Appendix A2
Final Scope of Work

East Side Coastal Resiliency Project:
Final Scope of Work to Prepare a Draft Environmental Impact Statement

April 5, 2019

East Side Coastal Resiliency

Final Scope of Work to Prepare a Draft Environmental Impact Statement

April 5, 2019

CEQR No:	15DPR013M
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1 INTRODUCTION

On October 29, 2012, Hurricane Sandy made landfall, greatly impacting the east side of Manhattan and highlighting the need for the City of New York (the City) to increase its efforts to protect vulnerable populations and critical infrastructure during major storm events. Hurricane Sandy, a presidentially declared disaster, caused extensive coastal flooding, resulting in significant damage to residential and commercial property, open space, transportation, power, and water and sewer infrastructure, which in turn affected medical and other essential services. As part of its plan to address vulnerability to such major flooding, the City is proposing the East Side Coastal Resiliency (ESCR) Project (the proposed project), which involves the construction of a coastal flood protection system along a portion of the east side of Manhattan (see **Figure 1**) and related improvements to City infrastructure (the proposed project).

The proposed project area begins at Montgomery Street to the south and extends north along the waterfront to East 25th Street and is composed of two sub-areas: Project Area One and Project Area Two. Project Area One extends from Montgomery Street on the south to the north end of John V. Lindsay East River Park (East River Park) at about East 13th Street. Project Area One is approximately 61 acres and consists primarily of the Franklin Delano Roosevelt East River Drive (the FDR Drive) right-of-way, a portion of Pier 42 and Corlears Hook Park as well as East River Park. The majority of Project Area One is within East River Park and includes four existing pedestrian bridges across the FDR Drive to East River Park (Corlears Hook, Delancey Street, East 6th Street, and East 10th Street Bridges) and the Houston Street overpass. Project Area Two is approximately 21 acres and extends north and east from Project Area One, from East 13th Street to East 25th Street. In addition to the FDR Drive right-of-way, Project Area Two includes the Consolidated Edison Company of New York (Con Edison) East 13th Street Substation and the East River Generating Station, Murphy Brothers Playground, Stuyvesant Cove Park, Asser Levy Recreational Center and Playground, and in-street segments along East 20th Street, East 25th Street, and along and under the FDR Drive. **Figure 2** is an aerial map depicting the limits of Project Area One and Project Area Two.

The area that would be protected under the proposed project (the protected area) includes lands within the Federal Emergency Management Agency (FEMA) 100-year special flood hazard area (SFHA). In addition, the protected area also takes into consideration the 90th percentile projection of sea level rise to the 2050s (see **Figure 3**). Based on these assumptions, the protected area includes portions of the Lower East Side and East Village neighborhoods, Stuyvesant Town, Peter Cooper Village as well as East River Park and Stuyvesant Cove Park inland of the flood alignment. Within the project area, the City is proposing to install a flood protection system generally located within City parkland and streets, which would consist of a combination of floodwalls, levees, closure structures (e.g., floodgates), and other infrastructure improvements to reduce the risk of flooding. In addition to providing a reliable coastal flood protection system for this area, another goal of the proposed project is to improve open spaces and enhance access to the waterfront, including East River Park and Stuyvesant Cove Park.

The City has entered into a grant agreement with the U.S. Department of Housing and Urban Development (HUD) to disburse $338 million of Community Development Block Grant-Disaster Recovery (CDBG-DR) funds for the design and construction of the proposed project. The City is the grantee of CDBG-DR funds related to Hurricane Sandy for the development of a coastal flood protection system, which would be provided to the City through the New York City Office of Management and Budget (OMB), acting under HUD's authority.

Implementing the proposed project requires the preparation of an Environmental Impact Statement (EIS) in accordance with the requirement of the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations (CFR) 1500-1508), the State Environmental Quality Review Act (SEQRA), and the City Environmental Quality Review Act (CEQR). NEPA is the federal law that governs the disclosure and analysis of the environmental effects of actions that are funded, approved, or directly undertaken by a federal government agency. Pursuant to 24 CFR Part 58 (Environmental Review Procedures for Entities assuming HUD Environmental Responsibilities), and as the recipient of the above-noted CDBG-DR funds, OMB has assumed these environmental review responsibilities which would otherwise apply to HUD. As such, OMB is the HUD-designated responsible entity and has assumed Lead Agency status under NEPA. Since the proposed project also requires State approvals (e.g., permits), the EIS must also comply with SEQRA and its implementing regulations (6 New York City Rules and Regulations [NYCRR] Part 617). Additionally, since the proposed project requires local approvals and would be implemented by the City of New York, it is also subject to the requirements of CEQR, as set forth in Executive Order 91 of 1977, CEQR regulations, and subsequent CEQR amendments. Given that the proposed project would be located in large part within City parkland and requires approvals from the New York City Department of Parks & Recreation (NYC Parks), NYC Parks has assumed Lead Agency status under SEQRA and CEQR. OMB and NYC Parks, with the cooperation of a number of involved and interested agencies at the city, state and federal levels, will therefore be preparing an EIS that will analyze the potential environmental effects of the proposed project and will serve to fulfill the statutory obligations of NEPA, SEQRA and CEQR.

Public scoping is the first step in the environmental review process and is the period during which government agencies, elected officials, community organizations, groups, and individuals can review and provide comments on the Draft Scope of Work (Draft Scope) to prepare a Draft EIS (DEIS). The formal public review process for the proposed project was initiated with the release of the Draft Scope on October 30, 2015, with a public scoping meeting that was held on December 3, 2015, to receive spoken and written comments on the Draft Scope. The public review period remained open through December 21, 2015. Subsequent to the closure of the comment period, the Lead Agencies (NYC Parks and OMB) reviewed and considered comments received during the public scoping process. **Appendix B** to this Final Scope of Work (Final Scope) to Prepare a DEIS identifies the comments submitted during the public review period and provides responses. This Final Scope was prepared after consideration of relevant public comments and design updates. Where changes between the Draft and Final Scopes were necessary based on public comments and design updates, they are identified in this Final Scope by double underlining.

This Final Scope describes the following: the purpose and need for the proposed project, a summary of the proposed project alternatives, and the methodologies to be used in assessing the potential for environmental effects associated with the proposed project alternatives. The proposed DEIS impact assessment criteria and methodologies contained in this Final Scope are primarily based on the guidance set forth in the 2014 *City Environmental Quality Review (CEQR) Technical Manual,* but also draw upon applicable state and federal guidelines, where appropriate. The proposed scope of work for each DEIS technical area is described in the sections below. The potential for adverse effects will be assessed and disclosed in the DEIS.

2 BACKGROUND OF THE PROPOSED PROJECT

When Hurricane Sandy hit New York City in 2012, the resulting waves and storm surge battered the City's coastline, leading to 43 deaths, the destruction of homes and other buildings, and severe damage to critical infrastructure. The damage was particularly intense in neighborhoods across

Southern Manhattan, Southern Queens, Southern Brooklyn, and the eastern and southern shores of Staten Island.

During Hurricane Sandy, Manhattan's East River waterfront between East 42nd Street and the Brooklyn Bridge experienced extensive coastal flooding, which affected millions of square feet of built space, including residential and commercial buildings, parks, and critical infrastructure. The East River storm surge overtopped the bulkhead, inundated East River Park, crossed the FDR Drive, and flowed inland two blocks and down Avenue C, with water depths of up to four feet reported along Avenue C. **Figure 4** shows the extent of Hurricane Sandy flooding. This flooding damaged critical mechanical systems within numerous buildings, including fire safety, life safety, and heating and cooling systems.

Hurricane Sandy also resulted in significant damage to critical elements of the City's utility infrastructure, including the energy grid, water supply and sewer service facilities, and transportation systems. As Hurricane Sandy approached New York City, Con Edison preemptively shut down two electrical networks in Lower Manhattan (the area south of the Brooklyn Bridge) to minimize the damage to their facilities and critical infrastructure. Nonetheless, the surge damaged substation facilities located at both East 13th Street and the South Street Seaport, shutting down electrical service to much of Manhattan below 34th Street for nearly four days after the storm.

Surge waters also damaged two New York City Department of Environmental Protection (DEP) wastewater facilities serving Southern Manhattan, including the Avenue D Pump Station (also referred to as the Manhattan Pump Station or the 13th Street Pump Station), located at East 13th Street and the FDR Drive, and the Canal Street Pump Station, located near the intersection of Canal and Varick Streets. The Manhattan Pump Station experienced service outages and was shut down for more than a day, exacerbating combined sewer overflow (CSO) discharges into the East River during that time. Flooding also affected seven subway tunnels, including the 14th Street Tunnel for the L line (BMT-Canarsie Line). Damage to these tunnels resulted in their closure for up to a week after the storm.

In Hurricane Sandy's aftermath, the City formed the Special Initiative for Rebuilding and Resiliency (SIRR) to analyze the impacts of the storm on the City's buildings, infrastructure, and people; to assess climate change risks in the near term (2020s) and long term (2050s); and to outline strategies for increasing resiliency citywide. The PlaNYC report, "*A Stronger, More Resilient New York*," released in June 2013, was the result of that effort and contains Community Rebuilding and Resiliency Plans (CRRP) for five particularly vulnerable neighborhoods in the City, including Southern Manhattan.

The CRRP for Southern Manhattan outlines specific initiatives to address coastal defenses for buildings and critical infrastructure coupled with post-storm community and economic recovery. With respect to coastal protection, the City's proposals were based on a multi-faceted analysis that considered the types of coastal hazards and their likelihood of occurrence, the potential impact of these hazards on the built environment and on critical infrastructure, and the likely effectiveness of proposed measures to address these hazards. In addition, the coastal defense measures were informed by the New York City Department of City Planning's (DCP) *Urban Waterfront Adaptive Strategies* (UWAS) study, published in June 2013, and funded by a HUD Sustainable Communities Regional Planning Grant. The UWAS study examined the underlying geomorphology of the various regions, including categorizing each coastal reach of the City's shoreline by geomorphic type. The UWAS study provided an assessment of coastal resiliency measures that would be appropriate for each geomorphologic type along the City's shoreline. The

CRRP built upon the results of the UWAS study to recommend coastal initiatives for Southern Manhattan's coastline, which includes the proposed project area.

Coastal Protection Initiative 21 of the CRRP calls for an integrated flood protection system in Lower Manhattan, extending from East 14th Street to Battery Park City, the first phase of which is intended to protect the Lower East Side and parts of Chinatown. Generally defined as the area south of East Houston Street and east of the Manhattan Bridge between the Bowery and the FDR Drive, the Lower East Side and Chinatown are home to a large residential population, including one of the greatest concentrations of low- and moderate-income households in the City, with over 9,000 New York City Housing Authority (NYCHA) housing units. In addition, critical infrastructure, including the City's subway system, Con Edison substations, the Manhattan Pump Station, and the FDR Drive, are all located here. It was recognized in the CRRP that potential storm damage to these critical assets would result in citywide impacts on thousands of housing units, transportation systems, parks, and the economy.

In June 2013, HUD launched the Rebuild by Design (RBD) competition to respond to Hurricane Sandy's devastation. Through this competition, which was funded using foundation and private-sector resources, selected proposals were identified for further analysis with the goal of identifying projects for implementation. In June 2014, following a year-long process during which the design teams met with regional experts—including government agencies, elected officials, community organizations, local groups, and individuals—HUD announced six winning proposals that included projects throughout the Hurricane Sandy-impacted area, including Long Island, New Jersey, the Bronx, Staten Island, and Manhattan. The concept for Manhattan was named "the Big U," which focused on a flood protection system around Manhattan extending along the Hudson River from West 57th Street to The Battery, and then north up the East River to East 42nd Street. As part of the RBD process, a more focused proposal was developed to reduce the flood risk for vulnerable communities along the East Side. This proposal identified three waterfront compartments between The Battery and East 23rd Street. These compartments were determined based on the 100-year mapped SFHA map (see **Figure 5**), topography, and sea level rise projections developed by the New York City Panel on Climate Change. Although the compartments were conceptualized together, each could provide flood protection independently of the others. CDBG-DR funds were subsequently allocated by HUD for the design and construction of the Montgomery Street to East 23rd Street compartment, which is the basis for the proposed project area. As design for this compartment advanced, the project area was extended north to East 25th Street and included the historic Asser Levy Recreational Center.

The importance of this project to the City was emphasized in "*One New York: The Plan for a Strong and Just City*," (*OneNYC*) released in April 2015. In *OneNYC*, the City identified the proposed project as one of several vital projects to be completed throughout all five boroughs that would strengthen coastal defenses, building a stronger, more resilient New York City that is prepared for the impacts of climate change. Specifically, Vision 4 of *OneNYC* noted that the proposed project would benefit thousands of public housing and other residents of a particularly vulnerable part of Manhattan and would demonstrate a new model for integrating coastal protection into neighborhoods, consistent with the City's resiliency vision.

3 PURPOSE AND NEED OF THE PROPOSED PROJECT

As established above, Hurricane Sandy underscored the City's need to bolster its resiliency efforts to protect property, vulnerable populations, and critical infrastructure during design storm events. The need to protect the area is magnified by the potential for more frequent flooding events and

would align with resiliency planning goals described in *OneNYC* and *A Stronger, More Resilient New York*. To that end, the purpose of the proposed project is to address this coastal flooding vulnerability in a manner that reduces the flooding risk while enhancing waterfront open spaces and access to the waterfront.

The principal objectives of the proposed project are as follows:

- Provide a reliable coastal flood protection system against the design storm event for the protected area;
- Improve access to, and enhance open space resources along the waterfront, including East River Park and Stuyvesant Cove Park;
- Respond quickly to the urgent need for increased flood protection and resiliency, particularly for communities that have a large concentration of residents in affordable and public housing units along the proposed project area; and
- Achieve implementation milestones and comply with the conditions attached to funding allocations as established by HUD, including scheduling milestones.

Additionally, design considerations for the proposed project include:

- Reliability of the proposed coastal flood protection system;
- Urban design compatibility and enhancements;
- Improving the ecology and long-term resiliency of East River Park;
- Minimizing environmental effects, including construction-related effects, and disruptions to public right of way;
- Constructability;
- Operational needs;
- Maintenance needs;
- Minimizing use of pre-storm event deployable structures;
- FEMA accreditation;
- Scheduling that meets HUD milestones; and
- Cost effectiveness.

4 ENVIRONMENTAL REVIEW PROCESS

The environmental review process provides decision-makers with the necessary information to systematically consider the proposed project's potential adverse environmental effects. This includes evaluating the potential adverse environmental effects from reasonable alternatives, and identifying and mitigating, where practicable, the effects identified as part of this process. OMB and NYC Parks, as the NEPA and SEQRA/CEQR Lead Agencies, respectively, have determined that the proposed project has the potential to result in significant adverse environmental effects. Therefore, at OMB's request, HUD issued a Notice of Intent (NOI) to Prepare an EIS (in accordance with 24 CFR Part 1502) and NYC Parks issued a Positive Declaration in accordance with SEQRA/CEQR (see **Appendix A**). In addition, OMB and NYC Parks prepared a Draft Scope to describe the proposed content of the DEIS to explain the methodologies to be used in the impact analyses, and to allow for public and stakeholder participation as recommended by 6 NYCRR Part 617. The Draft Scope was published on October 30, 2015, and a public scoping meeting was held on December 3, 2015.

The Lead Agencies will prepare a DEIS based on this Final Scope, which has been issued following the public input and review period that remained open until December 21, 2015. This Final Scope includes a response to comments on the Draft Scope (see **Appendix B**) and has been modified as necessary to address those comments. (Modifications between the Draft and Final Scopes are identified by double underlining.) As stated above, the DEIS and subsequent Final EIS (FEIS) will serve to fulfill the statutory obligations of NEPA, SEQRA, and CEQR.

Once OMB and NYC Parks have determined that the DEIS is complete, a Notice of Availability (pursuant to NEPA) and a Notice of Completion (pursuant to CEQR) will be prepared, distributed, and published in accordance with applicable regulations. The DEIS will then be available for additional public review, in accordance with NEPA, SEQRA and CEQR procedures, including a public hearing and a period for public comment. After the DEIS public comment period has closed, a FEIS will be prepared, which will include a summary of the comments received on the DEIS, responses to all substantive comments, and any necessary revisions to the DEIS to address those comments. No sooner than 30 days after publishing the FEIS, OMB, as NEPA Lead Agency, will prepare a Record of Decision (ROD) that will describe the Preferred Alternative for the proposed project, its environmental effects, and any required mitigation. Similarly, NYC Parks, as the CEQR Lead Agency, will prepare a Statement of Findings demonstrating that it has reviewed the environmental effects, mitigation measures, and alternatives in the FEIS prior to adopting its findings. OMB can proceed with the federal action of requesting release of CDBG-DR grant funds from HUD once the environmental review process is concluded.

5 POTENTIAL REGULATORY PERMITTING, APPROVALS, AND COORDINATION

Implementation of the proposed project involves a number of federal, state, and local approvals. The federal, State, and City agencies that may potentially be involved in the environmental review and regulatory permitting processes are as follows:

FEDERAL

- U.S. Department of Housing and Urban Development (HUD) – Disbursement of funds, administration of CDBG-DR grant to the City of New York; review of Action Plan Amendments.
- U.S. Army Corps of Engineers (USACE) – Permits or authorizations for the discharge of dredged or fill materials into Waters of the United States (Section 404 of the Clean Water Act) or structures or work within navigable waters (Section 10 of the Rivers and Harbors Act).
- U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) – Advisory agencies to the environmental review process focusing on activities that affect wetlands, water quality, protected plant and wildlife species, and essential fish habitat.
- U.S. Coast Guard (USCG) – Coordination and authorization regarding placement of construction barges and underwater work.
- Federal Emergency Management Agency (FEMA) – Review of flood protection design and potential changes to Flood Insurance Rate Maps (FIRM).
- Advisory Council on Historic Preservation (ACHP) –Advisory role in federal review process pursuant to Section 106 of the National Historic Preservation Act (NHPA).

- U.S. Department of Veterans Affairs (VA) – Coordination and authorization regarding flood protection design proposed to connect to the VA Medical Center.

STATE OF NEW YORK

- Department of Environmental Conservation (NYSDEC) – Permits related to activities in tidal wetlands or adjacent areas (Article 25) or protection of waters (Article 15), Water Quality Certification (Section 401); endangered species protection if an incidental take is determined; permits related to the State Pollutant Discharge Elimination System (SPDES) program; SEQRA regulations related to compliance with the National Ambient Air Quality Standards (NAAQS); and approvals related to the handling and transport of hazardous materials and soils.
- Department of State (NYSDOS) – Review of Coastal Zone Consistency.
- Office of General Services (NYSOGS) – Permits related to State Owned Land under Water.
- Office of Parks, Recreation and Historic Preservation (OPRHP) – Advisory role as the State Historic Preservation Office (SHPO) in federal review process pursuant to Section 106 of the National Historic Preservation Act (NHPA) with respect to designated and protected properties on the State and National Registers of Historic Places and properties determined eligible for such listing.
- Department of Transportation (NYSDOT) – Review of flood protection design and approvals related to construction activities along and adjacent to segments of the FDR Drive under NYSDOT jurisdiction.

CITY OF NEW YORK

- Office of Management and Budget (OMB) – Responsible Entity (RE) for the disbursement of CDBG-DR funds for Hurricane Sandy from HUD to City agencies and NEPA Lead Agency for the environmental review.
- Department of Parks & Recreation (NYC Parks) – Review of and issuance of permits and approvals for project design and construction in City parkland and SEQRA/CEQR Lead Agency for the EIS.
- Mayor's Office of Recovery and Resiliency (ORR) – Advisory agency for activities and projects proposed to increase resiliency, including strengthening neighborhoods, upgrading buildings, adapting infrastructure and critical services, and strengthening coastal defenses.
- Department of Design and Construction (DDC) – Coordination of plans, designs, and environmental review of the proposed project for client agencies.
- Department of Environmental Protection (DEP) – Review of design and advisory agency for activities and projects related to stormwater management, water and sewer infrastructure, air quality, noise, hazardous materials, and natural resources.
- Department of Transportation (NYCDOT) – Review of flood protection design and permits related to activities along, adjacent to and within the FDR Drive and Williamsburg Bridge footings, and the local street network.
- Department of City Planning (DCP) – Planning and waterfront area zoning text compliance and decision-making, Coastal Zone Consistency decision-making, and approval of actions subject to Uniform Land Use Review Procedure (ULURP).

- New York City Economic Development Corporation (NYCEDC) – Coordination and approval for activities on NYCEDC-leased property, including Stuyvesant Cove Park and Solar One Environmental Education Center.
- Small Business Services (SBS) – Coordination and approval for activities on SBS-owned property, including Stuyvesant Cove Park and adjacent parking lot. Issuance of permits for construction related to improvement or maintenance on Waterfront Properties under SBS jurisdiction.
- New York City Emergency Management (NYCEM) – Coordination for emergency preparedness, response, and operations under storm conditions.
- Public Design Commission (PDC) – Review and approval of art, architecture, and landscape features proposed for City-owned property and capital projects.
- Landmarks Preservation Commission (LPC) – Advisory agency for activities on or near sites of historic or archaeological value.
- Department of Buildings (DOB) – Review of design and permits related to buildings including compliance with the City's Building, Electrical, and Zoning Codes and construction activities in the FEMA-designated flood hazard area.
- Department of Housing Preservation and Development (HPD) – Review and approval for the disposition of the New York City Housing Authority (NYCHA) property.
- Office of the Deputy Mayor for Operations – Advisory agency in CEQR review and for activities and projects proposed to advance long-term plans for sustainable growth.
- New York City Fire Department (FDNY) – Design approval for emergency access.

AUTHORITIES

- NYCHA – Review and approval for use of NYCHA property (easement).
- Consolidated Edison Company of New York (Con Edison) – Review and approval for use of Con Edison property (easement).

COMMISSION

- Public Service Commission—Approval of dispositions involving public utility properties (Con Edison).

6 PUBLIC SCOPING FOR THE DRAFT SCOPE OF WORK

In accordance with the requirements of NEPA, SEQRA, and CEQR, a Draft Scope was made available for public review and comment on October 30, 2015.

To solicit public comments on the proposed project, the alternatives to be analyzed in the EIS, and the Draft and this Final Scope, a public meeting was held at 7:00 PM on December 3, 2015, at the following location:

Bard High School Early College
525 East Houston Street
New York, NY 10002

A copy of the Draft Scope to Prepare the DEIS was available online at https://www1.nyc.gov/site/cdbgdr/index.page or by contacting:

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Written comments on the Draft Scope were accepted at either of the above mailing addresses, fax numbers, or email addresses through Monday, December 21, 2015. OMB and NYC Parks reviewed and considered submitted comments before issuing this Final Scope. This Final Scope addresses the comments received during the public review period and includes any changes that were necessary to address those comments.

6.1 ORGANIZATION AND SCOPE OF THE ENVIRONMENTAL IMPACT STATEMENT

The EIS will include the following chapters: Executive Summary; Purpose and Need; Project Alternatives (including a No Action alternative and four flood protection alternatives); Process, Coordination, and Public Participation; Analysis Framework; Affected Environment and Environmental Effects; Indirect and Cumulative Effects; Unavoidable Adverse Effects; and Irreversible and Irretrievable Commitment of Resources.

The following sections of this Final Scope provide a description of the EIS approach and analyses for the following sections: Project Alternatives; Analysis Framework; Affected Environment and Environmental Effects; Indirect and Cumulative Effects; Mitigation Measures; and Summary Chapters.

6.2 PROJECT ALTERNATIVES

The EIS need not consider every alternative of the proposed project but will consider a reasonable range of potentially feasible alternatives that achieve the goals and objectives of the proposed project.

The EIS will include a project alternatives chapter that will provide a thorough description of the alternatives and will establish relevant context for the proposed project. Specifically, the project description is essential to understanding the proposed project and will provide the public and decision-makers a perspective from which to evaluate the environmental effects under each alternative and inform the selection of the Preferred Alternative.

This chapter will provide: a project identification (i.e., a brief description of the proposed project and its location); the project background and history; a statement of the project purpose and need; key planning efforts that shaped this proposed project; a discussion of potential flood protection approaches; description of the design elements of each alternative, including the flood protection components that would be used and where such components would be sited (i.e., in parkland, streets, other City-owned property, or private property); a description of the flood protection systems operation, including activation of the proposed closure structures and drainage isolation components during a storm event; description of water and sewer infrastructure improvements; identification of any related infrastructure or utility relocation; overview of operations and maintenance requirements; descriptions of connections to and coordination with other flood protection systems (e.g., at the Con Edison facility and VA Medical Center); descriptions of park improvements including landscaping, improvements to parkland and recreational facilities; and the restoration and replacement of parkland, streets, and any private property that may be affected by construction. This description will also include a discussion of the approvals required, any acquisition of land that may be required, procedures to be followed during environmental review and permitting, and the role of the EIS in these processes.

Provided below is a summary of the alternatives that are expected to be analyzed in the EIS and the process to be used in developing and refining those alternatives.

6.2.1 PROJECT ALTERNATIVES OVERVIEW

Description of Project Areas

As part of the design process, the proposed project area was divided into two project areas and 16 design reaches (see **Figure 6**). Project Area One comprises 10 design reaches and extends from Montgomery Street on the south to the north end of East River Park (or about East 13th Street). The southerly reaches include City streets such as Montgomery and South Streets, as well as a segment under the elevated FDR Drive, with the majority of Project Area One being within East River Park. Project Area One also includes four existing pedestrian bridges across the FDR Drive to East River Park (the Corlears Hook, Delancey Street, East 6th Street, and East 10th Street Bridges) and the East Houston Street overpass. Project Area Two comprises seven design reaches (Reach J spans both Project Areas One and Two) and extends north and east from Project Area One, from East 13th Street to East 25th Street. In addition to the FDR Drive right-of-way, Project Area Two includes the Con Edison East 13th Street Substation and the East River Generating Station, Murphy Brothers Playground, Stuyvesant Cove Park, street segments along and under the FDR Drive and Asser Levy Playground, and the VA Medical Center.

