. A spray park will be a great addition to the other park features and the additional comfort station will not add strain to the existing restrooms in Mill Pond Park.

### POCKET WETLAND

The property south of the 149th Street Bridge is currently a recycling center for building materials. Although it is a private business, the land is owned by the City. The Major Deegan hems in the property and makes it unsuitable for most types of development. However, it is an ideal opportunity for additional park space and an innovative environmental pilot program.

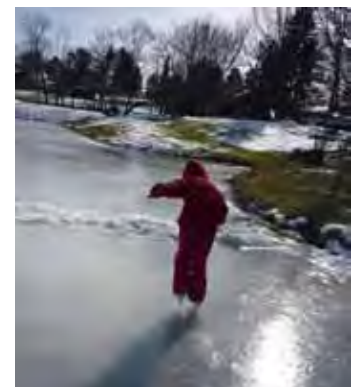
Creating a wetland on this six acre parcel will not only address the area's environmental challenges,

but will also introduce a new type of outdoor environment to the borough. There are precedents for wetland water filtration systems, and for urban pocket wetlands, but the two have rarely been combined. This pocket wetland on the Harlem River will filter stormwater runoff from the Major Deegan during rainy periods and could filter river water during drier times of the year. The natural landscape will attract migratory birds and visitors will be able to observe them from a bird blind at the center of the site. A system of boardwalks, a river walk, and interpretive signage throughout the wetland will make the park accessible for all ages and fitness levels and connect to the Harlem River Greenway. In winter the shallow streams through the wetland will be great for ice skating.



(OPPOSITE) Stormwater is collected from the Major Deegan Expressway, filtered and cleaned, and then used in a spray park and comfort station. These features will make Pier 5 a summer destination.

(RIGHT) The Bronx Recycling Center is replaced by a stormwater treating wetland. Visitors can enjoy the natural landscape year round, birdwatching in the summer and ice skating in the winter.



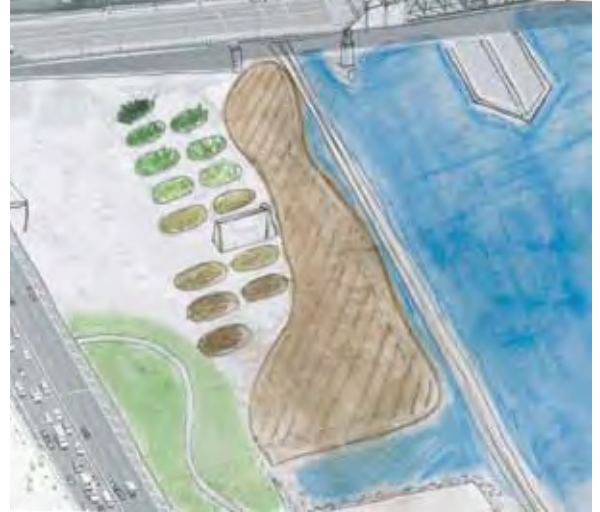
# PHASED REMEDIATION: A MODEL FOR INCREMENTAL IMPROVEMENT

Pier 5 needs significant remediation. Because the City owns the property there is an option to treat this as a remediation lab to test a variety of low-cost remediation strategies that can be applied to other brownfields around the city.

The remediation process could also be used as an educational program. The site could be used by the nearby Hostos Community College or another group for green job development and training.

## PHYTOREMEDIATION GARDEN BEDS

In the first phase, earth from along the seawall is excavated and used to create raised garden beds where different phytoremediation plants are tested.



## SEAWALL RECONSTRUCTION

In the second phase, the excavated portion of the site is reconstructed with a gabion seawall, which will grow into a small wetland. The raised phytoremediation beds will have cleaned the soil. At this point the soil can be moved fairly easily and spread out or continue to be used for gardening, possibly even for food. Soil testing and garden maintenance can be completed by community groups or schools.



## FULLY REMEDIATED PIER 5

In a fully remediated Pier 5 the wetland edge will have grown in. Soil from the garden beds is spread throughout the site and a more permanent design is implemented. The existing crane is retained as a stage and as an icon of the Bronx's industrial past, and paths now link north to Mill Pond Park and south to the pocket wetland and the rest of the greenway.



# SHORT-TERM PROGRAMMING

Pier 5 is already used for short-term activities. Twice in 2011, the site was the temporary home of the Ringling Bros Circus. As the park is more formally developed, the design will maintain flexible space for short-term programming.

## PERFORMANCES AND MOVIES

A crane near the center of Pier 5 is one of few remnants from the area's industrial past and is perfectly positioned to become the framework for a stage. A lighted BRONX sign atop the crane will spotlight the park from the Major Deegan Expressway and the Harlem River bridges. Theatrical lighting and a projector for films will be mounted on the crane. Local and touring performing arts groups will be able to perform here and outdoor movie showings will enliven the park on summer nights.

## SUMMER SUNDAYS ON THE 149TH ST. BRIDGE

Getting people above the river will help generate excitement about the river and river edge activities. Summer Sundays is a proposed cross-borough series celebrating local and immigrant culture on the bridge.

