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New York State Assemblymember
Brian Kavanagh

New York State Department of State
Division of Coastal Resources

THE EAST RIVER BLUEWAY PLAN

March 2013

PREPARED FOR
Manhattan Borough President Scott M. Stringer
New York State Assemblymember Brian Kavanagh
New York State Department of State
Division of Coastal Resources

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KEY CONSULTING AGENCIES AND ORGANIZATIONS

Con Ed
Consolidated Edison Company of New York

DEC
NYS Department of Environmental Conservation

DCP
NYC Department of City Planning

DEP
NYC Department of Environmental Protection

DPR
NYC Department of Parks & Recreation

DOT
NYC Department of Transportation

EDC
NYC Economic Development Corporation

MWA
Metropolitan Waterfront Alliance

NYCHA
Tenant Associations
NYC Housing Authority

KEY TERMS AND ABBREVIATIONS

Biodiversity
The degree of variation of species and a measure of health of a ecosystem

Bioswale
Green infrastructure landscaping found predominantly alongside roadways

Brownfield
Abandoned or underused industrial and commercial facilities whose development is complicated by real or expected environmental contaminations

Bulkhead
A retaining wall or seawall to maintain coastal land or beach

CSO
Combined Sewer Overflow is the discharge of a sewer system which combines sanitary and stormwater sewers into bodies of water (rivers, canals, the ocean, etc.)

CSO Outfalls
Points where CSOs discharge

GI
Green Infrastructure, generally incorporating plants and soil in designs to capture stormwater runoff and/or reduce CSO discharges

Green roof
Vegetation covering the roof of a building, used primarily as green infrastructure, as well as to provide insulation and lessen the urban heat island effect

Greenway
A long, generally narrow piece of land, where a more natural environment is encouraged, which is managed for public recreation and slow travel

Hold the Line
Engineered strategies to protect existing coastal properties and infrastructure

Lido
Public outdoor swimming pool and surrounding facilities

Managed Retreat
Allowing the shoreline to overtake developed land, while relocating existing buildings and infrastructure

Raised Table
A speed hump with a flat section of several feet between the ramps on either end. This traffic calming measure is often used as a crosswalk, and is preferred option of emergency responders

Resilience
Design to minimize damage to structures from natural disasters such as flooding. This does not mean making structures impervious

Riprap
Rocks and other material used to protect shorelines against erosion

Wayfinding
An organized system of navigational guidance, preferably using coherent visible, audible, or tactile cues

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Rendering of bird's-eye view of proposed East River Blueway Plan from Stuyvesant Cove to Brooklyn Bridge

View of the East River Esplanade

FOREWORD

Dear Friends,

Welcome to the East River Blueway Plan, an ambitious new blueprint designed to re-imagine a stretch of Manhattan's precious waterfront—from the Brooklyn Bridge to East 38th Street—and also to protect our beloved city from rising water levels and the next great storm.

Ever since our offices undertook this project in 2010, our objective with the Blueway Plan was to open up this under-appreciated waterfront area, creating beachfront access, recreational activities, tree-lined walkways, and other amenities that would bring people closer to the water. But we also knew that we had to fortify this low-lying area against storms and flooding that are increasing dangers as the climate changes and river levels rise.

When Hurricane Sandy hit in October 2012, it confirmed our worst fears about the need to plan differently for the future. Now that the winds have died and the waters have receded, we must get down to the job of making our coastal communities more resilient through better infrastructure and ecological features that provide natural protection from flooding.

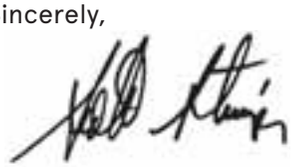
As you will see in the following pages, our plan calls for natural beaches and other recreational amenities along the shoreline, but also wetlands to catch and cleanse storm water runoff and provide buffers against waves and flooding. We propose a footbridge spanning the FDR Drive at East 14th Street that would not only improve pedestrian access, but also protect the Con Ed power station from future floodwaters.

We believe the Blueway Plan offers a model of community engagement and planning as New York now looks to revitalize storm-battered areas from Breezy Point and Coney Island to Red Hook and the devastated shores of Staten Island. Developed with Community Boards 3 and 6 and the Lower East Side Ecology Center as project partners, and more than 40 other community-based organizations and countless local residents who offered suggestions and feedback, this is a plan built by the community and for the community.

We want to say thank you to all those community participants, to our fellow elected officials who cosponsored the public workshops and whose support will be vital to realizing this vision, to the city and state agency representatives who offered their insights and technical expertise, and to our design team at W X Y architecture + urban design who worked with all of us to distill our many ideas and aspirations into the unified vision presented in this report.

The tremendous enthusiasm, creativity, and determination this community displayed during the planning process—and of course the way so many New Yorkers bravely weathered Hurricane Sandy—have convinced us more than ever that together we can build a stronger, more resilient city.

Sincerely,



Scott M. Stringer
Manhattan Borough President

Brian Kavanagh
New York State Assemblymember

Rendered view of proposed saltwater marsh, fishing piers and planted areas by the FDR Drive downspouts in the South Street Waterfront Area

Manhattan Borough President Scott M. Stringer, Assemblymember Brian Kavanagh, NYS Department of State Division of Coastal Resources

EXECUTIVE SUMMARY

The East River Blueway Plan (Blueway Plan) is a community-based waterfront initiative that establishes a planning and urban design framework for Manhattan's East River waterfront, from the Brooklyn Bridge to East 38th Street. This study aims to establish a unified and sustainable vision for a stretch of waterfront with the potential to provide new recreational and educational opportunities, while improving storm resiliency.

The study, funded by the New York State Department of State Division of Coastal Resources, was commissioned by Manhattan Borough President Scott M. Stringer and New York State Assemblymember Brian Kavanagh, in collaboration with Manhattan Community Board 3, Manhattan Community Board 6, and the Lower East Side Ecology Center.

The East River, once one of the most polluted waterways in New York City, has been transformed in recent decades following the decline of industrial uses along the waterfront and environmental legislation of the 1970s. A river that was once intolerable is now a sought-after spot for millions of New Yorkers who are eager for green space and who seek respite by the water's edge. Similar transformations have taken place in cities and towns across the country, leading to the development of "blueways." These blueways are holistically designed parks and open spaces that integrate waterfronts into the life of a city.

With new waterfront development throughout New York City—from the Bronx River and Long Island City to Red Hook, Saint George, and Hudson River Park—New Yorkers are now starting to swim, fish and boat in and around their surrounding waters. Even the waterfront north of the Blueway study area, from East 38th to East 60th Street, should be getting an esplanade following legislation authored by Assemblymember Kavanagh. The waterfront is at last being reincorporated into the lives of New Yorkers.

However, the East River waterfront from the Brooklyn Bridge to East 38th Street has not received the same kind of attention. Some challenges along this four-mile stretch of the waterfront include: fragmented uses, the foreboding barrier of the FDR Drive, and the oversight of multiple city and state agencies.

As a result, a clear and comprehensive plan for this precious waterfront land is needed; a plan that should take into account the needs of the surrounding communities and respond to the challenges of extreme weather events and gradual sea level rise. As Hurricane Sandy underscored, developing such a plan is no longer just a matter of improving public access and beautifying the riverfront, it is an urgent matter of public safety with implications for the entire city.

Indeed, even as New Yorkers begin to enjoy their waterfront, the city is facing the new paradigm of climate change and a growing awareness of the need for environmental stewardship. The unprecedented impact of Hurricane Sandy has reinforced the need to strengthen and protect our shoreline, critical infrastructure, and neighborhoods.

The East River Blueway Plan is a model for resiliency because it provides a vision of an accessible and dynamic waterfront that also addresses the urgency of climate change and its effects.

Bird's-eye view of the East River along South Street

View of Waterside Plaza from East River Park

Moreover, the Blueway Plan is a model for civic engagement as the local community played a central role in shaping the vision. The East River Blueway Plan represents more than a year of public consultations with suggestions and feedback gathered from dozens of stakeholder meetings, several public workshops, surveys, and an interactive website.

This study also considered the many policy developments, master planning initiatives, and recently completed public and private plans that have and will shape this section of the East River waterfront in the years to come. "Vision 2020," published by the New York City Department of City Planning (DCP) in 2011, is a principal policy document that has provided a foundation for the Blueway Plan. The Blueway Plan seeks to provide a design vision and more specific detail to the guidance provided in Vision 2020. The New York City Economic Development Corporation's (EDC) "Transforming the East River Waterfront" and the New York City Department of Parks and Recreation's construction at Pier 42 are examples of work underway that shaped the Blueway Plan approach and will have an immediate impact on the East River waterfront.

BLUEWAY PLAN GOALS

Through consideration of these plans and an extensive public consultation process, the following four goals were developed for the Blueway Plan:

- **Engaging the River**
  Identify and design key points and down-to-the-water sites to engage with the East River from the water and from the shore
- **Planning for Resilient Neighborhoods**
  Create a long-term, sustainable vision that takes into account climate change, stormwater management, technological developments, and evolving transportation trends
- **Improving Community Access**
  Propose improvements to a series of access routes linking East Side communities to the redesigned East River waterfront
- **Creating Waterfront Continuity**
  Establish a network of waterfront sites connected by continuous bikeways and waterfront esplanades with improved access to public transportation

Implementation of the Blueway Plan will require prioritizing capital projects, identifying a range of capital funding sources, and outlining a strategy for project initiation. The Blueway Plan's implementation must address both community needs and environmental resiliency, with funding for flood protection as well as improvements in accessibility and recreational amenities.

BLUEWAY PLAN PRIORITY PROJECTS

The concept design highlights six priority projects and a range of advocacy efforts that will lay the groundwork for the East River Blueway Plan. The report does not prioritize within the six projects as each project will require multiple agency approval and the identification of funding sources. Each project could proceed simultaneously or in phases based on relevant input from stakeholders, agencies and elected officials.
The six priority projects are:

The Blueway Crossing and Flood Barrier p.56

The Blueway Crossing and Flood Barrier addresses the "pinch point" along the East River Esplanade, where cyclists and pedestrians are squeezed onto a dangerously narrow path, by creating a crossing that extends over the FDR Drive to allow for a continuous esplanade. The ramps connect the neighborhoods north and south of East 14th Street and also act as critical flood infrastructure to help protect the Con Ed power station.

Brooklyn Bridge Beach p.34

At the southern end of the Blueway, the Brooklyn Bridge Beach project establishes public access to a natural beach beneath the historic bridge. The beach creates a spectacular viewing area, with terraced seating. Kayaks can launch from here to explore surrounding waters and a concession stand on the esplanade provides oversight of the area.

Corlears Hook Park Landscape Bridge p.46

Corlears Hook Bridge is a planted bridge that seamlessly brings together two parks —the Corlears Hook Park and the East River Park—and provides visitors with the experience of remaining within the park as they cross the bridge. With the amphitheatre on axis with the new bridge, this connection creates a dynamic gateway into East River Park.

Esplanade Freshwater Wetlands p.38

Further north, where the FDR Drive viaduct overhangs the river (from Robert F. Wagner Sr. Place to Market Slip), freshwater wetlands are built out from the esplanade bulkhead to catch and cleanse stormwater runoff from the FDR Drive which currently discharges directly into the river. The freshwater wetlands project would provide greenery along a section of the esplanade that currently has no plantings. If implemented in conjunction with educational signage, the wetlands would also provide a unique educational experience, demonstrating how run-off from the FDR Drive can be captured and naturally treated before entering the East River.

Stuyvesant Cove Boat Launch p.66

The Stuyvesant Cove Boat Launch is a floating dock adjacent to Solar One: New York City's only all-native species park and first stand-alone solar-powered building. Designed to be the first phase of a Solar Two pier, the dock is engineered to rise and fall with the tide. The boat launch will provide opportunities for New Yorkers to explore the river with kayaks, canoes, and other human-powered craft, in a portion of the river that is largely protected from tidal currents. By placing a dock at this location, the Manhattan side of the East River will connect to water trails within the New York Harbor.

Manhattan Borough President Scott M. Stringer, Assemblymember Brian Kavanagh, NYS Department of State Division of Coastal Resources

Skyport Garage Rooftop Activation p.70

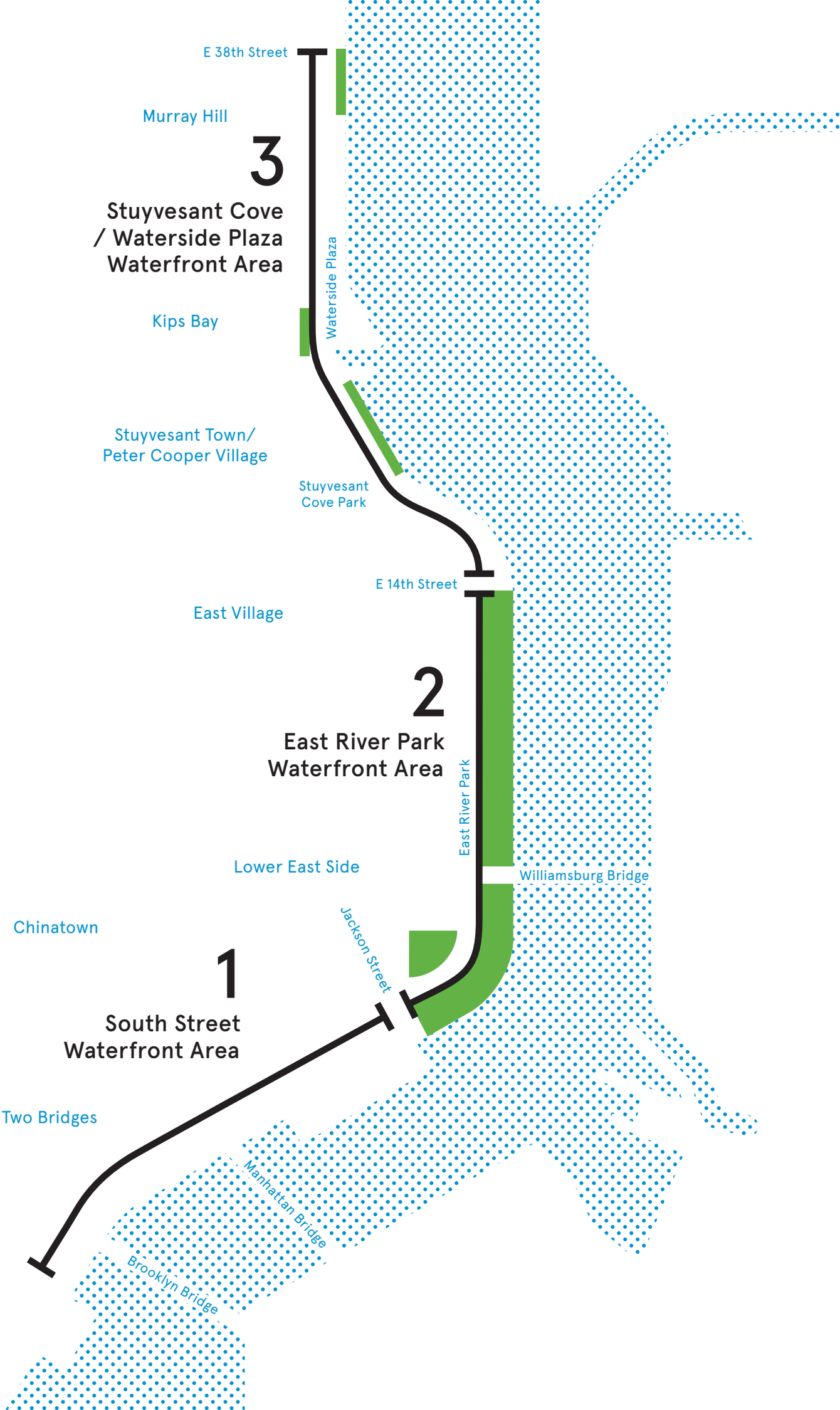
The Blueway Plan proposes to transform the roof of the Skyport Garage, located at East 23rd Street, into a garden with space for food vendors. The revenue generated by these vendors can help fund maintenance of Stuyvesant Cove. The Blueway Plan preserves the majority of the existing structure and parking capacity, but requires the re-cladding of the southern facade with a public stairway to access the roof.

BLUEWAY PLAN ADVOCACY EFFORTS

In addition to the priority projects, the Blueway Plan sets out a number of advocacy efforts that will underpin the vision and provide significant improvements to accessibility and the environment. These changes can be achieved by advocating for their implementation with various New York City and New York State agencies.

- **Crossings and Connections**
  The FDR Drive determines the nature of accessibility to the East River waterfront. On South Street and service roads beneath the FDR Drive viaduct, additional road crossings and calming methods are recommended, including new traffic lights, bulb-outs, crosswalks, and rumble strips. New and improved pedestrian bridges spanning the FDR Drive into East River Park offer new gateways to the waterfront that are ADA-compliant and can house park amenities. Proposed upland bicycle routes tie the East River Greenway into the larger city bike path network. Finally, the Blueway Plan includes signage that directs people to the waterfront and provides information about the waterfront's history and biodiversity.
- **Green Infrastructure**
  The upland connections to the waterfront are prime opportunities for bioswales that can help manage stormwater. Capturing rainwater before it gets into the combined sewer system is critical in preventing combined sewer overflow (CSO) events that result in sewage dumping into the East River. The Blueway Plan highlights other opportunities, such as storing stormwater underneath ballfields and capturing stormwater discharged from the FDR Drive downspouts.
- **Environmental Improvements**
  The Blueway Plan includes continuous lines of trees that improve water and air quality while shielding park-goers from noise and sun. This approach re-imagines Robert Moses' original design for the FDR Drive (then East River Boulevard), which included continuous lines of trees on both sides of the road. The Blueway Plan also provides for a number of other streetscape improvements, such as widened sidewalks on South Street and additional lighting underneath the FDR Drive viaduct.

Key to successful implementation of the Blueway Plan is effective coordination between New York City and New York State agencies. Currently, oversight and maintenance of the East River waterfront is fragmented among several agencies and, in the case of Stuyvesant Cove Park, a not-for-profit group. The case for a continuous Blueway requires organizational coherence. To that end, the creation of a single entity that can coordinate maintenance, management and development of the waterfront should be considered.



Manhattan Borough President Scott M. Stringer, Assemblymember Brian Kavanagh, NYS Department of State Division of Coastal Resources

INTRODUCTION

The East River Blueway Plan (Blueway Plan) is an effort commissioned by Manhattan Borough President Scott M. Stringer and New York State Assemblymember Brian Kavanagh, with Manhattan Community Board 3, Manhattan Community Board 6, and the Lower East Side Ecology Center, with funding from the New York State Department of State Division of Coastal Resources. The Blueway Plan aims to create a unified and sustainable vision for a stretch of waterfront with the potential to provide new recreational and educational uses, while improving storm resiliency. The project partners commissioned the WXY architecture + urban design team to develop a design and planning framework that achieves the following goals:

- **Engaging the River**
  Identify and design key points and down-to-the-water sites to engage with the East River from the water and from the shore
- **Planning for Resilient Neighborhoods**
  Create a long-term, sustainable vision that takes into account climate change, stormwater management, technological developments, and evolving transportation trends
- **Improving Community Access**
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The Blueway Plan includes concept designs and guidelines for priority projects as well as key areas to focus advocacy efforts. The Blueway Plan brings together the endeavors of many elected officials, city agencies, institutions, stakeholder groups, and community residents in order to guide future funding efforts.