Project Alternatives Design Process

A set of alternatives has been developed and refined during the public scoping process, which commenced with the issuance of the Draft Scope, with input from the public, agencies, and other stakeholders. Subsequent to the issuance of the Draft Scope and the close of the public comment period, the City identified a fourth design alternative for the proposed project – Alternative 5, Flood Protection System East of FDR Drive. Alternative 5 is included in this Final Scope. Modifications to the components assumed to be part of the other alternatives that occurred since issuance the Draft Scope are also reflected in this Final Scope. The EIS will describe the alternatives that have been considered for analysis, identify those that have been eliminated from further consideration because they do not meet the stated purpose and need of the proposed project, and identify those that will be analyzed further in the EIS. This process, which will be described in the EIS, leads to the designation of a Preferred Alternative.

Coastal Flood Protection System Components

The proposed project incorporates a combination of coastal flood protection components composed of floodwalls, levees, and closure structures, as well as drainage infrastructure improvements. Provided below are descriptions of these systems.

Floodwall. Floodwalls are narrow, vertical structures with a below-grade foundation that are designed to withstand both tidal storm surges and waves. They are typically constructed of steel, reinforced concrete, or a combination of materials with a reinforced concrete cap and can be integrated into a park setting. Floodwalls can be used where there are horizontal space limitations for levees and where there is a design objective to have a narrow footprint of the flood protection system. Typical floodwall designs include I-walls (partially embedded in the ground) and L-walls (foundation base slab supported by a pile foundation), each providing differing degrees of structural protection to withstand tidal surge and wave forces (see **Figure 7** for a cross section of a typical floodwall).

Levees. Levees elevate the existing topography, forming a barrier or line of coastal flood protection. In general, levees have a relatively wide footprint when installed. They are typically constructed of a core of compacted fill material, capped by stiff clay to withstand storm waves, along with a stabilizing landscaped cover. The slopes are designed to maintain the structural stability of the levee under design loading conditions, considering drainage and utilities. To avoid seepage, the coastal flood reduction levee has an interior cutoff wall that is constructed of either a stiff clay or slurry. These coastal protection levees can be integrated into a park setting and have the ability to be adapted or added to in the future to provide for greater flood protection or accommodate sea level rise (see **Figure 8** for a cross section of a typical levee).

Closure Structure. In many flood protection systems, it is necessary to provide an opening to accommodate day-to-day vehicular or pedestrian circulation along a street or sidewalk. In these instances, closure structures are installed to close the openings prior to the anticipated arrival of a design storm event and require active deployment. There are two types of closure structures that have been considered as part of the proposed project, each of which is made of steel and structurally reinforced. These closure structures include the following:

- **Swing Gates.** Swing gates operate like hinged doors and are moved to the closed position prior to the anticipated arrival of a design storm event. The span limit for these systems is generally around 40 feet (see **Figure 9** for a cross section of a typical swing floodgate). This type of floodgate is a site fixture, meaning it remains on-site and is kept in the open position when not in use.
- **Roller Gates.** Roller gates are closure structures that can be used in openings with spans up to 72 feet. They are stabilized with a single or double line of wheels and are slid into their protection position prior to the anticipated arrival of a design storm event. See **Figure 10** for a cross section of a typical roller floodgate. This type of floodgate is kept in the open position when not in use.

Other Components

Infrastructure Improvements. The flood protection components described above would prevent coastal flooding from entering the protected area. The protected area lies within a large sewershed served by a combined sewer system that conveys a combination of sanitary sewage and stormwater through a network of pipes to the Manhattan Pump Station where it is then pumped to the Newtown Creek Wastewater Treatment Plant (WWTP) for treatment and discharge to the East River. Additional improvements are required to modify the existing combined sewer infrastructure

to hydraulically isolate the protected area (drainage isolation) as well as to protect against inland flooding during the simultaneous occurrence of a rain event with a storm surge event (drainage management). An overview of these improvements is shown on **Figure 11**.

- **Drainage Isolation.** Modifications to existing sewer infrastructure would ensure that this infrastructure would not act as a conduit through which tidal surge water from the East River can enter the protected area. These modifications include installing gates on the existing large-diameter sewer pipe (interceptor) that collects and conveys flow through the system and flood-proofing components of the existing sewer infrastructure (such as catch basins and manholes) on the unprotected side of the proposed flood protection system.
- **Drainage Management.** During an extreme storm event, depending on the nature of coincident rainfall, with the tide gates closed, the sewer pipes can reach capacity, potentially resulting in drainage backups within the system that cause inland flooding. Measures to address the potential flooding include the installation of additional conveyance pipes and increasing the size of certain pipes to increase the capacity of the sewer system during design storm events.
- **Infrastructure Reconstruction within East River Park.** The infrastructure within East River Park, including outfalls and regulators and the park's drainage collection system and water supply system, is proposed to be hardened and reconstructed under Alternatives 4 and 5. ~~Con Edison high-voltage transmission lines within the project area present a variety of challenges to the design and construction of flood protection measures. These lines are currently buried at a depth that allows effective heat dissipation, which is critical to the efficient functioning of electrical transmission in Lower Manhattan. The proposed project would include wrapping Con Edison's existing live transmission lines located belowground in a protective carbon fiber material. The carbon fiber wrapping approach would protect the transmission lines during construction and ensure long-term viability and access.~~

Con Edison high-voltage transmission lines within the project area present a variety of challenges to the design and construction of flood protection measures. These lines are currently buried at a depth that allows effective heat dissipation, which is critical to the efficient functioning of electrical transmission in Lower Manhattan. During construction of proposed project, Con Edison would undertake the wrapping of their existing live transmission lines located belowground in a protective carbon fiber material. The carbon fiber wrapping approach would protect the transmission lines during construction and ensure long-term viability and access.

The proposed project would also require water main, sewer, and utility relocations, an operations and maintenance plan, utility and lighting plans, connections to other flood protection structures (e.g., the protection systems at the Con Edison East River Complex and the VA Medical Center), and the restoration and replacement of parkland and streets affected by construction. Construction activities may also require temporary mooring facilities to support barging during construction. Each of the following alternatives propose varying configurations and combinations of the coastal flood protection components described above. These alternatives would meet the project objectives to respond quickly to the need for reliable coastal flood protection and resiliency; improve access to and enhance open space resources along the waterfront; and achieve implementation milestones. The alternatives vary in the degree by which the coastal flood protection system is integrated with the park landscape, park enhancements, and improvements to neighborhood connections. The build year for the proposed project is 2025. However, although the superstructure of the shared-use flyover bridge for the proposed project would be completed

in 2025, the flood protection and enhanced parks and access features under the Preferred Alternative would be completed in 2023 (see additional detailed descriptions below).

Below is a description of the alternatives that are analyzed in the EIS.

6.2.2 ALTERNATIVE 1 – NO ACTION

The No Action Alternative (Alternative 1) is the future condition without the proposed project and assumes that no new comprehensive coastal protection system is installed in the proposed project area. The build year for the proposed project is 2025 and accordingly, Alternative 1 assumes that projects planned or currently under construction in the project area are completed by the 2025 analysis year (i.e., No Action projects).[1] The No Action alternative will describe the future without the proposed project, including other projects planned or currently under construction within the same vicinity and time frame. Alternative 1 will assume that no new comprehensive coastal flood protection systems are implemented in the proposed project area. In the absence of this system, the existing neighborhoods would remain at risk to coastal flooding during extreme tidal storm surges. In addition, there would be limited improvements to open space resources and access to East River Park and the East River waterfront from other planned projects or targeted resiliency projects such as those proposed at the NYCHA properties and the recently completed measures along the VA Medical Center and at Con Edison. The EIS will include a map and list of the projects that are expected to be completed through the 2025 analysis year.

6.2.3 PREFERRED ALTERNATIVE (ALTERNATIVE 4) – FLOOD PROTECTION SYSTEM WITH A RAISED EAST RIVER PARK

The Preferred Alternative proposes to move the line of flood protection further into East River Park, thereby protecting both the community and the park from design storm events, as well as protecting it from increased tidal inundation resulting from sea level rise. See **Figure 12** for schematic of the Preferred Alternative.

In Project Area One, the proposed flood protection alignment begins at its southerly tieback along Montgomery Street about 130 feet west of South Street; at South Street the system turns north along for a distance of about 50 linear feet and then east, crossing under the FDR Drive to the east side of the highway with a pair of swing floodgates. Once on the east side of the highway, the flood protection system turns north and runs adjacent to the FDR Drive, continuing north into East River Park. Once in East River Park, the proposed flood protection alignment starts to turn east towards the East River near the existing amphitheater. From here, the alignment continues north and the system parallels the East River Park bulkhead. The Preferred Alternative would raise the majority of East River Park from the amphitheater to approximately East 13th Street, excluding the Fireboat House. This plan would reduce the length of exposed wall between the community and the waterfront to provide for enhanced neighborhood connectivity and integration. Between the amphitheater and East 13th Street, the park would be raised by an average of approximately eight-feet with the floodwall installed below-grade to meet the design flood elevation criteria. The Delancey Street, East 10th Street, and Corlears Hook Bridges would be reconstructed to be universally accessible. A portion of the park's underground water and drainage infrastructure and

[1] Note that although the superstructure of the shared-use flyover bridge, which is a common component across each of Alternatives 2 through 5, would be completed in 2025, the flood protection and enhanced park and access features under the Preferred Alternative (Alternative 4) would be anticipated to be completed in 2023.

bulkhead are reaching the end of their serviceable life and are in need of repair. Therefore, this park infrastructure would be reconstructed, along with existing park structures and recreational features, including the esplanade, amphitheater, track facility, and tennis house, as part of the raised park. Relocation of two existing embayments along the East River Park esplanade is also proposed under this plan to facilitate more direct connection to the water, increase the type and quality of park user experiences, and allow for the retention of extremely heavily utilized active recreation fields within the park. A shared-use pedestrian/bicyclist flyover bridge (See **Figure 13)** linking East River Park and Captain Brown Walk would be built cantilevered over the northbound FDR Drive to address the narrowed pathway (pinch point) near the Con Edison facility between East 13th Street and East 15th Street, substantially improving the City's greenway network and north-south connectivity in the project area.

In Project Area Two, the line of flood protection would cross the FDR Drive with closure structures near East 13th Street, and continue along the west side of the FDR Drive, bordering the eastern boundary of NYCHA's Jacob Riis Houses, Con Edison's facilities at East 13th, East 14th, and East 15th Streets (including closure structures that cross at East 13th, East 14th, and East 15th Streets), and Murphy Brothers Playground. The system would then cross under the FDR Drive at Avenue C with closure structures, and run along the western edge of Stuyvesant Cove Park. Stuyvesant Cove Park would be reconstructed and redesigned to include elevated pathways, seating, and planted areas on a series of berms against the wall along the rear of the park and a pedestrian esplanade along the water's edge. The system would then traverse under the FDR Drive at East 23rd Street with a series of closure structures, and would run adjacent to the eastern edge of Asser Levy Recreation Center along the FDR Drive off-ramp then turn in along the northern edge of the building to cross Asser Levy Playground. The portions of Murphy Brothers Playground and Asser Levy Playground that are affected by construction of the floodwall would be reconstructed and reconfigured. A closure structure then connects to the VA Medical Center's flood protection system to close the compartment along East 25th Street to 1st Avenue.

The Preferred Alternative also includes modifications of the existing sewer system, including installing gates underground near the northern and southern extents of the project area within the existing large capacity sewer pipe (interceptor) and flood-proofing manholes and regulators located on the unprotected side of the proposed project alignment to control flow into the project area from the larger combined sewer drainage area. Installation of additional sewer pipes and, in one location, enlarging existing sewer pipes, is also proposed within and adjacent to the project area to reduce the risk of street and property flooding within the protected area during a design storm event.

The flood protection system and raised East River Park proposed under this alternative would be constructed in 3.5-years and completed in 2023 compared to the 5-year construction duration anticipated under Alternatives 2, 3, and 5. The foundations for the shared-use flyover bridge would also be completed in 2023, with the prefabricated bridge span to be installed and completed in 2025.

6.2.4 ALTERNATIVE 2 – FLOOD PROTECTION SYSTEM ON THE WEST SIDE OF EAST RIVER PARK – BASELINE

The Flood Protection System on the West Side of East River Park_ Baseline Alternative (Alternative 2) provides flood protection in Project Areas One and Two using a combination of floodwalls, levees, and closure structures (i.e., deployable gates) from Montgomery Street to East 25th Street. In Project Area One, the line of flood protection would generally be located on the

west side of East River Park. Protection would be provided by a concrete floodwall starting at Montgomery Street within the sidewalk adjacent to the Gouverneur Gardens Cooperative Village. The floodwall would then cross under the FDR Drive with closure structures across the FDR Drive's South Street off- and on-ramps. A combination of floodwalls and levees would then run along the west side of East River Park for the length of the entire park. The park-side landings for the Delancey Street and East 10th Street bridges would be rebuilt within East River Park to accommodate the flood protection system. The flood protection system in Project Area Two would be the same as the Preferred Alternative except that the portions of Murphy Brothers Playground and Asser Levy Playground that are affected by construction of the floodwall would be replaced in kind.

As with the Preferred Alternative, Alternative 2 would include drainage components to reduce the risk of interior flooding and construction of the shared-use flyover bridge to address the Con Edison pinch point.

The flood protection alignment proposed in Alternative 2 would require that the majority of flood protection construction be performed during night-time single-lane closures of the FDR Drive and in close proximity to sensitive Con Edison transmission lines. Given the related construction complexities and logistical considerations, the flood protection system and associated components under this alternative are assumed to be constructed in 5-years and completed in 2025.

See **Figure 14** for schematic of Alternative 2.

6.2.5 ALTERNATIVE 3 – FLOOD PROTECTION SYSTEM ON THE WEST SIDE OF EAST RIVER PARK – ENHANCED PARK AND ACCESS

Alternative 3 provides flood protection using a combination of floodwalls, levees, and closure structures in Project Areas One and Two. As with Alternative 2, the line of protection in Project Area One would be generally located on the western side of East River Park. However, under Alternative 3, there would be more extensive use of berms and other earthwork compared to Alternative 2 in association with the flood protection along the FDR Drive to provide for more integrated access, soften the visual effect of the floodwall on park users, and introduce new types of park experience. The landscape would generally gradually slope down from high points along the FDR Drive towards the existing at-grade esplanade at the water's edge. Due to the extent of the construction of the flood protection system, this alternative would include a more extensive reconfiguration and reconstruction of the bulk of East River Park and its programming (i.e., landscapes, recreational fields, playgrounds, and amenities) as compared to Alternative 2 but not as extensive as those proposed under the Preferred Alternative as described above. In addition, the existing pedestrian bridges and bridge landings at Delancey and East 10th Streets would be completely reconstructed to provide universal access, and a new raised and landscaped park-side plaza landing would be created at the entrance to the park from the East Houston Street overpass. In Project Area Two, the flood protection alignment would be the same to that proposed in the Preferred Alternative.

As with the Preferred Alternative, this alternative would include drainage components to reduce the risk of interior flooding and the shared-use flyover bridge to address the Con Edison pinch point.

Alternative 3 would involve construction of the flood protection system alignment along the FDR Drive and in close proximity to sensitive Con Edison transmission lines. Given the associated

complexities and logistical considerations involved when working in and around these facilities, a 5-year construction duration is assumed, with the proposed project estimated to be completed in 2025.

See **Figure 15** for schematic of Alternative 3.

6.2.6 ALTERNATIVE 5 – FLOOD PROTECTION SYSTEM EAST OF FDR DRIVE

The Flood Protection System East of FDR Drive (Alternative 5) proposes a flood protection alignment similar to the Preferred Alternative, except for the approach in Project Area Two between East 13th Street and Avenue C. This alternative would raise the northbound lanes of the FDR Drive in this area by approximately six feet to meet the design flood elevation then connect to closure structures at the south end of Stuyvesant Cove Park. Maintaining the flood protection alignment along the east side of the FDR Drive would eliminate the need for closures structures crossing the FDR Drive near East 13th Street as well as the need to install floodwalls adjacent to NYCHA Jacob Riis Houses, Con Edison property and Murphy Brothers Playground.

As with the Preferred Alternative, this alternative would include drainage components to reduce the risk of interior flooding and construction of the shared-use flyover bridge to address the Con Edison pinch point.

Anticipated project completion under this alternative is driven by construction of the raised northbound lanes of the FDR Drive and the adjacent shared-use flyover bridge in this same footprint, therefore Alternative 5 is anticipated to be constructed in 5-years and completed in 2025. See **Figure 16** for a schematic of Alternative 5.

6.3 ALTERNATIVES CONSIDERED AND ELIMINATED

This section will describe the alternatives that were considered, but not carried forward into the EIS. This will include a description of those alternatives and the rationale for elimination of those alternatives from further analysis. This would include alternate flood protection and drainage management approaches.

6.4 ANALYSIS FRAMEWORK

This chapter will discuss the framework for the EIS technical analyses. It will identify the analysis year for the proposed project[2] and describe the affected environment that will be assessed in the EIS for each alternative under consideration for implementation of the proposed project. The EIS will consider both the short-term (construction) and long-term (operational and, where relevant, maintenance) effects for each alternative.

Each alternative will be evaluated for potential environmental effects during typical operational conditions (i.e., no coastal flood event) and design storm conditions for all relevant potential environmental impact categories.

[2] The build year for the proposed project is 2025. Note that although the superstructure of the shared-use flyover bridge for the proposed project would be completed in 2025, the flood protection and enhanced park and access features under the Preferred Alternative would be completed in 2023.

Storm conditions are defined as flood events that meet the criteria of the design storm event (the 100-year flood events with sea level rise to 2050s) for when the protection system would be fully deployed and engaged. This design storm event reflects the Federal Emergency Management Agency (FEMA) 100-year storm tide, which is 10.9 feet NAVD88[3], and is associated with the coastal analysis used to develop the Preliminary Flood Insurance Rate Maps (PFIRMs) for New York City that were released on January 30, 2015.[4] Although the PFIRMs are still preliminary, the storm tide elevations are higher than the storm tides associated with FEMA's 2007 Effective Flood Insurance Rate Maps (FIRMs). The City's Local Law 96 currently requires the use of the higher of the two storm tides (City of New York Law Department 2013) in the design of coastal protection features. This design storm event also includes an additional 30 inches of increased surface water elevation to address sea level rise projections through the 2050s.

For the purposes of this flood protection system design, non-storm conditions are defined as typical day-to-day conditions without the occurrence of a design storm event. These non-storm conditions include typical dry weather days as well as typical rainfall and high tide event days without storm surges coupled with a high tide above the 100-year storm. The following analysis of potential for environmental effects during typical operational conditions will be included: land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; natural resources; hazardous materials; water and sewer infrastructure; transportation; neighborhood character; and environmental justice.

Based on current information, during non-storm operational conditions the alternatives would not alter, displace, or overcrowd community facilities and services such as schools, libraries, child care facilities, healthcare facilities, or fire and police protection; result in new structures or additions to existing structures greater than 50 feet, or be located adjacent to, or across from, a sunlight-sensitive resource; generate any mobile or stationary sources of noise; increase or redistribute traffic, create any other mobile sources of pollutants, add new users near mobile sources, create new stationary sources of pollutants; significantly affect the transmission or generation of energy; involve power generation (not including emergency backup power) or result in development of 350,000 square feet or greater; or result in the generation of 50 tons per week or more of solid waste. Therefore, based on the guidance of the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, the following impact categories do not warrant further analysis for effects during typical operational conditions: community facilities and services; shadows; noise; air quality; energy; greenhouse gases; and solid waste and sanitation services; and public health. Screening analyses were undertaken to determine that these impact categories would not result in long-term operational effects.

In addition to the categories described above that have been determined to warrant analysis for adverse effects during non-storm operational conditions, this EIS evaluates the potential for effects during design storm event operational conditions on the following: land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual character; natural resources; hazardous materials; water and sewer infrastructure; and transportation. Certain technical areas were assessed and determined not to warrant further analysis for effects during design storm event operational conditions; that is, the screening process determined that the proposed project's characteristics fell below the initial CEQR thresholds for

[3] Elevation expressed in the North American Vertical Datum of 1988 (NAVD88).

[4] In FEMA terminology the storm tide is referred to as the stillwater elevation and the 100-year event is referred to as the 1 percent-annual-chance event.

determining whether more detailed technical analyses were required. The technical areas that "screened out" from further design storm event operational condition analysis are: community facilities and services; shadows; solid waste and sanitation services; energy; air quality; greenhouse gas emissions; noise; neighborhood character; and environmental justice.

Furthermore, this EIS evaluates the potential for construction effects under the proposed project in the following technical areas: socioeconomic conditions; open space; historic and cultural resources; urban design and visual character; natural resources; hazardous materials; water and sewer infrastructure; energy; transportation; air quality; greenhouse gas; noise; and public health.

Each category discusses the existing conditions (affected environment) and conditions in the future for each evaluated alternative. The technical analysis identification of potential significant adverse effects is focused on the incremental changes to the affected environment that would occur under the alternatives that are being considered as compared with the No Action Alternative. The No Action Alternative includes a discussion of projects expected to be completed independent of the proposed project in addition to the baseline growth within the affected environment for each applicable category.

6.5 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

This section of the EIS will include descriptions of the project area and the surrounding study area. This section will provide detail, where appropriate and necessary to inform the analysis, on activities proposed, including construction and operational activities. This section will also include a discussion of mitigation, as appropriate and necessary, for each impact category.

6.5.1 LAND USE, ZONING, AND PUBLIC POLICY

A land use analysis characterizes the uses and development trends in the area that may be affected by a proposed project and determines whether that project is compatible with those uses and trends. Similarly, the analysis considers the proposed project's compliance with, and effect on, the area's zoning (see **Figures 17a and 17b**) and other applicable public policies.

This analysis will include the following activities:

- Map and describe existing land uses, zoning, and recent land use and zoning trends in the study area;
- Identify and describe predominant land use and zoning patterns in the study area based on existing information included in geographic information systems (GIS) for the area, compiled field surveys, and aerial photograph, as appropriate; and
- Describe any known potential acquisition, zoning text amendments, and amendments to the City map that may be included in an application submission for review under ULURP.

As the proposed project is led by City agencies, an assessment will be conducted to consider the proposed project's consistency with relevant sustainability goals and initiatives outlined in City policy documents. More specifically, the DEIS will describe the proposed project's consistency with the City's initiatives to protect neighborhoods and infrastructure from future climate events as outlined in *OneNYC* and *PlaNYC: A Stronger, More Resilient New York* reports.

Since the project area is located within the City-managed Coastal Zone, the proposed project's compliance with the following policies will also be assessed:

- Coastal Zone Management Act (CZMA) of 1972 (16 U.S.C. §§1451-1464);

- New York State Coastal Zone Management Program (CMP); and
- New York City's Waterfront Revitalization Programs (WRP) including preparation of the City's WRP Consistency Assessment Form (CAF).

The proposed project's consistency with zoning and other public policy initiatives or local plans, such as the Stuyvesant Cove 197-a plan, Community Board 6 197-a plan, and the East River Blueway Plan, will also be assessed. Consistency with applicable federal and state policies, including the Federal Flood Disaster Protection Act, will also be assessed.

6.5.2 SOCIOECONOMIC CONDITIONS

Principal issues of concern with respect to socioeconomic conditions are whether the proposed project could result in significant adverse environmental effects due to: (1) direct displacement of a residential population; (2) direct displacement of businesses and employment associated with those businesses; (3) indirect displacement of a residential population due to project-generated changes in market conditions that, in turn, lead to increased residential rents; (4) indirect displacement of businesses due to changes in market conditions that lead to increased commercial rents; and (5) adverse effects on a specific industry. Indirect effects may also include the consideration of growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water and other natural systems, including ecosystems. The proposed project would not result in any direct residential or business displacement. Therefore, this assessment will focus on indirect residential and business displacement and potential adverse effects on specific industries. The DEIS will succinctly present the demographic and economic conditions in the study area that could be affected by the alternatives and will describe whether any of the alternatives would adversely affect socioeconomic conditions.

The analysis will identify and describe existing socioeconomic conditions in the study area using available data from local and State agencies and other sources. This section will present data on residential populations and the local economy including businesses, critical infrastructure assets, recreational activities and tourism that may be affected by the proposed alternatives within the study area. For each alternative, the analysis will identify future changes in the study area that could affect socioeconomic conditions in the analysis years (e.g., residential or commercial development, enhancement of existing recreational spaces). This will include a qualitative assessment of the potential effects of each alternative on residential populations and the local economy (including businesses, critical infrastructure assets, recreational activities and tourism). The assessment will consider whether and under what conditions the design alternatives could stimulate changes that would raise either property values or rents (residential and commercial), and if so, whether this would make existing categories of tenants vulnerable to displacement.

6.5.3 OPEN SPACE

This section will assess the potential for direct and indirect effects of the proposed project on publicly accessible open spaces in accordance with the methodologies of the *CEQR Technical Manual*. Publicly accessible open spaces in the study area include East River Park, Murphy Brothers Playground, Stuyvesant Cove Park, Asser Levy Playground, Corlears Hook Park, and NYCHA housing complex grounds, among others (see **Figure 18**). Direct effects are defined as a change in public open space acreage or alterations of open space such that it may have different

facilities and/or user populations. Indirect open space effects are defined as increased user demand that overtaxes the available open space.

For each alternative, the open space analysis will include the following activities:

- Collect data on the total population in the study area.
- Map and describe existing publicly accessible open spaces in the study area.
- Collect detailed information on each open space within the study area including name and address, ownership, acreage, percent of area dedicated to active and passive uses, and open space features.
- Conduct field surveys of publicly accessible open space within the study area to identify location and size of parks access points, assets/amenities, use, general duration and frequency of use, and age group of users.
- Identify and describe predominant open space patterns and recreational activities in the study area (e.g., ball fields, bike paths, unprogrammed recreational space) based on existing information included in GIS for the area and compiled field surveys. In addition, identify and describe open space and recreational areas utilized during temporary construction closures.
- Identify future development projects in the study area that could affect open space and recreational activity patterns and trends in the analysis years (i.e., Pier 42) including specific development projects, plans for public improvements, and pending actions within the study area. Based on these changes, future open space and recreational conditions in the No Action Alternative will be assessed and described.
- Assess and describe the compatibility with open space and recreation, relevant trends in the study area, water and sewer drainage changes within East River Park, and the consistency of the alternative with recognized plans. The open space analysis will describe any direct effects to ball fields, shared use paths, unprogrammed park space, or recreational activities due to each alternative.