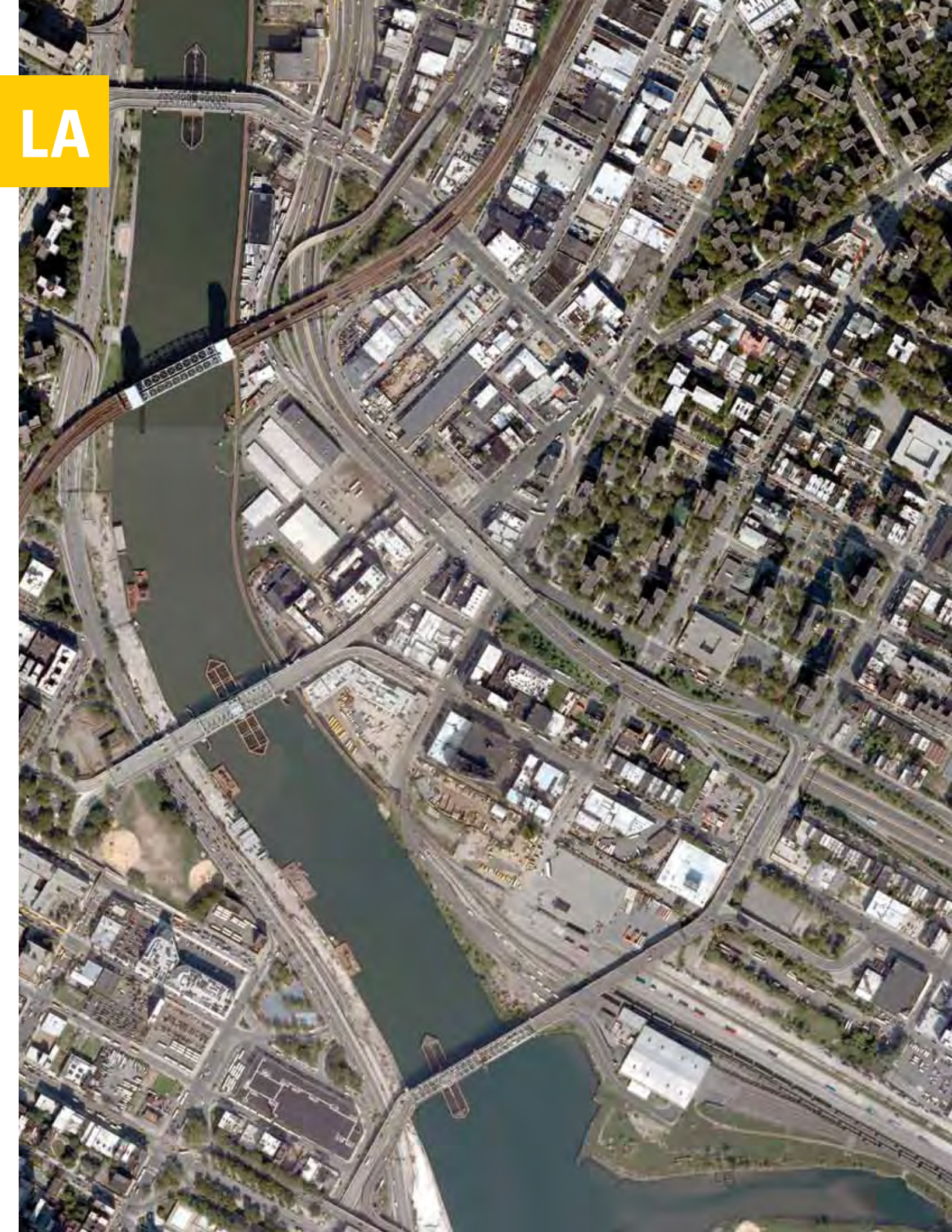
## INTERSECTION REDESIGN

The intersection on the Bronx end of the 149th Street Bridge is dangerous for pedestrians. Should the City elect to develop Pier 5 or the recycling center property, improvements to this intersection will be essential to maximize the City's investment in new green space. Temporary activations, such as street art or cycling events, will generate greater awareness of pedestrians in the neighborhood and could lead to more permanent traffic calming measures.

The flexible park space on Pier 5 would be activated through short-term programming including: movie screenings, dance performances, community art, and food festivals.



LA



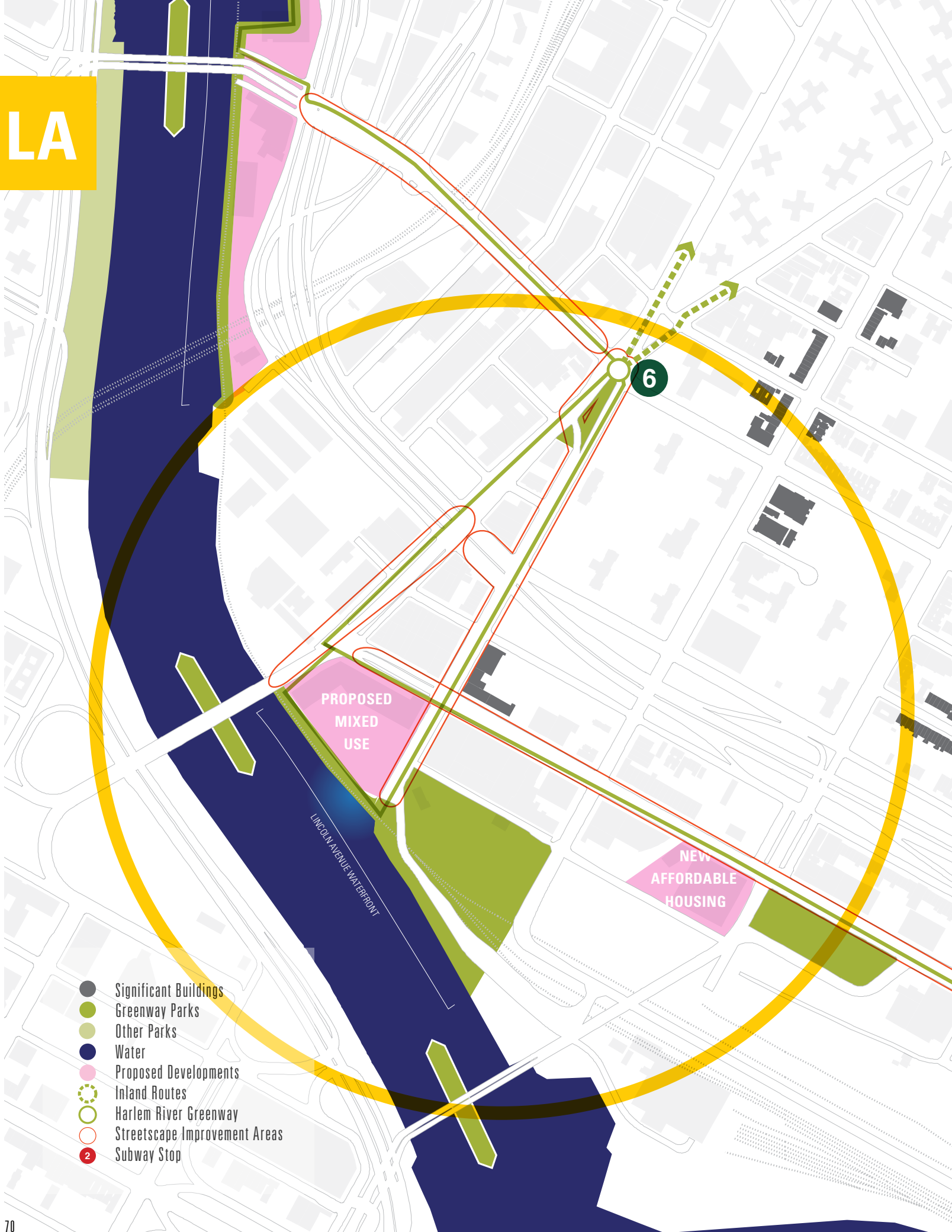
# LINCOLN AVENUE

# LA

**AT THE NEXUS OF THE HARLEM RIVER GREENWAY AND BRUCKNER BOULEVARD, LINCOLN AVENUE IS THE BEST OPPORTUNITY TO DEVELOP BOAT ACCESS ON THE HARLEM RIVER.**

TUCKED INTO MOTT HAVEN AND THE BURGEONING SOUTH BRONX CULTURAL

CORRIDOR, LINCOLN AVENUE'S ONE THIRD MILE OF ROADWAY IS A GREAT OPPORTUNITY TO TACKLE STORMWATER MANAGEMENT IN A WAY THAT ALSO PROVIDES MUCH NEEDED PUBLIC OPEN SPACE AND GALLERY SPACE FOR THE GROWING SOUTH BRONX ARTIST COMMUNITY.