The Blueway waterfront, extending from the Brooklyn Bridge to East 38th Street, includes the eastern confines of Manhattan Community Board 3 and the southern portion of Manhattan Community Board 6. In order to structure engagement with the local community and to manage the analysis and design of such a large area, the Blueway study area has been divided into three areas:

1 **South Street Waterfront Area,** which extends from the Brooklyn Bridge overpass to Jackson Street
2 **East River Park Waterfront Area,** which encompasses the area of East River Park from Jackson Street to East 14th Street
3 **Stuyvesant Cove / Waterside Plaza Waterfront Area,** which extends from the north end of East River Park to the north end of Glick Park at East 38th Street

Each area has unique site conditions that prevent residents from accessing the waterfront, and the Blueway Plan proposes specific recommendations for each access point in need of improvement. The Blueway Plan examines these opportunities to determine how the redesign can meet multiple goals.

Workshop table from one of six community meetings

Pages from the East River Blueway Plan's website (www.eastriverblueway.org)

Solutions within these areas were developed after considerable deliberation and consultation with the community. The WXY team developed analysis and designs over the course of a 14–month-long process starting in November 2011. The study's three phases were:

- **Existing Conditions,** which examined environmental, social and economic conditions along the waterfront and adjacent neighborhoods, including an historical overview of the waterfront
- **Blueway Plan,** which identified the goals of the study and analyzed the opportunity sites for waterfront improvements
- **Blueway Concept Design,** which expanded on the Blueway Plan and presented the design vision for the East River waterfront

Each phase included extensive stakeholder engagement and public consultation, including six public meetings and four Project Advisory Committee (PAC) presentations. In addition, special one-on-one and small group meetings were set up for key city agencies, such as New York City Department of Transportation (DOT), New York City Department of Parks and Recreation (DPR), and the New York City Economic Development Corporation (EDC). Attendees at the public meetings and PAC presentations included elected representatives, representatives from city agencies, neighborhood residents, representatives of more than 20 local tenants associations and community groups, more than 10 city-wide environmental, transportation and waterfront stakeholder groups, and institutions such as hospitals and utility companies.

To assess community priorities and to encourage ongoing participation with citizens and stakeholders throughout the entire planning and design process, the Blueway Plan used a number of additional methods to gather opinions and solicit feedback. These included one-on-one interviews with stakeholders, questionnaires, and a Blueway website that includes an interactive mapping system to gather information about the study area.

The website (www.eastriverblueway.org) has been used to provide information about the Blueway Plan through video interviews and relevant articles, to post progress reports, and to announce upcoming events. In concert with the website, the East River Blueway Plan used a number of social media platforms, such as Twitter, Facebook and Instagram, to boost community awareness of and participation in the planning process.

The Blueway Plan takes into account the concerns, insights, and aspirations the community has for the East River waterfront. These are incorporated in the following sections:

- **Blueway Waterfront Areas,** which places the waterfront neighborhoods into an historical context while describing current diversity of the study area
- **Protecting the Waterfront,** which sets out how the Blueway Plan can begin to address extreme weather events, sea level rise and climate change
- **Blueway Design,** which describes the design and planning framework for the Blueway study area
- **Blueprint for the Blueway,** which considers the implementation of the Blueway Plan
- **Appendix,** which provides additional information such as groups who participated in the public workshops

Map of the Lower East Side, 1776

East River swimming pool house, 1870

Lillian Wald and Jacob Riis NYCHA housing along East River Park, 1949

BLUEWAY WATERFRONT AREAS

A common concern among residents and stakeholders is access to activities at the river's edge. This concern speaks to the physical challenges of creating a dynamic waterfront along this stretch of the East River. The range of ideas gathered—from fishing areas and swimming beaches, to kayak launches and environmental education areas—is indicative of the diversity of populations in these neighborhoods, yet are all towards a common goal. In order to create a plan that values these diverse ideas while respecting the physical challenges, it is necessary to understand how we arrived at the waterfront we know today.

HISTORY OF WATERFRONT DEVELOPMENT

The physical landscape along the four-mile length of the Blueway study area has undergone dramatic change over the last several centuries.

The East River waterfront was once a soft natural edge with large stretches of saltwater marshes teeming with animal and plant life. However, as far back as the 1820s, the protected shoreline of the East River transformed as a hub for the fast-growing shipbuilding industry.

Gradually, manufacturing and tenement housing pushed the shipping industry and its auxiliary activities further out in the New York City harbor. By the early 20th century, factories and railroad yards were positioned along the riverfront, right alongside recreational sites for residents of Lower Manhattan, who came to swim in the river and to enjoy the riverside bathhouses.

From the late 1800s to the early 1900s, several bathhouses and river pools fed directly by river water operated throughout Manhattan. Eventually, concerns over river pollution led to the decommissioning of the floating baths in the 1930s and the discouragement of swimming in the river.

In addition, the government began to address dangerous and long-standing conditions in overcrowded tenements throughout the city and in particular, the Lower East Side. As a result of a wave of "urban renewal" programs, the middle of the 20th century brought a near-total reconstruction of the Blueway study area.

The urgent social demands for affordable housing, Robert Moses' obsession with transforming waterfront areas into multi-lane highways, and the desire for institutional uses in the area resulted in a series of major projects. These included the construction of large-scale housing developments across the east side of Manhattan below 28th Street; the creation of East River Park and the East River Boulevard (to be renamed the FDR Drive); the development of the United Nations International School; and the continued expansion of the medical centers in the area.

Bird's-eye view of the South Street Waterfront Area

Bird's-eye view of the East River Park Waterfront Area

Bird's-eye view of the Stuyvesant Cove / Waterside Plaza Waterfront Area

IMPACTS OF HISTORIC DEVELOPMENT

The changes of the 20th century made the East River waterfront increasingly inaccessible. The combination of major housing developments, institutions, and infrastructure erased the Manhattan street grid that had once connected people directly to the river. Most notably, the construction of the FDR Drive made access to the river dependent on its entrance and exit ramps.

In addition, the slips and shipping piers that once underpinned a dynamic working waterfront on the East River were replaced by a hard bulkhead and pile foundations. As a result, few easy opportunities exist for actually getting down to the river.

And yet demand from the current neighborhoods to use the waterfront is tremendous.

The South Street Waterfront Area today remains culturally dynamic. Within the Blueway Plan site area, it has the highest percentage both of people under 18 and over 65 years of age. As a result, concerns about access and activities vary tremendously within the area. The younger population has expressed a significant desire for educational and recreational activities, while the older population has vocalized a need for improved access and enhancements such as lighting and shading.

The East River Park Waterfront Area is defined by a combination of public housing and private co-ops by the park and the historic tenements of the East Village further upland. The residents in this area have placed a high priority on quality access to the park and the waterfront.

The Stuyvesant Cove / Waterside Plaza Waterfront Area combines a residential neighborhood with large and expanding hospitals. As a result, the demands for waterfront access here are not just from residents but also from people working in the area. Moreover, the new reliance on ferries has meant that many people now arrive from the water at East 34th Street and require safe street crossings and transportation connections to get to their final destinations.

The rebirth of activity along the East River and the desire for waterfront access provides the community with a profound and historic opportunity to create a vision for the varying needs of these three areas. In creating this plan, community voices and aspirations were the driving force behind a dynamic design process, not just an afterthought to larger urban demands of the day.

"I was born about three blocks from the East River on James Street. The impression we had of the East River growing up was that it was a pretty daring place to go, forbidding. But we also knew that the older guys used to go swimming in the East River. And it wasn't considered so dangerous then. But my generation just avoided it."

Victor Papa, President and Director of Two Bridges Neighborhood Council

"Whether it's a hurricane or rising sea water, as an island, we have to constantly maintain an eye out to the sea. I am very respectful of the water. I think the softening of the edges is crucial. If we had maintained the eco-system well, there might not be the kind of massive erosion caused by storms. We need to go from hard edges to soft edges."

Wellington Chen, Executive Director of Chinatown Partnership

"After being familiar with the parks on the Upper West Side and Chelsea, my impression of the East River Park [is that it] offered only sports. There [are] no programs that would include Youth or Seniors. True, there is the [amphitheatre] —however I have not seen any ongoing programs or events promoted since I have lived in the area—more than ten years... The park is a wonderful place that could offer many projects of culture, education and quiet places to creatively work."

Luther T. Stubblefield, Member of GOLES / member of (and former Vice President of) Baruch Houses Tenant Association

"Because of the FDR Highway it's difficult to get to the river in some spots. Not to mention, the closest subway is eight blocks from the river. Access, that's what I'd like to see change. That's what we try to do with our fishing clinic. I'm teaching people how to fish and teaching them about the ecology of the river, but just getting them there is a great way to make people care about the river, and seeing it as a resource..."

Dan Tainow, Educational Director of the Lower East Side Ecology Center

"I feel the biggest need for the river is to somehow figure out how to improve the combined sewer overflows, the CSOs, because with just a small half inch of rain, the waste from housing, from bathrooms, combines with rainwater and it all flows right out into the East River. And the capacity is not there. The holding areas can't hold it all. So if that could be improved through green streets, through better infrastructure, that's the main idea I'd like to see."

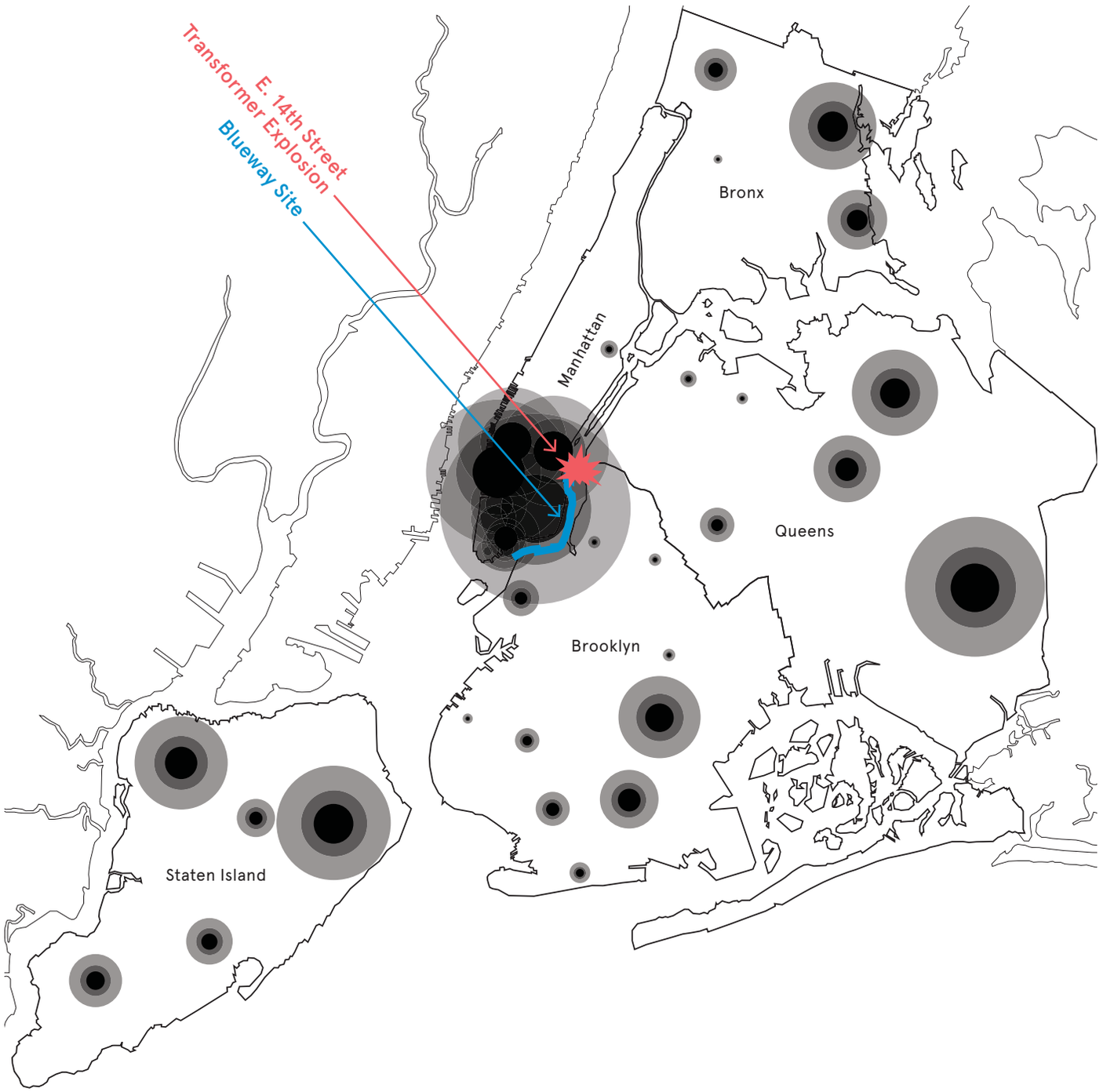
Joy Garland, Executive Director Emerita of the Stuyvesant Cove Park Association

"You can see the whole history of New York unfold along the East River. There are still places where it's very natural, you see the industrial past, the working waterfront, a lot of infrastructure, the roads, the highways, the sewage treatment plants, you see a lot of old and new residential development, and then you see so much of New York's recreational infrastructure like Brooklyn Bridge Park across the way, East River Park, and Stuyvesant Cove Park. So it's really the focal point for New York. You have Queens, Manhattan, and Brooklyn all right there."

Max Joel, Director of the Energy Connections Program at Solar One

Locations and Severities of Power Outages in New York City after Hurricane Sandy

Source: The New York Times, October 31, 2012



PROTECTING THE WATERFRONT

Hurricane Sandy was a devastating blow to New York City. The storm crippled our transportation system, directly caused 46 deaths in the city, and left New York with economic losses estimated at $18 billion. The record storm surge of nearly 14 feet swamped subways and tunnels and extended well beyond the 100-year flood plain.

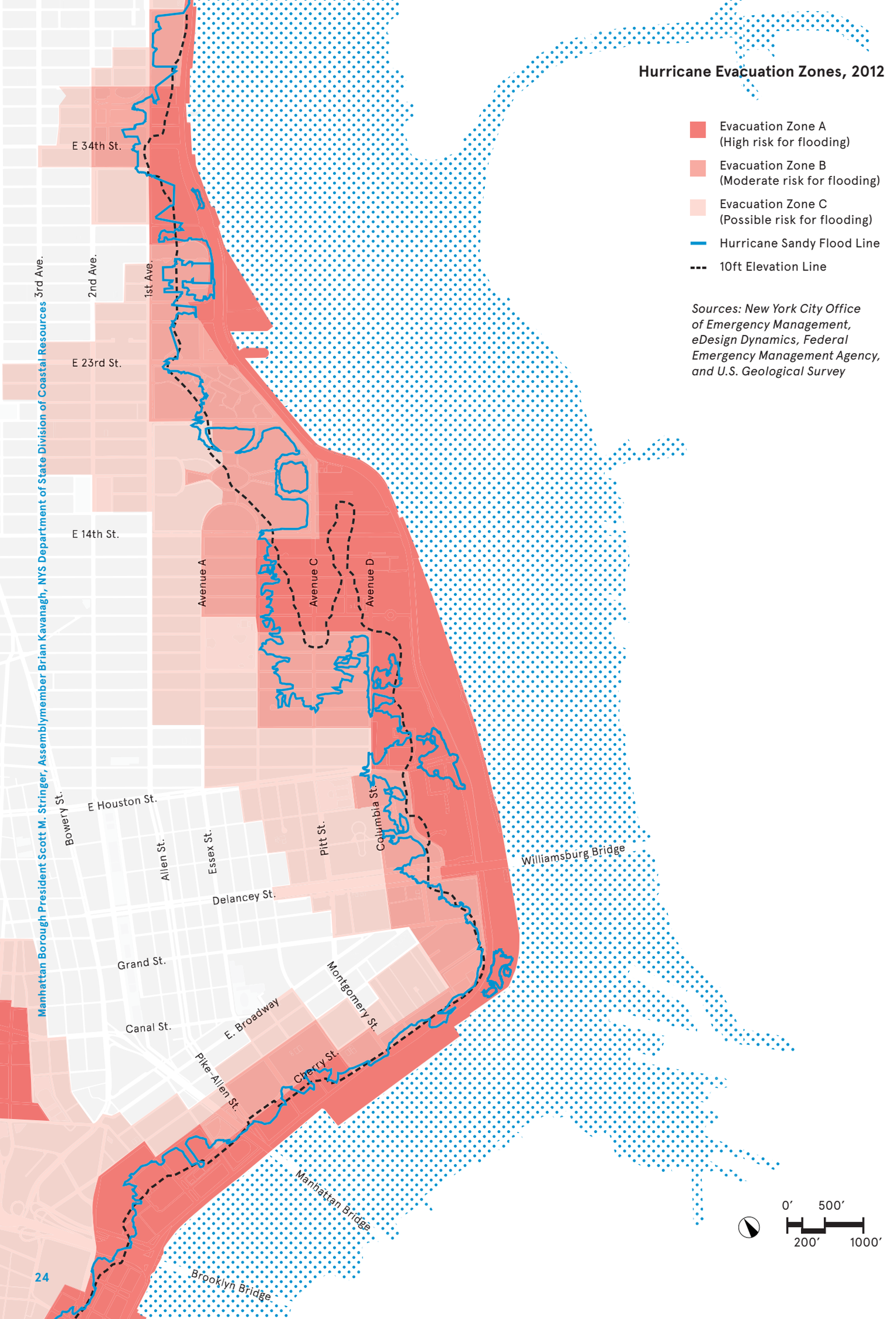
Hurricane Sandy was also a wake-up call. The storm exposed the urgent need to implement a comprehensive plan to protect the city from sea level rise and future storm events related to the effects of climate change. Climate scientists predict an increase in the frequency of extreme storm events, particularly hurricanes, for the North American Atlantic Coast, along with a rise in sea level by as much as two feet by the end of the 21st century. This section of the report addresses how the Blueway study area should be considered as part of a regional plan for storm surge protection. The Blueway Plan can become a model for more resilient and livable waterfront communities.

Cities must consider both regional and local scales when confronting the prospect of flooding and storm surges. Regional actions are those located further out in the harbor than the immediate East River Blueway area. This includes flood defense systems such as the Delta Works in Rotterdam, Netherlands, a series of tidegates and levees that protect the low-lying city.

Whether New York City should pursue the construction of a large-scale flood barrier is a decision to be made by state, city and federal officials following additional debate and study. Such a large study is outside the scope of this plan; however, given the expected increase in frequency of these events, a regional plan should be undertaken immediately. Regardless of what regional storm surge protection systems are ultimately pursued, they need to be coupled with secondary flood proofing systems at regional and local scales. The rationale behind these investments is to both protect critical infrastructure and vulnerable high-density housing, and to mitigate frequent weather events that cause stormwater management issues.

The Blueway site, which lies within the highest risk hurricane evacuation zone (Zone A) and the 100-year flood plain, contains a significant number of critical infrastructure sites. These include the Con Ed power station, Bellevue Hospital and NYU Medical Center, and public and private housing developments. During Sandy, the Con Ed facility at East 14th Street experienced an explosion that left much of Lower Manhattan in the dark. Patients at both Bellevue Hospital and NYU Medical Center had to be evacuated due to power outages caused by flooding. Nearby public and private housing residents, many of them elderly, were stranded in high-rise buildings in the dark with no water, power or heat for days.

Clearly, this stretch of waterfront must be further fortified as a matter of public safety, and to protect vital infrastructure from the next great storm surge. The Blueway Plan presents a framework for integrating local approaches with neighborhood recreational and access needs. It also takes the view that flood prevention measures must be multi-purpose and multi-dimensional.