Section 6(f)

As shown in **Figure 18**, a portion of the proposed project includes an area that was improved with funds from the Federal Land and Water Conservation Fund Act (LWCFA) (16 U.S.C. §§ 460l-4 to 460l-11 is commonly referred to as Section 6(f), as the provision was originally contained in Section 6(f)(3) of the LWCFA, Public Law 88-578 of 1962, before codification). The United States Department of the Interior (DOI), through the National Park Service (NPS), provides funding under the LWCFA for State and local efforts to plan, acquire, or develop land to advance outdoor recreational activities. The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) serves as the New York State agency that administers LWCFA funds received from DOI. LWCFA funds were used for the improvement of an approximately 2.88-acre area on the northern edge of East River Park stretching from East 6th Street to East 10th Street. The area received $178,402 in LWCF funds in 1973 for rehabilitation and improvement of existing facilities, including sport fields, site improvements, landscaping, sewer, water and electrical systems, and design and engineering. Under the LWCFA, this area cannot be converted to any non-recreational purpose for more than six months unless it undergoes a conversion. The EIS will discuss any action or activities that may be required under the LWCFA as a result of the proposed alternatives.

6.5.4 HISTORIC AND CULTURAL RESOURCES

Historic and cultural resources include both archaeological and architectural resources. These include National Historic Landmarks (NHL); properties listed on the State and National Registers of Historic Places (S/NR) or formally determined eligible for S/NR listing (S/NR-eligible), or properties contained within a S/NR listed or eligible historic district; properties recommended by the New York State Board for listing on the S/NR; designated New York City Landmarks (NYCL) and Historic Districts; properties calendared for consideration as NYCLs by the New York City Landmarks Preservation Commission (LPC) or determined eligible for NYCL designation (NYCL-eligible); and potential historic resources (i.e., properties not identified by one of the programs listed above, but that appear to meet their eligibility requirements). **Figure 19** shows a preliminary identification of known historic and cultural resources in the immediate vicinity of the project area.

The historic and cultural resources assessment will be prepared in accordance with Section 106 of the 1966 National Historic Preservation Act (NHPA), since funding is being sought from a federal agency, HUD, to undertake the proposed project. Section 106 of NHPA mandates that federal agencies consider the effect of their actions on any properties listed on or meeting the criteria for listing on the National Register. Compliance under Section 106 also fulfills the requirements of Section 14.09 of the New York State Historic Preservation Act. The historic and cultural resources analysis will be prepared in consultation with SHPO and LPC.

As a result of Hurricane Sandy, in May 2013, a Programmatic Agreement was executed between FEMA, SHPO, the New York State Office of Emergency Management, the Delaware Nation, the Delaware Tribe of Indians, the Shinnecock Nation, the Stockbridge-Munsee Community Band of Mohicans, LPC, and the Advisory Council of Historic Preservation (ACHP) as a result of Hurricane Sandy.[5] This Programmatic Agreement ensures that federal disaster assistance programs in the State of New York are administered in accordance with certain stipulations to satisfy FEMA's Section 106 responsibilities. Other federal agencies providing financial assistance for the type of disaster assistance programs covered by the Agreement may, with the concurrence of ACHP, FEMA, and SHPO, satisfy their Section 106 responsibilities by accepting and complying with the terms of the Programmatic Agreement. As described above, HUD is disbursing CDBG-DR Funds for the East Side Coastal Resiliency Project, with the City of New York as the grantee. OMB has assumed HUD's environmental responsibilities as the Responsible Entity for New York City and has agreed to accept the terms and conditions of the Programmatic Agreement listed in Appendix D, and to take into account the effects of its implementation and satisfy its Section 106 responsibilities for the CDBG-DR program for activities in New York City.[6]

6.5.4.1 ARCHAEOLOGICAL RESOURCES

Since the proposed project would require ground disturbance, the Lead Agencies (OMB and NYC Parks) are consulting with LPC and SHPO to request their preliminary determination of the project area's potential archaeological sensitivity. Supporting information including historical maps and information from any previous archaeological investigations of the site or surrounding areas will be submitted to the reviewing agencies as part of the initial consultation. If the site is determined not to be archaeologically sensitive, no further work will be required with respect to archaeological

[5] The Programmatic Agreement was amended in November 2014.

[6] Appendix D to the Programmatic Agreement was amended in December 2014.

resources. If LPC and/or SHPO determine that any portion of the project area has the potential to contain significant archaeological resources that may be affected by the proposed project, archaeological studies, an Archaeological Documentary Study will be prepared.

On October 27, 2015, a report was submitted to LPC and SHPO that assessed whether any locations within the proposed project area could be eliminated from further in-depth archaeological study due to a lack of potential archaeological sensitivity. That report determined that the Area of Potential Effect (APE) for archaeological resources should be limited to the portion of Project Area One from the vicinity of Pier 42 to Rivington Street and to the portion of the Project Area Two along East 23rd Street to East 25th Street under the East 25th Street alignment. Further, the report concluded that no further archaeological consideration of the portion of the Project Areas between Rivington Street and East 23rd Street was warranted. In a letter dated October 30, 2015, LPC concurred with the conclusions of the report. On December 10, 2015, SHPO concurred with the proposed definition of the APE for archaeological resources. Therefore, an Archaeological Documentary Study is being prepared for the APE.

As requested by SHPO and LPC in letters dated January 7, 2019 and January 28, 2019, respectively, a Supplemental Phase 1A Archaeological Documentary Study was prepared in March 2019 that addresses project design refinements made subsequent to approval of the 2016 reports. Specifically, the Supplemental Phase 1A report addresses the upland drainage management improvements that lie outside of the original APE for archaeology and design refinements for the Preferred Alternative. Recommendations of the report will be discussed, as well as the need for additional archaeological investigations that will be stipulated in a Programmatic Agreement (PA). It is expected that the PA will be executed among HUD, OMB, NYC Parks, SHPO, the Delaware Nation, the Delaware Tribe of Indians, the Shinnecock Nation, the Stockbridge-Munsee Community Band of Mohicans, and the Advisory Council on Historic Preservation (ACHP).

Ongoing consultation with LPC and SHPO, the October 27, 2015 APE Report, and the required Archaeological Documentary Study or Studies will be summarized in the DEIS. If the archaeological documentary study determines that potentially archaeologically sensitive areas may be affected by the proposed project, and LPC and SHPO concur, then archaeological field testing will be needed. If that work, in turn, determines that potentially significant archaeological resources are present and may be affected by the proposed work, and LPC and SHPO concur, then mitigation measures, which may include full archaeological excavation, must be developed and implemented. If such work is not possible, then this would be considered an environmental effect that cannot be mitigated.

6.5.4.2 ARCHITECTURAL RESOURCES

The architectural resources analysis will consider whether construction of the proposed project would be likely to affect any architectural resources either directly through construction activities or indirectly through alteration of the context or visual environment of these resources.

For each alternative, the following tasks will be undertaken as part of this assessment:

- Definition and mapping the APE for architectural resources. This includes the area in which the proposed project may directly or indirectly affect architectural resources. Identify and describe any designated architectural resources within the APE. There will be two APEs for the proposed project: a primary 400-foot APE in which construction and operation of the

proposed project may directly or indirectly effect historic properties; and a secondary APE that corresponds to the area to be protected by the proposed project (see **Figure 19**).

- Field survey of the primary APE conducted by an architectural historian to identify any potential architectural resources that could be affected by the proposed project. Potential architectural resources include properties that appear to meet S/NR eligibility criteria as set forth in 36 CFR Part 63 and NYCL criteria according to the New York City Landmarks Law.
- Mapping and brief description of any potential architectural resources within the APE.

The analysis will consider effects of each alternative on architectural resources, including:

- Assess any potential physical, contextual, or visual effects on architectural resources that would result from the proposed project in consultation with SHPO and LPC.
- Develop measures to avoid, minimize, or mitigate any adverse effects on historic architectural in consultation with SHPO and LPC, as appropriate.
- Implement the Section 106 process in coordination with involved federal agencies and any appropriate outreach with the public and consulting parties.
- Assess compliance with applicable federal acts and executive orders including the NHPA 36 CFR 800, Archaeological Resources Protection Act of 1970 (ARPA) 43 CFR Part 7, Historic Sites Act of 1935, and Executive Order (EO) 13007 Indian Sacred Sites.
- Assess compliance with applicable portions of the New York City Landmarks Law (Charter of the City of New York §§ 3020 et seq. and the Administrative Code of the City of New York §§25-301 et seq.).

6.5.5 URBAN DESIGN AND VISUAL RESOURCES

According to the methodologies of the *CEQR Technical Manual*, if a project requires actions that would result in physical changes to a project area beyond those allowable by existing zoning and which could be observed by a pedestrian from street level, an assessment of urban design and visual resources should be prepared. Given the nature of the proposed project, which proposes the installation of vertical flood protection measures, including berms, floodwalls, and other features that would affect the pedestrian experience, this section of the DEIS will assess changes in urban design patterns and visual resources of the study area as a result of the proposed project. The assessment will be prepared following *CEQR Technical Manual* methodologies and in conformance with NYSDEC guidance for visual assessments.

The urban design and visual resources assessment will draw on information from field visits to the project area and surrounding study area and visual materials prepared for the proposed project, and will present, as warranted, sketches or renderings of the proposed project for existing views; bird's-eye views of the proposed project; and elevations and sections of the proposed project. The urban and visual resources study area is shown in **Figure 20**. As the overall project area is largely public open space located along the East River waterfront, the assessment will include longer views to the waterfront, views from the Williamsburg Bridge and Brooklyn waterfront, and long views from within the project area itself, including views from Murphy Brothers Playground and views to historic resources such as the Asser Levy Recreation Center. A preliminary identification of existing inland views to the waterfront to be considered in the assessment is shown on **Figure 20**. Based on field visits, the assessment will describe and illustrate with photographs the urban design and visual character of the project area and the surrounding area and the inland locations that provide views of the waterfront. The assessment will also describe the potential changes that could occur to urban design and visual resources with the proposed project in comparison to the

No Action Alternative, focusing on the changes that could negatively affect a pedestrian's experience of the area. This description will include an assessment of the potential effects of the proposed alternatives on existing view corridors and will include views that may be affected by both the proposed flood protection system and the proposed bridge improvements. In conformance with NYSDEC guidance, the assessment will evaluate visual and aesthetic effects using viewshed and line-of-sight profile analyses. If environmental effects are identified, mitigation measures to avoid or reduce potential significant effects will be identified.

For each alternative, this component of the assessment will include a concise narrative of the project area and a surrounding study area and will consider longer view corridors beyond the study area. The narrative will address the components of urban design as defined in the *CEQR Technical Manual*: streets, buildings, visual resources, open space, and natural resources. It will also identify and describe aesthetic resources as defined in NYSDEC's guidance document, *Assessing and Mitigating Visual Impacts*. The narrative will be supported with the following items: photographs; birds-eye views; area maps including a viewshed and those showing existing view corridors and access to visual resources including views north and south along the East River; and line-of-sight profiles. A key focus of this analysis will be view corridors within the project area and inland view corridors to the waterfront along major streets (e.g., Grand, East Houston, East 14th, Avenue C, and East 23rd Streets).

6.5.6 NATURAL RESOURCES

While the project area is highly developed, it is located on the East River waterfront and includes large waterfront open spaces (e.g., East River Park and Stuyvesant Cove Park). The proposed project may affect natural resources and water quality, including tidal wetlands, vegetation communities, and aquatic and terrestrial fauna in the study area. The natural resources study area is shown in **Figure 21**.

For each alternative, this section will include a description of the natural resources within the study area, including identification of any potential natural resources that may be directly or indirectly affected by the proposed project. The following tasks will be undertaken to define the affected environment for natural resources:

- Gather baseline vegetation and wildlife data for the study area based on available habitat maps, published literature, and field surveys;
- Review the study area for the presence of wetlands. Executive Order 11990 (Protection of Wetlands) requires federal activities to avoid adverse effects to wetlands where practicable. Describe wetlands and vegetation within and adjoining the study area;
- Describe depth of water and bathymetric data within the study area. Describe the depth of the East River within and adjoining the study area;
- Describe tree species, understory, and herbaceous layers. Describe tree composition based on tree inventory data acquired during field surveys. Other general species composition will be based on a field survey of the study area;
- Based on site reconnaissance, collect site specific data collection, and existing information on aquatic and terrestrial resources in the study area, including floodplains, essential fish habitats, wetlands, terrestrial resources, and threatened or endangered species from resource agencies such as USFWS, NMFS, and NYSDEC. Characterize the existing aquatic resources of the East River within the study area, and the terrestrial resources within the potential areas of disturbance within the study area. Gather wildlife data from literature searches and field

investigations. During field investigations, note all observed avifauna (birds), herpefauna (amphibians and reptiles), and mammals and any related indirect observations, such as nests (including any birds that may nest or utilize Stuyvesant Cove Park), tracks, and scat. Sources of existing information include USACE, NOAA, USEPA, and NYSDEC databases, among others. Specifically, field work may include:

  - Threatened and endangered species and migratory bird surveys to document resident and migrating birds in the study area.
  - Vegetation surveys (including tree surveys) to identify, map and describe species (including noting invasive or native and any notable health issues) during the months of May through September, where practicable.
  - Wetlands surveys to determine the presence of potential regulated wetland adjacent areas along the East River and identify any non-engineered sections of shoreline within the study area.

- Contact New York Natural Heritage Program (NHP) and NMFS, and consult the USFWS Information, Planning, and Conservation System for information on federal and State-listed species, and significant habitats known to occur or identified as having the potential to occur within the study area;
- Conduct an Informal Section 7 Consultation with USFWS and NMFS that will confirm listed species, assess potential environmental effects of the project to each species, and seek concurrence with findings and recommended conservation measures from the respective regulating agency. These agencies will also decide whether there is sufficient need to enter into a Formal Section 7 Consultation;
- Characterize water quality conditions of the East River in the study area based existing regional and site-specific water quality information (e.g., DEP Harbor Survey, Interstate Environmental Commission, NYSDEC, USACE, and USEPA). This section will also describe the general hydrodynamic characteristics of the East River, including information on currents, tidal range, water quality classification, pollutant sources, and biological conditions.
- Comply with Executive Order 11988 (Floodplain Management) and Executive Order 11990 (Protection of Wetlands) and HUD's implementing regulations 24 CFR Part 55 required since the study area is located within the 100-year floodplain, as identified on the FEMA FIRMs. This also includes completing the §55.20 analysis (8-step decision making process) to document noticing requirements, including identifying any alternatives to locating the proposed project in the floodplain, and any potential environmental effects associated with occupying the floodplain, along with proposed mitigation measures, as necessary.

For each alternative, this analysis would assess any potential natural resources and water quality effects. Potential for effects would account for any changes in the study area, including areas where physical disturbance would occur within the study area. The analysis will include maps of the areas where physical disturbance is proposed. Potential effects on natural resources would be determined based on the following: the nature and extent of the physical alteration of the affected environment, changes in wetlands, and effects on natural resources habitats (including any site-specific effects resulting from the loss of habitat and wildlife).

Specific tasks associated with this section of the analysis include:

- Assess potential effects to terrestrial and aquatic resources. Potential effects to terrestrial and aquatic resources will be assessed by considering any fill and any tree-clearing activities,

visual and noise disturbances to wildlife, and benefits to wildlife that would result from each alternative.

- Assess compliance with the Endangered Species Act of 1973, as amended, and HUD's implementing regulations at 50 CFR Part 402. This will include consultation and coordination with USACE, USFWS, and NMFS to comply with the Fish and Wildlife Coordination Act, 16 U.S.C. § 661 et seq.
- Assess infrastructure and stormwater effects and their potential indirect effects on habitats, taking into account the design or modification of the stormwater management system and any effects on local surface water conditions.
- Assess consistency with other NEPA environmental review requirements related to natural resources.

6.5.7 HAZARDOUS MATERIALS

Soil and groundwater investigations undertaken for the project area will be summarized in the EIS. **Figure 22** shows the approximate locations of soil and groundwater testing locations in the proposed project area. This section will summarize the results of that testing and disclose any soil or groundwater contamination issues based on the testing results.

This section will also include a description of soil and groundwater disturbance and any associated remediation efforts, if any, undertaken to address existing hazardous materials. Also included will be a description of the planned imported soils that will be used in creating the project-related coastal flood protection systems.

6.5.8 WATER AND SEWER INFRASTRUCTURE

The proposed project may affect water supply and sewer service infrastructure. Therefore, this section will evaluate the proposed project's potential to affect the management, service, and quality of potable water, stormwater runoff and sewage within the study area. The study area for this analysis will encompass the sewershed within which the project protected area is located, as indicated on **Figure 23**.

The following tasks will be undertaken to define the affected environment for water and sewer infrastructure:

- Describe existing infrastructure for water supply and combined sanitary sewer conveyance. This will include a discussion of existing water supply infrastructure, and a description of existing combined sewer system infrastructure and associated capacity.
- Describe projected demands on water and combined sewer systems for the analysis years.

For each alternative, the analysis will evaluate effects on water and sewer infrastructure under various operational conditions. Tasks will include:

- Assess compliance with the City's SPDES Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s) requirements.
- Describe the proposed operations, capacity, and locations of water supply and combined sewer infrastructure modifications (e.g., installing gates on sewer interceptors, installing parallel conveyance, flood-proofing regulators and manholes, etc.) in the study area.
- Evaluate effects of the proposed modifications to the existing sewer system to be undertaken within the study area to reduce coastal flooding risks during a design storm event.

- Describe effects from installation and operation of the proposed modifications to the existing sewer system on the larger sewershed within which the study area is located.

6.5.9 TRANSPORTATION

Major roadways in the study area include the FDR Drive, South Street, Avenue C, First Avenue, Montgomery Street, Grand Street, Delancey Street, East Houston Street, East 10th Street, East 20th Street, and East 23rd Street. The study area, which is shown in **Figure 24**, is serviced by the M8, M9, M14A, M14D, M21, M22, M23, and M34A bus routes.

Within the study area, the waterfront can be accessed at four at-grade intersections:

- Montgomery Street/South Street;
- Avenue C Loop/East 18th Street;
- Avenue C/East 20th Street; and
- Avenue C/East 23rd Street.

In addition, pedestrian access is provided at the following resources spanning the FDR Drive:

- Corlears Hook pedestrian bridge;
- Delancey Street pedestrian bridge;
- East Houston Street overpass;
- East 6th Street pedestrian bridge; and
- East 10th Street pedestrian bridge.

Within the East River Park, there is the north-south East River Esplanade, a pedestrian esplanade along the waterfront, and the north-south East River Bikeway, which is a shared pathway with NYC Parks, NYCDOT, Con Edison, and emergency vehicles.

At the Con Edison pier, the bikeway becomes a shared bicycle/pedestrian path, narrowing between the FDR Drive and Con Edison pier. North of the Con Edison pier, the shared bicycle/pedestrian path widens and continues along Captain Patrick J. Brown Walk into Stuyvesant Cove Park, where the bikeway and pedestrian path separate.

6.5.9.1 TRAFFIC

A qualitative traffic assessment of the potential environmental effects will be prepared using traffic data collected at the following locations:

Turning Movement Counts

- Montgomery Street/South Street
- Avenue C/East 20th Street
- Avenue C/East 23rd Street
- Avenue C Loop/East 18th Street

Automatic Traffic Recorder (nine-day continuous counts)

- Montgomery Street northbound, North of South Street
- Montgomery Street southbound, North of South Street
- South Street eastbound, West of Montgomery Street

- South Street westbound, East of Montgomery Street
- Grand Street eastbound, West of FDR Service Road
- Grand Street westbound, West of FDR Service Road
- FDR Service Road southbound, North of Delancey Street
- Houston Street eastbound, West of FDR Service Road
- Houston Street westbound, West of FDR Service Road
- Avenue C northbound, South of FDR Drive/18th Street
- Avenue C southbound, South of FDR Drive /18th Street
- 20th Street eastbound, West of FDR Drive/Avenue C
- 20th Street westbound, West of FDR Drive/Avenue C
- FDR Drive/ Avenue C northbound, South of 20th Street
- FDR Drive/ Avenue C southbound, North of 20th Street
- 23rd Street eastbound, West of FDR Drive/Avenue C
- 23rd Street westbound, West of FDR Drive/Avenue C
- FDR Drive/ Avenue C northbound, South of 23rd Street
- FDR Drive/ Avenue C southbound, North of 23rd Street
- FDR Drive Service Road southbound, North of 6th Street

It is assumed that the proposed project would not generate any new traffic and would not result in any permanent changes in the geometry or pavement markings for the majority of the local streets that would affect traffic. Where permanent changes are proposed that would affect traffic operations, a quantified traffic impact analysis will be prepared. Additionally, there will be a qualitative analysis of the potential for any environmental effects on the proposed bridges on street traffic circulation (e.g., along Grand Street, Delancey Street, East 6th Street) and there will be an analysis of the potential for the proposed pedestrian bridges to affect any circulation patterns on properties along the proposed alignment including vehicular access and driveways.

During coastal flood event conditions, there could be temporary road closures by implementing closure structures as flood protection measures. A qualitative assessment will be included describing the location of the closure structures and the temporary detours due to road closures. This would include an assessment of the ramps leading to and from the East Houston Street Overpass and other ramps and streets that may be affected during the operational phase and will also examine access both within and adjacent to the proposed project area (e.g., access at Waterside Plaza) during the pre-storm, storm, and post-storm conditions.

6.5.9.2 TRANSIT

This analysis will examine the potential for any transit effects due to the proposed project. The analysis will include text and graphics as necessary and will rely on data collected to inform the design of the alternatives to assess the potential for environmental effects associated with the proposed project on transit service or facilities (e.g., bus service along Delancey and Grand Streets).

6.5.9.3 PEDESTRIANS AND CYCLISTS

This analysis will examine the potential for any pedestrian effects resulting from the proposed project. The analysis will include text and graphics as necessary and will rely on data and pedestrian and bicycle counts collected during the draft conceptual design process to assess the potential for environmental effects associated with the proposed project on pedestrian conditions, including the bikeway/walkway along the East River (see **Figure 25)**. Pedestrian count data were collected during the development of the draft conceptual design at the following locations:

- Crosswalks and paths at the Montgomery Street/South Street intersection;
- Corlears Hook pedestrian bridge;
- Delancey Street pedestrian bridge;
- East Houston Street overpass;
- East 6th Street pedestrian bridge;
- East 10th Street pedestrian bridge;
- Crosswalks at East 18th Street/Avenue C Loop intersection;
- Crosswalks at East 20th Street/Avenue C;
- Crosswalks at East 23rd Street/Avenue C;
- Bicycle/pedestrian path at Con Edison building; and
- Bicycle/pedestrian path just north of East Houston Street overpass.

Each of the design alternatives will be examined for any potential effects on pedestrian and bicyclist facilities, including crosswalks, paths, bridges, and sidewalks in accordance with the requirements of the *CEQR Technical Manual*.

A qualitative assessment of the effects on pedestrian circulation and access to land uses along the west side of the FDR Drive to East River Park due to the reconstruction and reconfiguration of the Delancey Street and East 10th Street pedestrian bridges will also be provided.

Crash data for the study area intersections from the most recent three-year period will be obtained from the New York State Department of Transportation (NYSDOT). These data will be analyzed to determine if any of the studied locations may be classified (using criteria from the *CEQR Technical Manual*) as high vehicle crash or high pedestrian/bike accident locations and whether trips and changes resulting from the proposed project would adversely affect vehicular and pedestrian safety at these locations. If any high accident locations are identified, feasible improvement measures will be explored to alleviate potential safety issues.

6.5.9.4 PARKING

This analysis will examine the potential for adverse effects associated with the proposed project on parking facilities within the study area. The analysis will include an assessment of existing parking under the FDR Drive between East 20th Street and East 23rd Street and under the FDR Drive at Montgomery Street and any potential for environmental effects as a result of construction of the coastal flood protection barrier and related park and access improvements. Parking utilization rates at these locations as well as at other off-street parking lots located within ½ mile of these two parking lots will be assessed. A qualitative analysis will then be prepared to assess the potential for effects on local on-street parking. If the proposed project would result in permanent parking loss as part of the reconstruction of the East 10th Street and Delancey Street

pedestrian bridges, the number of spaces lost will be quantified and assessed in the qualitative parking analysis.

6.5.10 NEIGHBORHOOD CHARACTER

The character of a neighborhood is established by numerous factors, including land use patterns, the scale of its development, the design of its buildings, the presence of notable landmarks, pedestrian experience, and a variety of other physical features that include traffic and pedestrian patterns, noise, etc. The proposed project has the potential to alter certain elements contributing to the affected area's neighborhood character. Therefore, an assessment of neighborhood character will be provided in the EIS to determine whether changes expected in other technical analysis areas—land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; transportation; and noise—may affect a defining feature of neighborhood character. This analysis will draw heavily from those assessments in determining the potential for environmental effects related to neighborhood character. If the preliminary assessment determines that the proposed project could affect the defining features of neighborhood character, a detailed analysis will be conducted in accordance with the *CEQR Technical Manual* guidelines.

This section will describe the predominant factors that contribute to defining the character of the neighborhood. The assessment will be based on existing development within the study area, visual resources, historic resources, traffic, and noise. For each alternative, this section will summarize any planned development projects and public policy initiatives that may be expected to affect the character of the neighborhood.

This analysis will also assess for each alternative, the potential to affect defining neighborhood character features, either through the potential for a significant adverse effect or a combination of moderate effects in relevant technical analysis areas. If the alternative has the potential to affect the defining features of the neighborhood, a detailed assessment of neighborhood character will be prepared consistent with the methodologies of the *CEQR Technical Manual*.

6.5.11 ENVIRONMENTAL JUSTICE

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) requires federal agencies to consider whether actions they might fund or approve may have any disproportionately high and adverse environmental or human health effects on low-income or minority populations. Since the proposed project will require federal approval from HUD subject to review under NEPA, the EIS will consider the proposed project's potential for disproportionately high and adverse effects on minority and low-income populations following the guidance and methodologies outlined in the Council on Environmental Quality's *Environmental Justice Guidance under the National Environmental Policy Act* (December 1997).

The environmental justice analysis will also be used by NYSDEC in its environmental permit review process associated with the proposed permit actions and its application of SEQRA, and is required under CP-29, "Environmental Justice and Permitting," which is NYSDEC's policy on environmental justice. This analysis will also rely on the other technical analyses included in the EIS for a determination of effects, recognizing that the effects within minority or low-income populations may be different from effects on the general population.