- Significant Buildings
- Greenway Parks
- Other Parks
- Water
- Proposed Developments
- Inland Routes
- Harlem River Greenway
- Streetscape Improvement Areas
- 2 Subway Stop

# OVERVIEW

## **LINCOLN AVENUE IS ONE OF THE FEW REMAINING STREETS THAT END DIRECTLY AT THE RIVER'S EDGE.**

Lincoln Avenue is located in a neighborhood with a mix of land uses including: active industrial sites, historic factories turned live/work lofts, and an ethnically diverse residential community with many young families. This southwestern corner of the Bronx is also the heart of the South Bronx Cultural Corridor and a growing artist community.

Bruckner Boulevard is currently undergoing redevelopment with new low-income housing, retail space, and a number of artist live/work buildings. This is an important main street and will be the primary connector between the Harlem River Greenway and the South Bronx Greenway currently under development in Hunts Point.

Our proposal offers several opportunities for the display of artistic work. Between Bruckner Boulevard and the waterfront, parking lots and the neighboring waste transfer station will be hidden with murals and unique fencing, giving owners security while providing visually engaging boundaries to the public space. The area under the 3rd Avenue Bridge is underutilized and close to many arts organizations. The space is reimagined as a gallery with brightly colored lighting and a plaza that offers space to exhibit hanging work, films, and sculptures.

For most, visiting Lincoln Avenue will begin at 138th Street where there is a cluster of residences and transit. The intersection of Lincoln Avenue and 138th Street was one of the earliest commercial centers in the Bronx. A monument and a marble bank building in the plaza are remnants from that time. The currently static plaza will be reinvigorated with the addition of rain garden planters. These planters will provide firm footings for elegant shade trees, reduce stormwater runoff by absorbing excess water, and will be edged with benches to encourage casual gatherings.

The rain garden planters continue along Lincoln Avenue's one-third mile length. In the final block from Bruckner Boulevard to the water's edge, the sidewalk on the west side of the street is widened to include planted bioswales that will collect and clean stormwater.

Because the street ends at the river, it is a prime location for developing waterfront public space and boat access. A boat launch and observation deck provide direct access to the water itself, a rarity in this industrial area. Redesigning Lincoln Avenue will also leave enough space for a playground to be built at the waterfront. The Lincoln Avenue street end is also the site of a combined sewer outfall (CSO) that empties contaminated water into the Harlem River during heavy rains. CSO events will limit boat access after storms, so local measures to reduce the frequency of CSO events are a closely incorporated aspect of this initiative.

LA

# 138TH STREET PLAZA

Rain garden planters with plenty of seating transform this plaza into a comfortable place to wait for the bus or talk with friends. Large shade trees keep the plaza cool in summer and less windy in winter.