Manhattan Borough President Scott M. Stringer, Assemblymember Brian Kavanagh, NYS Department of State Division of Coastal Resources

Flooding at Stuyvesant Cove after Hurricane Irene

Flooding on the FDR Drive after Hurricane Sandy

The Blueway Plan combines resilience and livability through several design concepts that will be explored in the next section of the report. Although some experts have called for a "managed retreat" that removes buildings near the waterfront in order to create an intermediate zone of saltwater marsh, dunes, and other coastal habitat, this approach is not viable in Lower Manhattan given the density of buildings and existing infrastructure along the water. Instead, the Blueway Plan proposes strategies along the water's edge, including the construction of saltwater marshes outward from the East River bulkhead adjacent to the South Street Waterfront Area and adjacent to Stuyvesant Town. This wetland construction, which could be integrated with a system of seawalls, can help dissipate wave energy from storm surges as well as reduce the amount of bulkhead, resulting in greater biodiversity and habitat in the East River. The Blueway Plan highlights a conceptual design for the constructed marsh. The size and precise location would need to be considered in relation to emerging plans for other natural and artificial systems throughout the harbor.

The Blueway Plan also proposes that critical infrastructure, such as the Con Ed power station, be better protected from flooding. At East 14th Street, the Blueway Plan envisions a new pedestrian bridge crossing the FDR Drive to connect the neighborhoods and parks north and south of the Con Ed facility, simultaneously providing a long flood barrier to protect the power station. This multi-use approach highlights how storm surge protection can also facilitate social needs by greatly improving pedestrian access and flow at what is now the narrowest pedestrian path or "pinch point" in the study area.

Finally, the Blueway Plan proposes a layer of secondary protection through the construction of plentiful green infrastructure upland from the waterfront. Building bioswales and green roofs will improve the East River's water quality by reducing CSO events that release raw sewage into the river during heavy rainfalls.

The Blueway's embrace of green infrastructure will soften the hard edge between the East River and Manhattan, providing both a glimpse of what Manhattan was like 400 years ago and a new sense of what a 21st century urban waterfront can be: accessible, enjoyable, resilient, and diverse in natural and constructed features. While many of these projects would require significant funding and consultation with local, state, and federal regulators, they are feasible with current technology.

Hurricane Sandy wreaked havoc on New York, but it also gives the city an opportunity to address climate change and rising sea levels in a thoughtful, holistic way. The Blueway Plan is a blueprint for integrated waterfront planning that protects the city's waterfront neighborhoods, while allowing New Yorkers to enjoy nature's beauty.


Map of Storm Protection Strategies
Hurricane Sandy Flood Line
Proposed Green Infrastructure
Flooding Barrier Line
Salt marsh for wave attenuation
Sources: eDesign Dynamics, Federal Emergency Management Agency, and WXY architecture + urban design
E 34th St.
E 23rd St.
E 14th St.
E Houston St.
Delancey St.
Grand St.
Canal St.
3rd Ave.
2nd Ave.
1st Ave.
Avenue A
Avenue C
Avenue D
Bowery St.
Allen St.
Essex St.
Pitt St.
Columbia St.
Montgomery St.
E. Broadway
Cherry St.
Pike-Allen St.
Williamsburg Bridge
Manhattan Bridge
Brooklyn Bridge
0′
500′
200′
1000′
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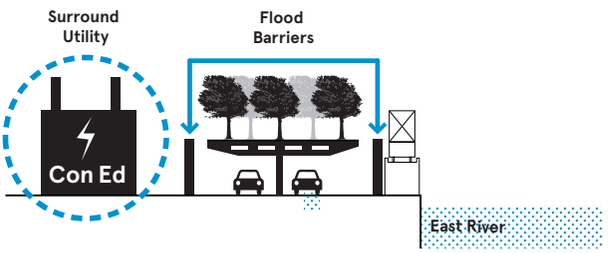
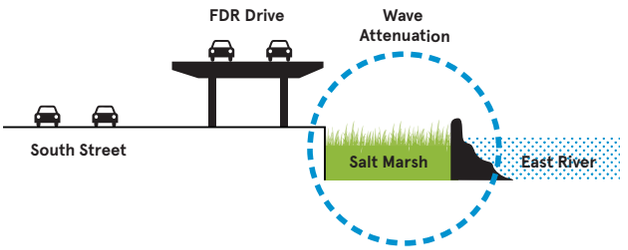
The Blueway Plan Storm Protection Strategies

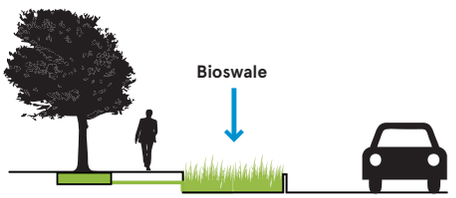
- Critical infrastructure flood protection



- Salt marsh for wave attenuation



- Green infrastructure for common events



Conceptual design of a sea barrier in the Verrazano Narrows by ARCADIS, 2012

The Blueway consultant team engaged with the Dutch engineering firm ARCADIS which has been responsible for flood planning in the Netherlands and in post-Katrina New Orleans. The New Orleans system was successfully tested in the fall of 2012 by Hurricane Isaac, when the floodwalls held despite storm surge levels that were only slightly lower than those experienced during Katrina. At a 2010 workshop, ARCADIS and other firms proposed a flood barrier in the Verrazano Narrows (see image above) as one option for addressing New York City storm surges.

Delta Works in Rotterdam, The Netherlands

There are several examples of large-scale "holding the line" projects such as MOSE in Venice, Italy and Deltaworks in Rotterdam, The Netherlands. In each of these low-lying cities, a series of levees and tide gates were installed to keep storm surges and higher than normal tides from inundating cities and developments. A study has also been performed by the SUNY Marine Science Resources center for the New York Metropolitan Area exploring the effectiveness of a specific layout of tide gates located at three strategic points around New York Harbor and The Long Island Sound.

BLUEWAY DESIGN

The Blueway Design section of the report lays out a vision for each of the three identified waterfront areas: the South Street Waterfront Area, the East River Park Waterfront Area, and the Stuyvesant Cove / Waterside Plaza Waterfront Area. This section sets out distinct design proposals to move forward the key principles established by the NYC Department of City Planning's Vision 2020 document to guide the activation of the city's waterfront.

The following pages describe the design and advocacy efforts that the Blueway Plan proposes based on the project's four goals:

- **Engaging the River**
  Identify and design key points and down-to-the-water sites to engage with the East River from the water and from the shore
- **Planning for Resilient Neighborhoods**
  Create a long-term, sustainable vision that takes into account climate change, stormwater management, technological developments, and evolving transportation trends
- **Improving Community Access**
  Propose improvements to a series of access routes linking East Side communities to the redesigned East River waterfront
- **Creating Waterfront Continuity**
  Establish a network of waterfront sites connected by continuous bikeways and waterfront esplanades with improved access to public transportation

In addition to proposing specific capital projects, the Blueway Plan addresses shared challenges that unify the community vision for this section of the East River. Primary among these are: building a truly continuous, publicly accessible, and attractive waterfront esplanade and bikeway; addressing green infrastructure (GI) and landscaping; and improving pathways to the waterfront and wayfinding systems. To meet the goals of creating access, design solutions are needed to reconnect paths and enable activities to better coexist along the waterfront throughout the Blueway Plan study area. The Blueway Plan proposes a variety of design solutions to the physical and perceived barriers experienced by residents and visitors that were identified in the community workshops. In addition, the Blueway Plan's design solutions include incremental improvements that would ease overall congestion and improve the quality of public space up and down the East River for those people on foot or on bicycle.

Community members showed overwhelming support for initiatives that would address climate change, as well as for initiatives that would increase public awareness of the East River's

Historical flood markers in White's Ferry, Maryland

Rendering of wayfinding signage highlighting the flood line of Hurricane Sandy

water quality. For this site, designing a sustainable landscape includes the following tactics:

- Restoration of significant bird habitats, including the former tree-lined East River Boulevard along the FDR Drive and increasing the tree canopy at locations all along the waterfront esplanade
- Implementation of green infrastructure by creating rain gardens on upland sites
- Softening of the water's edge by constructing freshwater wetlands, salt marshes, and riprap edges in order to increase aquatic habitat and minimize wave and water impacts

Resiliency strategies often have multiple impacts. Landscape initiatives contribute to environmental benefits that will in the long term help reduce the heat island effect, and in the short term improve air quality and attenuate automobile and urban noise. Additional shade and seating areas also have positive social impacts on the health and well-being of neighborhood residents. Softened edges, riverfront, and riprap increase the potential for recreational uses.

The inclusive planning process demonstrated community interest in embedding place-specific knowledge in the public space and in creating waterfront continuity. Information about environmental conditions could be shared through art, lighting and new approaches to information signage. The Blueway signage should work on three levels, including:

- Wayfinding signage, which helps guide people to the waterfront and specific access points
- Continuity signage, which creates a consistent identity for the Blueway along the waterfront and helps orient people using maps that show the extent of the Blueway, specific destinations, and important markers
- Interpretive signage, which raises awareness about the area's history and environmental issues

Illustrated above are examples of signage elements that could be integrated into paving and sidewalk edges.

The following subsections of the Blueway Design provide a combination of recommended approaches, such as street crossing improvements and green infrastructure insertions, and specific design proposals that have been developed to create a dynamic and coherent vision across a long stretch of waterfront that has been previously addressed in a piecemeal fashion. The vision for each of the three waterfront areas utilize the four Blueway goals to structure the description of proposed projects and guidelines.

1

South Street Waterfront Area

The South Street Waterfront Area extends from the Brooklyn Bridge to Jackson Street. It is the southernmost of the three areas within the study, dominated by at-grade and overhead roadways and bridges running alongside the East River waterfront. Key urban design features of the South Street Waterfront Area are the Brooklyn Bridge Beach, and the new East River Waterfront Esplanade including Piers 35 and 42. Plans for Pier

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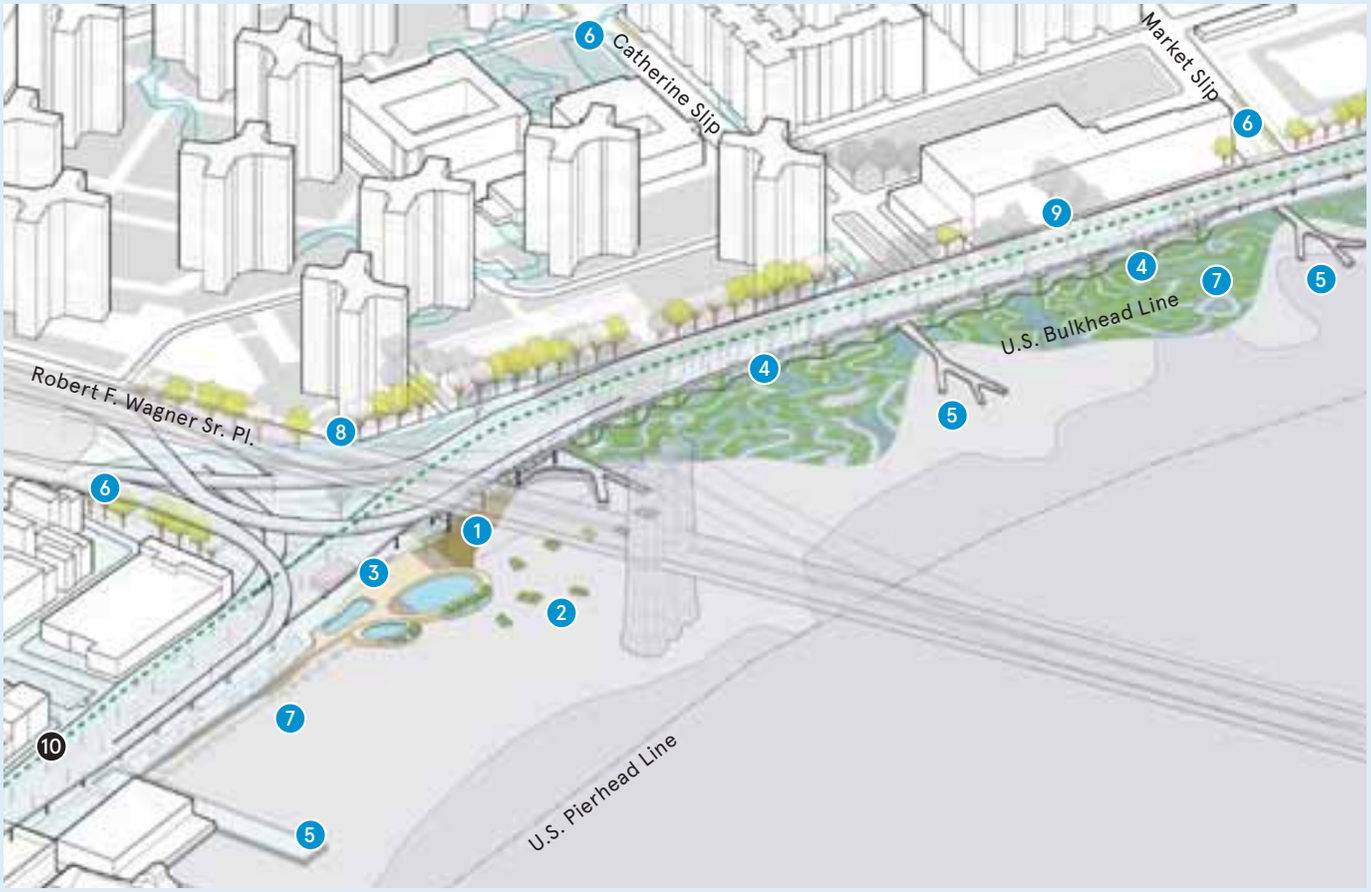
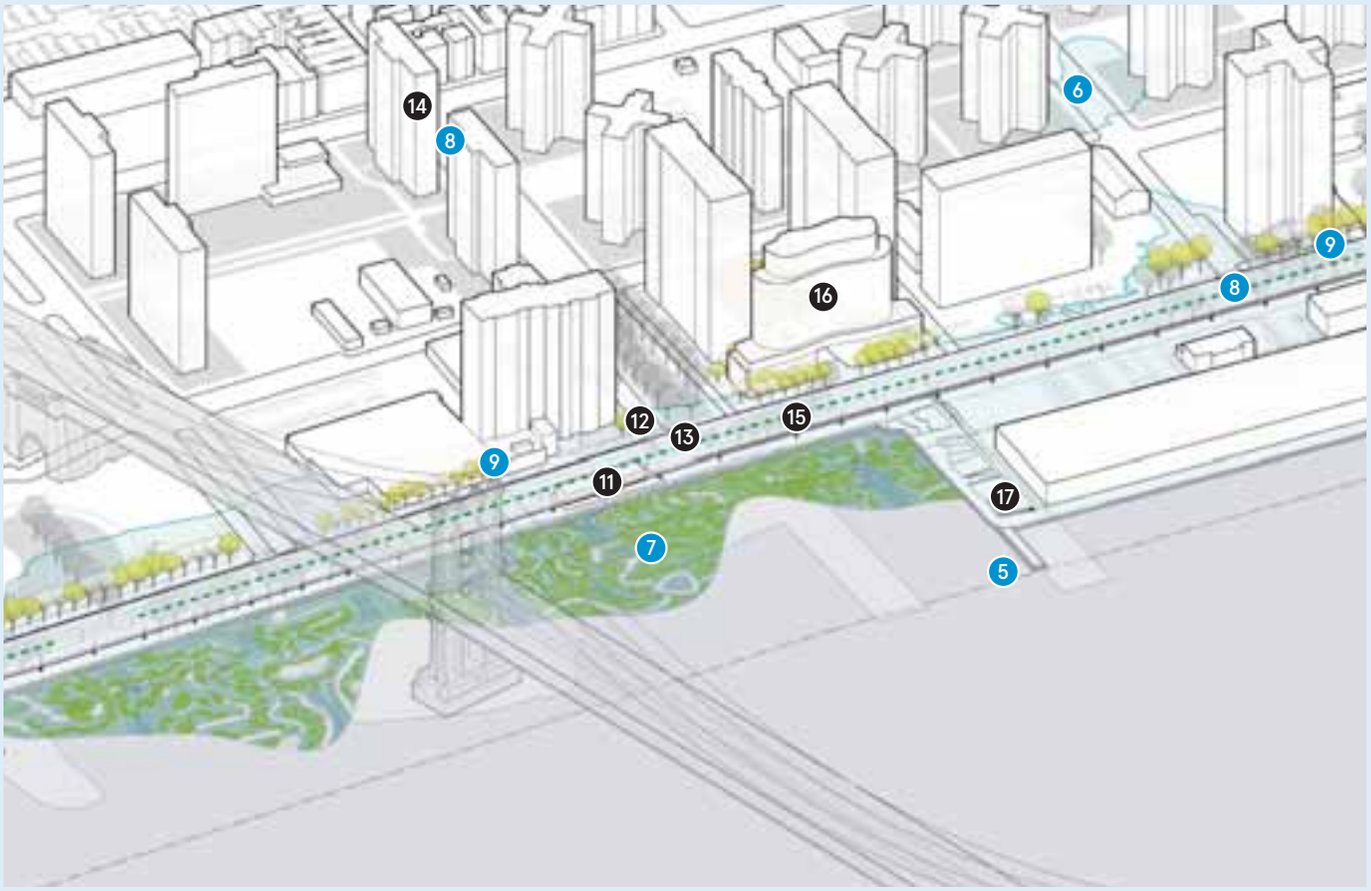
35 are being implemented by EDC and Pier 42 is being planned by the community in partnership with the DPR. These improvements will add amenities and enhance the esplanade and bikeway. The challenges of the South Street Waterfront Area are primarily defined by the current use of South Street as a service road and truck route; the FDR Drive viaduct, which looms over the East River Esplanade; and the vulnerability of this area to storm surges. The Blueway Design sets out a number of projects that responds to these issues in order to protect the area from flooding, to establish greenery and biodiversity, to provide better connections and to create new areas for waterfront activities.

BLUEWAY DESIGN — 1 South Street Waterfront Area

Blueway Design for the South Street Waterfront Area outlines 9 key projects and guidelines

- Blueway Design
- Other Proposed or Planned Projects
- Bikeway
- Historic Shoreline





1. Restore Shoreline and Decrease Bulkhead Conditions
This creates steps down to the Brooklyn Bridge Beach and a riprap edge along the beach.

2. Add Buffers To Slow Water Speed and Wave Action
This includes saltwater marsh planters in the area around the Brooklyn Bridge Beach.

3. Create Safe Access and Improve Beach Area For Boat Landing and Swimming
The Brooklyn Bridge Beach makes kayak landings and wading pools using filtered river water publically accessible, and provides oversight of the beach and pools with a lido building.

4. Treat Runoff From The FDR Drive Through Planting Strategies
This captures runoff from the FDR Drive downspouts in constructed freshwater wetlands, which currently runs into the East River.

5. Rebuild Existing and Construct Additional Piers
This creates three fishing and lookout piers and two piers (Pier 19, north of the South Street Seaport and at Pier 35) that could be used as ferry landings.

6. Complete Streets Program
This program emphasizes new street trees and bioswale bump-outs to improve stormwater management.

7. Construct and Bring Back Salt Marshes And Habitat Restoration
This incorporates constructed saltwater marsh and smaller interventions like reef balls.

8. Safe Crosswalks At All Blocks Along South Street and New Bikeway Connections
This provides a new crosswalk and light at Robert F. Wagner Sr. Place and a bikeway extended down Clinton Street to the Esplanade.

9. South Street Building Frontage
This widens sidewalks and street trees and encourages new buildings in the long term to have entrances directly on South Street.

Other Proposed or Planned Projects
(10) New bikeway part of the EDC East River Waterfront Plan; (11) Rutgers Pavilion, EDC East River Waterfront Plan; (12) Crossing at Rutgers Slip and South St. Intersection, DOT Planned project; (13) New raised table to calm traffic exiting the FDR Drive; (14) Improved wayfinding from E. Broadway F train; (15) Package 3 of the EDC East River Waterfront plan; (16) New Center for Palliative Care, Private project; (17) Pier 35 / Eco Park, EDC East River Waterfront Plan

Rendering of proposed Brooklyn Bridge Beach

Existing Brooklyn Bridge Beach

ENGAGING THE RIVER

The impetus for the Blueway Plan originated from a community desire for places to swim and kayak on the East River. The South Street Waterfront Area can predicate these activities based upon current waterfront uses. With specific design interventions, this stretch of the water will become a place to kayak, touch the water, swim in pools supplied by filtered river water, fish without obstructing pedestrians, and learn about marine life.