For each alternative, the environmental justice analysis will identify and describe existing demographic data in the study area using available data from local and State agencies and other sources. Data collection will include compilation of race and ethnicity and poverty status data for the study area and identification of minority or low-income communities. To identify minority and low-income populations in the study area, data will be gathered from the U.S. Census Bureau's *Census 2010* and *2012–2016 American Community Survey (ACS)*, respectively, for all census block groups substantially within the study area. For comparison purposes, data will be aggregated for the study area as a whole and compiled for Manhattan and the other four boroughs of New York City.

The environmental justice analysis will identify any disproportionately high and adverse effects on minority or low-income communities associated with the No Action Alternative within the study area. For each alternative, the environmental justice analysis will also involve the following steps:

- Identify the potential for significant adverse effects on minority and low-income communities within the study area as a result of the proposed project.
- Evaluate the overall potential significant adverse effects associated with the proposed project on minority and low-income communities to determine whether any potential significant adverse effects on those communities would be disproportionate and, therefore, disproportionately high and adverse.
- Summarize the public participation efforts associated with each alternative and specifically any targeted outreach to minority or low-income populations.

6.5.12 CONSTRUCTION

Construction activities can have a noticeable and disruptive effect on surrounding communities. The construction analysis will begin with a description of the different alternatives and construction activities required for the major project components. It will also outline the construction methods considered, and the methodology used to establish reasonable construction schedules from which the environmental effects during the construction period are analyzed. This analysis will include a preliminary phasing of activities as well as identify potential construction staging areas, potential barging locations, construction truck routes to/from project area, truck access points, and safety measures to protect the public, and expected construction work hours.

The construction analysis will then provide qualitative and quantitative assessments of the potential effects of the construction activities in accordance with the methodologies described below. Further, the assessment of potential significant adverse construction effects will take into account projects expected to be completed independent of the proposed project through the 2025 analysis year. Measures to avoid, minimize, and/or mitigate potential construction effects will also be discussed, as needed.

6.5.12.1 SOCIOECONOMIC CONDITIONS

Economic benefits during construction will be analyzed for each alternative with estimates of the direct and indirect employment, wages and salaries, and total economic output associated with the construction and operation of the project using the IMPLAN (IMpact analysis for PLANning) economic input-output modeling system. This analysis will include the following:

- Direct effects representing the initial benefits to the economy of a specific new investment; e.g., this would include direct construction cost and the resulting demand in employment and changes in employee compensation;
- Indirect effects representing spending effects generated by inter-industry purchasing due to the direct investment; and
- Induced effects representing the effects caused by increased income in a region.

The economic modeling for construction benefits will be based on construction cost estimates for each alternative. The assessment of project benefits also will qualitatively address the social and ecological benefits that would result from the proposed project, including benefits that may be realized by local businesses.

6.5.12.2 OPEN SPACE

Construction activities would affect East River Park, Murphy Brothers Playground, Asser Levy Playground, and Stuyvesant Cove Park, including the temporary closure or relocation of park assets or closure of access points to the parks. The open space analysis will estimate the extent and timing of open space displacement during construction and consider the construction-related noise and air pollutant emissions on the quality of the open space resources. The open space analysis will also assess how open space ratios for the open space study area could change over the course of the construction period.

6.5.12.3 HISTORIC AND CULTURAL RESOURCES

The historic and cultural resources analysis will assess whether the proposed construction activities would affect any archaeological or architectural resources in the proposed project area or the study area.

6.5.12.4 URBAN DESIGN AND VISUAL RESOURCES

The urban design and visual resources analysis will consider the pedestrian experience during construction activities and the temporary changes to the urban design and visual context of the project area and study area during construction, and also assess whether the construction of the proposed project could result in any construction-period effects on urban design and visual resources.

6.5.12.5 NATURAL RESOURCES

The natural resources analysis will assess the effects of the proposed construction activities for each alternative on natural resources. The assessment will include potential temporary and permanent effects to terrestrial and water resources, temporary and permanent loss of habitat, as well as noise and other construction-related disturbances.

6.5.12.6 HAZARDOUS MATERIALS

The hazardous materials analysis will assess the effects of the proposed construction activities for each alternative on hazardous materials, including the temporary disturbance, storage, and removal of potentially hazardous soils and sediments; and the disturbance, storage, and treatment of potentially hazardous groundwater.

6.5.12.7 WATER AND SEWER INFRASTRUCTURE

The water and sewer infrastructure analysis will assess the effects of the proposed construction activities on water and sewer infrastructure.

6.5.12.8 ENERGY

The energy assessment will assess the effects of the proposed construction activities on existing utility infrastructure operated by Con Edison. In addition, this assessment will include a qualitative discussion of energy demands and use during construction, including a description of energy needs associated with any construction equipment (e.g., emergency generators, diesel fuel) and potential effects on existing energy sources.

6.5.12.9 TRANSPORTATION

This section will consider temporary closures of vehicular travel lanes, sidewalks, etc., during the various stages of construction, which may include Montgomery Street, South Street, East 23rd Street, East 25th Street, and the FDR Drive and the associated ramps and service roads where flood protection systems are proposed; identify the increase in person and vehicle trips due to construction activities; identify truck routes and principal access routes to the project areas that would be used during construction by both trucks and workers; identify potential construction worker parking and truck staging locations; describe and assess any temporary modifications to street operations if required; and analyze potential temporary effects to the transportation systems serving the study area. This analysis will include Level-1 (Trip Generation) and Level 2 (Trip Assignment) screening assessments to determine if the analysis thresholds would be exceeded. If required, critical intersections near the project areas will be identified and analyzed for the potential of significant adverse traffic effects during construction of the proposed project. As part of the analysis, the No Action Alternative will be assessed and include traffic volume increases to account for the Brookdale Campus of Hunter College project and various other developments within ½ mile of the project area that are expected to be completed by 2025, the build year for the proposed project.

The transportation analysis will also include an assessment of off-street parking facilities and on-street parking spaces within a ½-mile radius of the project area between Montgomery Street and East 25th Street during the early morning AM and midday peak periods, and whether the proposed project has the potential to result in adverse effects on parking during construction.

Construction barges may be used to supplement truck deliveries of materials during construction of the proposed project. Therefore, this section will also describe the number of barges that could be used and discuss the effect of construction activities on marine traffic on the East River, including on the two passenger ferry landings in East River Park and Stuyvesant Cove Park that are part of the Citywide Ferry Service project. The expected hourly construction truck and barge trip projections during peak construction, and the cumulative projections of both transportation modes, will be provided.

6.5.12.10 AIR QUALITY

Emissions from nonroad construction equipment and on-road construction vehicles, as well as dust-generating construction activities, all have the potential to affect air quality. In general, much of the heavy equipment used in construction is powered by diesel engines—including those on marine vessels such as barge cranes and tug boats— and produce relatively high levels of nitrogen oxides (NO_x) and particulate matter (PM) [both PM_{10} and $PM_{2.5}$] emissions. Dust generated by

construction activities is also a source of PM emissions. Gasoline engines produce relatively high levels of carbon monoxide (CO). As a result, the primary air pollutants of concern for construction activities will include nitrogen dioxide (NO_2), the component of NO_x that is a regulated pollutant, PM_{10}, $PM_{2.5}$ and CO. The assessment will include a determination of conformity with the Clean Air Act (CAA during construction, and adherence to the requirements of Local Law 77 of 2003.

A detailed dispersion analysis of construction sources will be performed to determine the potential for air quality effects on nearby sensitive receptor locations. For the detailed analysis, concentrations will be predicted using a refined dispersion model, AERMOD, to determine the potential for air quality effects from construction of the proposed project. Concentrations for each pollutant of concern at each sensitive receptor will be predicted during the most representative worst-case time period(s). The potential for significant adverse effects will be determined by comparing modeled concentrations to NAAQS or the applicable *de minimis* thresholds.

In addition, CAA (42 U.S.C. 7401 et seq.), and in particular sections 176 (c) and (d), prohibits federal assistance to projects that are not in conformance with the State Implementation Plan (SIP). Therefore, this section will include a conformity analysis to determine the consistency of the proposed construction activities with the strategies contained in the SIP for the area. At any receptor sites where violations of standards occur, further analyses will be performed to determine what mitigation measures would be required to attain standards.

6.5.12.11 GREENHOUSE GAS

While greenhouse gas (GHG) emissions are normally accounted for as total emissions for the lifetime of a project, in this case, there would be no substantial emissions during operations. Therefore, the construction period operations represent the total potential effect of the proposed project. A quantitative assessment of greenhouse gases (GHG) from project construction, and emissions associated with the extraction or production of construction materials will be performed. Opportunities for reducing GHG emissions associated with construction will be considered. Emissions will be reported as carbon dioxide equivalent (CO_2e) metric tons per year. GHG emissions other than carbon dioxide (CO_2) will be included if they would account for a substantial portion of overall emissions, adjusted to account for the global warming potential. The consistency of the project with City, State, and federal policy regarding emission reductions will be prepared.

6.5.12.12 NOISE AND VIBRATION

The construction noise assessment will include a detailed quantitative discussion of noise levels from construction equipment, including mobile sources. The analysis will include a conservative estimate of intensity, duration, and location of noise emissions relative to nearby sensitive locations, based on projected construction activity and equipment for both daytime and night-time construction using the CadnaA model. During representative worst-case time periods throughout the construction period, noise levels due to construction activities at each sensitive receptor will be determined and compared with existing levels measured during the expected hours of construction work, including both daytime and nighttime background noise levels (see **Figure 26** for collected noise measurement locations). If necessary, the analysis will identify project-specific control measures required to reduce the effects of construction and avoid or minimize any significant adverse effects. Such measures may include noise barriers, equipment curtains or enclosures, alternative construction techniques, and use of quieter equipment. Construction activities have the potential to result in vibration levels that may result in structural or architectural damage, and/or annoyance or interference with vibration-sensitive activities. A construction

vibration assessment will be performed. This assessment will determine critical distances at which various pieces of equipment may cause damage or annoyance to nearby structures based on the type of equipment, the construction activities, and applicable vibration level criteria. Should it be necessary for certain construction equipment to be located closer to a structure than its critical distance, vibration mitigation options will be proposed.

6.5.12.13 PUBLIC HEALTH

According to the *CEQR Technical Manual*, public health is the organized effort by society to protect and improve the health and well-being of the general population through monitoring; assessment and surveillance; health promotion; prevention of disease, injury, disorder, disability and premature death; and reduction of inequalities in health status.

According to the *CEQR Technical Manual*, a public health assessment may be warranted if an unmitigated significant adverse effect is identified in the areas of air quality, water quality, hazardous materials, or noise. If unmitigated significant adverse effects are identified in any of these areas, a public health assessment will be provided for that specific technical area.

6.6 MITIGATION MEASURES

Where significant adverse effects are identified in the analyses discussed above, measures will be identified and assessed to mitigate those adverse effects. Where effects cannot be practicably mitigated, they will be described as unavoidable adverse effects.

6.7 INDIRECT AND CUMULATIVE EFFECTS

The federal Council on Environmental Quality (CEQ) regulations (40 CFR Part 1500-1508) define indirect effects as those that are "caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable." Generally, these effects are induced by a project. Indirect effects can occur within the full range of impact areas, such as changes in land use, economic conditions, traffic congestion, air quality, noise, vibration, and water and natural resources. This section of the EIS will evaluate any indirect effects, both adverse and beneficial, that may occur as a result of the proposed project.

NEPA also requires consideration of cumulative effects of a project. Cumulative effects may result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions (40 CFR 1508.8). The analysis will address cumulative effects to both environmental resources and socioeconomic conditions that could be potentially affected by the proposed project in combination with other reasonably foreseeable projects. The cumulative effects of each of the alternatives, considered in conjunction with other projects being constructed and/or operated within the same vicinity and timeframe, will be assessed in this section of the DEIS. Projects to be included in this analysis will include, but not be limited to, the following:

- Lower Manhattan Coastal Resiliency – Two Bridges project;
- Pier 42;
- NYCHA resiliency improvements;
- Lower East Side Ecology Center Composting Facility;
- Solar One Environmental Education Center;
- Hunter College Brookdale Campus / East 26th Street Department of Sanitation garage;

- Additional resiliency and open space projects near the project area; and
- Residential and mixed-use private and as-of-right developments.

6.8 SUMMARY CHAPTERS

Several summary chapters will be prepared, focusing on various aspects of the EIS, as set forth in the applicable regulations and the *CEQR Technical Manual*. They are as follows:

1. *Executive Summary.* Once the EIS technical sections have been prepared, a concise executive summary will be drafted. The executive summary will utilize relevant material from the body of the EIS to describe the proposed development and actions, their environmental effects, measures to mitigate those effects, and alternatives to the proposed development and actions.
2. *Unavoidable Adverse Effects.* Those effects, if any, that could not be avoided and could not be practicably mitigated, will be listed in this chapter.
   Irreversible and Irretrievable Commitments of Resources. This chapter focuses on those resources, such as energy and construction materials, that would be irretrievably committed if the project is built. ✷

Proposed Project Area

0 1 MILES

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Regional Location

Figure 1

Source: 2016 Digital Orthoimagery in New York City, October 2016

Project Area One

Project Area Two

0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Proposed Project Area Aerial Map

Figure 2

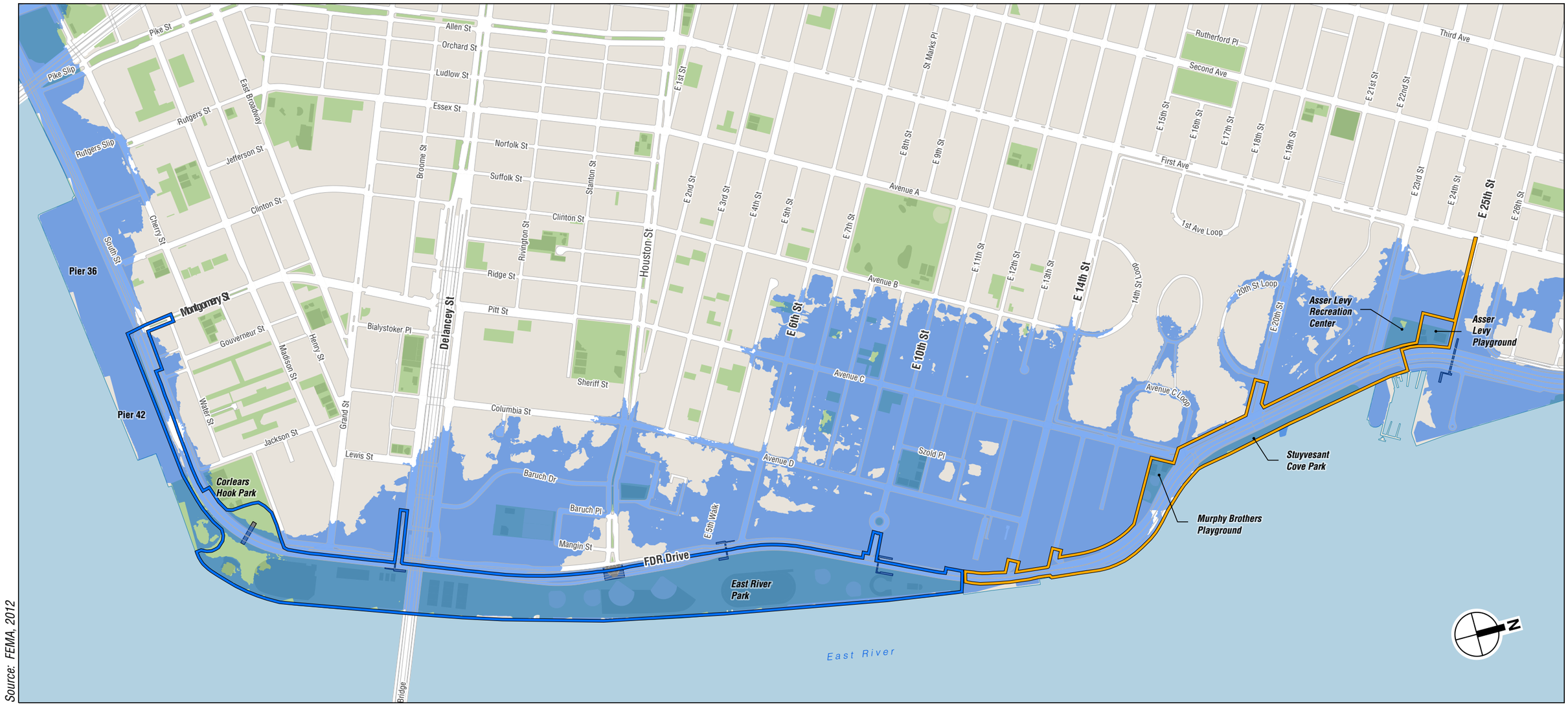
Source: 2016 Digital Orthoimagery in New York City, October 2016

Project Area One
Project Area Two
Protected Area
100-year Flood Hazard Area with 90th Percentile 2050s Sea Level Rise

0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Protected Area Aerial Map
Figure 3



Source: FEMA, 2012

Project Area One

Project Area Two

Hurricane Sandy Flooding Extent

0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Extent of Hurricane Sandy Flooding

Figure 4

Source: FEMA Preliminary Flood Insurance Rate Maps, 1/30/2015

Project Area One
Project Area Two
Protected Area

500-Year Flood Hazard Area (0.2% Annual Chance)
100-Year Flood Hazard Area (1% Annual Chance) / Special Flood Hazard Area
100-year Flood Hazard Area with 90th Percentile 2050s Sea Level Rise

0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

FEMA Preliminary
Flood Hazard Areas (2015)
Figure 5

Project Area One

Project Area Two

Existing Pedestrian Bridges

Proposed Project Design Reaches

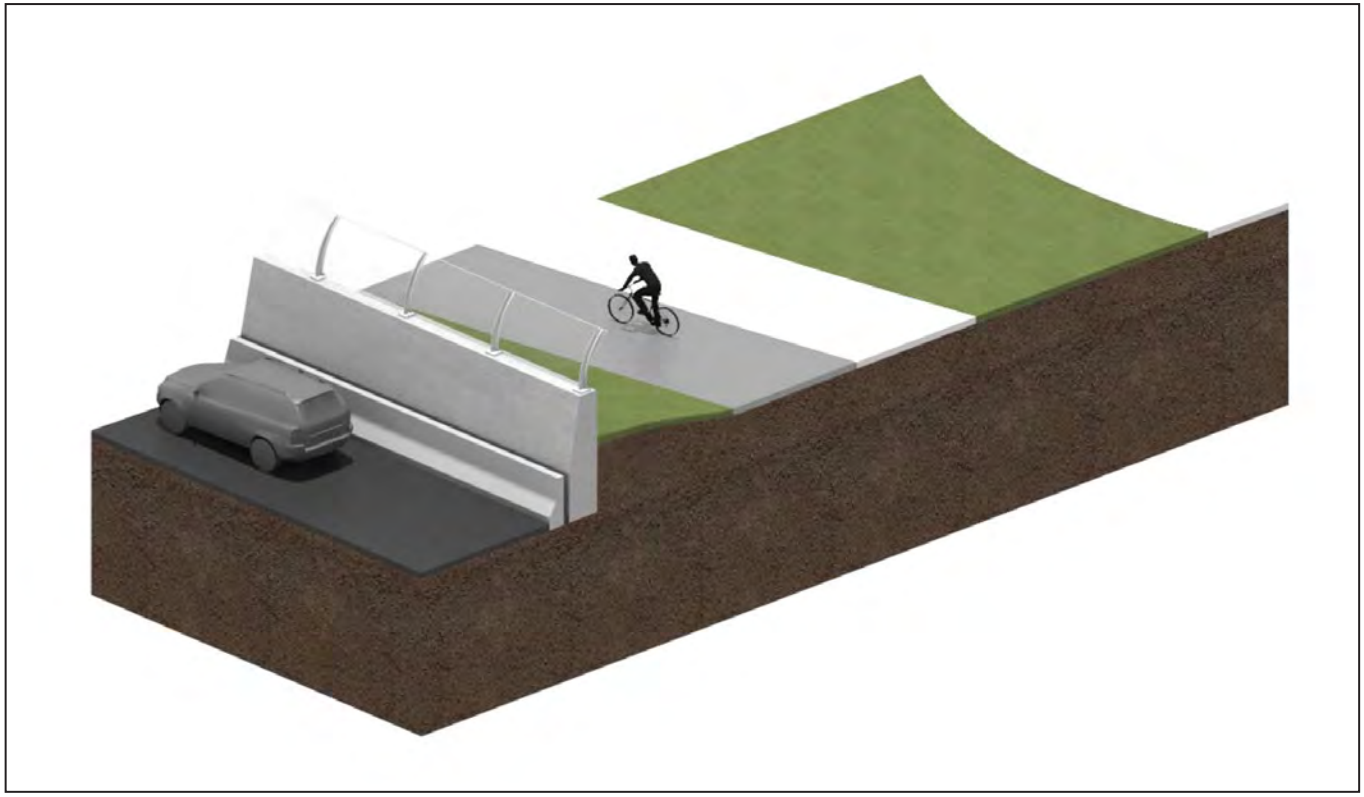
0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Proposed Project Area and Design Reaches

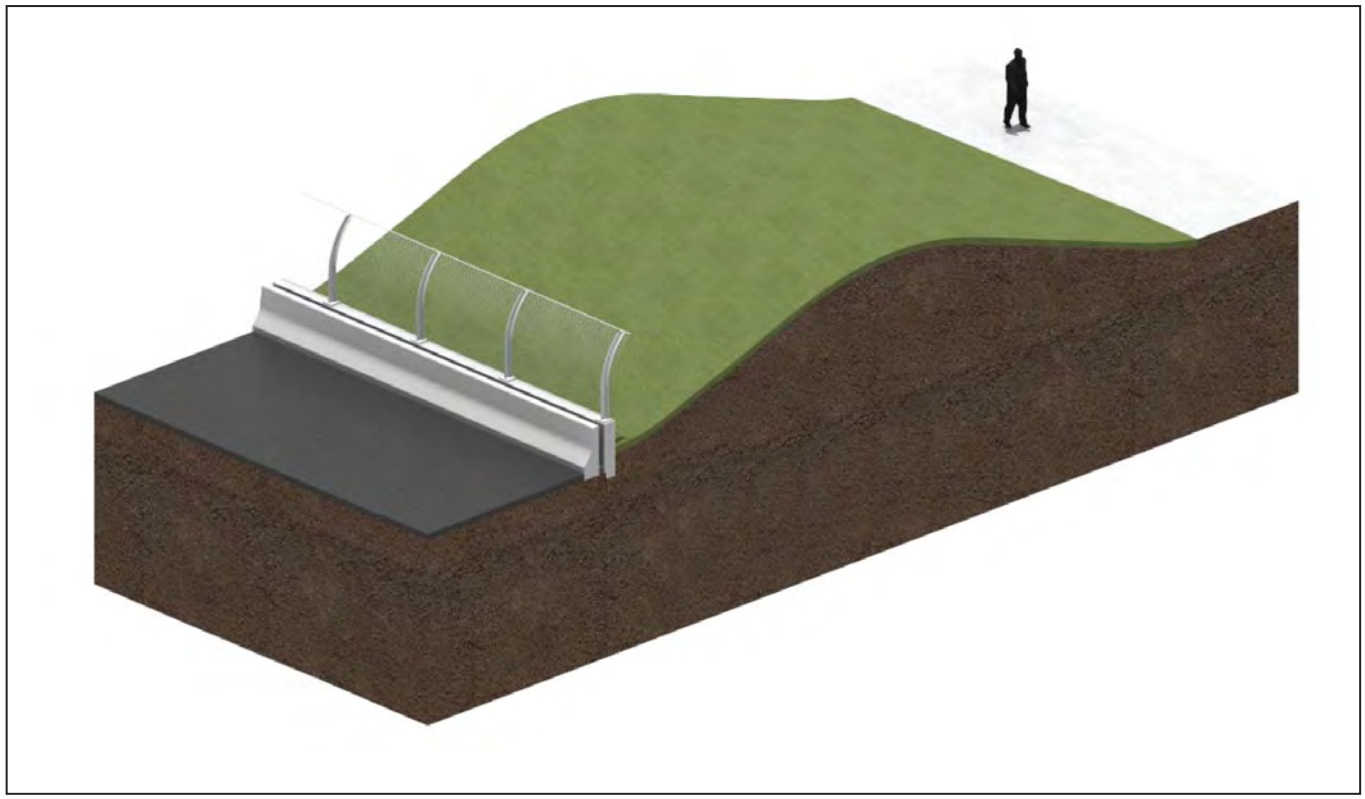
Figure 6



NOTE: Preliminary Illustrative Design Concept

Capital Project: SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

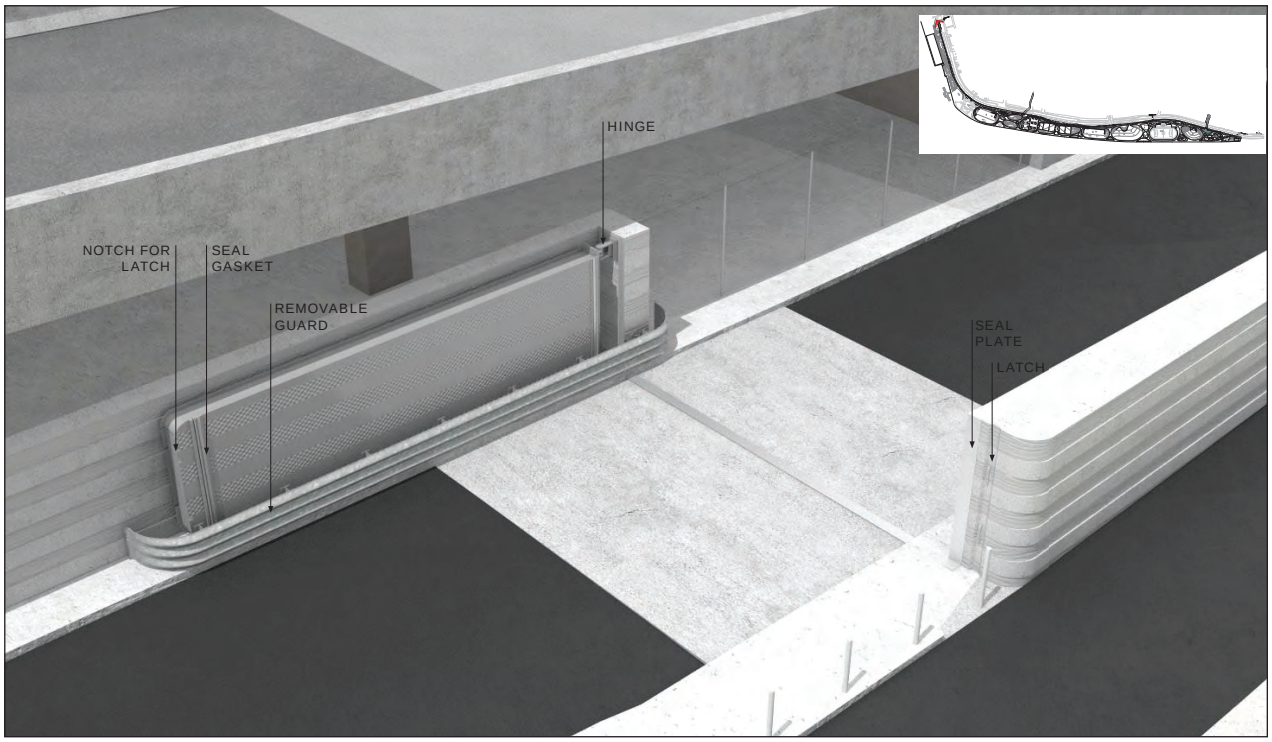
Typical Floodwall (Illustrative)
Figure 7