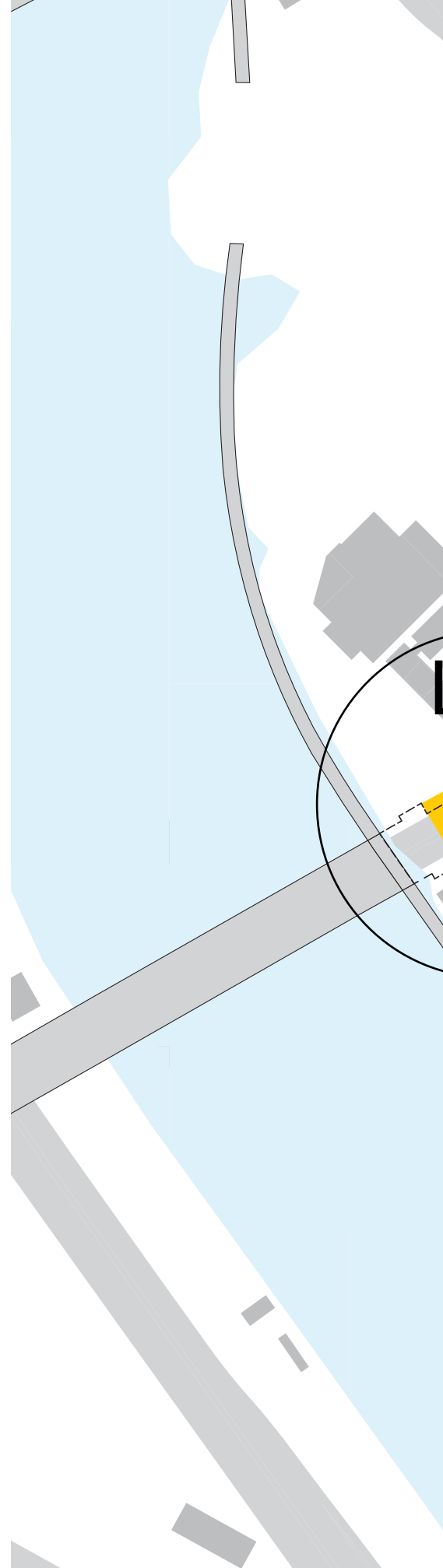
LA.1

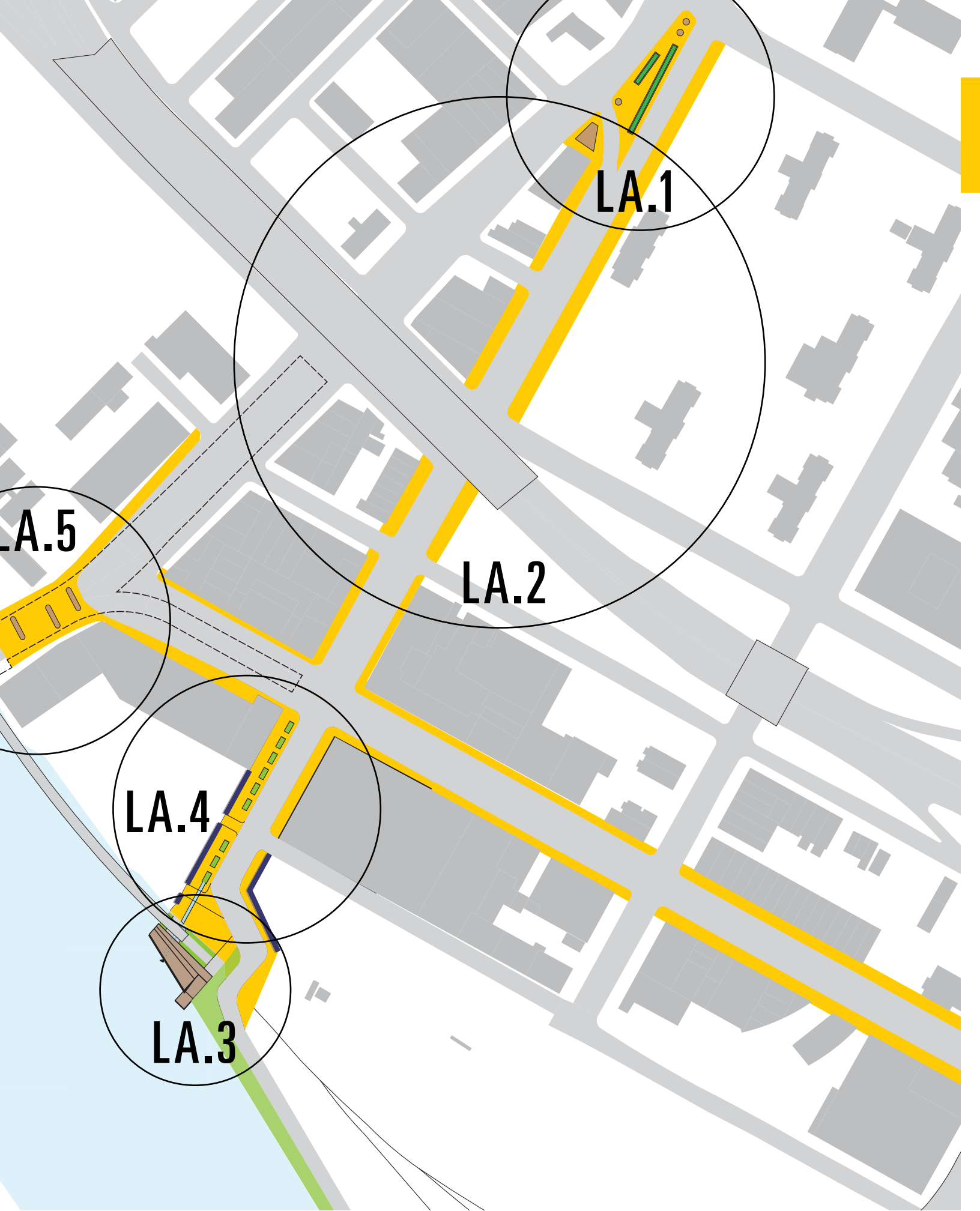


LA

## PROJECT ELEMENTS

- LA.1 138th St Plaza
- LA.2 Rain Gardens
- LA.3 Waterfront Park
- LA.4 Bioswales
- LA.5 Bruckner Blvd Outdoor Gallery





**LA.1**

**LA.2**

**LA.4**

**LA.3**

**LA.5**

LA

RAINWATER FROM ROOF

STORMWATER RETENTION TREE TRENCH

RAINWATER TO PLANTER

STORMWATER RETENTION PLANTER BENCH

LA.1

# 138TH STREET PLAZA

(OPPOSITE) The 138th Street Plaza includes several rain garden features including harvesting rain water from a nearby roof, tree trenches, and low retention planters with benches.

(BELOW) With proposed changes, the plaza becomes a welcoming place to visit with friends or wait for the bus.

The plaza at Lincoln Avenue and 138th Street once sat in the center of a bustling commercial district. Today the surrounding streets are only busy with vehicles and most businesses around the plaza are auto-oriented. This is also the end of the line for multiple bus routes. The uninviting plaza also borders a large public housing complex with thousands of residents who pass through daily on their commutes.

## RAIN GARDEN

A rain garden in the plaza will welcome people to stay for a while, with pleasant shade trees and plenty of benches. Young trees that were recently added to the plaza would be replanted in water retaining planters with seating along the planter box edges. Additional retention beds are added throughout the plaza to fill out the rain garden. In time this will provide a beautiful shaded area for

residents to wait for buses and chat with friends and neighbors.

A few remnants of this plaza's former grandeur remain, including the monument in the plaza itself and the historic North Side Board of Trade Building (now Chase Bank) just south of the plaza. Incorporating this historic building into the water quality management program being established along the Lincoln Avenue corridor, will tie together the plaza's past and future.

A team of local artists and engineers would be engaged to create a visually engaging system to collect rainwater from the building's roof. The collected water would be filtered through a natural bioswale placed in front of the building.



# RAIN GARDENS

**THE GOAL OF THE 138TH STREET RAIN GARDEN IS TO REDUCE PRESSURE ON THE CITY SEWER SYSTEM AND REDUCE THE CHANCES OF A CSO EVENT AT LINCOLN AVENUE'S END.**

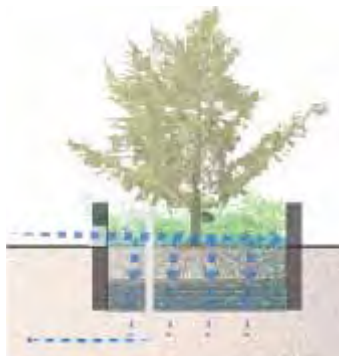
This area is one of the smallest watersheds in the Bronx and rain falling on Lincoln Avenue will almost certainly contribute to the Lincoln Avenue CSO. As such, any effort to reduce the water flowing into the sewer system during a heavy rain will reduce the incidence of CSO events at this particular outflow.

Improving the water quality in the Harlem River is imperative to making boat, fishing, and maybe even swimming access possible. To help accomplish this goal, the entirety of Lincoln Avenue is turned into a stormwater retaining machine through the inclusion of retention planters for street trees along the 1/3 mile of sidewalk between the plaza and the waterfront park. Not only will the planters contribute to the environmental mission of the project, but will shade the street and provide pleasant places to pause between 138th Street and the waterfront.





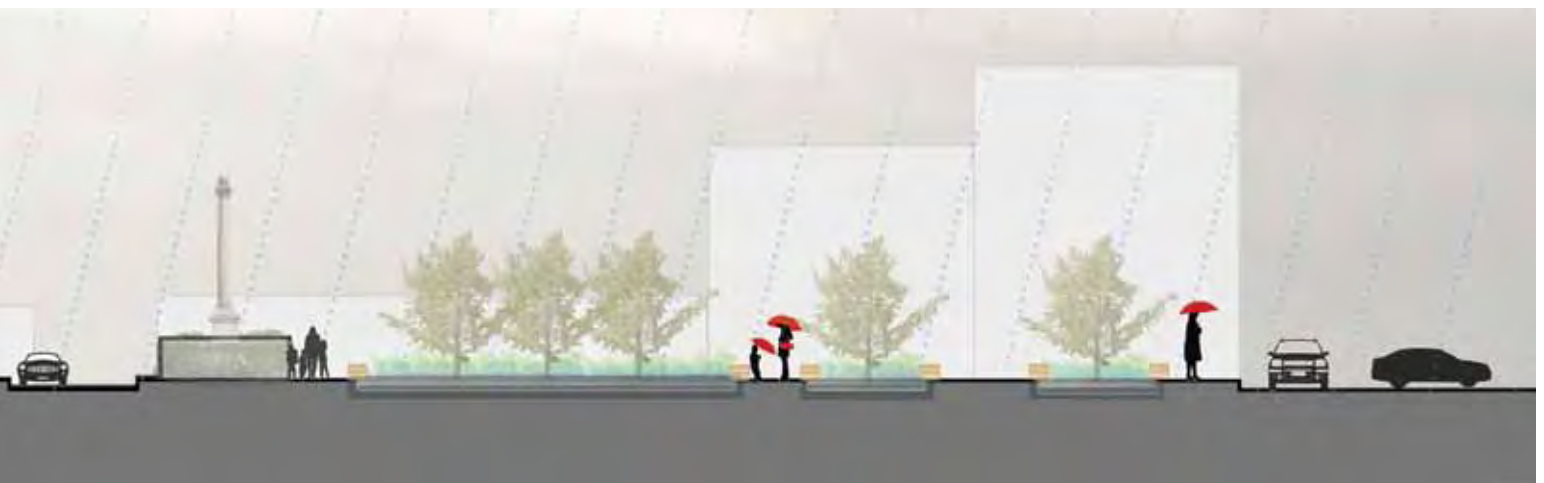
Bioswales collect water from the curb water filters through soil in the planter and slowly, the cleaner water is collected by a pipe and flows back into the stormwater system