1. Restore Shoreline and Decrease Bulkhead Conditions

Interest in human-powered boating as well as swimming in the river has grown in the past decade. On Manhattan's West Side, New Yorkers' increased interest in experiencing the city from the water is reflected in the growth of kayak and

canoe launches at Hudson River and Riverside Parks. While there are eight kayak launch sites in Manhattan along the Hudson River, only two are available along the East River, neither of which are in Manhattan. Today, there are few possibilities for swimming near the East River. More than 94% of the area's shoreline is hard bulkhead and pile foundation, creating barriers to accessing the water. Brooklyn Bridge Beach, the only naturally occurring beach along the site, is in high demand from the community as an access point into the water and has similarly been pinpointed by the boating community as a natural kayak launch site. While this sandy area is a permitted kayak landing site, it is not publicly accessible due to reasonable concerns around the East River's strong currents and wave action, which are at times unsafe for swimmers and kayakers.

2. Create Safe Access and Improve Beach Area For Boat Landing and Swimming

Preserving the beach and making it publicly accessible as a designated landing and launch site for human-powered boats, as well as a place for walking on sand and touching the water requires designing ways to maintain and supervise this access. The concept design combines railing and gates with amphitheatre-style steps from the esplanade to the beach that function as both seating and landing for kayaks. Brooklyn Bridge Beach offers the opportunity to create a launch site without having to build a dock or any other complicated infrastructure. Challenges and potential health risks relate to the proximity to a combined sewer overflow (CSO) outfall, a Coast Guard security zone, and an active navigation channel, and washed up debris impairing safe access.

The waterfront area adjacent to the natural beach would benefit from access to safe outdoor swimming and wading. Shallow wading pools utilizing filtered river water can be places for sunning, water play and education about water safety. To ensure the active management and supervision of the site, the project proposes an urban beach concession, a lido, under the FDR Drive viaduct adjacent to the pools. This affordable amenity for the public would include restrooms, showers, changing areas, lockers, facilities to rent towels, and a place to buy snacks. The lido operator would manage access and supervision to the wading pools, the facilities and beach.

3. Add Buffers to Slow Water Speed and Wave Action

The East River's tides and currents are of concern when proposing programs that promote human activity on and in the water. Depending on the time of day or month, weather, and nearby boat use, tidal and current patterns vary widely, but can be predicted nonetheless. Periods of lower flow, known as slack tides, are relatively safer than peak flow. These patterns can inform planning decisions, identifying when conditions are safer for waterborne activity to occur. Because of safety considerations, informational signage on currents and slack tide patterns should be provided for recreational boaters in conjunction with making the beach publicly accessible. Placement of salt marsh planters in the river will reduce the wave action for incoming kayakers and be part of a buffer system to prevent large debris from reaching the beach.

4. Rebuild Existing and Construct Additional Piers

Community support is strong for bringing back piers for recreation and waterborne transit. Three fishing piers are proposed between Robert F. Wagner Sr. Place and Market Slip. Rebuilding Pier 19 and encouraging a ferry use at Pier 35 would allow for the transportation of people and goods by boat in the future. Fishing is an important activity in the area, although currently many fishermen prefer to do their fishing north of Market Slip to avoid their lines getting caught in the beams overhanging the FDR Drive. Creating piers south of Market Slip will facilitate fishing and minimize conflicts between fishing activities, joggers and other pedestrians by providing more space for different uses along the esplanade. Finger piers can accommodate all these uses while minimizing their footprint over the water.

PLANNING FOR RESILIENT NEIGHBORHOODS

The main contributors to contamination in the East River are CSOs and direct stormwater runoff from roadways. The construction phases of the The East River Esplanade project may include sustainable stormwater management. The implementation of green infrastructure (GI) systems with the primary goal of minimizing CSO events would also significantly improve water quality along the Blueway and incrementally along the river. GI not only helps to manage stormwater, it also plays a role in improving air quality, enhancing biodiversity, and beautifying the environment.

5. Treat Runoff From FDR Drive Through Planting Strategies

The FDR Drive between the Brooklyn Bridge and Market Slip contains downspouts that discharge directly into the East River through the East River Esplanade. Proposed freshwater wetlands that attach to and extend the esplanade will capture and filter the FDR Drive's surface runoff, thereby helping to minimize its impact on the East River water quality. The long-term care of the freshwater wetland requires stewardship and provides an opportunity for educating the community on the local and regional marine ecology. The wetland would also soften the otherwise hard bulkhead edge by adding plantings. This transformed bulkhead could become a model for multi-functional edge treatments for similar areas along the city's shoreline.

6. Complete Streets Program

Green infrastructure along South Street, between the Brooklyn Bridge and Montgomery Street would also improve East River water quality. Street and sidewalk storm detention and infiltration such as vegetated bioswales and permeable surfaces tied to subgrade storage would capture and filter stormwater diverted from the public right-of-way on South Street. If the existing wastewater infrastructure does not connect to a combined sewer, GI facilities would prioritize treatment of polluted surface runoff. New guidelines and goals for water quality are proposed for the public right-of-way, as set forth in the New York State Department of Environmental Conservation's (DEC) Stormwater Management Design Manual,

Proposed section at FDR Downspouts

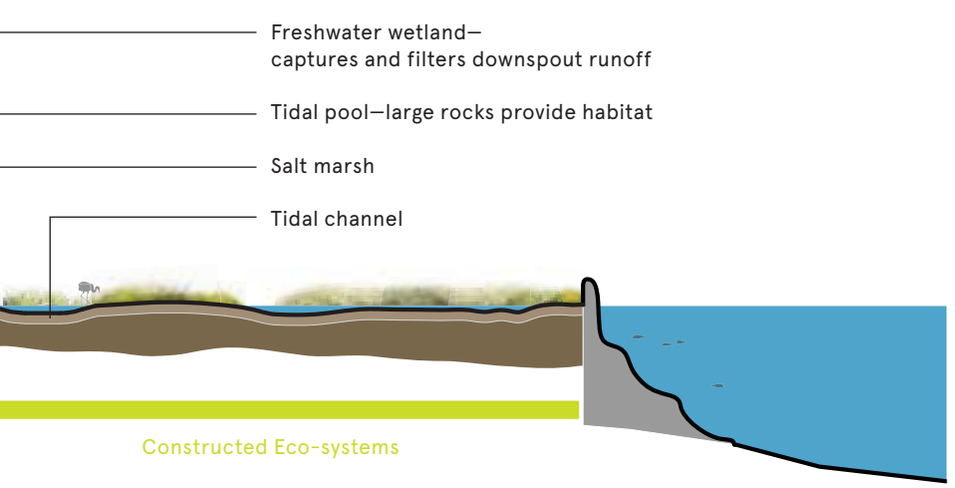
New York City Department of Design and Construction's (DDC) High Performance Infrastructure Guidelines, and New York City Department of Environmental Protection's (DEP) storm discharge requirements.

7. Construct Salt Marshes and Habitats

Habitat restoration efforts contribute to the recovery of key target species, which is a process that helps improve river water quality. Due to habitat elimination, over-fishing, and contamination, large populations of marine life have been depleted from the East River estuary. The Blueway Plan targets the water's edge in supporting new habitat creation. Native to the Northeast, the creation of salt marshes from Robert F. Wagner Sr. Place to Pier 35 will increase biodiversity. Salt marshes are one of the most biologically productive ecosystems that can be created along the East River shoreline; they are homes to filter-feeding oysters and mussels, establish habitat that attracts foraging birds, provide breeding and hatching grounds for fish, and promote the growth of stable riverbed (benthic) communities that extend well beyond the marsh footprint. Salt marshes also sequester pollutants from the river, and provide breeding and feeding grounds for harbor herons, raptors and migratory birds along the Atlantic Flyway. Incorporating a salt marsh along this stretch would have the added benefit of dissipating wave energy from the East River, thereby minimizing the kind of damage caused by storm surges.

In order to simulate the conditions of a protected cove, a low barrier marsh is constructed and backfilled on the landward side to raise grades to the proper elevation for inter-tidal marsh. The constructed marsh could be integrated with proposals for seawalls and other harbor-wide storm surge protection strategies.

In addition to the salt marsh, reef balls placed adjacent to the bulkhead along the bottom of the East River south of the Brooklyn Bridge Beach represent another opportunity for habitat construction. Reef balls are small concrete structures that are designed with varying sized holes to provide hiding places for small crabs and fish, and have solid surfaces for mussels, oysters, clams, barnacles, and vegetation to attach to. The presence of mussels and oysters improves water quality and sediment quality, and generates additional habitat and foraging grounds for other marine species. Pilot studies would aid in the evaluation of these techniques' tradeoffs by the Department of Environmental Conservation. This comparison with the current East River habitat is essential for any changes proposed in the East River.



Salt marsh and construction and pier removal at Brooklyn Bridge Park

Existing esplanade along South Street underneath the FDR Drive, with downspouts emptying into the East River

IMPROVING AND EXPANDING NEIGHBORHOOD ACCESS

The community workshops and project analysis led to recommendations about improving intersections along the East River Blueway study area, where pedestrian and cyclist accidents and fatalities have occurred. They recognized that in order to have an active waterfront, improving the ways people get there is imperative.

There are particular challenges where pedestrians and bicyclists are crossing underneath the FDR Drive viaduct. The South Street Waterfront Area has four existing at-grade access points. One of the communities' most immediate concerns was safe access to the waterfront. This includes new crosswalks and pedestrian signals at popular intersections, as well as incorporating traffic calming measures to slow down traffic, using South Street as an alternate to the FDR Drive, and placing better wayfinding signage throughout the area.

8. Safe Crosswalks At All Blocks Along South Street

Because of its proximity to the East Broadway subway station and the planned Pier 35 Eco Park, the Rutgers Slip and South Street intersection was identified in community meetings as a priority site for a new crosswalk and traffic light. DOT is planning a crosswalk and signal at this intersection. More traffic calming

Rendering of proposed East River Esplanade

measures such as a raised table, similar to a low and wide speed bump, could slow down cars speeding down South Street. New neighborhood wayfinding can direct people from the East Broadway subway to the waterfront.

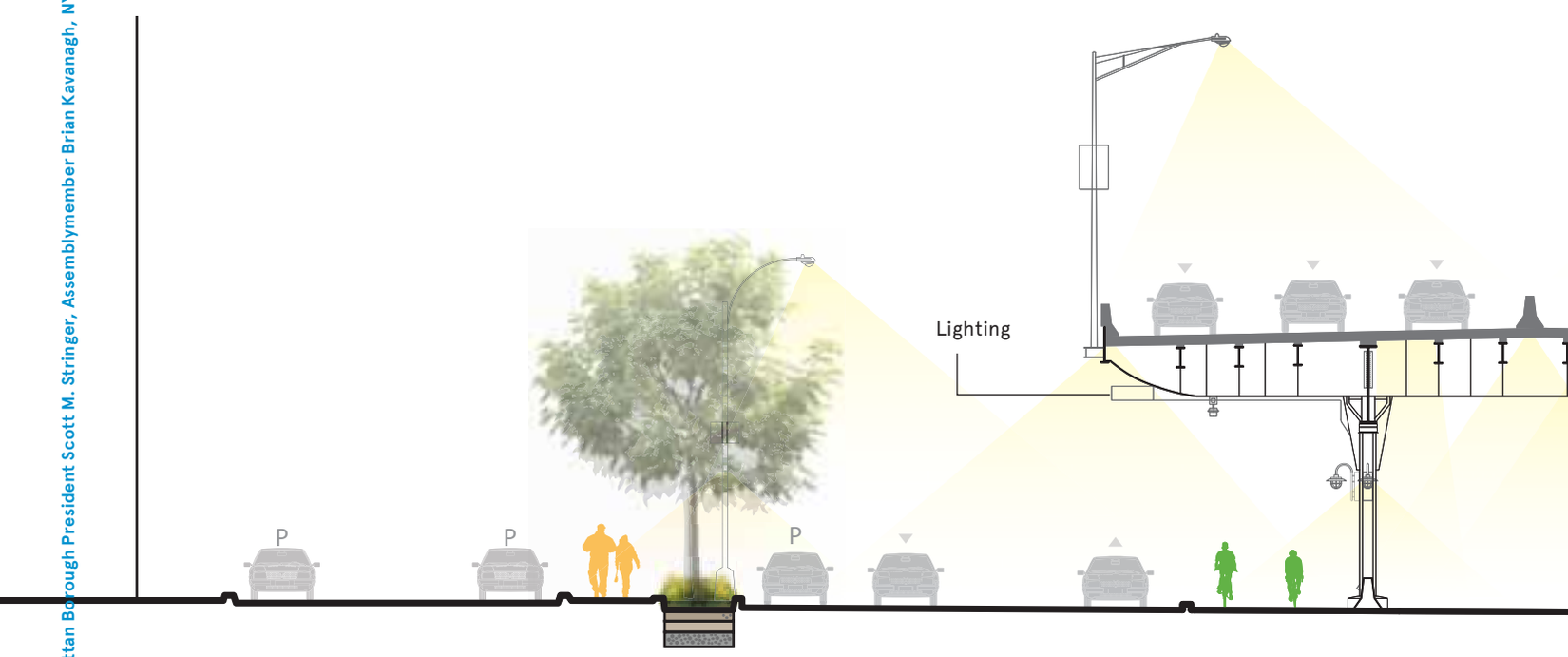
Other intersections where new crosswalks are needed along South Street include Robert F. Wagner Sr. Place and Clinton Street. A crosswalk at Robert F. Wagner Sr. Place would allow residents from Alfred E. Smith houses, which houses approximately 4,300 residents, to easily access the Brooklyn Bridge Beach and wading pool. Data shows that the intersection at Robert F. Wagner Sr. Place has experienced over eight accidents and one fatality from 1995 to 2009. Safe access at this intersection needs to be ensured to avoid any future tragedies. A crosswalk at Clinton Street is proposed where none exists today. While this pedestrian intersection is not as high demand today as compared to Rutgers Slip or Robert F. Wagner Sr. Place, this will change over time. Clinton Street can become an important bicycle connection between the Williamsburg Bridge bicycle and pedestrian access point and the South Street waterfront. Located between Pier 35 and Pier 42, this intersection will only increase in use as these piers are developed for public use in the near future. To improve this link, the new two-way bike lane recently installed on Clinton Street between Delancey Street and Grand Street should extend down to the waterfront.

CREATING WATERFRONT CONTINUITY

While a continuous esplanade exists along the East River in this section of the Blueway study area, the South Street corridor is not attractive. Without regular crossings at each intersection on South Street, people travelling to the East River must walk along South Street for a number of blocks before getting to a safe crossing. As a result, creating a better environment along South Street was noted by community residents and is an important corollary to creating strong waterfront continuity.

9. South Street Building Frontage

South Street's current condition is reinforced by heavy truck use and it being a popular alternative route to the FDR Drive. Long-distance tour buses park on South Street and create another barrier to the river. The positioning of the existing



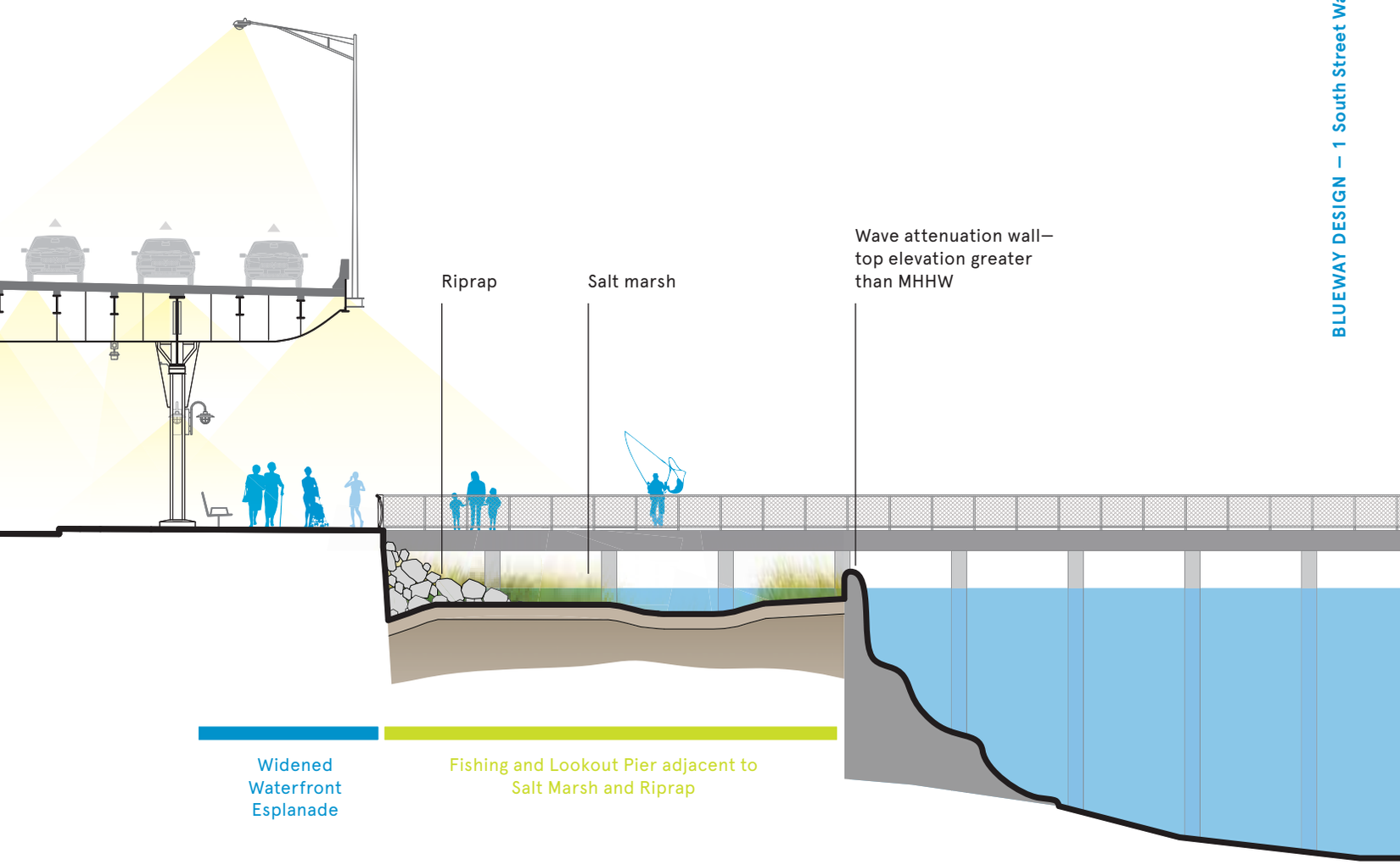
Sidewalk | New Trees and Bioswale | Enforce no bus parking | South Street | Bikeway

Proposed section at Market Slip

buildings, with few front doors opening onto South Street, and the current land uses, dominated by parking lots and lack of retail uses, further reinforce the perception that South Street is not for people. The public realm does little to encourage pedestrian use. Narrow sidewalks, unattractive lighting, and the lack of street trees create unpleasant conditions for people.