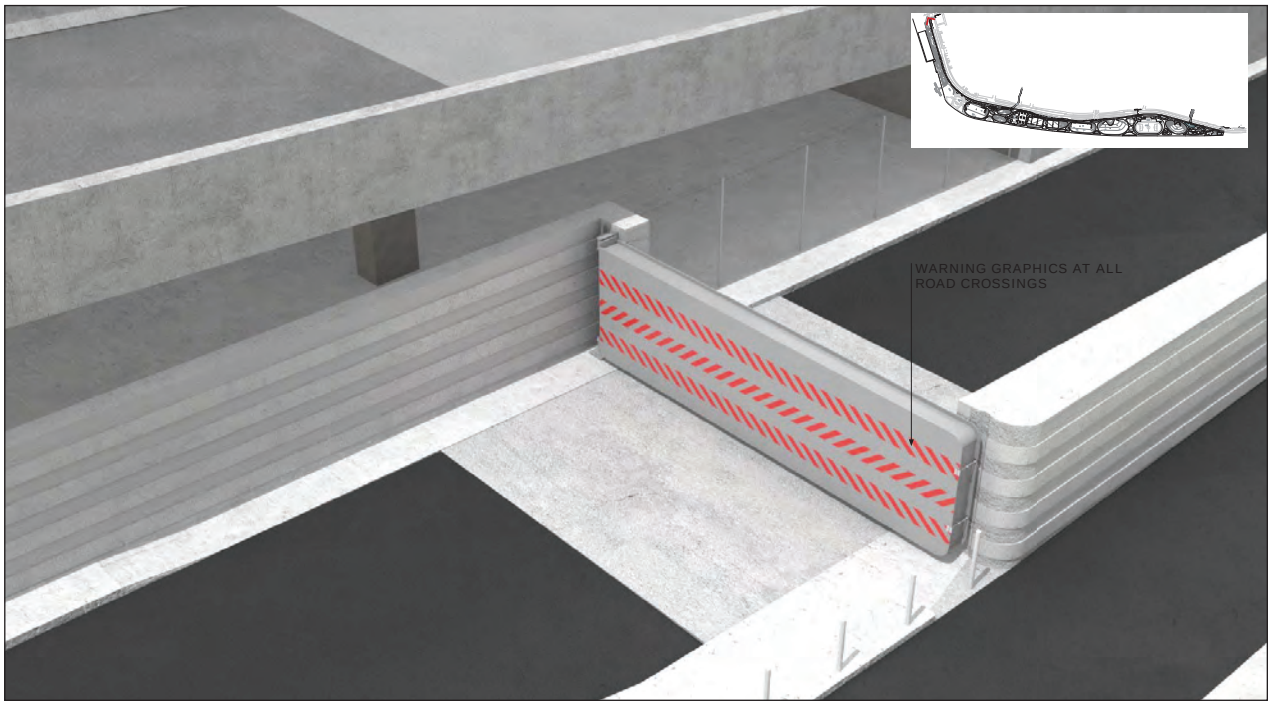
NOTE: Preliminary Illustrative Design Concept.

Capital Project: SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Typical Levee (Illustrative)
Figure 8

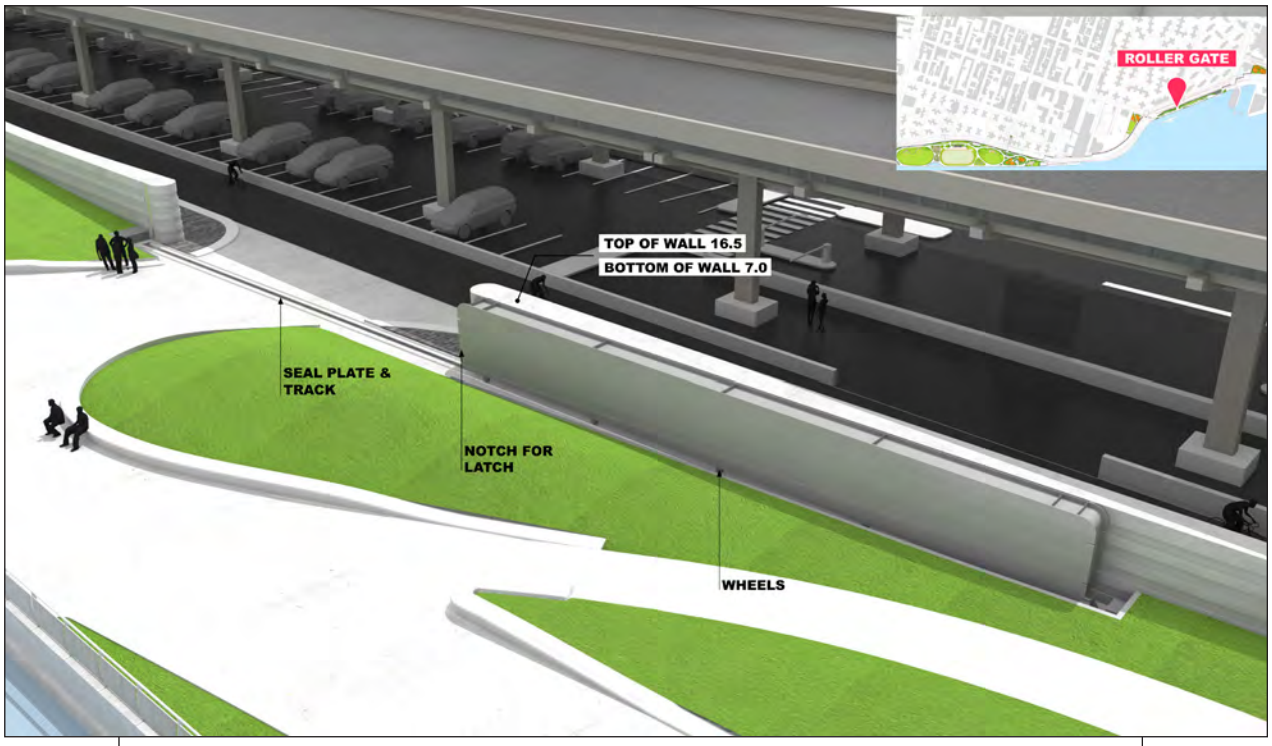


Open position

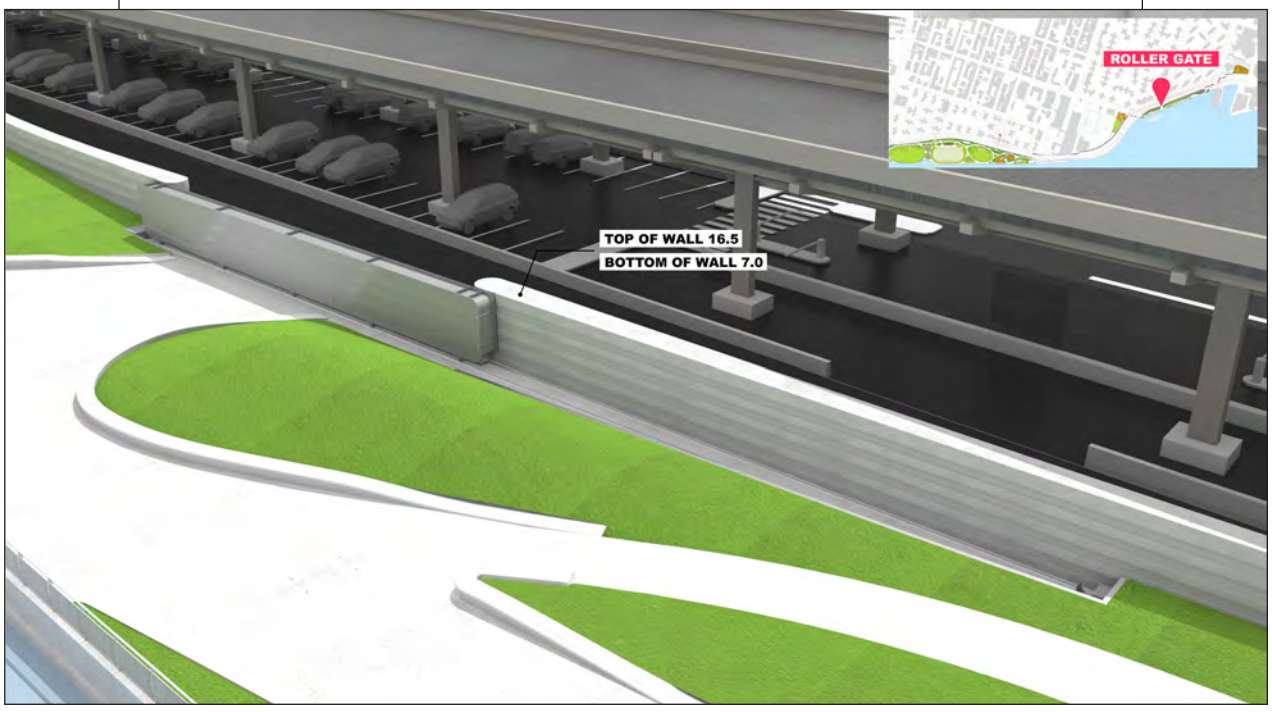


Closed position

NOTE: Preliminary Illustrative Design Concept



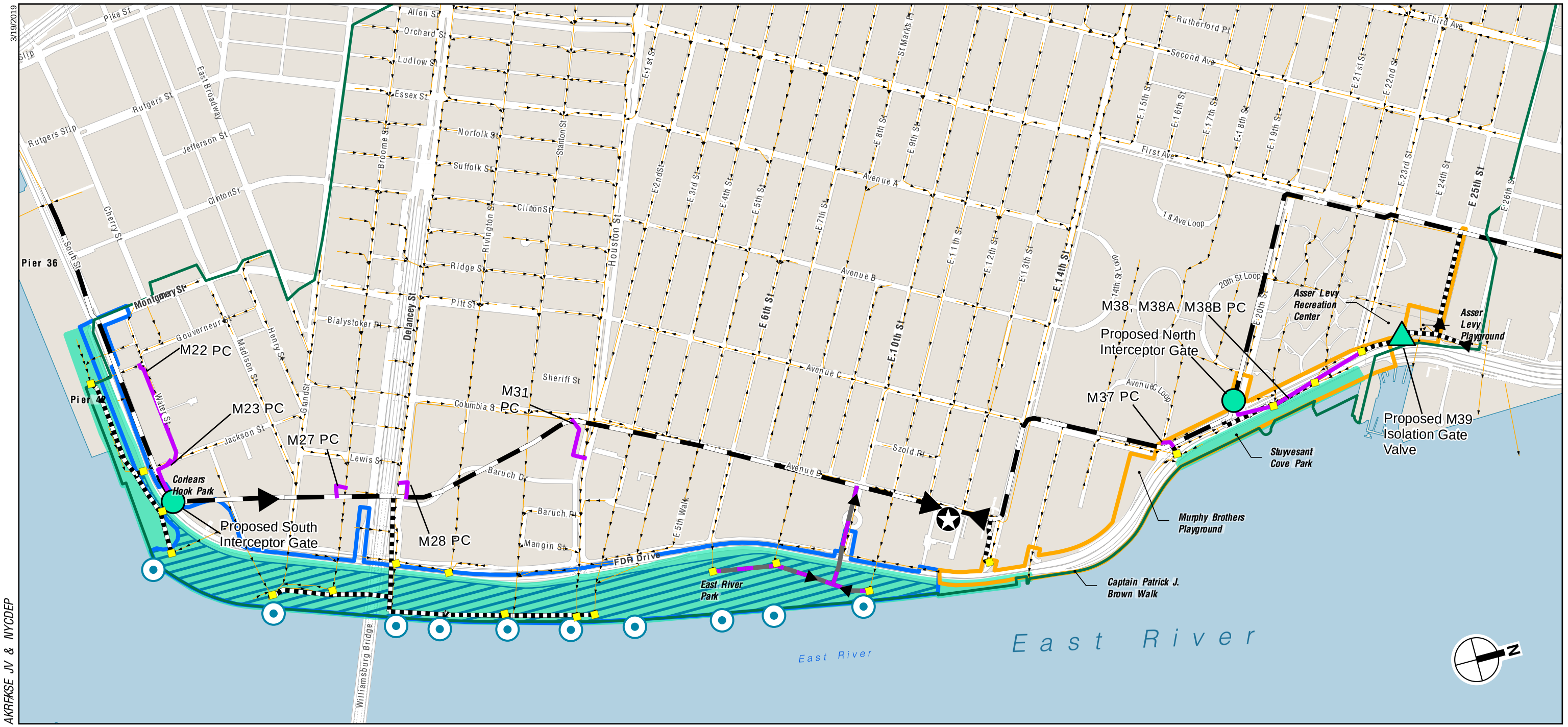
Open position



Closed position

NOTE: Preliminary Illustrative Design Concept

3/19/2019



AKRF/KSE JV & NYCDEP

Drainage Isolation

- *Proposed Isolation Gate Valve at Regulator M-39*
- *Proposed Interceptor Gate*
- *Proposed Floodproofing of Unprotected Sewer Infrastructure*

Drainage Management

- *Proposed Parallel Conveyance (PC)*
- *Proposed Upsized Branch Interceptor*

Infrastructure Reconstruction

- *Proposed Infrastructure Reconstruction*
- *Proposed Reconstructed Outfall Location*

- *Existing Regulators*
- *Existing Lateral Sewers in Drainage Protected Area*
- *Existing Branch Interceptors*
- *Existing Interceptor*
- *Manhattan Pump Station*
- *Drainage Protected Area*

0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Infrastructure Reconstruction, Drainage Isolation, and Drainage Management Components

Figure 11

Project Elements

Proposed Floodwall

Redesigned Open Spaces

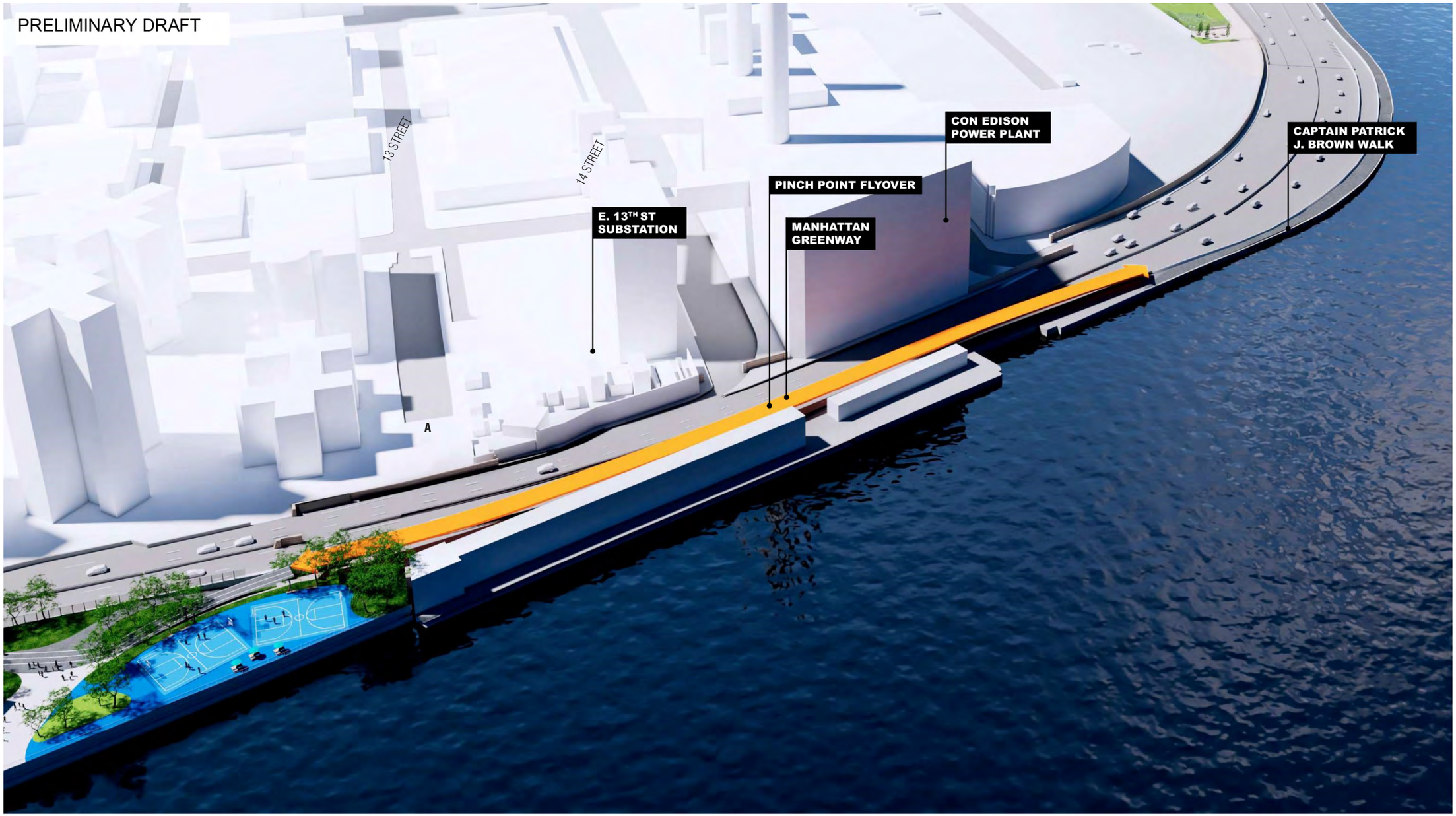
NOTE: Based on Preliminary Draft Design Concept. Design includes flyover bridge.

Capital Project: SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Schematic of Alternative 4:
Flood Protection System with a Raised East River Park

Figure 12



NOTE: Preliminary Conceptual Design

Project Elements

- *Proposed Floodwall*
- *Proposed Levees or Raised Landscapes*
- *Proposed Deployable Systems*
- *Proposed Reconstructed Shared Use Path*

NOTE: Based on Preliminary Draft Design Concept. Design includes flyover bridge.

SOURCES: East Side Coastal Resiliency Project, Project Area One Conceptual Design Report, November 2015. East Side Coastal Resiliency Project, Project Area Two Conceptual Design Report, November 2015.

Capital Project: SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Schematic of Alternative 2:
Flood Protection System on the West Side of
East River Park – Baseline

Figure 14

Project Elements

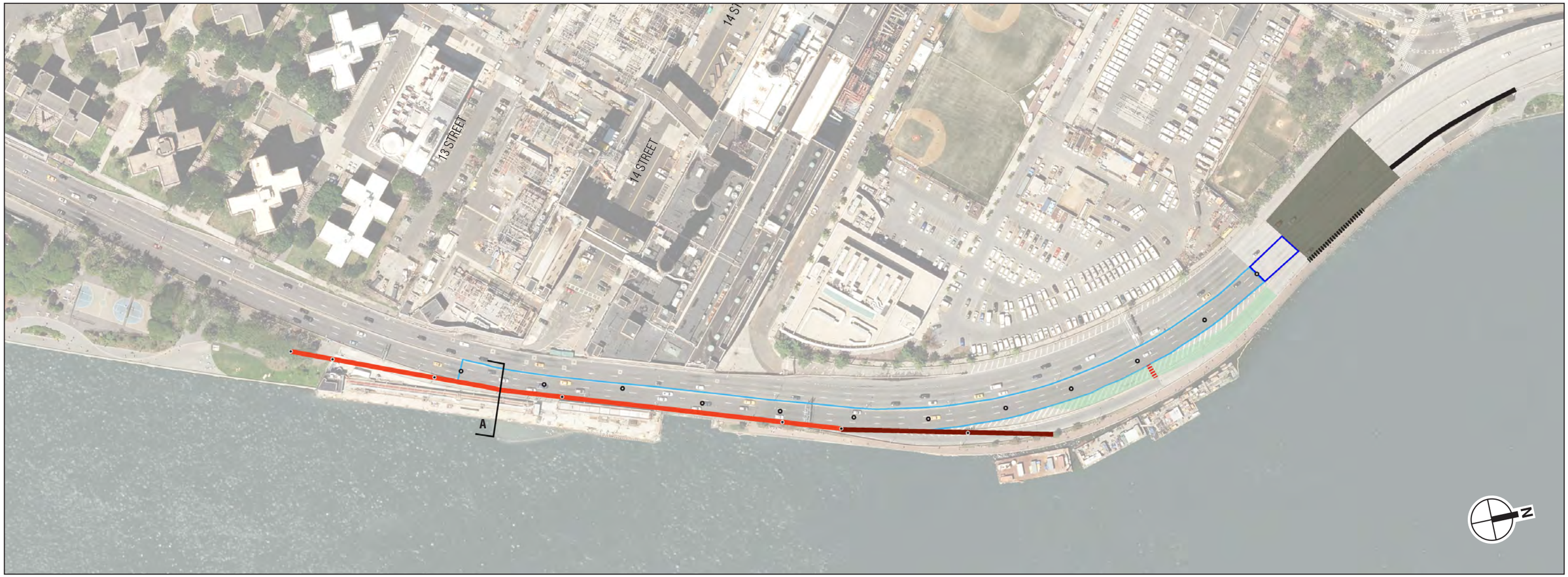
Proposed Floodwall

Redesigned Open Spaces

NOTE: Based on Preliminary Draft Design Concept. Design includes flyover bridge.

Schematic of Alternative 3:
Flood Protection System on the West Side of East River Park – Enhanced Park and Access

Figure 15



NOTE: Based On Preliminary Draft Design Concept, NYCDOT, August 2016.