Street Tree Planters collect water from the curb. Water infiltrates the soil over time



(BELOW) Section drawing showing the stormwater collection features in the plaza.



LA



# WATERFRONT EDGE

## AS ONE OF THE FEW STREETS EXTENDING DIRECTLY TO THE WATERFRONT, LINCOLN AVENUE IS AN OBVIOUS SITE FOR PUBLIC WATERFRONT ACCESS.

(OPPOSITE) The plan of the waterfront park and the bioswale system along Lincoln Avenue shows that parking is still available on both sides of the street with plenty of space for trucks to enter and exit the waste transfer station.

While the area at the water's edge is currently small, there is an opportunity to create additional square footage by redesigning Lincoln Avenue itself from Bruckner Boulevard to the street end. Currently there are standard 15' wide sidewalks on both sides and an expanse of unmarked pavement in between. By following the natural paths of the garbage trucks entering and exiting the waste transfer facility, a significant amount of space can be reclaimed for public use.

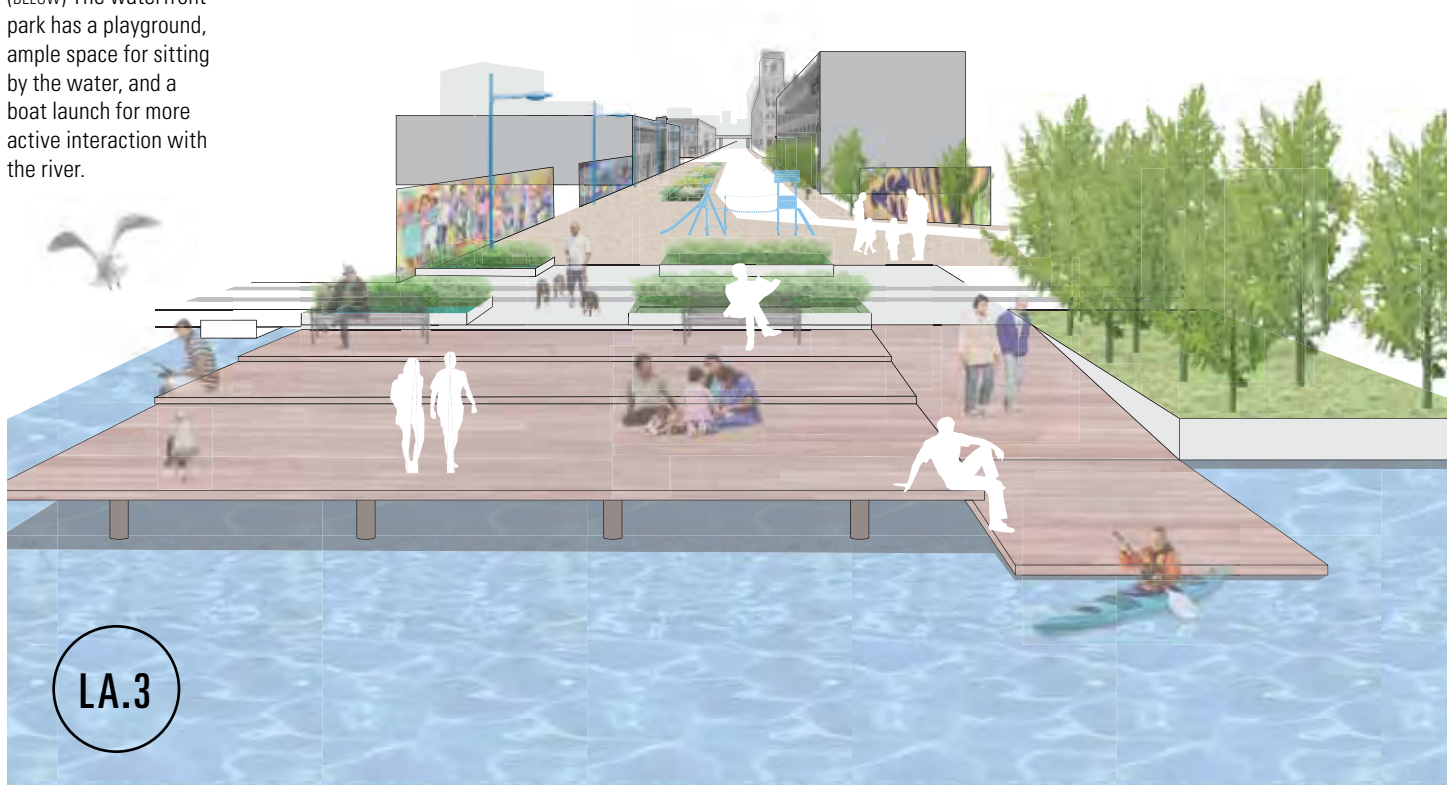
Enough space, in fact, for a small playground. There are over 8,000 children enrolled in K-8 schools within a mile of this new park, most of whom live within the similar radius. Given that this neighborhood is home to many young fami-

lies, a playground is an important amenity for the community.

A second part of the Lincoln Avenue street design is the widening of the western sidewalk. Even with this change, there is enough paved roadway for on-street parking on both sides of the street and for two garbage trucks to pass. The wider sidewalk incorporates a system of low planted bioswales. These will collect and clean stormwater running along the curb and the plantings will contribute to better air quality in the immediate area.

The adjacent waste-transfer station and parking facility are not ideal neighbors for a public park. Visually buffering between these properties and the street will make for a more pleasant waterfront experience. On the waste transfer station's edge ample plantings provide an olfactory as well as visual barrier. On the western side, murals or dynamic fencing will create an active edge.

(BELOW) The waterfront park has a playground, ample space for sitting by the water, and a boat launch for more active interaction with the river.