Transforming South Street which fronts on to the East River Esplanade from a service road to a waterfront boulevard is seen as a two-pronged strategy. In the long term, the community review process should encourage development sites along South Street to have a stronger front door presence to the East River, and systemic approaches to make South Street less of a service road. The nearer term approach considers street crossings (discussed earlier), methods for improving the public realm by widening the sidewalk and adding street trees and planting. Management approaches include charging fines for layovers to discourage charter and tour buses from forming a wall of buses along South Street.

One of the simplest and most effective ways to create a safe, continuous, and attractive waterfront is to improve the lighting under the FDR Drive Viaduct. Lighting the underside of FDR Drive and approach roads will make these areas more inviting. Vertical surfaces painted to reflect light could also help draw people to the water's edge and make the underpass less foreboding. By providing the appropriate electrical infrastructure, this area also has the potential for art installations and seasonal displays that will add to the area's street activity.



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2

East River Park Waterfront Area

The East River Park Waterfront Area is a 57–acre New York City public park that extends along the East River from Jackson Street to East 14th Street. Key urban design features are the large-scale public and private housing developments, the FDR Drive and East River Park with its many features including; playing fields, an amphitheatre, a promenade, the East River Greenway as well as the five pedestrian bridges connecting the community with the waterfront. The challenges of the East River Waterfront Area are primarily defined by the current use of the East River Greenway as a park road and the limited connections bridging over the FDR Drive to the water. The Blueway Design sets out a number of projects that responds to these issues in order to protect the area from flooding, provide a sustainable model for pedestrian and bicycle access to and from East River Park and create new activities to facilitate enjoyment of the natural environment.

Blueway Design for
the East River Park Waterfront Area outlines
9 key projects and guidelines

- Blueway Design
- Other Proposed or Planned Projects
- Bikeway
- Historic Shoreline

Manhattan Borough President Scott M. Stringer, Assemblymember Brian Kavanagh, NYS Department of State Division of Coastal Resources

1. Connecting Two Parks—Corlears Hook Park and East River Park
This seamlessly connects Corlears Hook and East River Parks with greenery and plantings, bringing new users to both parks.

2. Connect the East River to the Growing Neighborhood at Delancey Street
This bridge welcomes the growing Lower East Side community into East River Park.

3. Reduce Pedestrian-Car Conflicts with Traffic Calming on the East Houston Street Overpass
This extends the street grid into East River Park, providing a safe gateway for pedestrians and cyclists.

4. Provide New Vantage Points and Functionality for the East 6th Street Bridge
This expands the bridge to accommodate many users, and provides new opportunities for experiencing East River Park.

5. Enhance and Extend East 10th Street Bridge to the Water
This widens the already popular bridge while incorporating direct access to the water.

6. Capture Stormwater in Recreation Field Detention Basins
This utlitizes the ballfields' large area and underground space to minimize sewage discharge into the East River.

7. Develop "Green Fingers" as Guides to Waterfront Access Points
This increases the attractiveness of the entryways to East River Park, while filtering runoff.

8. Elevate East River Park Greenway for Infrastructure and Mode Separation
This entices park users to use the inner pathway, simultaneously providing space for infrastructure.

9. Create the Blueway Crossing to Eliminate Esplanade Bottlenecks and Protect Critical Infrastructure
This provides new, safer north-south and east-west linkages, while incorporating flood protection.

Vancouver Land Bridge, Washington State

The Green Bridge in Mile End Park, London, UK

IMPROVING COMMUNITY ACCESS

During the Blueway community workshops, area residents and park users made clear that access to East River Park is a top concern. The distances between the five neighborhood access points to the park are substantial with confusing and low quality crossings. All of the overpasses are in need of significant rehabilitation. Most are not ADA-compliant and do not provide sufficient width to comfortably accommodate combined bicycle and pedestrian crossing. Reconsidering the design of these access points will improve connections to the East River Park and integrate existing activity spaces with the adjacent neighborhoods. The redesigned crossings will act as dynamic gateways to the East River, and they will more comprehensively link the communities upland from the FDR Drive to the water's edge.

1. Connecting Two Parks— Corlears Hook Park and East River Park

Corlears Hook Bridge is the southernmost pedestrian bridge into East River Park. It connects Corlears Hook Park, located between the FDR Drive and the intersection of Cherry and Jackson Streets, to East River Park. While Corlears Hook Park is almost half the size of Tompkins Square Park and in close vicinity to residential neighborhoods, it is largely underused. Corlears Hook Park is tucked away behind large housing developments, with portions of its edge facing a parking lot. The park's lack of visibility and wayfinding signage lead to low level use of the Corlears Hook Bridge, which takes pedestrians into the East River Park amphitheatre.

Despite being the widest of all the pedestrian bridges into East River Park, Corlears Hook Bridge has the lowest pedestrian usage (based on this study's pedestrian counts). The lack of activities and minimal programming at the amphitheatre further adds to the general neglect of the bridge. The 2,500–seat amphitheatre, just south of the Williamsburg Bridge in East River Park, sits between the East River and the FDR Drive. The amphitheatre underwent some restoration in December of 2011 after falling into disrepair in previous decades.

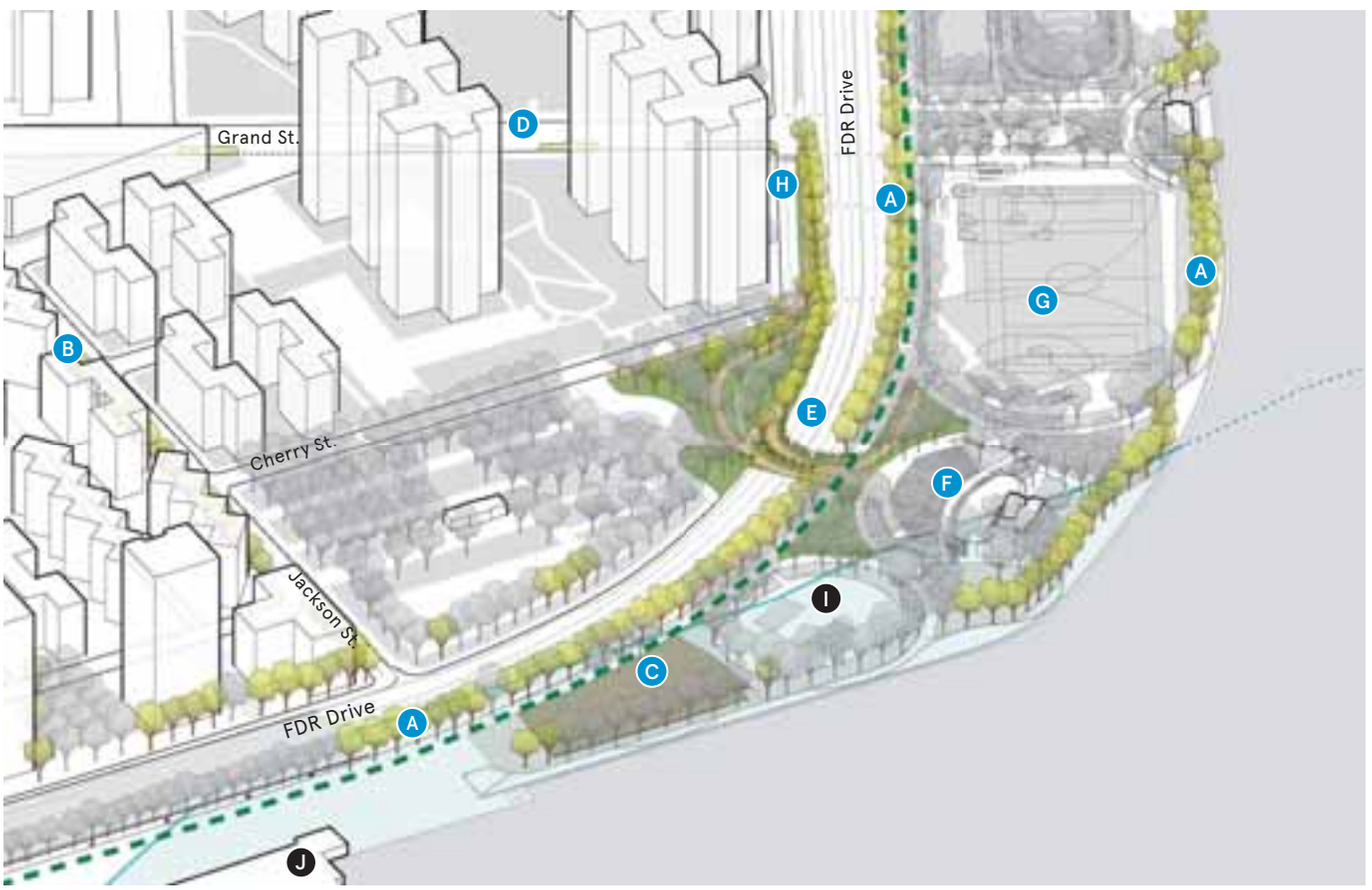
To activate this portion of East River Park, Corlears Hook Park must become more visible from Grand Street, the park's main access road. To achieve greater connectivity from Grand Street, Corlears Hook Park would be extended north on the west side of the FDR Drive along the median between FDR Drive and its service road. The eastern edge of Grand Street would be landscaped with trees and plantings to guide pedestrians and cyclists

into the park, and provide a visual barrier to the FDR Drive.

The East River Park's amphitheatre is greatly underutilized. To encourage more day-long and year-round programming, step lights and infrastructure for enhanced event lighting should be incorporated into the amphitheatre's design. The bridge provides another opportunity for distinctive lighting to illuminate paths between trees and encourage safe nighttime use.

The connection to East River Park at Corlears Hook also presents an opportunity to re-conceive the bridges along the park as higher performance structures. Green roof technology could be implemented to reduce stormwater run-off into the combined sewers, and decrease the heat island effect. This emphasis on stormwater management would tie into a larger vision for the area being driven by the Lower East Side Ecology Center's plans for a constructed wetland south of the amphitheatre.

A vegetated green bridge, like those pictured on the previous page, would seamlessly blend the two parks, transforming the pedestrian and cyclist experience across the bridge into one continuous park. With the amphitheatre lying on the same axis as the bridge, this connection would act as an important gateway into the park. Designated bicyclist routes over the bridge and on Jackson Street, along with new wayfinding signage on Grand Street, would also contribute to the bridge's role as a prominent access point to East River Park.



Proposed continuous landscaped connection between Corlears Hook and East River Park

(A) New street trees; (B) New bike lane on Jefferson St.; (C) Permeable pavers; (D) Bioswale bump-outs; (E) New planted Bridge; (F) New amphitheatre programming; (G) Ballfield stormwater storage; (H) Extended Corlears Hook Park with street visibility; (I) Lower East Side Ecology Center constructed wetland, planned; (J) Development of Pier 42

2. Connect the East River to the Growing Neighborhood at Delancey Street

Community members expressed significant interest in improving Delancey Street, west of Clinton Street, as an important pedestrian connection point to the waterfront. The eastern end of Delancey Street is currently dominated by parking areas, with an overpass to the park that is not ADA-compliant on one side. In addition, the overpass abutment sticks out slightly over the East River Greenway and was the cause of death for one cyclist who did not see it and struck it while riding by.

The planned development of the Seward Park Urban Renewal Area (SPURA), a nine block mixed-used development plan along Delancey Street, presents an opportunity to provide a whole new community with good access to the water's edge. Delancey Street is relatively wide to the east of Clinton Street, particularly alongside the Williamsburg Bridge, which offers space for public realm improvements that would extend down to the East River.

Improved streetscapes with trees and plazas would establish a more beautiful and accessible gateway to the waterfront. This East River link should include an ADA-compliant bridge near current bus stops, allowing people to take public transit almost to the water's edge. The bridge would be an extension of the improved Delancey streetscape, with seating areas and ornamental tree planters, connecting Delancey Street across the park road to the East River Esplanade.

Proposed reconceived Delancey Street Bridge into East River Park

(A) New street trees; (B) New bridge from 12–30 ft. wide; (C) New green space at the end of crosswalks; (D) Connection to SPURA development; (E) New crosswalk at Baruch Pl. to connect to north side of Delancey; (F) New street trees and promenade; (G) Steps to waterfront promenade; (H) Overlook; (I) New grilling area at Dance Circle

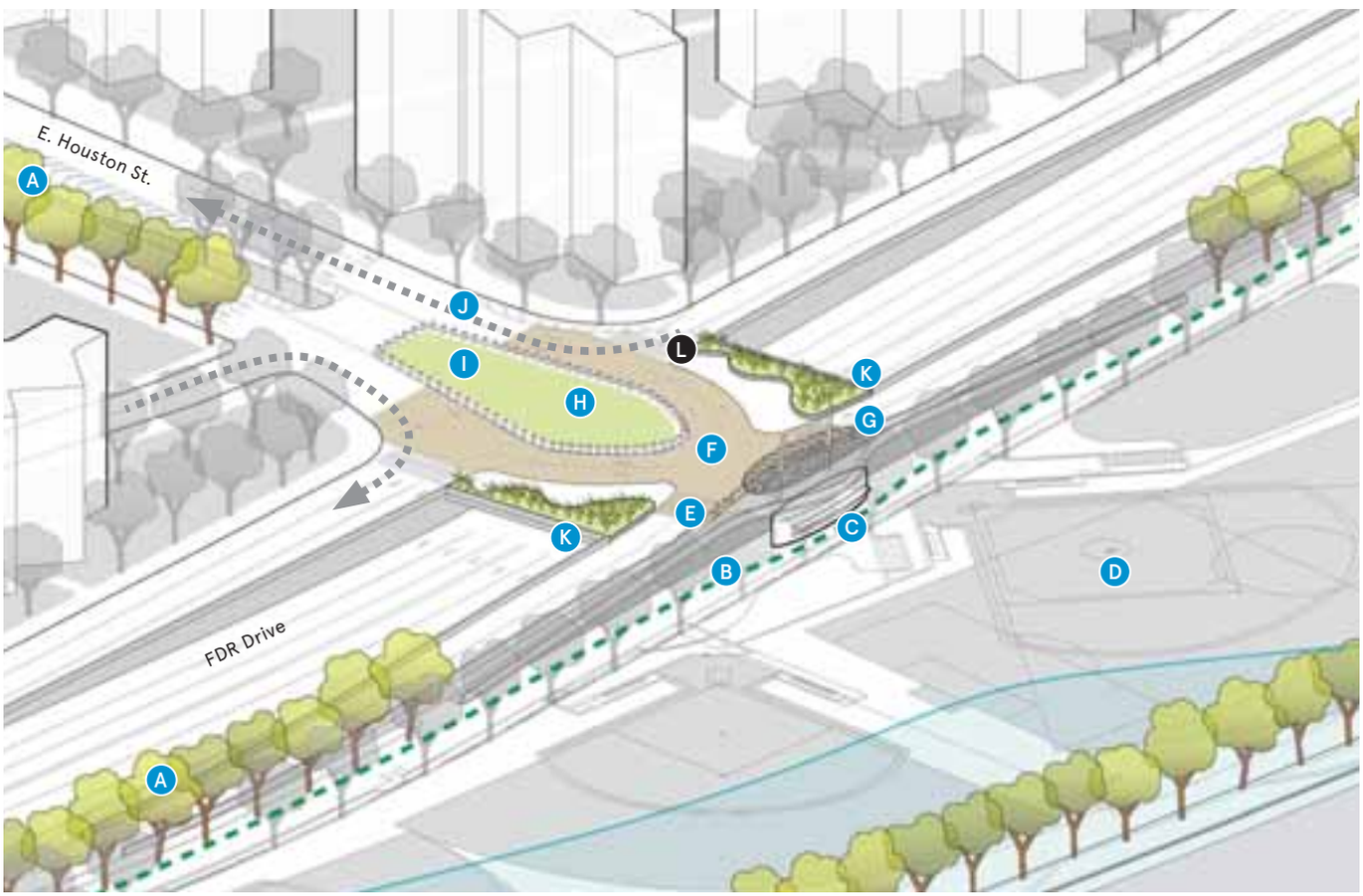
Blueway Design
Bikeway
Historic Shoreline

3. Reduce Pedestrian-Car Conflicts with Traffic Calming on The East Houston Street Overpass

The East Houston Street overpass is one of the most important entry points to the East River waterfront parks. The overpass is unique for the neighborhood in that it is not a pedestrian bridge, but an extension of the street grid above the park, with ramps extending down to the park's level. The redesigned overpass is envisioned as a gateway, prioritizing safe green spaces for pedestrians and cyclists.

The NYC Department of Transportation is in the process of installing traffic lights and pedestrian signals at this intersection, which is currently very difficult to cross. In addition to this necessary work, other traffic calming strategies should be implemented to ensure that traffic from the FDR Drive off-ramp slows before reaching the East Houston Street intersection. Enlarging the traffic island median to prevent direct access to the FDR Drive and service road would help to calm traffic. This traffic island could be developed as a rain garden and incorporate commemorative features. Additionally, replacing pavement at crossings in this area with cobblestone pavers would slow down cars because of the rough surface, creating a safer zone for pedestrians. Permeable paving would add stormwater management benefits.

Finally, a shaded overlook on the East River ballfields can be integrated into the crossing. This shade structure is envisioned with solar panels, a concession stand for snacks and public restrooms tucked under the overlook platform.



Proposed pedestrianized East Houston Street Overpass

(A) New street trees; (B) Bike path; (C) Food concession under widened overlook; (D) Ballfield stormwater storage; (E) Widened entry; (F) Cobbles, slow down cars with rough surface, creates precinct; (G) Shade structure with solar panels; (H) Stormwater retention; (I) Join medians; (J) Cars loop around to access the FDR Drive Service Road; (K) New planting; (L) Traffic light and pedestrian signal

- Blueway Design
- Other Proposed or Planned Projects
- Bikeway
- Historic Shoreline

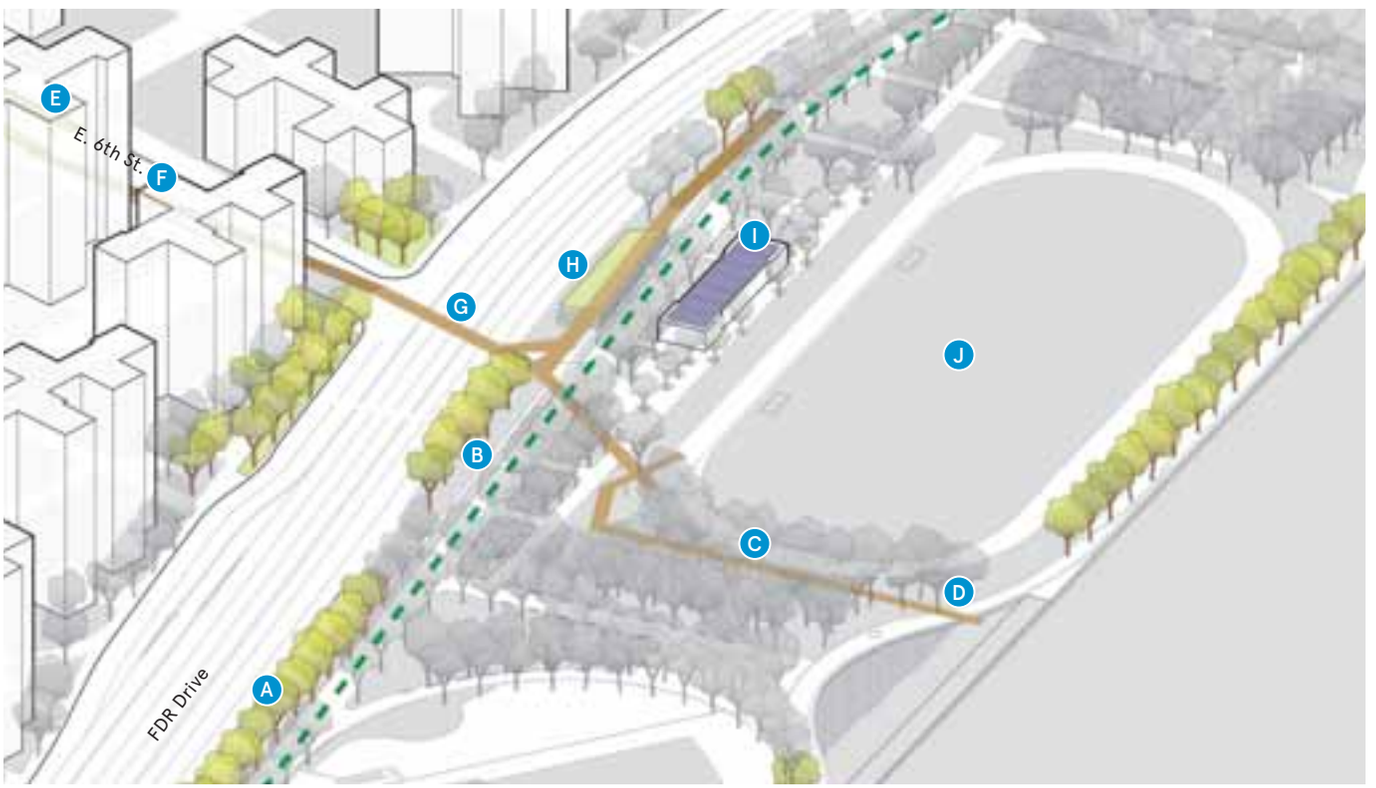
ENGAGING THE RIVER

East River Park offers residents of the Lower East Side and the city a tremendous array of ballfields and courts for active recreation. The park's design, with large areas of playing fields surrounded by fencing, and with pedestrian bridges that ramp down the greenway at the edge of the FDR Drive, makes it very difficult for visitors to reach the East River Esplanade. The re-design of the pedestrian bridges, particularly at East 6th Street, East 10th Street and as described at Delancey Street, would allow visitors to have a path leading directly to the river.