Project Elements

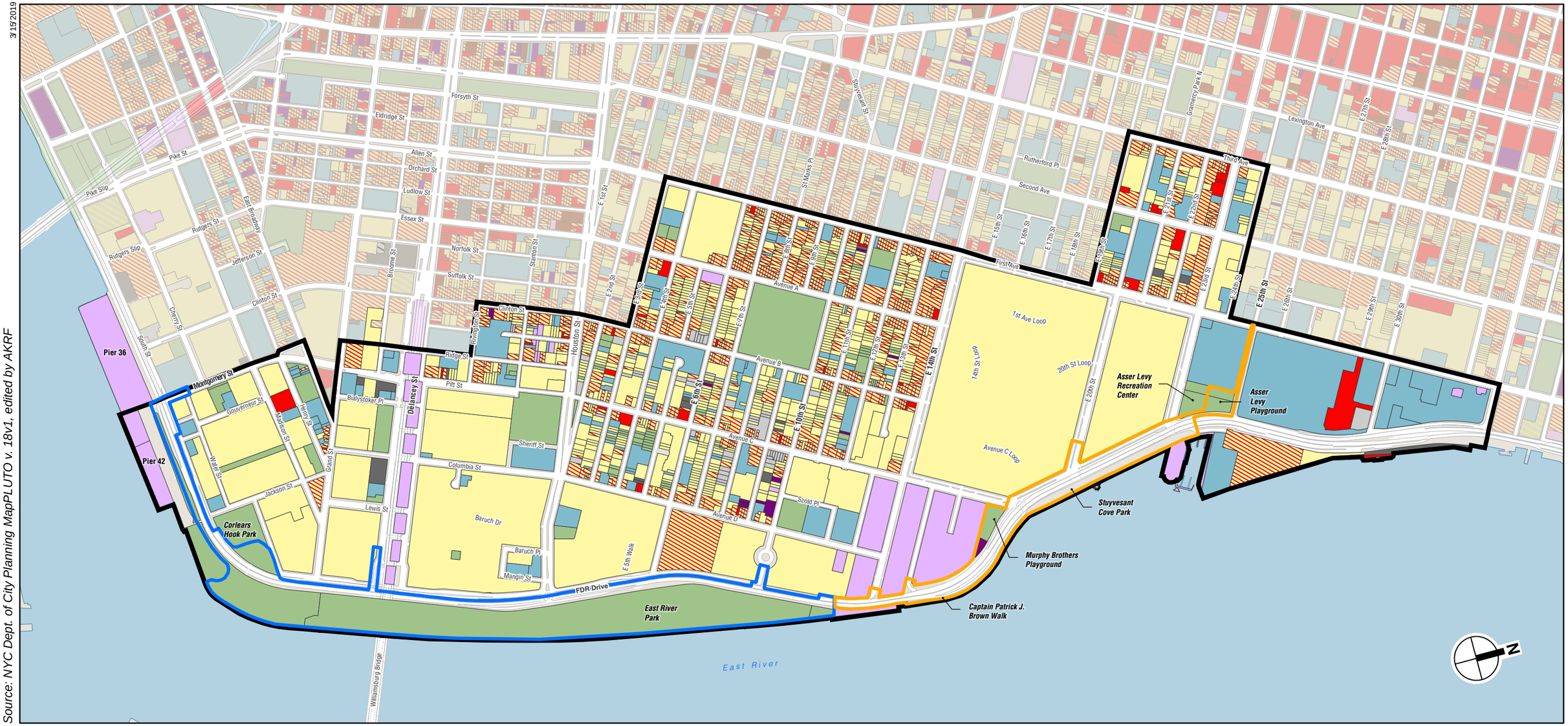
- *Proposed Elevated FDR Drive Roadway & Floodwall*
- *Transition Slab with "L" Floodwall*
- *Proposed Realigned North Bound FDR Exit Ramp*
- *Existing Wall Enclosure Under FDR Drive*
- *Proposed Floodwall*
- *3' - 6' High Floodwall Attached to East Side of Bridge*
- *FDR Drilled Shaft with Pier Cap (125' Apart)*
- *Proposed Deployable Systems*
- *Proposed Pedestrian Flyover*
- *Proposed Pedestrian Flyover Ramp*
- *Pedestrian Flyover Drilled Shaft with Pier Cap*

Capital Project: SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Schematic of Alternative 5:
Flood Protection System East of FDR Drive
Figure 16

3/15/2019

Source: NYC Dept. of City Planning MapPLUTO v. 18v1, edited by AKRF



- *Project Area One*
- *Project Area Two*
- *Land Use, Zoning & Public Policy Study Area*
- *Commercial and Office Buildings*
- *Hotels*
- *Industrial and Manufacturing*
- *Open Space and Outdoor Recreation*
- *Parking Facilities*
- *Public Facilities and Institutions*
- *Residential*
- *Residential with Commercial Below*
- *Transportation and Utility*
- *Under Construction*
- *Vacant Building*
- *Vacant Land*

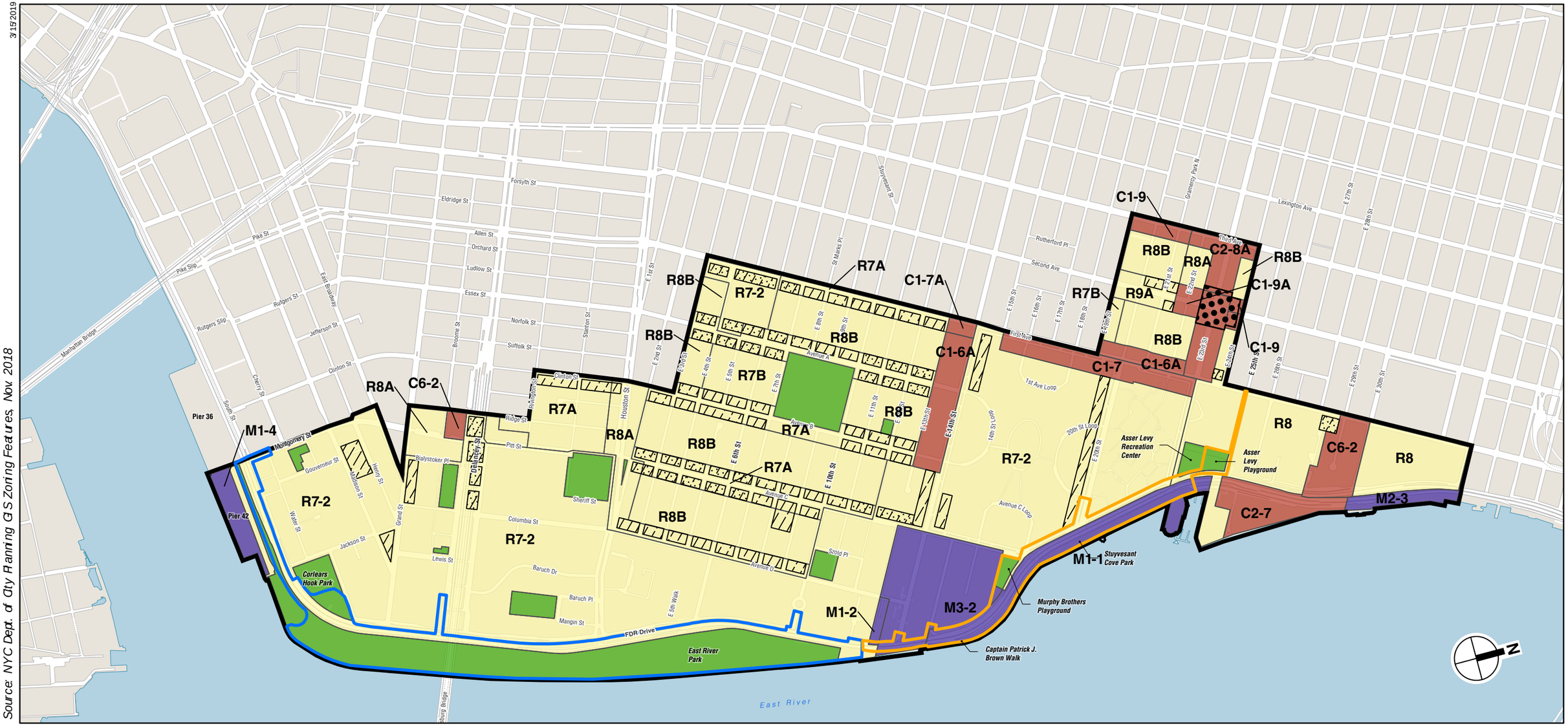
0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Existing Land Use in Study Area
Figure 17a

3/15/2019

Source: NYC Dept. of City Planning GIS Zoning Features, Nov. 2018



Project Area One

Project Area Two

Land Use, Zoning & Public Policy Study Area

C 1-5 Commercial Overlay District

C 2-5 Commercial Overlay District

Special Transit Land Use District

Zoning Designation

Commercial

Manufacturing

Park

Residential

0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Existing Zoning in Study Area

Figure 17b

3/18/2019

Source: Source: U.S. Census Bureau TIGER/Line Shapefiles (2017)

Project Area One
Project Area Two
Open Space Study Area
Census Tracts
Park Area Improved with Land and Water Conservation Funds
Open Space Resources
Recreational Fields
Tracks, Courts, and other features
Parks and Gardens

0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Open Space Study Area
Figure 18

Source: NYC Landmarks Preservation Commission, NYS OPRHP

Project Area One

Project Area Two

Primary (400-foot) APE

Secondary APE

Known Historic and Cultural Resources

East 10th Street Historic District (NYCL, S/NR-eligible)

Lower East Side Historic District and Extension (S/NR)

Stuyvesant Square Historic District (NYCL, S/NR)

FDR Drive (S/NR)

❷ *Individual Architectural Resources*

0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY

Historic and Cultural Resources Inventory:
Area of Potential Effect

Figure 19

Source: View Corridors - AKRF

Project Area One

Project Area Two

Visual Resources Study Area (400-Foot Radius)

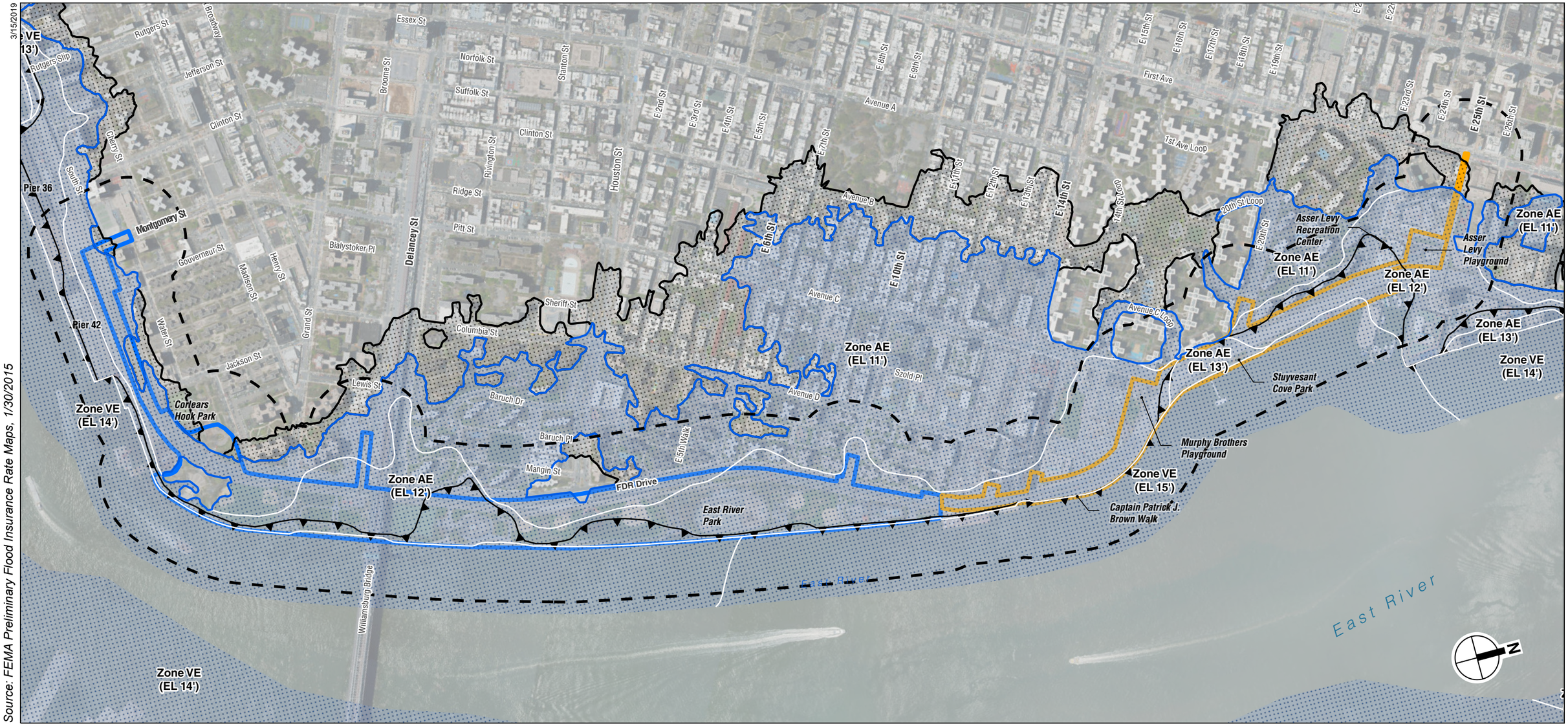
Photo View Direction and Reference Number

0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY

Urban Design and Visual Resources
Study Area
Figure 20



Source: FEMA Preliminary Flood Insurance Rate Maps, 1/30/2015

3/15/2019

Project Area One

Project Area Two

Natural Resources Study Area (400-Foot Study Area Radius)

100-Year Flood Hazard Area (1% Annual Chance)

500-Year Flood Hazard Area (0.2% Annual Chance)

Boundary Dividing Flood Hazard Area Zones and Areas of Different Base Flood Elevations

Limit of Moderate Wave Action (Coastal A Zone)

0 1,000 FEET

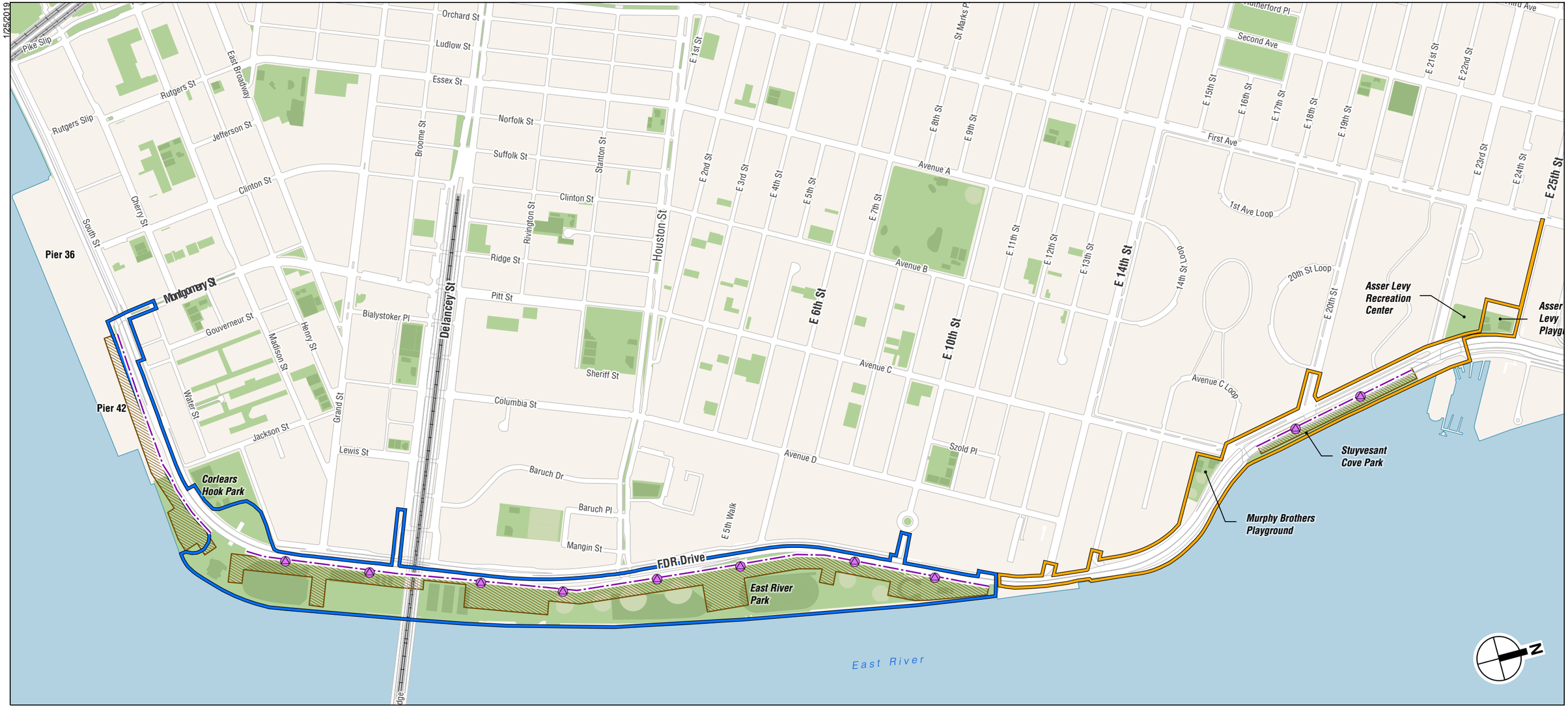
Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Natural Resources Study Area and
FEMA Preliminary Flood Hazard Areas (2015)

Figure 21

1/25/2019



Project Area One
Project Area Two
Deep Boring Alignment
Shallow Boring Areas
Groundwater Sample Locations

0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY

Soil and Groundwater Testing Locations
Figure 22

3/19/2019

Source: NYCDEP

Project Protected Area

Drainage Protected Area

Water & Sewer Study Area: Manhattan Pump Station Service Area

Existing Interceptor

Existing Branch Interceptors

Manhattan Pump Station

0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Water and Sewer Study Area

Figure 23

Project Area One

Project Area Two

Study Area (1/2-mile Boundary)

Pedestrian Bridges

Pedestrian / Bicycle Counts

Vehicle Counts

Automatic Traffic Recorder (ATR) Counts

Subway Lines

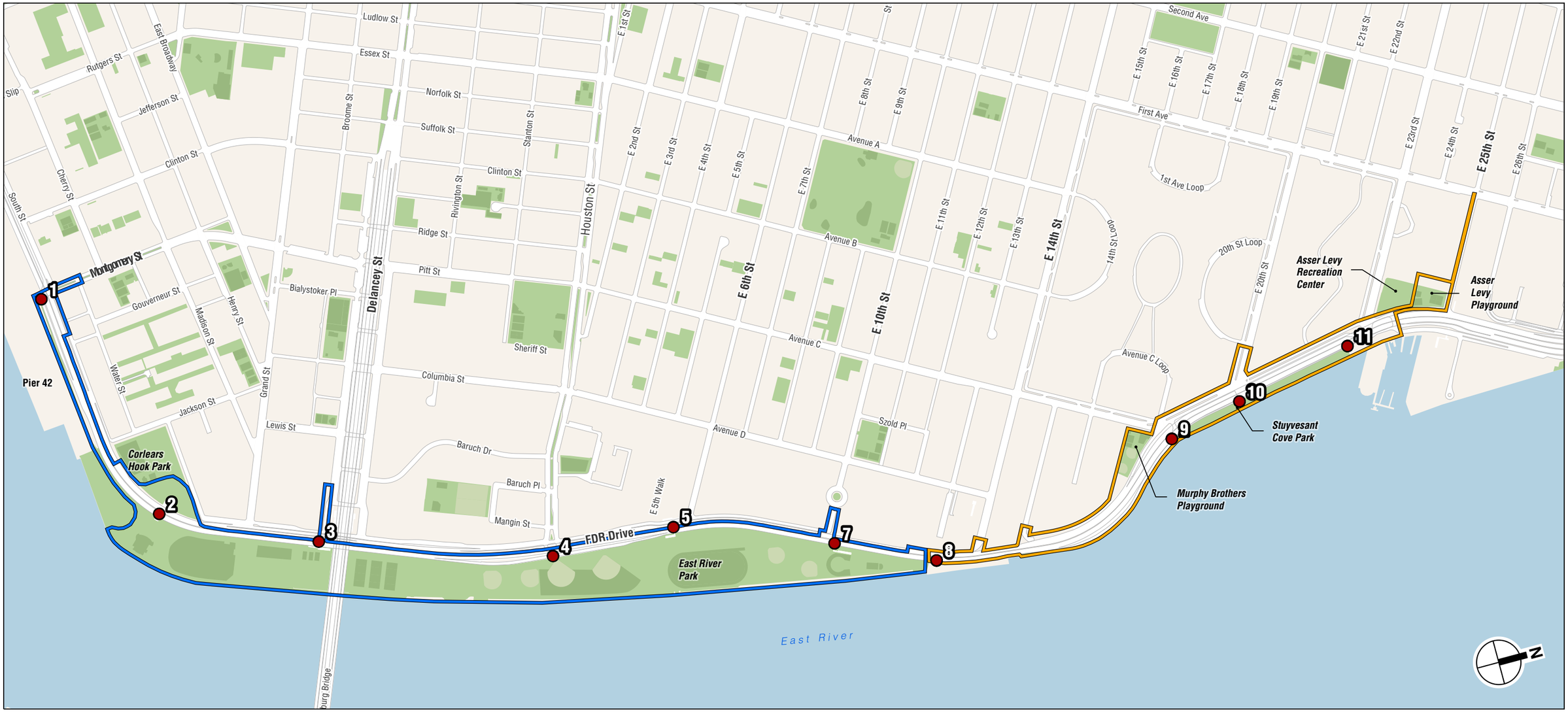
0 2,000 FEET

NYC DDC Capital Project: SANDRESM1

EAST SIDE COASTAL RESILIENCY

Traffic Data Collection Locations Area

Figure 24



Project Area One

Project Area Two

Pedestrian / Bicycle Count Locations (w/ Location ID)

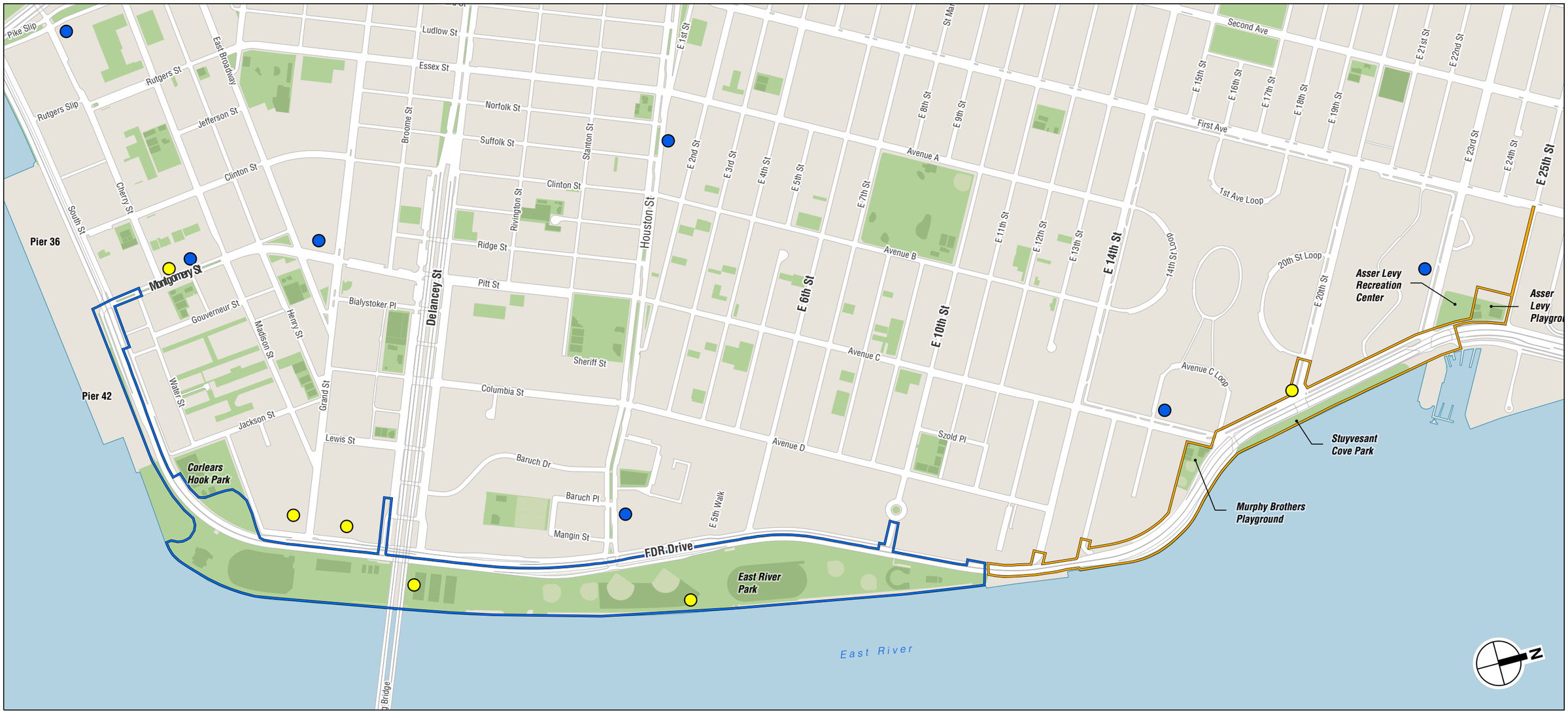
0 2,000 FEET

NYC DDC Capital Project: SANDRESM1

EAST SIDE COASTAL RESILIENCY

Pedestrian and Bicyclist Data Collection Locations

Figure 25



Project Area One

Project Area Two

Collected Noise Level Measurement Locations

Supplemental Noise Monitoring Locations

0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Construction Noise Analysis Measurement Locations

Figure 26

Appendix A

Positive Declaration:
Notice of Intent to Prepare a
Draft Environmental Impact Statement (DEIS)

NYC Parks

Alyssa Cobb
Assistant Commissioner
Planning & Parklands

T 212.360.3402
F 212.360.3453

E Alyssa.Cobb@parks.nyc.gov

City of New York
Parks & Recreation

The Arsenal
Central Park
New York, NY 10065
www.nyc.gov/parks

POSITIVE DECLARATION

NOTICE OF INTENT TO PREPARE A DRAFT ENVIRONMENTAL IMPACT STATEMENT

PROJECT:	**LEAD AGENCIES:**
East Side Coastal Resiliency Project New York, New York CEQR: 15DPR013M	**NEPA:** New York City Office of Management and Budget 255 Greenwich Street, 8th floor New York, NY 10007 **SEQRA/CEQR:** New York City Department of Parks & Recreation The Arsenal, Central Park 830 Fifth Avenue New York, New York 10065

DATE ISSUED: October 28, 2015

TYPE OF ACTION: Type I

PROJECT IDENTIFICATION:

In order to address flood hazard vulnerability for an approximately 2.4 mile stretch of Manhattan's East River waterfront, the City of New York is proposing to construct an integrated flood risk reduction system called the East Side Coastal Resiliency (ESCR) Project. The proposed project area extends between Montgomery Street on the south and East 23rd Street (and in one alternative East 25th Street) on the north, and also includes inland segments along these streets. The proposed project area is within Manhattan Community Districts 3 and 6. To implement the proposed project, the City of New York is proposing to enter into a grant agreement with the U.S. Department of Housing and Urban Development (HUD) to accept $335 million in Community Development Block Grant-Disaster Recovery (CDBG-DR) Funds. These funds would be provided by HUD to the City's Office of Management and Budget (OMB) for use in project implementation. Thus, OMB has been designated as the project's "Responsible Entity" in accordance with HUD regulations and is the Lead Agency for the environmental review pursuant to the National Environmental Policy Act (NEPA). Additionally, implementation of the proposed project requires multiple City and state actions and involves substantial activities in City parkland. Thus, the New York City Department of Parks & Recreation (DPR) is the Lead Agency in fulfilling the environmental review requirements of the State Environmental Quality Review Act (SEQRA) and City Environmental Quality Review (CEQR).

NYC Parks

PROJECT DESCRIPTION:

The proposed integrated flood risk reduction system may be comprised of a combination of berms (or "bridging berms"), floodwalls, and deployable elements that would be located within existing City parkland and streets and potentially into non-City-owned property. The proposed project responds to the urgent need for increased flood protection and resiliency within this Federal Emergency Management Agency (FEMA)-designated flood hazard area. In doing so, the proposed project is intended to safeguard commercial and residential properties, and critical energy, infrastructure, and transportation systems against coastal flooding, and make related improvements to City infrastructure while simultaneously improving public open space and enhancing the accessibility and quality of waterfront open space in East River Park and Stuyvesant Cove Park. If all approvals are issued, project construction is anticipated to commence in summer 2017 and be completed in 2022.

REQUIRED APPROVALS

Implementation of the Proposed Action would involve federal, State, and City approvals, and is subject to NEPA, SEQRA, and CEQR and their implementing regulations. The federal, State, and City agencies that may potentially be involved in the environmental review and regulatory permitting processes are as follows.

FEDERAL

- U.S. Department of Housing and Urban Development (HUD) – Disbursement of funds, administration of CDBG-DR grant to the City of New York; review of Action Plan Amendments.
- U.S. Army Corps of Engineers (USACE) – Permits or authorizations for activities in Waters of the United States (Section 404 of the Clean Water Act) or structures within navigable waters (Section 10 of the Rivers and Harbors Act).
- U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) – Advisory agencies to the environmental review process focusing on activities that affect wetlands, water quality, protected plant and wildlife species, and essential fish habitat.
- U.S. Coast Guard (USCG) – Coordination and authorization regarding placement of construction barges and underwater work.
- Federal Emergency Management Agency (FEMA) – Review of flood protection design and potential changes to Flood Insurance Rate Maps (FIRM).
- National Park Service (NPS) – Coordination and authorization for activities that may be necessary within parkland that was improved using federal Land and Water Conservation Funds (LWCF).