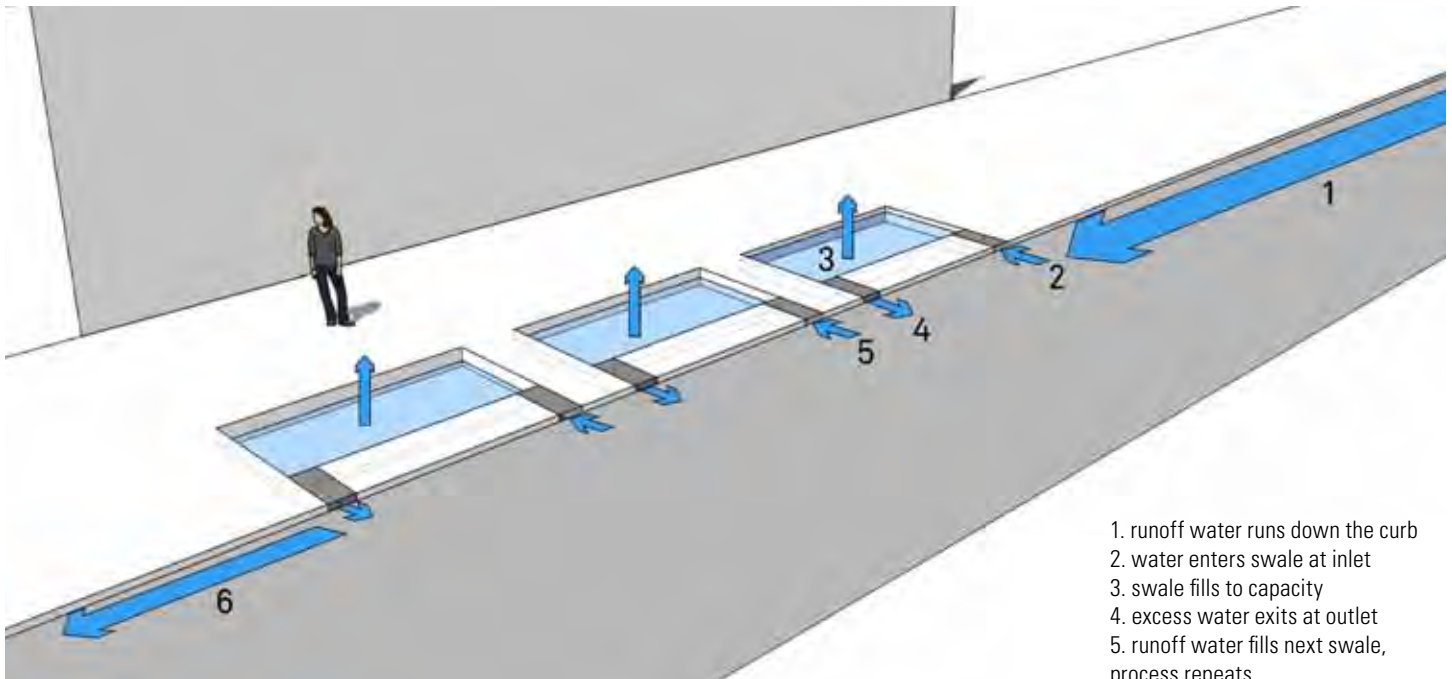


# BIOSWALES

**THESE DIAGRAMS AND IMAGES DOCUMENT THE BIOSWALE SYSTEM PROPOSED FOR LINCOLN AVENUE.**

CSO events occur when there is a lot of water entering the sewer system at once. This happens particularly rapidly during the first 20 minutes of a rain storm. Bioswales collect and hold rainwater that otherwise would enter the sewer system.

The water held there evaporates slowly over time without ever entering the sewers. In severe storms the bioswales may be overwhelmed and in those cases water flows back into the street and into the drains. Even still, the water is detained for a short time reducing the impact of the CSO event by a small amount.



1. runoff water runs down the curb
2. water enters swale at inlet
3. swale fills to capacity
4. excess water exits at outlet
5. runoff water fills next swale, process repeats
6. reduced water volume enters sewer system





LA.4

LINCOLN AVENUE BIOSWALES

Heavily planted bioswales add a soft edge to this harsh landscape. new sidewalk lighting will also make this block safer at night.

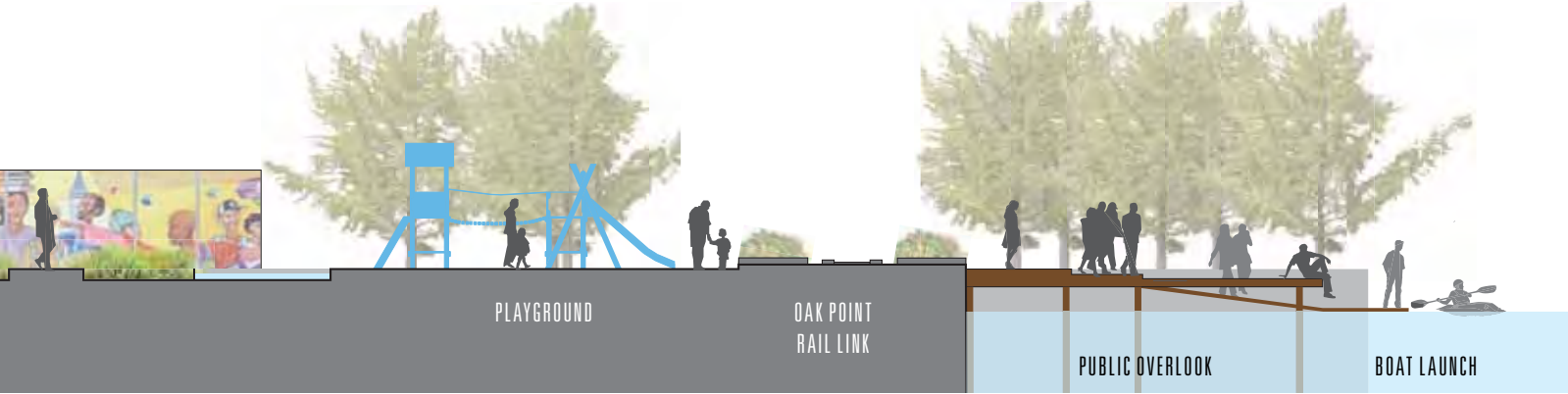
Through design of this wide right-of-way, traffic to the waste transfer site will be balanced with new public space.