4. Provide New Vantage Points and Functionality for the East 6th Street Bridge

At around six feet wide, the current East 6th Street Bridge is too narrow to accommodate both pedestrians and cyclists. The bridge has little visible presence on East 6th Street. Despite these physical disadvantages, data collected at this bridge suggests that it is a popular access point to East River Park during the weekends. Relatively high usage could be due to the bridge's close proximity to the track house, a popular landmark in East River Park.

To increase the bridge's visibility from East 6th Street, a new and wider (12-foot) bridge should be constructed, starting on East 6th Street and forking into two paths on the east side of FDR Drive. The bridge is envisioned as two integrated paths: one path descending to the greenway, and the other continuing as a tree "canopy walk." The descending greenway ramp could provide space for a café and bike rental conveniently adjacent to the existing track house.



Proposed extension of the East 6th Street Bridge into the East River Park treetops

(A) New street trees; (B) Rain gardens; (C) Tree canopy walk; (D) Overlook and steps to waterfront promenade; (E) Bioswale bump-outs; (F) Visible from E. 6th St.; (G) New bridge 12 ft. wide; (H) Cafe and bike rental with green roof; (I) Solar panels on track house roof; (J) Ballfield stormwater storage

Blueway Design
Bikeway

Rendering of proposed East 6th Street Tree Canopy Walk

The "canopy walk" is inspired by community desires to integrate more passive recreational activities into the East River Park, which is currently dominated by organized sports space. The thick tree canopy in this area of the park, just south of the field and track, is striking. With such a beautiful array of mature trees, there is an opportunity to create an elevated "canopy walk" that snakes through these trees, offering new and unexpected views of the river. A space for passive recreation in a park defined by its active recreation would diversify the types of activity in the park. At the end of the canopy walk would be an overlook that juts out over the existing inlet cove, with stairs to access the promenade directly. The canopy walk section of the bridge could be secured with a gate after the park hour without closing off the rest of the bridge.

Existing view of treescape at East 6th Street in East River Park

Tree Canopy, UPenn, Philadelphia, PA

5. Enhance and Extend East 10th Street Bridge to the Water

Similar to the East 6th Street Bridge, the East 10th Street Bridge is highly active due to the popular activities nearby in the Park. Pedestrian counts data gathered in this study indicates the East 10th Street Bridge had the highest pedestrian counts of any bridge or crossing during the study period. This is not surprising since the East 10th Street area is the only park location with a playground and picnic areas with grills and tables. During community workshops, it became evident that demand for these grills is high.

Creating a second grilling area within the currently underused dance circle between Delancey Street and East Houston Street would help alleviate some of this demand. A new, wider pedestrian bridge is needed given the popularity of the East 10th Street area among nearby residents.

The bridge could also integrate new and existing amenities. For example, instead of separate restrooms and baseball bleachers, the new East 10th Street Bridge consolidates these functions as well as a new food vendor within the bridge structure itself.

East 10th Street Bridge into East River Park integrated with amenities

(A) New street trees; (B) Ballfield stormwater storage; (C) Bleacher seating; (D) Concession and restrooms; (E) New bridge 12–40 ft. wide; (F) Bioswale

An example of a bioswale

PLANNING FOR RESILIENT NEIGHBORHOODS

The reduction of stormwater entering the combined sewer system or the prevention of runoff directly into the East River will improve the water quality of the river. There are opportunities in the approach to the East River Park and within the park itself to address stormwater management.

6. Capture Stormwater in Recreation Field Detention Basins

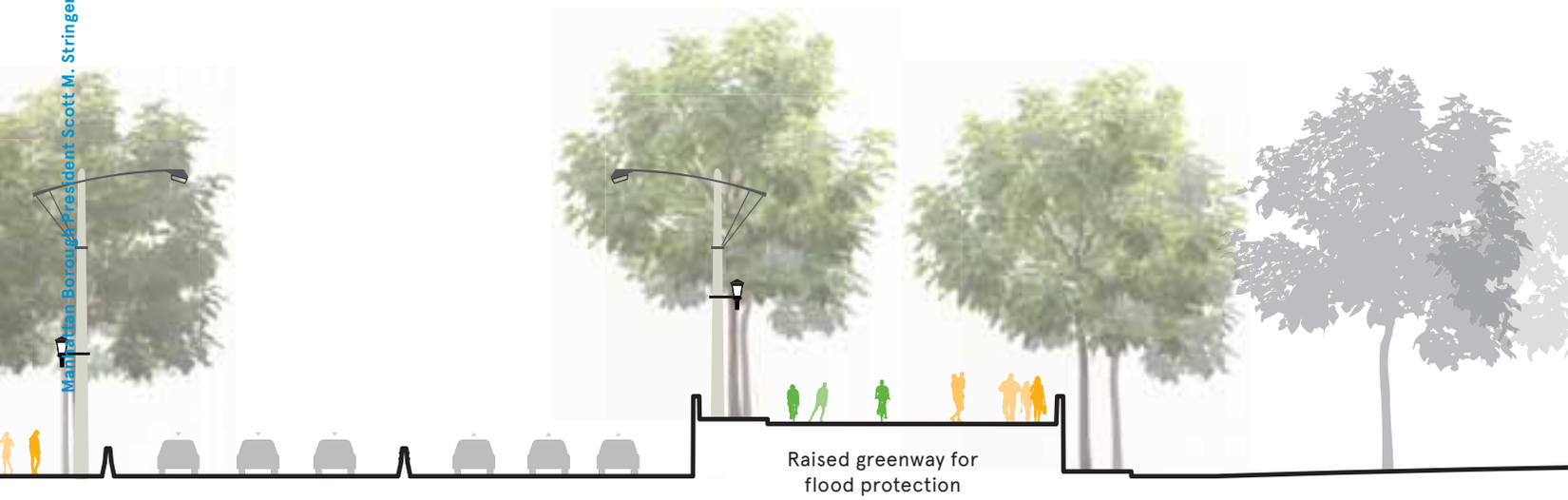
Recreational turf and grass playing fields are located throughout East River Park and their large footprints and permeable surfaces present opportunities for significant stormwater storage. Stormwater management strategies that divert stormwater from the city's combined sewer into GI facilities are a priority, particularly during storm surges and heavy rains. Stormwater storage chambers and reservoirs underneath the East River Park ballfields would be designed to capture diverted flow from the combined sewer and then slowly release the filtered water after a storm event. If stormwater drainage around the ballfields is separated from the combined sewer, treatment using bioswales is necessary before the water discharges into the river.

7. Develop "Green Fingers" as Guides to Waterfront Access Points

Green infrastructure should be incorporated along streets that lead to the pedestrian bridges in the East River Park Waterfront Area. These streets would have greater potential to capture and treat the FDR Drive rainwater runoff before it enters the combined sewer system. Vegetated bioswales and bump-outs spaced at regular intervals are effective runoff filters that increase the attractiveness of the streetscape. This green infrastructure network would tie into existing parks, areas within the public and private housing areas, and community gardens to create a system of green "fingers" to guide users to the waterfront. Maintenance and care of bioswales can reinforce existing community stewardship of green spaces.

Allegheny Riverfront Park, Pittsburgh, PA

Battery Park City Promenade



Proposed section at East River Park

CREATING WATERFRONT CONTINUITY

The East River Park Greenway is a bikeway /walkway along the East River Park that spans from Jackson Street to East 14th Street. The greenway is widely used by joggers, recreational cyclists, bicycle commuters, and people accessing East River Park. The path itself is in critical need of attention. Potholes, uneven surfaces, and cracks in the pavement create an overall unpleasant experience. Poor drainage causes pools of rainwater. Proximity to the FDR Drive creates noise issues. Service and maintenance vehicles occasionally drive on the path, making the route dangerous at times. Current plans are underway to improve the quality of the greenway. These can be expanded in ways that combine various infrastructural and logistical needs.

8. Elevate East River Park Greenway for Infrastructure and Mode Separation

A long-term solution to improve the greenway is raising it above the current at-grade level. By doing so, the greenway could support infrastructure enhancements as well as improved experience of the park. The greenway could integrate utilities and infrastructure under the path; more effectively drain stormwater runoff (both from the greenway itself and the FDR Drive); create an effective storm surge barrier for FDR Drive and adjacent housing; and act as a noise attenuation barrier for the park. Currently, there is very little shade along the water's edge in East River Park. Rows of trees along the wide promenade would provide this shade and create different pedestrian zones: a more shaded inner walkway and an outer waterfront promenade with plenty of sun. Similar to the Battery Park City promenade, these zones would separate pedestrian traffic with differing elevations. Raising the inner walkway just a couple of feet above the waterfront promenade would also offer distinctive variation in views of the river.

A new smooth and even path would further encourage bicyclists, especially commuters, to use the greenway as opposed to the waterfront esplanade, making this a much safer environment for pedestrians. Separating pedestrian and bicycle traffic on the greenway would further improve safety. Wayfinding signage and public maps throughout the park would facilitate easier access to the park and its amenities from the greenway. Key sites for this type of signage would be at the entrances to the park closest to the overpasses.

Rendering of the proposed Blueway Crossing looking north

Views of the pinch point looking north

9. Create the Blueway Crossing to Eliminate Esplanade Bottlenecks and Protect Critical Infrastructure

A key crossing bottleneck exists between the East River Park and Stuyvesant Cove / Waterside Plaza Waterfront Areas. The East River Blueway Plan proposes the construction of a new crossing to provide better connections along the Blueway and to secure vital New York City infrastructure.

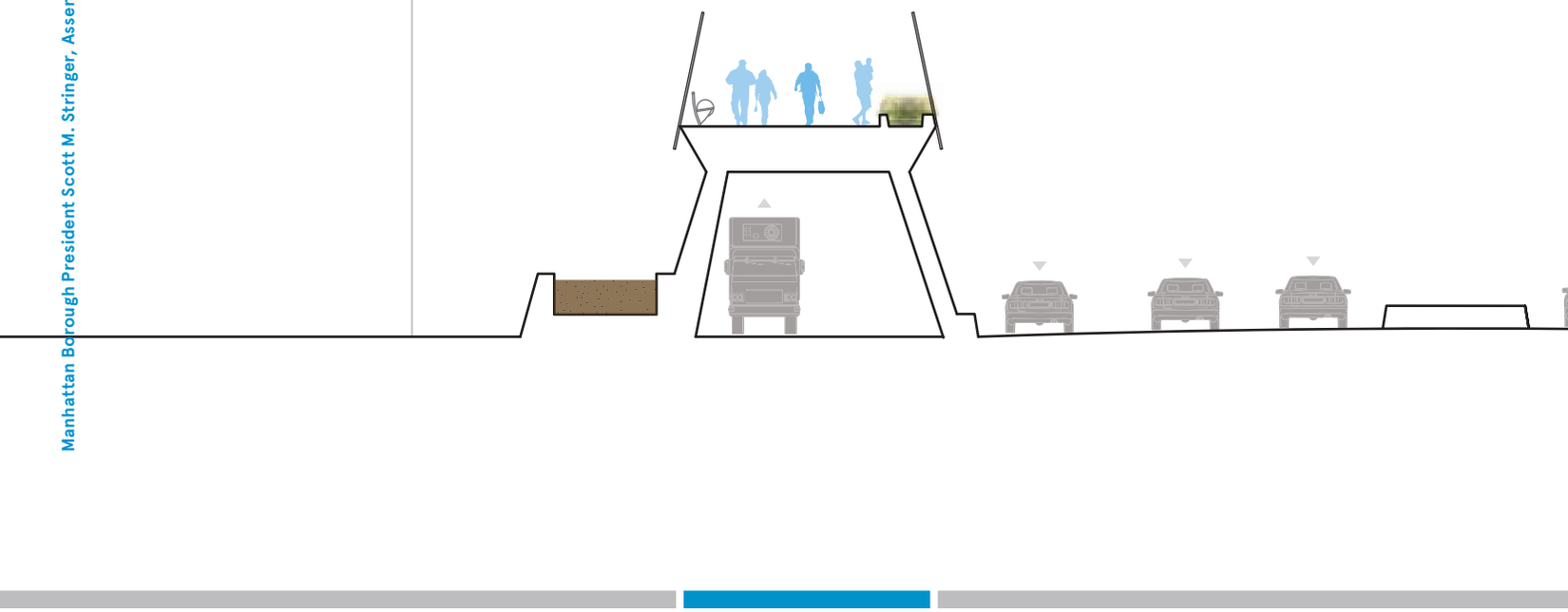
At East 14th Street the greenway narrows to approximately four feet wide to accommodate the Con Ed power station facilities and screen house. This narrow width is dangerous for pedestrians and cyclists that share the path, increasing opportunities for collisions. Elevating the greenway in this section to fly over the FDR Drive presents the most feasible solution to achieve a path wide enough to accommodate both pedestrians and cyclists. The Blueway Crossing's X-shaped bridge creates both a north-south and an east-west connection. The bridge is a link between the Jacob Riis Houses and East 10th Street, the East River Park, Murphy Park and Avenue C, and Stuyvesant Cove. This elevated structure would also offer views of the water otherwise blocked by the Con Ed facility. An elevated path would also minimize pedestrian and bicyclist exposure to the noise of the highway below.

As Hurricane Sandy illustrated, the proximity of the Con Ed facility to the East River presents a critical infrastructure weakness for the city. This vulnerability can impact the city's power supply with tremendous cost. The Blueway Crossing could act as a flood barrier to protect this critical infrastructure.

Concerns about the security of this facility arose in community workshops and conversations with Con Ed officials. The Blueway Crossing provides a solution by using the median of FDR Drive to support an elevated pathway for pedestrians and bicycles, separated from the cars below. In addition to enhanced public connection to the water, this overpass structure would separate the public from Con Ed's facilities.

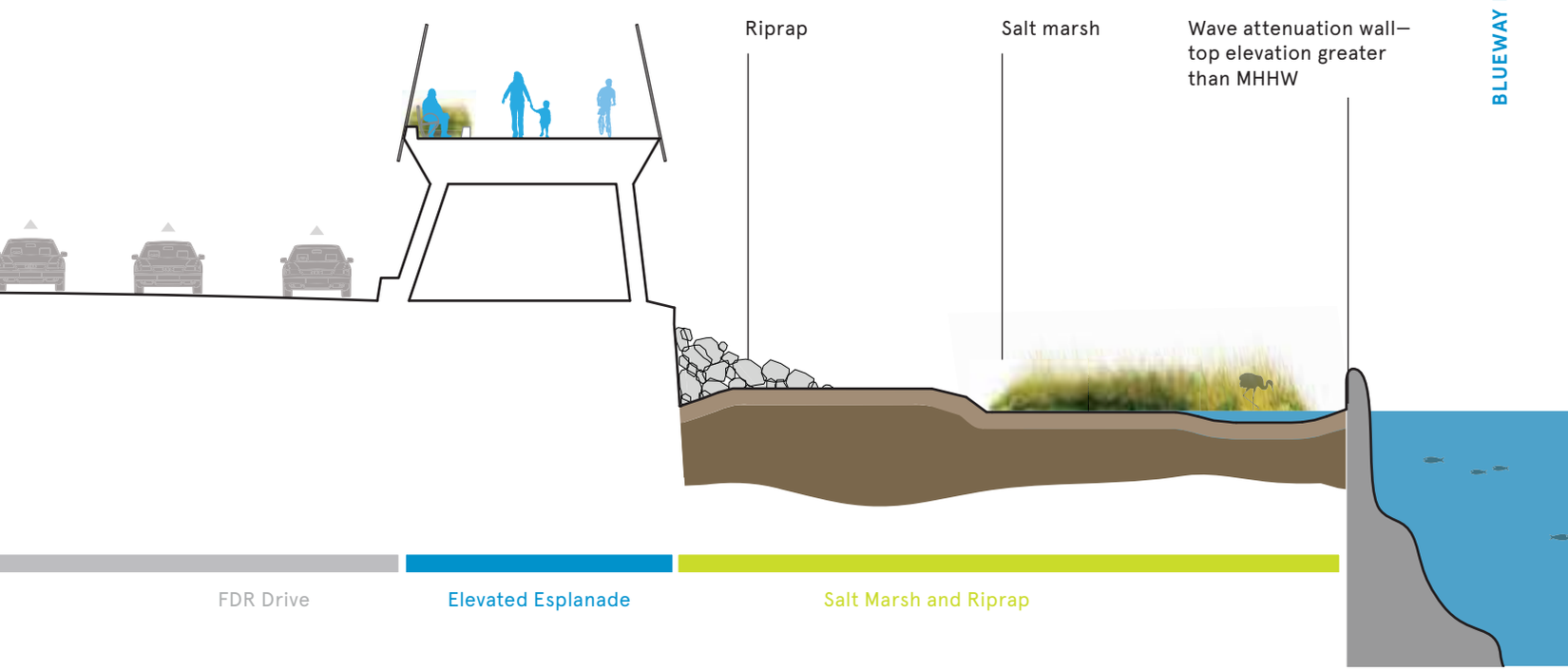
Aerial view rendering of the Blueway Crossing

Bird's-eye view of existing pinch point looking west



Proposed section north of the Con Ed facility

Rendered Bird's-eye view of the proposed Blueway Crossing



Manhattan Borough President Scott M. Stringer, Assemblymember Brian Kavanagh, NYS Department of State Division of Coastal Resources

Rendering of the Blueway Crossing and Flood Barrier, salt marsh and pools

BLUEWAY DESIGN — 2 East River Park Waterfront Area

Manhattan Borough President Scott M. Stringer, Assemblymember Brian Kavanagh, NYS Department of State Division of Coastal Resources