STATE OF NEW YORK

- Department of Environmental Conservation (NYSDEC) – Permits related to activities in tidal wetlands or adjacent areas (Article 25) or protection of waters (Article 15), Water Quality Certification (Section 401); endangered species protection if an

incidental take is determined; permits related to the State Pollutant Discharge Elimination System (SPDES) program; approvals related to the handling and transport of hazardous materials and soils.

- Department of State (NYSDOS) – Review of Coastal Zone Consistency.
- Office of Parks, Recreation and Historic Preservation (OPRHP) – Liaison with the Federal government for purposes of administering the LWCF program, including monitoring compliance with LWCF requirements. Advisory role as the State Historic Preservation Office (SHPO) in federal review process pursuant to Section 106 of the National Historic Preservation Act (NHPA) with respect to designated and protected properties on the State and National Registers of Historic Places and properties determined eligible for such listing.
- Department of Transportation (NYSDOT) – Review of flood protection design and approvals related to construction activities along and adjacent to segments of FDR Drive under NYSDOT jurisdiction.
- Subject to the review of additional design alternatives, the Proposed Action may also require an approval from the State Legislature to alienate portions of parkland within East River Park for non-park uses.

CITY OF NEW YORK

- Office of Management and Budget (OMB) – Disbursement of funds from HUD to City agencies and NEPA Lead Agency for the environmental review.
- Department of Parks & Recreation (DPR) – Review of and issuance of permits and approvals for project design and construction in City parkland and future parkland and SEQRA/CEQR Lead Agency for the EIS.
- Mayor's Office of Recovery and Resiliency (ORR) – Advisory agency for activities and projects proposed to increase resiliency, including strengthening neighborhoods, upgrading buildings, adapting infrastructure and critical services, and strengthening coastal defenses.
- Department of Design and Construction (DDC) – Coordination of plans, designs, and environmental review of the Proposed Action for client agencies.
- Department of Environmental Protection (DEP) – Review of design and advisory agency for activities and projects related to stormwater management, water and sewer infrastructure, and natural resources.
- Department of Transportation (NYCDOT) – Review of flood protection design and permits related to activities along, adjacent to and within FDR Drive and Williamsburg Bridge footings, and the local street network.
- New York City Housing Authority (NYCHA) – Approval for activities on NYCHA property.
- Department of City Planning (DCP) – Planning and waterfront area zoning text compliance and decision-making, Coastal Zone Consistency decision-making, and approval of actions subject to Uniform Land Use Review Procedure (ULURP).
- New York City Economic Development Corporation (EDC) – Coordination and approval for activities on EDC-leased property, including Stuyvesant Cove Park and Solar One.
- Small Business Services (SBS) – Coordination and approval for activities on SBS-owned property, including Stuyvesant Cove Park and adjacent parking lot. Issuance of

NYC Parks

permits for construction related to improvement or maintenance on Waterfront Properties under SBS jurisdiction.

- New York City Emergency Management (NYCEM) – Coordination for emergency preparedness, response, and operations under storm conditions.
- Public Design Commission (PDC) – Review and approval of art, architecture, and landscape features proposed for City-owned property and capital projects.
- Landmarks Preservation Commission (LPC) – Advisory agency for activities on or near sites of historic or archaeological value.
- Department of Buildings (DOB) – Review of design and permits related to buildings including compliance with the City's Building, Electrical, and Zoning Codes and construction activities in the FEMA-designated flood hazard area.
- Department of Housing Preservation & Development (HPD) – Review and approval for the disposition of NYCHA property.
- Mayor's Office of Sustainability (MOS) – Advisory agency in CEQR review and for activities and projects proposed to advance long-term plans for sustainable growth.
- New York City Fire Department (FDNY) – Design approval for emergency access.

STATEMENT OF SIGNIFICANT EFFECT:

In accordance with NEPA and Executive Order 91 of 1977, as amended, and the Rules of Procedure for CEQR, found at Title 62, Chapter 5 of the Rules of the City of New York, OMB and DPR, as Lead Agencies, have determined that the proposed project may potentially have a significant impact on the environment in the following areas:

(1) Land use, zoning, and public policy, due to land use disturbances and requirements for a consistency determination with the New York City Waterfront Revitalization Program;
(2) Open space resources, as the proposed project area encompasses both East River Park and Stuyvesant Cove Park and requires modifications of existing recreational facilities as well as park and street trees;
(3) Historic and cultural resources, due to the introduction of new structures and subsurface disturbance that could affect archaeological and architectural resources;
(4) Urban design and visual resources, due to the introduction of new structures that could affect the urban design setting of the project and waterfront view corridors;
(5) Natural resources, including the aquatic resources and water quality of the East River, due to site disturbance and the potential modification of the area's stormwater management system;
(6) Hazardous materials, due to subsurface disturbance and the potential for new pathways of human exposure to contaminated materials;
(7) Water and sewer infrastructure, due to potential effects on the City's infrastructure for water supply and combined sanitary sewer conveyance; and
(8) Construction-related impacts that may include potential impacts on transportation systems, sensitive receptors due to air and noise emissions, and public health due to disturbances to hazardous materials.

Accordingly, OMB and DPR have determined that an EIS should be prepared in accordance with the requirements of NEPA and the implementing regulations of HUD as

NYC Parks

well as SEQRA, 6 NYCRR 617.9(b), and Sections 6-08 and 6-09 of Executive Order No. 91 of 1977, as amended.

PUBLIC SCOPING:

The first step in the environmental review process is Public Scoping. Public Scoping is when the public is invited to comment on the Draft Scope of Work proposed to be used in preparing the Draft EIS (DEIS). A Draft Scope of Work has been prepared outlining the proposed content and analysis to be used in preparing the DEIS. To that end, a Public Scoping Meeting to accept oral and written comments on that Draft Scope of Work is scheduled for December 3, 2015 at 7:00 PM at:

Bard High School Early College
525 East Houston Street
New York, NY 10002

A copy of the Draft Scope to Prepare the DEIS can be obtained online at http://www.nyc.gov/html/cdbg/html/home/home.shtml or by contacting:

Owen Wells, Director of Environmental Review
New York City Department of Parks & Recreation
The Arsenal, Central Park
830 Fifth Avenue, Room 401
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Written comments can also be sent to the above mailing address, fax, or email address. Written comments will be accepted by the Lead Agencies through December 21, 2015.

This Positive Declaration has been prepared in accordance with Article 8 of the Environmental Conservation Law.

Alyssa Cobb Konon, Assistant Commissioner
New York City Department of Parks & Recreation

Appendix B

Response to Comments on Draft Scope of Work

Appendix B:
Responses to Comments on the Draft Scope of Work for the Draft Environmental Impact Statement (DEIS) for the East Side Coastal Resiliency Project

A. INTRODUCTION

This document summarizes and responds to comments on the Draft Scope of Work, issued on October 30, 2015, for the East Side Coastal Resiliency (ESCR) Project (the proposed project).

Oral and written comments were received during the public meeting held by the New York City Office of Management and Budget (OMB) and the New York City Department of Parks and Recreation (NYC Parks) at Bard High School Early College, 525 East Houston Street, New York, NY 10002 on December 3, 2015. Written comments were accepted through the close of the public comment period, which ended on Monday, December 21, 2015.

Section B lists the organizations and individuals that provided relevant comments on the Draft Scope of Work. Section C contains a summary of these relevant comments and a response to each. These summaries convey the substance of the comments made, but do not necessarily quote the comments verbatim. Comments are organized by subject matter and generally parallel the chapter structure of the Draft Scope of Work. Where more than one commenter expressed similar views, those comments have been grouped and addressed together.

B. LIST OF ORGANIZATIONS AND INDIVIDUALS THAT COMMENTED ON THE DRAFT SCOPE OF WORK

GOVERNMENTAL AGENCIES

1. Grace Musumeci, Chief, NEPA Section, United States Environmental Protection Agency, written comments submitted December 1, 2015 (USEPA)

ELECTED OFFICIALS

2. Gale Brewer, Manhattan Borough President, oral comments submitted by Ahmed Tigani December 3, 2015, written comments submitted December 3, 2015 (Brewer)

3. Daniel Garodnick, former New York City Councilmember, written comments submitted December 21, 2015 (Garodnick)

4. Brad Hoylman, New York State Senate, oral comments submitted by Rebecca Kriegman December 3, 2015, written comments submitted December 21, 2015 (Hoylman)

5. Brian Kavanagh, New York State Senate (former New York State Assembly member), written comments submitted December 21, 2015 (Kavanagh)

6. Carlina Rivera, New York City Council, former Legislative Director for the Office of Councilwoman Rosie Mendez, oral comments submitted December 3, 2015 (Mendez)

7. Daniel Squadron, former New York State Senate, oral comments submitted by Mauricio Pazmino December 3, 2015, written comments submitted December 3, 2015 (Squadron)

8. Jianhang Xiao, on behalf of Congresswoman Nydia M. Velazquez, oral comments submitted December 3, 2015 (Velazquez)

INTERESTED PUBLIC AND ORGANIZATIONS

9. Linda Alanko, oral comments submitted December 3, 2015 (Alanko)

10. Elena Alexander, written comments submitted December 21, 2015 (Alexander)

11. Irene Alladice, oral comments submitted December 3, 2015, written comments submitted December 21, 2015 (Alladice)

12. Yaron Altman, oral comments submitted December 3, 2015 (Altman)

13. Helena Andreyko, oral comments submitted December 3, 2015 (Andreyko)

14. Sarah Bassett, written comments submitted December 3, 2015 (Bassett)

15. Judy Capel, oral comments submitted December 3, 2015, written comments submitted December 10, 2015 (Capel)

16. Billie Cohen, written and oral comments submitted December 3, 2015, written comments submitted December 19, 2015 (Cohen)

17. Jeff Cole, written comments submitted December 21, 2015 (Cole)

18. Devon Colligan, oral comments submitted December 3, 2015 (Colligan)

19. Consolidated Edison Company of New York, Inc., written comments submitted December 21, 2015 (Con Edison)

20. Savannah Cox, written comments submitted December 1, 2015 (Cox)

21. Sid Davidoff, Davidoff, Hutcher & Citron LLP on behalf of Waterside Plaza, written comments submitted December 18, 2015 (Waterside)

22. Aziz Dehkan, Executive Director, New York City Community Garden Coalition, written comments submitted December 21, 2015 (NYCCGC)

23. Ingrid Devita, member of Manhattan Community Board 6, written comments submitted December 3, 2015 (Devita)

24. Anne Greenberg, written comments submitted December 21, 2015 (Greenberg)

25. Trever Holland, Lower East Side Power Partnership, oral comments submitted December 3, 2015, written comments submitted December 17, 2015 (Holland)

26. Ellen Imbimbo, member of Manhattan Community Board 6, oral comments submitted December 3, 2015 (Imbimbo)

27. Cheryl Jackson, written comments submitted November 29, 2015 (Jackson)

28. Jamie Jensen, written comments submitted December 21, 2015 (Jensen)

29. Eric Kaufman, Friends of the Dryline, written and oral comments submitted December 3, 2015 (Kaufman)

30. Victoria Lau, written comments submitted December 20, 2015 (Lau)

31. Mayzabeth Lopez, Good Ole Lower East Side, written and oral comments submitted December 3, 2015 (Lopez)

32. Ella Peake, written comments submitted December 21, 2015 (Peake)

33. Lawrence Scheyer, member of Manhattan Community Board 6, written and oral comments submitted December 3, 2015 (Scheyer)

34. Nicholas Smolney, oral comments submitted December 3, 2015 (Smolney)

35. Allison Tupper, oral comments submitted December 3, 2015 (Tupper)

36. Louise Velez, oral comments submitted December 3, 2015 (Velez)

37. Karin Weiss, written comments submitted November 30, 2015 (Weiss)

C. COMMENTS AND RESPONSES ON THE DRAFT SCOPE OF WORK

PROJECT DESCRIPTION

Comment 1: Con Edison has been and remains committed to working with the City of New York and its planning team on the development of the proposed project in order to improve resiliency and in preparation for future Sandy-type storms. Further, Con Edison has been working collaboratively with the staff and consultants for the New York City ESCR Project team, including the Department of Design and Construction (DDC), which is responsible for coordination of plans, designs and environmental review, and other City agencies to provide the input needed to accomplish the project objectives. Con Edison intends to continue that cooperation, with the expectation that together the City and Con Edison can facilitate the timely construction of a proposed project that protects the City's essential assets, including the infrastructure needed to provide reliable energy to Con Edison's customers. (Con Edison)

Response: To date the City has been involved in a design coordination process with Con Edison and that coordination will continue through the development of the final designs.

Comment 2: Moving to reinforce protections along our waterfronts cannot happen fast enough. Research by the New York City Panel on Climate Change suggests by mid-century, sea levels could rise up to 30 inches. These studies highlight the risk of rising sea levels on the stability of coastal cities, and they magnify the financial costs and/or human suffering to Manhattan's low-lying areas if we do nothing to address the situation. Inaction will mean more loss of life, residents cut off from help, dire financial conditions experienced by local businesses, and crippling health utility service delivery in the days, weeks, and months that follow dangerous weather events. (Brewer)

Response: The Environmental Impact Statement (EIS) will describe the design parameters for the project, which include assumptions regarding climate change.

Comment 3: Some approaches to this area that would help achieve the objectives of the proposed project were spelled out in the East River Blueway Plan, which we ask that you consider as a resource in your analysis. (Hoylman) (Kavanagh)

Response: The EIS will summarize the resiliency planning initiatives that were undertaken following Hurricane Sandy and taken into consideration as part of the design process including the East River Blueway Plan. Specific details will be included in the Land Use, Zoning, and Public Policy chapter.

Comment 4: Your team explained the difficulty in constructing effective resiliency measures around Pier 42, given the existing space constraints at that location, which limit engineering options. Understanding these constraints, I encourage you to work with the proper agencies to survey how existing bulkheads on the FDR Drive can act as resiliency structures. (Squadron)

Response: The EIS will analyze two alternatives (the Preferred Alternative and Alternative 5) that propose to elevate the existing esplanade and bulkhead structures along East River Park as part of an integrated flood protection system.

Comment 5: I encourage you to continue to work with Gouverneur Gardens residents to ensure resiliency efforts near them are effective while respecting the integrity of their housing campus. (Squadron)

We encourage you to continue to communicate with the residents of Gouverneur Gardens to ensure that resiliency efforts near them are effective and respectful. (Holland)

Response: The design process has included outreach to Gouverneur Gardens residents and the outreach process is proposed to continue in the next phases of the design as well as during the EIS review process

Comment 6: Filling Stations and their associated underground fuel storage tanks: There is no mention of the BP service station and the NY Skyports Marina fuel dock, which is a serious omission. They are located completely outside of the protective barrier. They are out in the open and vulnerable to the pounding of waves and being submerged in salt water, which will destroy their pumps and possibly compromise the integrity of their underground fuel storage tanks and lines. Unless they are sufficiently hardened, this poses a serious environmental hazard risk of leakage. Also, if they are damaged, it might take months before they can be serviceable again, and Manhattan has very few locations remaining that sell motor fuels. (Scheyer)

Response: The principal objective of the proposed project is to protect inland communities. As such, this alignment was not pursued further during the design alternatives evaluation process.

Comment 7: While we strongly advocate for the completion of Pier 42 and greenery comparable to the designs for East River Park to the north, we still have questions about the proposed floodwalls for Reach A and B. The color modeling and scaled visual slides for the Gouverneur Gardens Meeting, online December 15, for the October 29th presentation clarifies the height and comparison to the surrounding area. It still isn't clear what materials the walls will be composed of. We continue to have concerns about safety. A 5-foot-high wall may not seem obstructive until you actually stand in its shadow. The walls may become graffiti magnets and eyesores. Serious consideration needs to be given to this area to determine whether the walls could have a dual purpose such as planters, tree pits, additional seating, or long-term art installations. As this is also an aging community, mobility issues will also need to be examined. Therefore, we ask that you present the current plans to our community with scaled models that depict the buildings and the realistic appearance of floodwalls based on possible materials to be used. (Holland)

There are problems with the floodwall at Montgomery and South Streets:

- What is the true height and width of the proposed wall?
- What materials will you use to build this wall?
- How do you propose to build on private property without consulting the owners/residents of the Gouverneur Gardens co-op?
- This proposed wall is unsafe and outright dangerous to our residents and the elderly. The corner of Montgomery and South Streets only has a traffic light at the crosswalk: (1) no street lights; (2) homeless will reside behind a high wall protecting them from the wind; and (3) this is next door to a State mental health residence and a drug rehab center. Would you have your own mother walk her dog around the corner to get to the park?

Alternative suggestion: Why not place the floodwall along the north side of the Franklin D. Roosevelt (FDR) Drive next to Pier 42 and connect the entrance with a deployable gate and continue the wall along the parking lot at Basketball City, instead of flooding the drive and preventing the use of the Department of Sanitation (DSNY) trucks to move the deployables. (Alladice)

I don't think it's fair that we don't get any trees or any parkland or any improvements and you block, not only our view, but you give us a wall. You ought to be able to come up with another way that gives us some park space, some bike lanes, some trees and lets us share in the whole improvement of the waterways. (Alladice)

Response: The City conducted additional outreach as part of the design process to arrive at the current alignment in this segment and has coordinated with the Gouverneur Gardens residents regarding the design to date of the proposed flood protection system along Montgomery and South Streets and fronting the Gouverneur

Gardens property. As currently proposed, the floodwall on Montgomery Street would start at grade near Water Street and would then rise in height to approximately 5 feet above grade at the intersection of Montgomery and South Streets where it would turn north for approximately 50 feet along South Street. A deployable gate is proposed across South Street to connect the Montgomery Street floodwall to a floodwall underneath the FDR Drive viaduct. Additional coordination will be performed as part of the final design process.

Comment 8: Explore ways to incorporate art installations along with the proposed resiliency project, which would help further beautify the neighborhood. (Squadron)

Response: The New York City Public Design Commission (PDC) will review the proposed project for its design and the visual aspects of the flood protection system. The incorporation of these elements will be determined during the final design process.

Comment 9: For each of the proposed alternatives, how will the proposed project's infrastructure be connected to protection systems at the Con Edison East River Generating Facility, the Con Edison complex at East 13th Street, and the Veterans Affairs (VA) Medical Center? (Hoylman) (Kavanagh)

Response: The connections between the proposed flood protection system and Con Edison infrastructure and the VA Medical Center under each alternative are described in this Final Scope of Work and will be further described and analyzed in the EIS.

Comment 10: Is there not some more attractive way to address flooding than just a solid concrete wall? (Andreyko)

Response: Floodwalls are used to narrow the footprint of the proposed flood protection systems and are used in the proposed design to avoid impacts on existing park or street features in conjunction with raised landscapes as a way to integrate them into a park setting. The City team is committed to working with the appropriate stakeholders to refine the finishes of the proposed floodwalls to address urban design considerations. In addition, as will be described in greater detail in the EIS, the proposed project includes designing the much of the proposed flood protection system as a below grade element in East River Park in order to minimize adverse visual character and urban design effects.

Comment 11: It is not obvious what plan if any there is for improving the narrow walkway near the Con Edison plant at the East River and East 14th Street. This seems a terrible outcome given the amount of work being done. Can't the Feds, the State, and City pressure Con Edison into allowing the much needed park improvement at East 14th St. and the River, at the pinch point? (Bassett) (Alanko)

This plan forgoes a golden opportunity to correct the exceedingly narrow pinch point of the East River Greenway adjacent to the Con Edison screen building between East 15th and East 16th Streets. This vexing problem could be fixed by

continuing the East River Park flood barrier north along the river side of the FDR Drive. Next to the screen building the continuation of the flood wall could serve double-duty as part of a support structure for elevating a wider footpath and bicycle path above the pinch point, where it will not interfere with either the screen building or traffic on the FDR Drive. The FDR Drive would still be crossed by a moveable barrier (i.e., a flood gate with swinging doors) on the north side of the power plant. Continuing northward from there, the floodwall follows the proposed path along the west side of the FDR Drive Exit 7 southbound on-ramp. (Scheyer)

The narrowed bike and pedestrian pathway between the FDR and Con Edison's Head House and Receiving Pier on the East River from approximately East 12th to East 14th Streets, measured at 30 inches in width, is far too narrow for bikers to safely pass by pedestrians or other cyclists. Cyclists riding along the East River have no alternate route or dedicated bike path at this location, and stand-alone signs advising cyclists to dismount their bikes have had little impact on the unsafe situation. How will the proposed project improve transportation safety for cyclists and pedestrians through the narrowed shared pathway? Were any options examined that would widen this already dangerous pathway? If so, did any viable options to improve this corridor exist that were not pursued and if so, why not? The East River Blueway Plan included a recommendation for an elevated path rising above the FDR Drive to alleviate the dangerous traffic in this narrowing, and we ask that the project team study an elevated bridge scenario as a potential alternative. (Hoylman) (Kavanagh) (Imbimbo) (Scheyer)

Response: As described in the Final Scope of Work, the project build alternatives have been refined since issuance of the Draft Scope and will include a shared-use flyover bridge that would connect East River Park over the above-referenced "pinch point" to Captain Patrick J. Brown Walk to address this narrowed pathway, substantially improving the City's greenway network and north-south connectivity in the project area. .

Comment 12: Because the proposed alternatives include possible temporary deployable structures, we request that the ESCR team carefully detail (1) plans of action for deploying temporary structures when needed; (2) any potential barriers to quickly deploying these structures during an extreme weather event; and (3) the potential impacts of improperly or partially deployed structures. (Hoylman) (Kavanagh)

It must be clear what the protocols are to be for determining when the barriers are to be deployed, and when they are removed. (Garodnick)

The proposed project and alternatives do not detail the duration and implementation of the various coastal flood protection systems before and after a storm, thus making it difficult to assess the full impact of partitioning off Waterside Plaza from its only landward vehicular connection (i.e., East 23rd Street). (Waterside)

Response: The Project Alternatives chapter of the EIS will include a description of the process for developing an Operations and Maintenance Manual for the proposed project.

Comment 13: We request an analysis of systems stored on-site (versus off-site) and the related impact on deploying structures during a storm. (Hoylman) (Kavanagh)

Response: Since the issuance of the Draft Scope, the project alternatives have been refined and no systems requiring off-site storage are proposed as part of the proposed project.

Comment 14: Regarding deployables: My view is that they should be permanently located on-site, which leaves out demountable floodgates. Deployables should also be the most mechanically reliable and easiest to operate, as well as adequate to the horizontal space they have to protect. I didn't notice any mention of the relative merits of ease of use and reliability for swing floodgates, roller floodgates, and crest floodgates. (Greenberg)

Response: Since the issuance of the Draft Scope, the project alternatives have been refined and closure structures such as demountable floodgates are no longer included as part of the proposed project. The Project Alternatives Chapter of the EIS will also include a description of the operational phase of the proposed flood protection system, including the closure structures (e.g., swing floodgates and roller floodgates) that are proposed to be part of the flood protection system.

Comment 15: If Stuyvesant Cove Park is raised, won't it get to be very close to the elevated FDR Drive? (Bassett)

Response: The EIS will include the preliminary design drawings in the Appendices for the proposed raising of the grades and the flood protection system design that is being considered for Stuyvesant Cove Park. The drawings will specify the proposed raised landscape at Stuyvesant Cove Park and its relationship to the FDR Drive along this design segment. There will continue to adequate clearance between the park and the raised FDR Drive.

Comment 16: We are also concerned about appropriate lighting within the project area to both preserve nighttime visibility and ensure public safety. We ask that the DEIS discuss potential benefits of the proposed project to public safety, including improved lighting along pedestrian bridges. We hope you will detail plans of action to preserve and enhance sightlines for New York Police Department officers and NYC Parks staff, while avoiding unintentional disruption to residents from too-bright lights. (Hoylman) (Kavanagh) (Altman) (Smolney)

I suggest the consideration of liberally spaced floor lighting throughout the paths of our waterfront. Such installations would not be hindered by tree canopies and overpasses, have less of a direct impact on nearby residents and, finally, will

highlight the beauty of what we expect will be world-class landscape architecture being brought into our valued park. (Altman)

Response: An analysis of lighting plan is outside the scope of the environmental review. However, an appropriate lighting plan to be implemented for the proposed project will be examined in detail as part of the design process and will be reviewed and approved by NYC Parks and PDC.

Comment 17: Please consider building the 18th Street sump pump first. Possibly raise the grade of the waterfront to drain to 18th Street. Perhaps make tear drop structure point to the 18th Street drain. (Devita)

Response: As described in the Draft and in this Final Scope of Work, the EIS will include a complete description of the drainage improvements under the proposed project and the conceptual construction phasing for the proposed project.

Comment 18: Con Edison's review of the Draft Scope identified an error regarding the Sandy storm event. Page 7 incorrectly states that Con Edison shut down electrical networks in Southern Manhattan, defined in the Draft Scope as the area south of 42nd Street. As Sandy approached, Con Edison preemptively shut down two networks in Lower Manhattan, south of the Brooklyn Bridge. Please update the Final Scope accordingly. (Con Edison)

Response: This correction has been made in the Final Scope of Work.

Comment 19: Page 7 in the Draft Scope states that water flooded across East River Park to flood Avenues C and B. In earlier meetings it was said that it did not and came in at East 14th Street to flood Avenues C and B. (Cohen) (Lau)

Response: As stated in the Draft and in this Final Scope of Work, the EIS will include a complete description of the flooding that occurred under Hurricane Sandy. As described in this Final Scope of Work, the storm surge from the East River overtopped the bulkhead, crossed the FDR Drive, and flowed across the inland streets and down Avenue C. Flooding inundated East River Park and was reported at depths of up to 4 feet along Avenue C and extended approximately 2,000 feet inland, nearing Avenue B.

Comment 20: Figure 13a shows the approximate limit of Alternative 2 to stop far short of 420 East 23rd Street. (Greenberg)

Response: The alignment of the project alternatives have been clarified for this Final Scope of Work and now include Asser Levy Playground, just north of Asser Levy Recreation Center, and connect to the existing VA Medical Center structure, then extends the line of the protection along East 25th Street to First Avenue.