GARBAGE TRUCKS ON LINCOLN AVENUE



BEFORE



PLAYGROUND

OAK POINT RAIL LINK

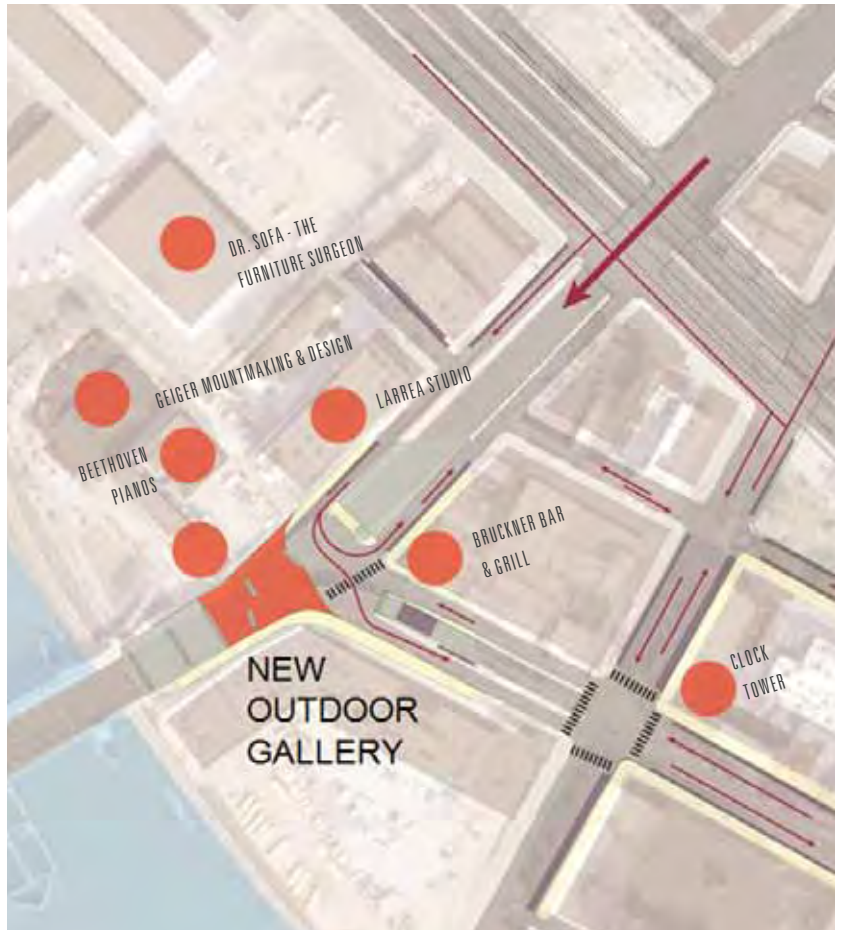
PUBLIC OVERLOOK

BOAT LAUNCH

LA



LA.5



(ABOVE) The space below the 3rd Avenue Bridge lacks lane markings.

(RIGHT) The Bruckner Bar & Gallery is a hub of arts activities and is just steps from the proposed outdoor gallery



# BRUCKNER BOULEVARD

(OPPOSITE) The area beneath the 3rd Avenue Bridge becomes a gallery for local artists.

(OPPOSITE, BOTTOM RIGHT) A number of arts institutions surround the 3rd Avenue Bridge. The Bruckner Bar & Grill, directly across from the new gallery, is already a local hotspot for the artist community.

## THE CORNER OF LINCOLN AVENUE AND BRUCKNER BOULEVARD IS A HUB OF ARTS ACTIVITY.

The Clock Tower is one of the largest artist live-work buildings in the South Bronx and the Bruckner Bar and Grill is one the area's most vibrant restaurants. In addition to these two institutions there are several galleries, studios, and workshops in the vicinity of this intersection.

While there is a lot of art activity here, it is currently all indoors. A large underutilized outdoor space below the 3rd Avenue Bridge will be converted into an outdoor gallery just steps from the Bruckner Bar and Grill. The plaza is raised to sidewalk level, safely separating the pedestrian space from traffic, and giving needed definition to the travel lanes.

Brightly colored lights distinguish this from other galleries. Even though the plaza will host rotating

artwork, this lighting scheme will ensure that it is also an inviting space between shows. The pedestrian connection to the 3rd Avenue Bridge is at the very back of the plaza. The lighting fixtures make the under-bridge space safer to walk through, enhancing connections between Mott Haven and neighboring East Harlem in Manhattan.

Zooming out, Bruckner Boulevard provides a vital link across the South Bronx between the Harlem River Greenway and the South Bronx Greenway in Hunts Point. Already Bruckner Boulevard is associated with recreation. Pulaski Park and two bridges to Randall's Island draw Bronx residents along Bruckner Boulevard to these destinations. A bike lane and well designed streetscape the full length of the route would invite users of both greenways to cross the South Bronx and explore new neighborhoods.

(RIGHT) Bruckner Boulevard is a key connector between the Harlem River Greenway, terminating at Lincoln Avenue and the South Bronx Greenway in Hunts Point. The entrances to bridges to Manhattan and Randall's Island are off of Bruckner Boulevard. These key connections are circled in yellow along with boat launch locations.



(OPPOSITE) The ramp along 3rd Avenue creates space for vehicle parking below and a Gallery under the main section of the bridge.

# IMPLEMENTATION & TOOLS

**THE DESIGNS FOR EACH OF THE FOUR TRANSFORMATIONS ARE MEANT TO BE BUILT INCREMENTALLY OVER SEVERAL YEARS. BELOW IS A TRAJECTORY OF HOW THE PROPOSED ELEMENTS WOULD BE DEVELOPED OVER TIME.**

In many cases, projects forming the Harlem River Greenway are proposed to take place in conjunction with other developments. Recently constructed housing in the Melrose and Mott Haven neighborhoods are generating excitement about the future of the Bronx, and several additional projects will continue that positive momentum over the next few years. The High Bridge is set to open in 2013, a new middle school on Sedgwick Avenue is under construction, and the South Bronx Overall Economic Development Corporation has long term plans for parcels near the 3rd Avenue Bridge.

Pier 5 is the most immediately available site for investment. The proposals for this site

begin with pilot programs that are individually small investments. As additional funding for remediation becomes available these eco-puncture strategies can be scaled up to many sites along the riverfront.

High Bridge transformations are also possible in the immediate future, because the opening of the middle school and High Bridge reopening are approaching in the next couple years. The designs proposed in this report can be accomplished in the course of the construction of those projects.

Macombs Dam Bridge and Lincoln Avenue area transformations are on a slower trajectory. While there is less pressure and funding available to develop these projects at the moment, they are investments aimed at engaging the local community. In both cases, local artists should be engaged to develop final project designs and this process of bringing in local practitioners can begin now, even if funding for these projects does not follow for a couple years.



# BX

## BRONX, MEET YOUR WATERFRONT PLAN

### SEDGWICK AVENUE STREETScape IMPROVEMENTS

Increase safety and access to the Harlem River Greenway and the High Bridge along with the opening of the new High Bridge Middle School.

### PARK-IT PLACE

Create a waterfront destination for recreation and dining out of the Yankee Stadium parking lot.

### ADD WATER FEATURES & PUBLIC ACCESS

Open Pier 5 to the public with a spray park and summer events.

### LINCOLN AVE & BRUCKNER BLVD STREETScape

Improvements along Lincoln Avenue will connect the two parks and streetscaping along Bruckner Boulevard will connect to other park spaces in the Bronx.