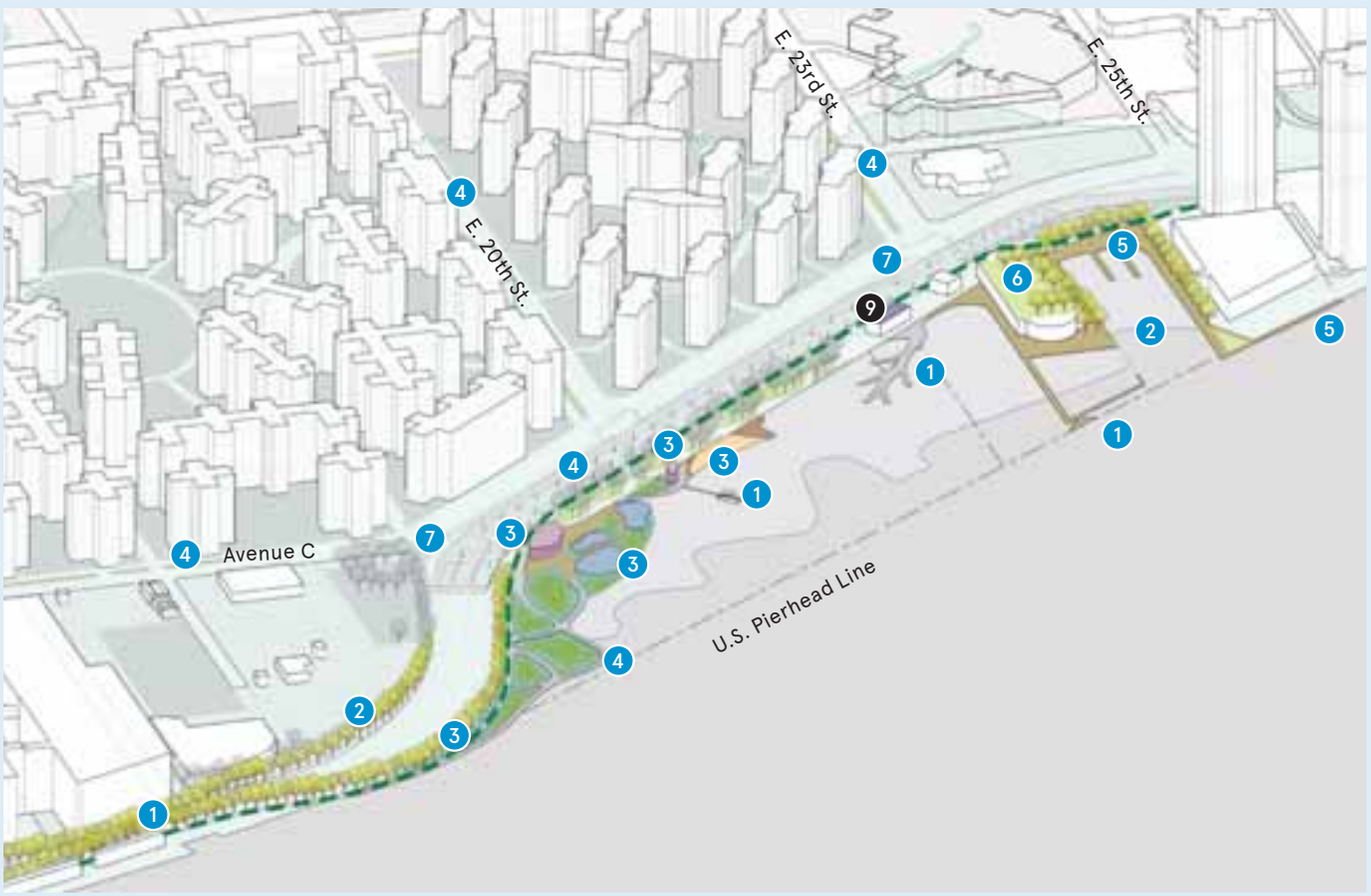
3

Stuyvesant Cove / Waterside Plaza Waterfront Area

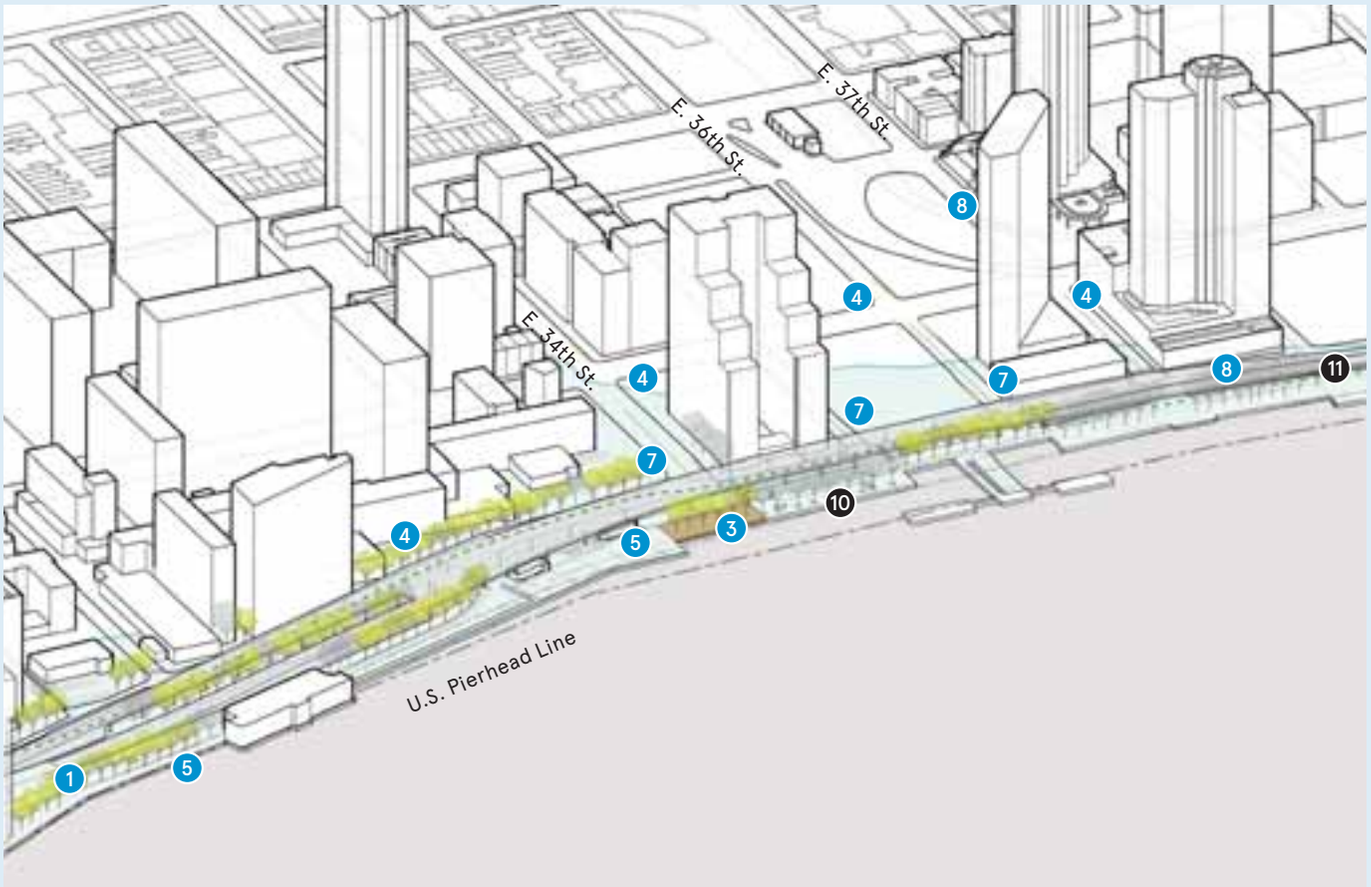
The Stuyvesant Cove / Waterside Plaza Waterfront Area spans from East 14th Street at the southern end to East 38th Street. It is the northernmost of the three areas and sits entirely within the boundaries of Community District 6. Its range of uses include hospitals, high-rise housing developments, schools, marinas, heliports and a waterfront restaurant. Key urban design features along the water include Stuyvesant Cove, the Skyport Garage and Skyport Marina, the United Nations International School and Waterside Plaza, the East 34th Street Ferry Terminal, and Glick Park. The challenges of the area are primarily defined by the limits to continuity of the bikeway and waterfront esplanade, the hard bulkhead edge, the FDR Drive viaduct; and the vulnerability of the area to storm surges. The Blueway Design sets out a number of projects that responds to these issues in order to protect the area from flooding, to establish greenery and biodiversity, to provide better connections and to create new areas for waterfront destinations.

Blueway Design for the Stuyvesant Cove / Waterside Plaza Area outlines 8 key projects and guidelines

- Blueway Design
- Other Proposed or Planned Projects
- Bikeway
- Historic Shoreline



Manhattan Borough President Scott M. Stringer, Assemblymember Brian Kavanagh, NYS Department of State Division of Coastal Resources



1. Create Areas for Both Human-Powered and Historic Vessels in Stuyvesant Cove
This provides a launch that could be implemented in the short-term future by Solar One and reinstalled at a later phase by the wading pools, and a reconfigured landing for historic vessels and the Skyports Seaplane.

2. Enlarge Marina to Create Space for Public Access to Boating Facilities
This creates space on the upland side for pedestrians and a UNIS layby while carving out more marina space outboard for Skyport Garage.

3. Support Safe Swimming and Boating
This incorporates wading pools using filtered river water, a lido to provide amenities and oversight of the pools, boat storage and a kayak landing area.

4. Restoring Intertidal Salt Marsh and Managing Stormwater With Complete Streets
This includes constructed salt marsh with walkways in Stuyvesant Cove and upland stormwater management measures such as street trees, bioswales and permeable pavers.

5. Create a Continuous Waterfront Esplanade at The Marina Connecting to Waterside Plaza's Esplanade
This is facilitated by a public walkway wrapping around Skyport Garage, the marina, UNIS and Waterside Plaza.

6. Create a Public Garden and Eatery at Skyport Garage Roof
This establishes public access to the Skyport Garage with new amenities on the rooftop.

7. New and Improved At-Grade Pedestrian Crossings Beneath the FDR Drive Viaduct
This offers a series of new and improved crossings all along this area from below East 20th Street to East 37th Street.

8. Increase and Enhanced Access to Glick Park
This enables a bike route connection, an improved crossing and lighting enhancements in the underpass entrance to Glick Park.

Other Proposed or Planned Projects
(9) Solar 2, planned; (10) 34th St. ferry terminal improvements, ongoing; (11) Planned park at former Con Ed site

ENGAGING THE RIVER

Stuyvesant Cove Park is located between East 18th Street and East 23rd Street. A decade ago it was built from the ground up through the hard work of many dedicated community members and organizations who transformed a contaminated waterfront site into an ecologically responsible public space. Cherished by the community and managed by the nonprofit organization Solar One, this park is a testament to the community-driven process that restored a brownfield and developed a strategy for maintenance. Located at a natural inlet along the East River, the cove benefits from slower currents than in other parts of the study area, and the community has advocated for access to recreational boating and other water activities here.

1. Create Areas for Both Human-Powered and Historic Vessels in Stuyvesant Cove

Stuyvesant Cove has the potential to accommodate a wide variety of recreational water activities on a regular basis. The support for ongoing waterfront activities requires creating piers and accessible edges and separating human-powered boating from larger, non-motorized boats and marina operations. These initiatives include a human-powered boat launch, a boat house, protected river pools with an accompanying lido, an expanded publicly accessible beach with steps, a mooring area for non-motorized public boats, and a dock for historic vessels.

In August 2012, human-powered boaters and public water access advocates convened at Stuyvesant Cove for an afternoon of free public kayaking. The event was a success, drawing a range of people, from novice kayakers to boating enthusiasts. This is paralleled by the strong interest in a human-powered boat launch in the near term, which could be located alongside Solar One in the short-term future. This launch could potentially be shifted or supplemented by an additional pier in a later phase nearer the wading pools by the rocky outcropping. Planning a public mooring area for other non-motorized vessels is also strongly supported. This mooring area could be demarcated by a permanent educational pier, located between Solar 2 to the south and Skyport Garage to the north.

2. Enlarge Marina to Create Space for Public Access to Boating Facilities

Located at East 23rd Street, the Skyport Garage offers an opportunity for an

Floating dock in Riverside Park, a potential interim human-powered boat launch

Rendering of proposed swimming area and lido in Stuyvesant Cove

improved facility that holds more vessels and engages visitors and nearby residents. This would require an expansion of the marina by relocating the existing seaplane deplaning area to the southeast corner of the garage. The new finger pier could also potentially be used as a water ferry stop and for the docking of historic and educational vessels. Expanding the waterfront promenade around the marina area would benefit a variety of uses at the marina, which currently suffers from shallow waters and lack of space.

3. Support Safe Swimming and Boating

Community support is strong for expanding the sandy outcrop resulting from the buildup of sediment around pilings, for public access, which would allow people to touch the water. Similar to recommendations for Brooklyn Bridge Beach, the outcrop would be accessed via steps designed with the secondary function of waterfront seating. Integrating a system of pools and lidos

Existing bulkhead at Stuyvesant Cove

along the Blueway would engage people in multiple modes of playful water activities. A series of protected pools filled with filtered river water are well-suited for the southern end of Stuyvesant Cove, along the Avenue C street axis. Similar to previous recommendations, these pools would also be supported by an adjacent lido, creating stewardship across the amenities. The lido would provide restrooms, changing rooms, and offer a place for people to buy snacks or rent a towel.

Existing riverwalk south of Stuyvesant Cove

PLANNING FOR RESILIENT NEIGHBORHOODS

Several environmental challenges are associated with programming at Stuyvesant Cove. The park is located near multiple CSOs, and sits adjacent to an active navigation channel. Area subsurface soils have been found to contain contaminated sediment from a former Manufactured Gas Plant site at East 21st Street, under what now constitutes about two-thirds of Peter Cooper Village. Contamination has been detected in groundwater, in Stuyvesant Cove Park, and in sediments extending 500 feet deep into the riverbed of the East River. However, no contamination was detected in the surface water. Any projects that contemplate piles or below-grade work must consider these findings and coordinate with Con Ed and the New York State Department of Environmental Conservation. Due to these environmental quality challenges, active management, signage, and health risk education are essential for any public activities in the water.

4. Restoring Intertidal Salt Marsh and Creating Complete Streets to Help Manage Stormwater

The water's edge along Stuyvesant Cove Park presents a unique opportunity. Historically, Stuyvesant Cove extended much further into the island of Manhattan and was predominantly wetlands. Creating intertidal marsh has the potential to improve water quality and habitat conditions, while reducing open water zones by only a small amount. A low sea barrier would be constructed and filled in the space next to the shoreline,

Rendering of proposed riverwalk south of Stuyvesant Cove

raising grades to the proper inter-tidal marsh elevation. When designed and constructed correctly, decomposed salt marsh cordgrass (Spartina alterniflora) provides a habitat and food source for a myriad of organisms: amphipods, crabs, snails, shellfish and small fish. These organisms support a broad food chain to establish a revived ecosystem.

A series of walkways through this cove environment would accommodate pedestrians and cyclists. The salt marsh in conjunction with appropriate academic signage or programing would provide opportunities to educate the public about local ecology and marine life. These walkways would replace the current esplanade that sits atop pilings between East 14th Street and Stuyvesant Cove. The edge would be transformed with riprap edge to soften the current hard bulkhead.

The current esplanade configuration suffers from issues of noise control. Positioning the salt marsh walkways farther into the water increases the buffer between pedestrians and the noisy highway. The esplanade should include multiple paths to separate pedestrians and cyclists. The innermost path (closest to the FDR Drive) could be the path for cyclists, while the longer paths, meandering into the marshes, would be the slow paths for pedestrians.

In addition, the Blueway Design continues to emphasize "Complete Streets" design that sets out guidance for street trees and bioswales to help improve stormwater management.

Rendering of proposed Skyport marina and piers

Bird's-eye view of existing Skyport marina

CREATING WATERFRONT CONTINUITY

The Stuyvesant Cove / Waterside Plaza Waterfront Area combines tremendous opportunities for public activity with challenges to the continuity of the walkway/bikeway along the waterfront between service roads, parking and building edges. Stuyvesant Cove Park, anchored by Solar One, has the potential to blossom as a new public space focused on environmental education and recreation. As usage along the waterfront increases, the areas further north of Stuyvesant Cove will require careful strategies that help the esplanade and bike path users to navigate their ways amidst the many other demands in the area.

5. Create a Continuous Waterfront Esplanade at the Marina Connecting to Waterside Plaza's Esplanade

North of Stuyvesant Cove, at East 23rd Street, the dedicated bike lane abruptly ends, forcing cyclists into the road with buses and cars. The two separate service roads adjacent to Waterside Plaza on East

25th Street make it difficult for bicyclists to understand where to go. Clear signage and the creation of a dedicated bicycle lane are currently being tested and should be extended along The Water Club Restaurant, the 34th Street Heliport, and the NYU Medical Center parking lot.

The waterfront esplanade is discontinuous and confusing north of Stuyvesant Cove. Continuous access to the water's edge is a priority to create a cohesive Blueway. Waterside Plaza, a housing development adjacent to the river, has a semi-public esplanade along its edge and the UN International School (UNIS), which is south of Waterside Plaza, does not provide public access along its waterfront edge. As a result, access to the Waterside Plaza esplanade requires walking along a service road between UNIS and Waterside Plaza or an alternate route from the northern end.

A new waterfront promenade can be created by expanding the width of the esplanade from the end of Stuyvesant Cove to UNIS and wrapping it around the Skyport Garage along the way. Under this scenario space along the waterfront would be exchanged for a much needed, designated drop-off/pick-up zone for the school. The ultimate goal is to create continuous waterfront access, continuing around UNIS and connecting to the Waterside Plaza esplanade. These proposals would require further discussion with UNIS and Waterside Plaza.

6. Create a Public Garden and Cafe at Skyport Garage Roof

Adding new waterfront destinations within the Stuyvesant Cove Area enhances access to the water and making the river's edge attractive and lively. A public space for a roof top garden at the Skyport Garage, could contribute revenue towards the maintenance of Stuyvesant Cove. Skyport Garage in the near term could preserve the majority of the existing structure and parking capacity, potentially improving the exterior, adding a public staircase and elevator for access to the roof.