### DEPOT PLACE PEDESTRIAN RAMP

Complete connection northward to future Harlem River Promenade and Roberto Clemente State Park.

### MACOMBS DAM BRIDGE UNDERPASS

Improve safety long-term by routing pedestrians and cyclists under the bridge.

### WETLAND PARK

When site acquisition becomes feasible, redevelop the Bronx Recycling Center property as a wetland park.

### 3RD AVENUE BRIDGE GALLERY

Ensure safe crossings under the 3rd Avenue Bridge by turning the empty space into a brightly lit gallery for local artists.

# IMPLEMENTATION: COMMUNITY PARTNERS

- PARTNERS CURRENTLY ACTIVE ON SITE
- POTENTIAL PARTNERS

|   | GOVERNMENT PARTNERS  | COMMUNITY PARTNERS   | BUSINESS PARTNERS  |
|---|--|--|--|
| <b>FINANCING PARTNERS</b>                             | <ul style="list-style-type: none"> <li>NYC Department of Transportation</li> <li>NYC Department of Public Works</li> <li>NYC Housing Authority</li> <li>Mayor's Fund to Advance New York City</li> <li>NYC Center for Economic Opportunity</li> <li>US Dept. of Housing &amp; Urban Development</li> </ul> | <ul style="list-style-type: none"> <li>Bronx Council on the Arts</li> <li>Mott Haven Herald</li> <li>South Bronx Overall Economic Development Corporation</li> </ul>   | <ul style="list-style-type: none"> <li>New York Post</li> <li>FedEx</li> <li>Harlem River Yard (Waste Transfer Station)</li> </ul>   |
| <b>ENVIRONMENTAL PARTNERS</b>                         | <ul style="list-style-type: none"> <li>EPA Urban Waters Federal Partnership</li> <li>Greener, Greater Communities</li> <li>NYC Environmental Protection</li> <li>New York State Energy Research &amp; Development Authority</li> </ul>   | <ul style="list-style-type: none"> <li>Friends of Brook Park</li> <li>Sustainable South Bronx</li> <li>Bronx River Alliance</li> <li>Wildlife Conservation Agency</li> <li>Bronx Council on Environmental Quality</li> </ul> | <ul style="list-style-type: none"> <li>New York City Waterworks</li> </ul>   |
| <b>EDUCATION &amp; WORKFORCE DEVELOPMENT PARTNERS</b> | <ul style="list-style-type: none"> <li>NYC Economic Development Corporation</li> <li>Workforce1</li> <li>NYC Department of Education &amp; Area Public Schools</li> <li>NYC Department of Youth &amp; Community Development</li> </ul>   | <ul style="list-style-type: none"> <li>Ghetto Film School</li> <li>Harlem River Rangers</li> <li>Highbridge Community Life Center</li> <li>Rocking the Boat</li> <li>The Bronx Defenders</li> </ul>                          | <ul style="list-style-type: none"> <li>Hostos Community College</li> <li>St. Jerome School</li> <li>Bronx Charter School for Children</li> <li>St. Pius V School</li> <li>St. Luke School</li> </ul> |
| <b>PROGRAMMING PARTNERS</b>                           | <ul style="list-style-type: none"> <li>NYC Department of Parks</li> </ul>  | <ul style="list-style-type: none"> <li>Bronx Culture Trolley</li> <li>LDR Studio Gallery</li> <li>Longwood Art Gallery at Hostos Community College</li> <li>Harlem River Working Group</li> <li>Pregones Theater</li> </ul>  | <ul style="list-style-type: none"> <li>Bruckner Bar College</li> </ul>   |



# TOOLS: FUNDING RESOURCES

Each of our proposals ties together multiple planning and design goals. This means that funding for these projects may be secured from a variety of places. Programs for green infrastructure, public space improvements, job creation, and public health may be viable funding sources for these projects. Listed here are a few suggestions of places to look for funding, as well as organizations that assist in the funding process.

## GREEN INFRASTRUCTURE

[New York City Environmental Protection:  
Stormwater Management Resources](http://www.nyc.gov/html/dep/html/watershed_protection/stormwater_management.shtml)  
www.nyc.gov/html/dep/html/watershed\_  
protection/stormwater\_management.shtml

[New York State Green Grants](http://www.nysefc.org/GreenGrants.aspx)  
www.nysefc.org/GreenGrants.aspx

[Syracuse University,  
Environmental Finance Center](http://efc.syracusecoe.org/EFC/images/allmedia/publications/funding_guide.pdf)  
efc.syracusecoe.org/EFC/images/allmedia/publi-  
cations/funding\_guide.pdf

[EPA: Managing Wet Weather  
with Green Infrastructure](http://www.epa.gov/npdes/pubs/gi_munichandbook_funding.pdf)  
www.epa.gov/npdes/pubs/gi\_munichandbook\_  
funding.pdf  
cfpub.epa.gov/npdes/greeninfrastructure/  
fundingopportunities.cfm

[EPA: Watershed Protection  
Federal Funding Sources](http://cfpub.epa.gov/fedfund/)  
(cfpub.epa.gov/fedfund/)

## DESIGN & PUBLIC SPACE

[The Design Trust for Public Space](http://www.designtrust.org/projects/projects.html)  
www.designtrust.org/projects/projects.html

[Project For Public Spaces:  
“Funding Sources for Greenway Projects”](http://www.pps.org/articles/funding-sources-for-greenway-projects)  
www.pps.org/articles/funding-sources-for-green-  
way-projects

[The Trust for Public Land](http://www.tpl.org)  
www.tpl.org

[National Endowment for the Arts:  
Our Town Grant](http://www.nea.gov/grants/apply/OurTown/index.html)  
www.nea.gov/grants/apply/OurTown/index.html

[Federal Highway Administration:  
Livability Initiative](http://www.fhwa.dot.gov/livability)  
www.fhwa.dot.gov/livability

## JOB CREATION & EDUCATION

[Green For All: “Understanding the Competitive  
Grants for Green Jobs Training”](http://www.greenforall.org/resources/reports-research/understanding-the-competitive-grants-for-green-jobs-training)  
www.greenforall.org/resources/reports-research/  
understanding-the-competitive-grants-for-green-  
jobs-training

[Wallace Foundation](http://www.wallacefoundation.org/knowledge-center/urban-parks)  
www.wallacefoundation.org/knowledge-center/  
urban-parks

[EPA: Environmental Education Grants](http://www.epa.gov/enviroed/grants.html)  
www.epa.gov/enviroed/grants.html

## HEALTH & COMMUNITY

[Partnership for Sustainable Communities:  
EPA, HUD, DOT](http://www.sustainablecommunities.gov)  
www.sustainablecommunities.gov

[City Parks Alliance](http://www.cityparksalliance.org)  
www.cityparksalliance.org

[Robert Wood Johnson Foundation](http://www.rwjf.org)  
www.rwjf.org