IMPROVING AND EXPANDING COMMUNITY ACCESS

7. New and Improved At-Grade Pedestrian Crossings Beneath the FDR Drive Viaduct

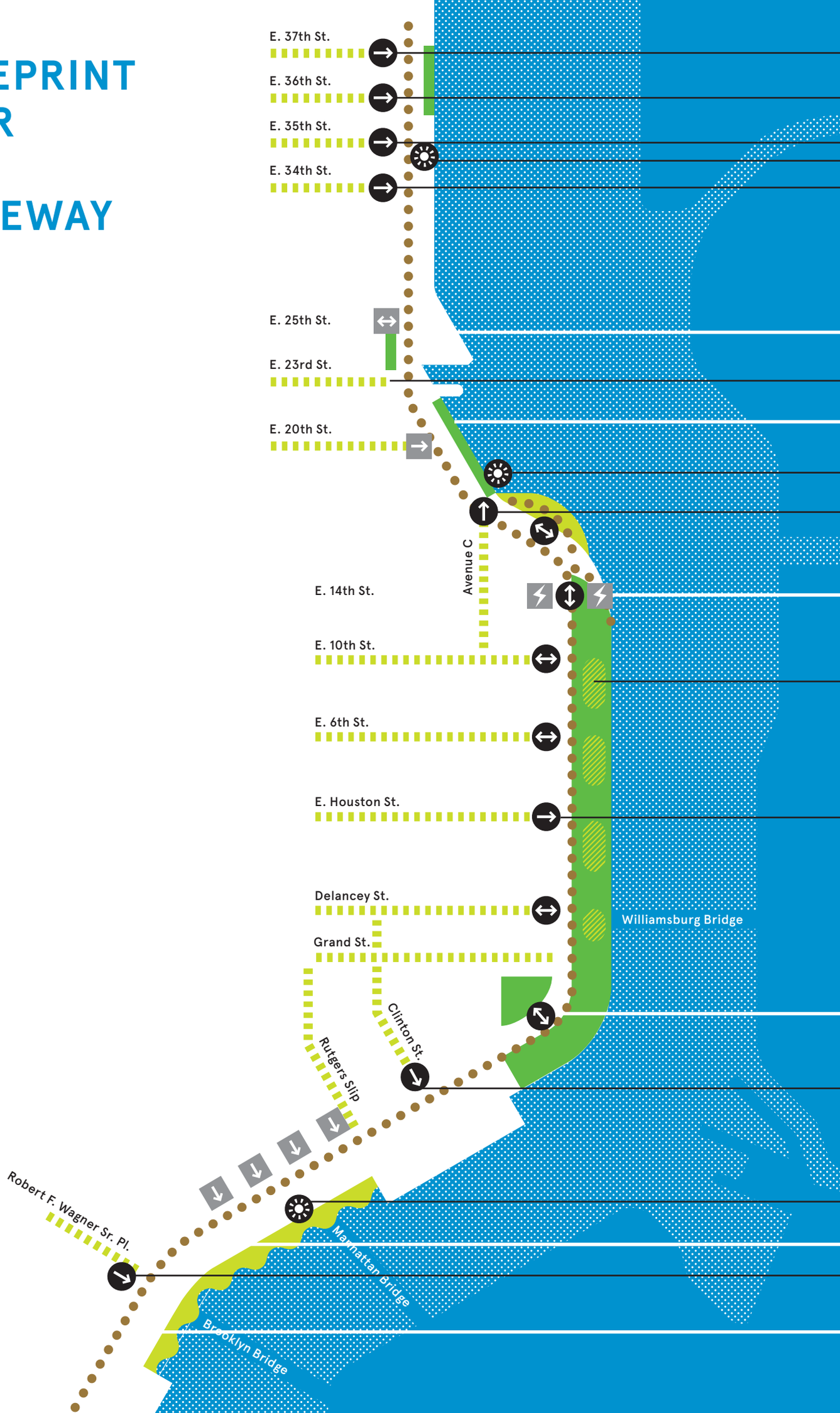
Improving community access in the area is as much about safety as access, with crash data indicating that many of the Blueway's most dangerous crossings are along this stretch, most notably at the intersection of East 34th Street and the FDR Drive. Crossing to the waterfront here, where the FDR Drive is raised, means that most crossings are at street level and would benefit from specific design interventions.

Lighting under the viaduct would make the spaces more welcoming. The crossing of the FDR Drive and Avenue C could be improved by removing the fence that currently block views of the park, installing bike-specific signals to avoid pedestrian and bicyclist conflicts, and adding pedestrian signals at the northbound FDR Drive exit lane crossing below the FDR Drive Viaduct. Extending and widening the existing medians along northern crosswalks at both Avenue C and East 23rd Street intersections would increase safety by providing pedestrian refuge areas.

8. Increase and Enhanced Access to Glick Park

Both access points to Glick Park require attention. With the ferry terminal, the East 37th Street crossing at the FDR Drive Service Road, Glick Park's southern entrance should be more visible. Proposed improvements include an elevated shoulder or bulb-out adjacent to the FDR Drive ramp structure, providing street-crossing protection for pedestrians and bicyclists. Prominent wayfinding signage would increase the connections to the waterfront. Exciting and attractive lighting and safety mirrors in the underpass would make this crossing safer and a true portal to the East River. This area would also be an appealing site for public art programs. Lastly, because the greenway ends at East 38th Street, a clear redirection of bicycle traffic at this intersection is needed to improve safety.

BLUEPRINT FOR THE BLUEWAY



Manhattan Borough President Scott M. Stringer, Assemblymember Brian Kavanagh, NYS Department of State Division of Coastal Resources

Create a raised shoulder or bulb-out; for pedestrians, add lighting to the Glick Park underpass entrance

Add traffic light, crosswalk, and signal; install traffic calming features

Add crosswalk and signal on south side of intersection

Lighting under FDR Drive viaduct from E. 30th St. to E. 37th St.

Add crosswalk, signal, and median on the south side intersection of E. 34th St.

Skyport Garage Rooftop Activation

Improve lighting; widen northern median to accommodate pedestrians

Stuyvesant Cove Human-Powered Boat Launch

Lighting under FDR Drive viaduct from E. 18th St. to E. 23rd St.

Remove fence; install bike signals; add pedestrian signal at the northbound FDR Drive exit lane crossing; extend existing median at northern crosswalk

The Blueway Crossing

East River Park ballfield stormwater storage

Provide traffic calming features such as rumble strips

Corlears Hook Park Landscape Bridge

Add traffic light; add crosswalk and pedestrian signal; provide traffic calming features such raised tables; add two-way bike lane on Clinton St. from Grand St. to the waterfront

Lighting under FDR Drive viaduct from the Brooklyn Bridge to Montgomery St.

Esplanade Freshwater Wetland

Add traffic light; add crosswalk and pedestrian signal

Brooklyn Bridge Beach

Funding Opportunity Projects: the client team would seek public funds, can be implemented within the short-term

Advocacy Efforts: to be built into city agency annual budgets

Existing Features

- Existing Public Park
- Existing Con Ed Facility
- Existing or Planned At-Grade Crossing
- Existing Pedestrian Bridge

Advocacy Efforts

- New/Improved At-Grade Crossing
- New/Improved Pedestrian Bridge
- Lighting Under FDR Drive Viaduct
- Green Infrastructure
- Salt Marsh for Wave Attenuation
- Ballfield Stormwater Storage
- New Street Trees

The priority projects identified below are strongly supported by local organizations and can leverage financing from both private and public sources to increase waterfront access, achieve environmental goals, and provide long-term benefits that far exceed the up-front costs. As discussed in previous sections, these projects can reduce the financial impacts of significant storms and have the potential to reduce long-term maintenance costs. This section lays out each priority project, potential financing strategies, and next steps for implementation, including long-term goals as well as short-term strategies and initial considerations for ongoing operations and maintenance needs.

FUNDING FOR WATERFRONTS AND PARKS

Urban waterfronts and parks transform neighborhoods and generate economic benefits to their nearby communities. These spaces:

- Provide valuable public programming
- Establish a civic identity and communicate the character of urban neighborhoods
- Create must-see destinations increasing tourism and generating retail and hospitality spending
- Enhance a neighborhood's "brand" or identity, increasing property values, retail sales, and employment
- Serve as green infrastructure keeping waterways clean

Great ideas supported by great designs—like those envisioned by the community for the East River Blueway—paired with popular and institutional support, have significant capacity to attract capital funds from local, state, and federal governments. Further, investment from local institutions and businesses interested in playing a role in the Blueway experience may also support capital needs. Similarly, signature projects like the Blueway are ripe for investments from individuals, foundations, and not-for-profit organizations.

CONSIDERATIONS FOR OPERATIONS AND MAINTENANCE

Similar to capital expenses, operating expenses and maintenance costs for the projects outlined below will require a combination of public and private funding. While operations and maintenance will continue to rely on current public funds dedicated to maintaining the existing greenway along the East River, the proposed enhancements will necessitate additional funding for this same purpose. Many parks throughout the city already receive considerable funding for operations and maintenance through philanthropy and corporate sponsorship; the East River Blueway should be no different. In addition, the redevelopment of the Blueway itself provides opportunities for new revenue streams, which are described below. Concessions (restaurant/other food and beverage), retail, paid parking, and event or activity rentals are examples of ways in which each of the priority capital projects can help fund, operate, and maintain themselves.

In the future, as the Blueway continues to establish itself as a local and regional destination, the Blueway Plan envisions increased recognition from New York City agencies, particularly in the form of increased or dedicated staffing. For instance, the Department of Parks and Recreation could appoint a Blueway or East River Administrator who focuses on the entire site area, providing an in-house champion for the continued renewal and revitalization of this singular resource.

The Blueway Crossing and Flood Barrier

The Blueway Crossing is an elevated greenway that spans the FDR Drive near Con Ed's facilities at East 14th Street. The Crossing will solve the pinch-point issue, and act as a flood barrier for Con Ed's facilities. Investment in this infrastructure will create greater access to East River Park while its support structures help to mitigate the impacts of future floods.

Advocates for the project might include pedestrians, runners, and cyclists who stand to benefit from access improvements, as well as Con Ed, the beneficiary of hardened flood protection. By fortifying critical city infrastructure, the Crossing would also serve to meet post-Sandy resilience objectives.

The Blueway Crossing can leverage outside funding sources to support capital costs, both from public sources focused on infrastructure improvement, pedestrian accessibility and waterfront protection, and from not-for-profit advocacy groups. Local, state, and national funding opportunities should be pursued. Public sector programs include New York City's Green Infrastructure Grants, the New York State Department of State Environmental Protection Fund, New York State's Empire State Economic Development Fund, the U.S. Department of Transportation's Transportation Enhancement Program, and programs from the Environmental Protection Agency. Numerous existing programs support enhancing walkability and cycling, as well as providing environmental improvements. Infrastructure funds dedicated to improving storm surge and flooding resilience developed post-Sandy might also be leveraged.

The next steps for moving this project forward include meetings with area advocates and stakeholders, including continued discussion with Con Ed to review how the project would provide critical protection for its facilities. Provided the project meets Con Ed's security concerns, the project would then need to advance to review by city agencies.

Brooklyn Bridge Beach

At the southern end of the Blueway, the Brooklyn Bridge Beach project establishes public access to a natural beach beneath the historic span. The beach will offer a spectacular viewing area, with terraced seating envisioned beneath the landmark bridge. Kayaks will be available to explore surrounding waters and a concession stand on the esplanade will enliven and activate the area.

This site sits at a pivotal juncture between the developed sections of the esplanade in heavily-commercial Lower Manhattan and the residential communities of the Lower East Side. With the appropriate treatment and design, the Brooklyn Bridge Beach will encourage and draw pedestrians and bicyclists to explore further north beyond South Street Seaport. Brooklyn Bridge Beach can become a spectacular destination, and at the same time, an important recreational amenity to nearby residents.

The city has previously funded projects beneath the Brooklyn Bridge, such as the New York City Waterfalls project in 2008, and the annual New York City Swim event across the East River that currently departs from Brooklyn Bridge Beach. The site would be an ideal candidate for EDC's Illuminate Lower Manhattan Program, which is an initiative developed to increase Lower Manhattan's exposure, expand its appeal and spur more diverse business activity by creating a landmark for the neighborhood. Advocates, agencies and elected officials seeking to realize the beach should continue to pursue

city funds for this area to enable proper public access to the beach and to turn it into a permanent destination. The project also has the potential for on-site income generation through a concession stand(s), which will add to the vibrant atmosphere at the beach.

Esplanade Freshwater Wetlands

Further north, where the FDR Drive viaduct overhangs the river (from Robert F. Wagner Sr. Place to Market Slip), the Blueway Plan envisions the construction of freshwater wetlands. Built out from the esplanade bulkhead, freshwater wetlands will catch and cleanse stormwater runoff, which currently discharges from the FDR Drive directly into the river.

The freshwater wetlands project would provide greenery along a section of the esplanade that currently has no plantings. If implemented in conjunction with educational signage previously discussed, the wetlands would also provide a unique educational experience, demonstrating how run-off from the FDR Drive can be captured and naturally treated before entering the East River. Funding through New York City's Green Infrastructure Grant program and the New York State Department of State Environmental Protection Fund may be appropriate.

Because the FDR Drive viaduct overhangs the East River along this stretch of the esplanade, the wetlands structure would not create much additional shadowing of the river, thereby reducing regulatory concerns from agencies such as the NYS Department of Environmental Conservation.

Corlears Hook Park Landscape Bridge

Corlears Hook Bridge is a planted bridge that seamlessly brings together two parks—Corlears Hook Park and East River Park—and provides visitors with the experience of remaining within continuous parkland as they cross the bridge. The existing Corlears Hook Bridge has the lowest pedestrian usage, despite being the widest of all the pedestrian bridges into East River Park. This lack of usage is partly due to its poor visibility and a lack of wayfinding to the crossing.

There is an opportunity to re-conceive the crossing as a dramatic new gateway to East River Park that is on axis to the amphitheatre. Today, planted bridges are in place around the world, from urban bridges such as Mile End Park Bridge in London to planted crossing bridges over highways for wildlife in rural areas. The success of these bridge projects demonstrates the feasibility of constructing and maintaining a planted bridge. With New York City's emphasis on green roofs, the creation of a highly visible "green bridge" would be an important addition to the city's ecological infrastructure landscape.

The Blueway Plan's long-term vision for the bridge is one that would make the structure more sustainable and less expensive to maintain. The bridge's existing structure will be maintained, while its deck will be replaced with plantings. To make it a truly pedestrian experience, vehicles would continue to be prohibited from using the bridge.

The critical source of funding for this project would be the NYC Department of Transportation, which has a bridge maintenance and replacement program.

Stuyvesant Cove Boat Launch

A human-powered boat launch introduces recreational boating to Stuyvesant Cove on a floating dock to be installed adjacent to Solar One's facilities. The project has local support from the community, Metropolitan Waterfront Alliance (MWA), EDC, and Solar One.

The human-powered boat launch project is a low-budget capital project that promotes access to the waterfront and requires limited funds for ongoing maintenance. The Blueway Plan envisions management of the facility by partnering organizations. In addition to leveraging public and private funding sources for capital costs, the project has the long-term potential for some on-site income generation, should the boat launch provide an opportunity for boat rentals. Fundraising efforts may be driven by organizations interested in managing the site in pursuit of city, state and federal grants and/or private funds.

The next steps for this project would be to work with MWA to confirm management capacity with Solar One and human-powered boating groups, and to secure capital financing, and work with EDC to ensure safe access to the waterfront that does not interfere with existing boating routes.

Skyport Garage Rooftop Activation

Skyport Garage is a four-story, paid-parking facility on the waterfront at Stuyvesant Cove owned by New York City and managed by EDC. The Blueway Plan calls for activating the garage's rooftop with a limited-service dining or event venue, and public access to the waterfront on this segment of the East River where none currently exists.

The project promotes connectivity to the waterfront by increasing opportunities for activities and events in the area without requiring significant additional capital funds. In addition, the project could be self-funding and/or a revenue generator.

EDC will be soliciting requests for a new operator for the garage in the near future, and the solicitation should be consistent with the Blueway Plan's recommendation of incorporating a dining/event space on the Skyport Garage roof. In the longer term, this site will provide an opportunity for future redevelopment given its accessibility and its proximity to existing waterfront multifamily residential buildings. Catalyzing redevelopment in the area may provide additional resources which can be used for ongoing operations and maintenance costs in Stuyvesant Cove or elsewhere in the park.

CONCLUSION

The priority projects represent six projects distributed across the entire Blueway site area, which include short- and long-term, small-scale and ambitious proposals. These projects address all four goals in terms of allowing people to engage with the river, plan for resiliency, and improve both access to and continuity along the East River.

The Manhattan waterfront has been transformed enormously over the past 15 years through a combination of public and private efforts. This stretch of the East River is one of the last remaining areas in need of a comprehensive vision and a plan for implementation that will make it an accessible, vibrant and resilient waterfront for nearby residents and people from across the city.

APPENDIX

IMAGE CREDITS

Rendering of new fishing piers and salt marshes looking west from the Manhattan Bridge.
Altered Flickr image. Whitaker, Ed. Brooklyn Bridge. Available from: Flickr. JPG Digital Image, http://www.flickr.com/photos/edwhitaker/3400392330/sizes/l/ (accessed November 16, 2012). Page 6

1776 Map of the Lower East Side.
A plan of the city and environs of New York in North America. JPG Digital Image, http://maps.bpl.org/details_14193/ (accessed January 11, 2012). Page 16

East River swimming pool house, 1870.
JPG Digital Image, http://blog.nyhistory.org/wp-content/uploads/2011/08/nyhs_pr020_65_bathhouse-300.jpg (accessed January 5, 2012). Page 16

NYCHA housing along East River Park.
Jacob Riis Projects. JPG Digital Image, http://theageofnepotism.com/2010/04/robert-moses-and-the-rise-of-new-york-part-2/ (accessed November 11, 2012). Page 16

Video stills from interviews.
Ewald, Sarah. Page 20, 21

Flooding at Stuyvesant Cove after Hurricane Irene.
O'Leary, Marianne. Stuyvesant Cove flooding from East River surge. JPG Digital Image, http://www.flickr.com/photos/marianne_oleary/6088647497/ (accessed December 5, 2011). Page 25

Flooding on the FDR Drive after Hurricane Sandy.
Shankbone, David. Hurricane Sandy NYPD FDR Flood 2012. JPG Digital Image, http://www.flickr.com/photos/shankbone/8139676602/ (accessed December 21, 2011). Page 25

Conceptual design of a sea barrier in the Verrazano Narrows by ARCADIS.
JPG Digital Image, http://www.ryot.org/scientists-sea-barrier-could-have-stopped-surge-in-nyc/ (accessed November 16, 2012). Page 27

Deltaworks in The Netherlands.
vtveen, JPG Digital Image, http://www.flickr.com/photos/vtveen/8330422488/ (accessed January 3, 2013). Page 27

Previous Flood Lines Water Marks at White's Ferry.
JPG Digital Image, http://www.mymcmedia.org/whites-ferry-prepares-for-flooding-photos/189079_397719006966384_133802936_n/ (accessed January 4, 2013). Page 29

Rendering of new fishing piers and salt marshes looking west from the Manhattan Bridge.
Altered Flickr image. Edwhitaker. Brooklyn Bridge. Available from: Flickr. JPG Digital Image, http://www.flickr.com/photos/edwhitaker/3400392330/sizes/l/ (accessed November 16, 2012). Page 31

Vancouver Land Bridge, Washington State.
Muñoz, Alicia. This aerial of the Land Bridge at Fort Vancouver Historic Reserve was taken at the 2007 dedication.
JPG Digital Image, http://artworks.arts.gov/?tag=maya-lin (accessed on May 3, 2012). Page 46

Mile End Park, London, UK.
JPG Digital Image, http://www.bdonline.co.uk/comment/piers-goughs-inspiration-the-barbican-by-chamberlin-powell-and-bon/3162951.article (accessed on June 14, 2012). Page 46

Tree canopy, UPenn, Philadelphia, PA.
JPG Digital Image, http://www.archdaily.com/95781/morris-arboretum-tree-adventure-metcalfe-architecture-design/morris-arboretum-by-metcalfe-architecture-design/ (accessed on July 25, 2012). Page 51

An example of a "bioswale."
JPG Digital Image, http://www.miabirk.com/blog/wp-content/uploads/2011/01/Green-Street-Feature-225x300.jpg (accessed on January 25, 2013). Page 53

Allegheny Riverfront Park, Pittsburgh, PA.
JPG Digital Image, http://ballistamagazine.com/wp-content/uploads/2011/01/MVVA-Allegheny-Riverfront-620x616.jpg (accessed on August 28, 2012). Page 54

Battery Park City promenade.
JPG Digital Image, http://www.walkingoffthebigapple.com/2012/04/walk-on-battery-park-esplanade-and-ride.html (accessed on August 28, 2012). Page 54

Floating dock in Riverside Park.
Garcia, Robert, The City Project. Available from: Flickr. JPG Digital Image, http://www.flickr.com/photos/cityprojectca/5785386556/ (accessed on December 21, 2012). Page 66

Unless listed above, renderings were created by WXY architecture + urban design. Aerial and site photography by Albert Vecerka/Esto.

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Office of State Senator Daniel Squadron
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Tudor City Neighborhood Association
Two Bridges Tenant Association
Waterside Plaza Tenants Association

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