Comment 21: Figure 13b is hard to read, but 23rd Street would be protected by deployables, although precisely what those would be is not specified in this paragraph. (Greenberg)

Response: The alignment of the project alternatives have been clarified for this Final Scope of Work and now include Asser Levy Playground, just north of Asser Levy Recreation Center, and connect to the existing VA Medical Center structure, then extends the line of the protection along East 25th Street to First Avenue.

Comment 22: How high will the wall need to be? (Cohen)

What are the height and width specifications? (Jackson)

Response: The EIS will include preliminary design drawings of the proposed flood protection system in the Appendices, which shows floodwall height and width along the proposed alignment.

Comment 23: We applaud the City for having one alternative that extends the proposed project to 25th Street and takes into account Waterside Plaza and UNIS. We would hope that 25th Street would become part of the proposed project. (Kaufman)

Response: The alignments of the project alternatives as shown in this Final Scope of Work extend north along the eastern boundary of Asser Levy Playground, turn west just north of Asser Levy Recreation Center, and connect to the existing VA Medical Center structure, which extends the line of the protection along East 25th Street.

Comment 24: Since no one really knows about sea-level rise, it would seem prudent to also consider or study the extension of the proposed project to Second Avenue instead of stopping at First Avenue. Five-hundred-year flood lines might become a norm rather than an aberration in our not too distant future. (Kaufman)

Response: As described in the Draft and in this Final Scope of Work, and to be further described in the EIS the design storm for the flood protection system as determined by the City and the U.S. Department of Housing and Urban Development (HUD) is the 100-year storm plus sea-level rise through the 2050s. These design objectives have served as the basis of the project design as well as the project funding as determined during the Rebuild by Design (RBD) process.

Comment 25: Revenue from parking spaces under the FDR Drive helps maintain both Solar One and Stuyvesant Cove Park. If this parking were to be eliminated or moved elsewhere, how could parking fees or other monetary sources be redistributed to ensure that these facilities do not lose much needed funding? (Hoylman) (Kavanagh)

Response: This parking area is not anticipated to be eliminated or relocated under the proposed design.

Comment 26: We also advocate leveraging City and Federal funds through private funding like Union pension funds, investors and even private developers. Perhaps accelerating some aspects of the Multi-Purpose Levee (MPL) Plan could bring more private capital to the table. (Kaufman)

Response: As described in this Final Scope of Work, the EIS (Purpose and Need Chapter) will include a summary description of the funding sources for the project.

Comment 27: As longtime supporters of public open green space and community gardens in particular, Gardens Rising would like to express our support for inclusion of integrated park facilities, as proposed by the RBD contest winning Big U proposal. The Big U vision was crucial in garnering public support and HUD funding for the proposed project, and while we appreciate that insufficient funding is currently available, expanded park facilities ought to be included in the long-term alternative plans. (Jensen) (NYCCGC)

Response: As described in the Draft and in this Final Scope of Work, the EIS (Project Alternatives Chapter) will include a complete description of the park improvement under the proposed project and the alternatives considered.

Comment 28: Given the growing trend toward tying zoning with locally sourced food, at least one of the alternative scenarios should consider urban agriculture as a mitigation strategy and revenue contributor. (Brewer)

Response: As described in the Draft and in this Final Scope of Work, the EIS (Project Alternatives Chapter) will include a complete description of the park improvement alternatives that are being considered under the proposed project; however, urban agriculture is not expected to be one of the alternatives as the open spaces along the proposed project area are already targeted primarily towards meeting the active and passive recreation needs of the community.

Comment 29: An integral part of the proposed project thus far has been its sustained community engagement process. Community engagement should continue to play a key role in ESCR, through the scoping period, public hearings, and through further rounds of community engagement workshops to maintain the community as a pivotal partner in the redevelopment of the East River. (GOLES)

We are pleased that the project team has made a meaningful effort to gather community input throughout the proposed project's development. The community engagement sessions, city reports, and ongoing infrastructure studies are valuable sources of information and discussion for the community and our offices, and we look forward to continuing conversations with all affected communities. (Hoylman) (Kavanagh)

Response: As stated above, the City has performed considerable outreach as part of the design process. That outreach will be continued through the EIS review and the development of the final designs. The Process and Coordination Chapter of the

EIS will include a summary of public outreach efforts that have been completed at the time of publication.

Comment 30: I'd like to encourage extensive attention to drainage needs near the Delancey and Grand Street areas. I live at 477 FDR Drive, directly across from the park and on the night of the Sandy storm I sat by my living room window and saw in the dark the waters (foam) coming over the esplanade, park, highway, and eventually our building. I may be wrong but I have not seen evidence drainage needs are being given enough attention in this particular area (though I guess the question is, where will the water go once drained?). (Capel)

Response: As described in the Draft and in this Final Scope of Work, the proposed project includes drainage management components to address street and property flooding during the design storm that will be described in the EIS (Project Alternatives Chapter and Water and Sewer Chapter).

Comment 31: I am a resident of 420 East 23rd Street, which is in Project Area Two, Reach P, and FEMA Zone AE (EL 11). My building as well as 440, 510, and 530 East 23rd Street have stairs on 23rd Street leading down to our basements. My building is the westernmost and took in about four feet of water in Sandy (that's how high the water reached on the outside of the basement door). With the VA Hospital across the street already constructing its own floodwall, I am concerned that without an adequate plan at the eastern end of 23rd Street, the VA wall will deflect even more water into our basements and may also affect 7 and 8 Peter Cooper Road. This might happen even with a less catastrophic storm than Sandy. (Greenberg) It's almost impossible to discern the difference between Figure 13b and Figure 14b, but there seems to be more of a floodwall in 14b. My concern is whether the walls will divert more water away from 23rd Street. (Greenberg)

Response: Based on studies prepared for the design of the proposed project, the surface water flood elevations around the proposed flood protection system will be determined by the tidal elevation of the East River. It is not expected that the proposed flood protection system would result in increased surface water elevations at the boundary of the proposed flood protection system during the storm event.

Comment 32: We ask that the DEIS detail an outreach plan to educate communities where temporary structures will be placed, communicate with the surrounding neighborhoods in the event that temporary structures are deployed, and coordinate plans with the needs of residents and businesses during a potential flooding event. (Hoylman) (Kavanagh)

Response: As described in this Final Scope of Work, the EIS will provide a description of the operational phase of the proposed project. The City has and will also continue its outreach on the flood protection system, including closure structures, and the proposed operations during the EIS review as well as final design and implementation.

Comment 33: We hope to see careful consideration of the maintenance required, estimated costs over time, and short- and long-term benefits of each proposed structure—both deployable and permanent. (Hoylman) (Kavanagh)

No plan is complete if it doesn't take into account both maintenance and upgrades when design glitches are evident. Without regular maintenance (and how that will be paid, i.e., concessions, selling of name rights to companies, etc.) any solution will deteriorate and become an eye sore. As I live across from the park this is of vital concern. All one has to do is look at the crumbling current bridge over Delancey Street to see what a lack of maintenance does. The City can't even agree on who is supposed to put a garbage can on that bridge—parks or DOT? Will we have more of the same, or will the plan include mention of what happens after the project is built? (Capel)

Response: The Project Alternatives chapter of the EIS will include a description of the process for developing an Operations and Maintenance Manual for the proposed project.

Comment 34: In the event of street work (e.g., underground pipes), who will be responsible for repairing the wall and the surrounding grounds? (Jackson)

Response: As stated above, the Project Alternatives chapter of the EIS will include a description of the process for developing an Operations and Maintenance Manual for the proposed project..

Comment 35: I'm very concerned about funding and that the project is going to run out of money in the middle. (Capel)

There is no guarantee there will be any money left to rehabilitate the park and install these designs after the construction of this proposed plan. These meetings seemed to be white washing the reality of the serious negative consequences of this project. (Cohen)

Response: As stated above, the EIS will include a description of funding for the construction of the proposed project.

Comment 36: We should withdraw any plans for building hundreds of millions of dollars of projects in the river that are not likely to work. Any alternative must involve no more building in the water at all. And we need to eliminate vague promises such as improving open space and enhancing access to the waterfront, which really may not mean anything. (Tupper)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a complete description of any work that is proposed in and along the East River and the role of those project elements in addressing the objectives of the proposed project.

Comment 37: As a long-time resident of, born and raised in this neighborhood adjacent to East River Park, I strongly oppose plans to move the overpass from Delancey Street to Grand Street. My points:

- Defending us from a flood is the most important purpose for this plan and best use of money—not turning it into a tourist destination;
- Moving the overpass to Grand Street makes it only one block from an existing overpass on Cherry Street, thus making it harder for people north of Delancey Street to enter the park;
- Installing a long ramp along the service road of FDR Drive deprives the over 400 families living there of a safe and necessary access to the main entrance to the building, which is a NORC[1] by the way, but which also houses many young families;
- Residents access school busses, ambulances, taxis, town cars from the main entrance, which also is a safe entrance at night—it's also the closest entrance from the Avenue D bus that stops on Delancey Street;
- The experience of walking on the narrow sidewalk alone along the FDR Drive fenced between a ramp and a fence feels very unsafe, trapped, especially early in the morning and late at night; and
- The ramp would deprive residents on lower floors of light, views, privacy; I believe it is your mandate that that should not happen. (Weiss)

We disagree with the length of the bridge going on East 10th Street. (Velez)

Response: The Delancey Street Bridge overpass is not being moved to Grand Street. The bridge alignment under certain alternatives would shift slightly south, but the overpass entrance would still be adjacent to Delancey Street. As described in the Draft and this Final Scope of Work, the EIS will include a description of the proposed changes and enhancements to bridges and bridge landings within the project area under each alternative, including Corlears Hook, Delancey Street, East Houston Street overpass, and East 10th Street bridges. The EIS will disclose both potential positive and adverse effects that may result from these changes and enhancements, including any effects on circulation and urban design.

Comment 38: The previous well attended community meetings presented design models and renderings to people with no visible or mentioned solid 15- and 16-foot-high walls or what their impact would be. In the published Environmental Impact Statement, Figure 8 illustrations show the walls only slightly higher than a person riding a bike. The heights of the walls, however, are labeled 15 feet and 16 feet. The public was presented with a deceptive picture that does not reflect the reality of the proposed project. There are professionals who have concerns that the walls may

[1] A NORC is a "naturally occurring retirement community."

cause real flooding problems from rain events. Please do not consider these 16-foot walls blocking the park as a solution to storm surge. (Cohen) (Lau)

Response: The majority of East River Park under the Preferred Alternative would be raised from the amphitheater to approximately East 13th Street and would substantially reduce the length of exposed wall between the community and the waterfront to provide for enhanced neighborhood connectivity and integration.

Comment 39: When I asked the engineers why they could not use deployables along the park, the answer given was that deployables are considered weak links in the wall system. So why, in the most vulnerable flooding zone, where there is also a Con Edison substation, are they proposing to use deployables if they are weak links? Why along the park, which is a natural buffer, are they proposing solid concrete walls? (Cohen) (Lau)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a complete description of the design objectives of the proposed flood protection system and the engineering and/or design considerations related to the use of passive (or fixed) flood protection elements and the use of closure structures. With each of the alternative designs under consideration, the use of closure structures has been limited to street crossing so that streets circulation and functions are not impacted by the proposed project.

Comment 40: Waterside Plaza is a mixed-use residential, community facility, and commercial complex made up of four towers and duplex townhouses. The multi-family complex comprises 1,470 residential units with nearly 4,000 residents. The residential component houses approximately 500 senior citizen residents, a substantial number of subsidized units, as well as units dedicated to residents with cerebral palsy. It is important to note these vulnerable populations as they are a significant portion of the 4,000 residents who have fewer economic and physical abilities to make alternative housing choices. (Waterside)

We appreciate the importance of New York City's need to bolster its resiliency efforts to protect property, vulnerable populations, and critical infrastructure during major storm events. However, the proposed project, as currently proposed, does not as yet address many of the concerns facing the Waterside Plaza community, including both their general resident base as well as their vulnerable population. Waterside is also the site of two large educational institutions—the British International School of New York (housed at Waterside) and the United Nations International School (on an adjacent property)—which, combined, accommodate nearly 3,000 school children. In addition, the proposed project does not mitigate significant adverse environmental impacts. To the contrary, it hazardously obstructs access to the only combined entrance and exit to the Waterside Plaza complex and does not respond to the need for increased flood protection to Waterside, particularly to its vulnerable population. (Waterside)

Due to its geographical location, Waterside Plaza is unable to integrate full protective measures to prevent flooding throughout the residential complex. Consequently, Waterside Plaza's management has taken steps to mitigate any damages that flooding might cause. However, we remain concerned about a proposed alternative in the Draft Scope that would extend flood protections north to 25th Street, placing a deployable flood wall at 23rd Street and blocking traffic from passing underneath the FDR on 23rd. A wall at this location would cut off Waterside's 4,000 residents from the rest of Manhattan. We ask that the DEIS examine how evacuation plans will be developed for this area, particularly regarding the possibility for deployable flood protection measures to be installed three days prior to a flooding event. Additional analysis is needed to determine whether residents, employees of Waterside Plaza, and commercial occupants will be provided ample time to vacate Waterside Plaza before deployment of the various flood protection measures. We ask that any plan account for the human reality that many residents may not be willing or able to leave their homes 72 hours prior to a storm, especially given the possibility for storms to change course during a three-day window. How will any plans developed account for the large population of elderly residents at Waterside, for whom relocating for three days or more could be a significant burden? (Hoylman) (Kavanagh) (Waterside)

Response: Once a design storm impact on the City is determined to be increasingly likely, the New York City Emergency Management Department (NYCEM) would initiate emergency preparedness actions to ensure that transportation routes critical to evacuation are managed in a coordinated manner. If evacuations are required as a result of an impending design storm event, closure of the proposed closure structures will require management of traffic circulation patterns in coordination with the New York City Department of Transportation (NYCDOT), the New York City Police Department (NYPD), and the New York City Fire Department (FDNY). The closure structures at East 23rd Street and the west service road, once actuated, would affect access/egress to Waterside Plaza. Traffic management to allow for circulation of emergency vehicles and local Waterside Plaza traffic would be implemented and maintained by NYPD, FDNY, and NYCDOT. Any testing and maintenance of the closure structures would be coordinated between NYPD, FDNY, and NYC Parks, to ensure emergency access routes are maintained in a coordinated manner using alternate routes..

Comment 41: Issues that are not addressed in the Draft Scope of Work that warrant additional analyses include the following:

- Amount of water to flood the region north of the proposed East 23rd Street flood wall.
- Flood path while draining once flood levels recede.
- Whether the proposed flood protection system will divert flood waters towards Queens and Newtown Creek.

- Speed of water upon deployment of the coastal flood protection systems.
- Whether the flood flow will accelerate along the proposed East 23rd Street flood wall.
- How far north would the accelerated flow extend?
- Whether the accelerated flow will be directed toward the piles supporting Waterside Plaza buildings.
- What are potential scour impacts from the accelerated flow and whether scour impacts may occur just offshore of the proposed floodwall.
- Whether the accelerated flow is sufficient to cause large debris to impact Waterside Plaza or other residential, school, or medical facilities in the path of the flood waters.
- Whether the proposed flood protection system creates pooling or collection of water in the protected area during flood events.
- Does the proposed flood protection system cause pooling outside the protected area?
- The drainage plan for pooling of water.
- Whether outfall pipes will be sealed during a flood event. (Waterside)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a description of proposed project elements to manage drainage within the project area as well as an analysis of the effects to water and sewer infrastructure and service within the larger sewershed as a result of the proposed project. The EIS will also discuss effects to the Special Flood Hazards Area (SFHA) within the project area.

Comment 42: In anticipation of future development of waterfront space, we support ESCR's intention to consider potential acquisitions, easements, and mapping changes that may be submitted for review under Uniform Land Use Review Procedure (ULURP). (Hoylman) (Kavanagh)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a complete description of the need for any acquisitions, site selection, zoning text amendments, or mapping changes associated with the proposed project.

ANALYSIS FRAMEWORK

Comment 43: We look forward to an analysis of how various alternatives will affect residential quality of life, including the potential impact of new or rehabilitated structures on noise, sightlines within the park, and public safety. (Hoylman) (Kavanagh)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a comprehensive analysis of the potential impacts of the proposed project on neighborhood character that will take into consideration multiple neighborhood

elements, among them noise, visual character, and pedestrian and vehicular circulation and safety.

Comment 44: Con Edison's review of the Draft Scope included consideration of whether a DEIS prepared in accordance with the Draft Scope would adequately address the potential impacts of the proposed project on the electric, gas, and steam utility infrastructure operated and maintained by Con Edison in the project area. A number of Con Edison utility assets are located within the area that would be affected by the proposed project. Among those facilities are the East River Complex (which includes the East River Generating Station and large substations) and a complex network of electric, gas, and steam transmission and distribution facilities, pipes, manholes, and other surface and subsurface structures and equipment. Notwithstanding the presence of substantial utility infrastructure in the project area, the Draft Scope summarily concludes that operation of the proposed project will not "significantly affect the transmission or generation of energy," and states that the DEIS will not include analysis of energy among the various operational impact categories. In addition, the Draft Scope indicates that a chapter of the DEIS will be devoted to the construction-related impacts of the proposed project. Although some passing reference is made to potential impacts relating to energy and water and sewer infrastructure, no mention is made of the potential impacts of construction on utility infrastructure in the project area. In light of the importance of Con Edison's facilities to maintaining a reliable supply of electricity, gas, and steam to customers in a large portion of Manhattan, it is of the utmost importance that the proposed project be planned and constructed to avoid damaging or otherwise interfering with the operation of the utility infrastructure. This is especially so because projects funded under the Disaster Relief Act of 2013 are intended to protect and restore electrical facilities, as well as other essential infrastructure in areas at risk of future flooding. For these reasons, Con Edison requests that the "Purpose and Need" chapter of the DEIS make clear that one of the objectives of the proposed project is to assure that the proposed coastal flood protection system is designed and constructed in a manner that will neither damage nor interfere with the operation and maintenance of the utility infrastructure in the project area. (Con Edison)

The DEIS should include analyses of operational and construction impacts on energy, including the current utility infrastructure, and the Final Scope of Work should note the necessity of these analyses. (Con Edison)

Response: The EIS description of alternatives will address the need to integrate the consideration of extensive and critical utilities along the proposed alignment into the design, and the construction analysis will include an assessment of any potential impacts on or relocation of utilities including energy supply and transmission lines during construction. This Final Scope of Work includes additional language to confirm that this analysis will be provided in the EIS. It is also expected that by designing the proposed project in close coordination with

Con Edison, any significant adverse impacts on energy transmission—both during construction and operation of the proposed project—can be avoided.

Comment 45: The DEIS should acknowledge that damaging or altering Con Edison's critical infrastructure would result in significant adverse impacts to the delivery of energy to our customers in the city, and should outline the steps being taken by the proposed project sponsors to avoid such impacts—in consultation with Con Edison—as project design and construction goes forward. Although the details of such consultation need not be spelled out in the document, it should make clear that: (i) all potential impacts to the existing infrastructure will be identified; (ii) appropriate precautions will be developed and implemented to support existing infrastructure as needed during construction, avoid damage that could result from construction-related vibration, and otherwise protect existing infrastructure; and (iii) the proposed project will be designed and built to avoid interfering with, or negatively impacting the future operation and maintenance of, Con Edison facilities. These commitments should be carried forward into the Final Environmental Impact Statement and into the findings issued under the State Environmental Quality Review Act (SEQRA) and City Environmental Quality Review (CEQR) and the Record of Decision under the National Environmental Policy Act (NEPA) (together, the "Findings"). The Findings should specifically require that the measures identified in the Final EIS as necessary to protect Con Edison infrastructure, and to avoid future interference with utility operation and maintenance activities, be included in the design of the proposed project and the contract specifications for its construction. (Con Edison)

Response: As stated above, the Energy Chapter of the EIS construction analysis will include an assessment of any potential impacts on utilities including energy systems, and it is expected that by developing the proposed project in close coordination with Con Edison, any significant adverse impacts on energy transmission—both during construction and operation—can be avoided. As required by NEPA, SEQRA, and CEQR, the measures necessary to avoid those impacts will be disclosed in the EIS.

Comment 46: Waterside Plaza is notable as Manhattan's only residential complex currently located east of the FDR Drive. The EIS should account for flood flow and frequency and must consider the potential physical effects of the proposed project on the underpinnings of the Waterside buildings. In particular, the EIS should examine the effects of the changes in flooding patterns that would be caused by the barriers, whether they will result in accelerated flow directed toward the pilings that support Waterside, and whether this flow could be detrimental to the pilings. (Waterside) (Garodnick)

Response: The Waterside complex and its supporting infrastructure, located over the East River, is directly exposed to tidal flooding, currents, and wave effects from the East River on a daily basis and during storm conditions. Based on an analysis of

coastal hydraulics conducted during the preliminary design phase of the proposed project, no added impacts on the supporting structures of the Waterside complex are expected with the proposed project.

Comment 47: Additional analysis is needed in connection with any scour or erosion impacts along the proposed coastal flood protection systems. (Waterside)

Response: The potential for scour and erosion as a result of the proposed project will be analyzed in the Natural Resources chapter of the EIS.

Comment 48: The historically marginalized community residents in the project area have long suffered from noise and air and water pollution. The RBD/Big U project promised to provide flood protection while mitigating these impacts by burying the existing FDR Drive beneath a complex of playing fields and transit improvements, yet none of the promised mitigations appear in the draft ESCR proposal. (Jensen) (NYCCGC)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a comprehensive analysis of the proposed project and the alternatives that were considered and those that were advanced as part of the design and process to be included as the alternatives presented in the EIS.

Comment 49: The proposed project's alternatives, as detailed in the Draft Scope of Work, will result in adverse effects on various impact categories, specifically, Socioeconomic Conditions; Historic and Cultural Resources; Urban Design and Visual Resources; Water and Sewer Infrastructure; Transportation; Public Health; and Construction. (Waterside)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a comprehensive analysis of the proposed project, which would include an analysis of socioeconomic conditions, historic and cultural resources, urban design and visual resources, water and sewer infrastructure, transportation, public health, and construction, among others.

COORDINATION WITH OTHER RESILIENCY PROJECTS

Comment 50: We ask that the DEIS address plans for coordination with various ongoing and future projects on or near the waterfront. In particular, the DEIS must examine the potential impacts on the existing Solar One structure, as well as the future incarnation of Solar Two, various ferry projects in the project areas, the planned Veterans' Affairs Medical Center flood walls, resiliency efforts at Con Edison facilities, and the proposed sanitation garage at the CUNY-Hunter Brookdale site. (Hoylman) (Kavanagh)

Response: As described in the Draft and this Final Scope of Work, the EIS will include consideration of other projects planned or under construction in the No Action

condition (i.e., the future without the proposed project). The EIS will include both a map and description of these projects, as relevant to the analyses.

Comment 51: In November 2015, the NYCCGC was awarded a $2 million HUD Community Development Block Grant-Disaster Recovery (CDBG-DR) funding through the New York State Governor's Office of Storm Recovery (GOSR). In the first phase of the project—Gardens Rising—we are undertaking a feasibility study for stormwater capture best practices in and around the community gardens in Manhattan's Community Board 3. Many of these 47 gardens are in the ESCR project area. The goal of Phase 1 of Gardens Rising is to combine community-based participation with engineering expertise, to develop a Master Plan for the construction of green infrastructure to increase the permeability and stormwater capture in and around these community gardens. Phase 2 of Gardens Rising will implement the Master Plan by constructing green infrastructure. Primarily, we are writing to make sure that the Gardens Rising project is fully involved and incorporated into the ESCR Final Scope of Work, as well as all other related storm protection and resiliency planning processes. We ask that the ESCR EIS scope of work be expanded to include the Gardens Rising project, in which GOSR is investing HUD CDBG-DR funds to improve stormwater management, community resilience and public safety, and also ask that any data or other information regarding stormwater and drainage in the project area obtained in the expected studies be shared with the Gardens Rising team. (NYCCGC)

Response: The Gardens Rising project has a distinct purpose that is subject to its own environmental review and will be considered in the Indirect and Cumulative Effects chapter of the EIS, where relevant.

Comment 52: We would like the City to think about having a separate body oversee the Dryline in its totality whether it is the Lower Manhattan Development Corporation or a newly created entity. The New York City Office of Recovery and Resiliency (ORR), along with DDC and Federal, State, and City agencies, is really the implementation arm of resiliency. Long-term planning for the entire Dryline might involve a different set of players, perhaps similar to the establishment of a dedicated organization for the High Line. (Kaufman)

Response: The EIS will include a description of the operation and maintenance of the proposed project.

Comment 53: We envision the entire Dryline as a 100-year project. Up until 2100, the City should look to protect and expand existing infrastructure. From 2100 to 2120, the long-term goal may be forms of retreat, if sea-level rise becomes more of an issue. (Kaufman)

Response: As will be described in greater detail in the EIS the design parameters for the proposed project have their origins in the RBD process and the federal funding allocation and include the 100-year storm event with assumptions on sea-level

rise through the year 2050. The planning horizons in the above comment are longer term and outside the scope of the proposed project.

Comment 54: The "No Action" alternative assumes the Con Edison and the New York City Housing Authority (NYCHA) projects will be completed, but there is no information provided about what these projects entail, and what their impacts will be. Without the detailed information on these other projects, there is no effective way to evaluate the environmental impacts of the proposed project, whether as a "No Action" or for any of the Alternatives proposed in the DEIS. Detailed information on all projects in the project area ought to be made available to the public and to the GOSR Gardens Rising team. (Jensen) (NYCCGC)

Response: The EIS will include a map and description of other projects planned or under construction in the No Action condition (i.e., the future without the proposed project). The EIS will include both a map and description of these projects, as relevant to the analyses.

Comment 55: I understand the urgency of making progress but am concerned about the lack of public information being provided about coordination between parallel, simultaneous projects—most notably at Con Edison and at NYCHA, both of which have significant implications for the proposed project and for the community impacted by these projects, individually and collectively. (Jensen) (NYCCGC)

As the Draft Scope notes, there are various other resiliency initiatives underway throughout the neighborhood. Of particular concern for GOLES are NYCHA's upcoming resiliency improvements. With NYCHA developments in closest proximity to the East River throughout much of the project area, special attention must be paid to how ESCR resiliency measures will extend into those communities, and how such measures can complement those already underway. Furthermore, another important concern is the state of flood protection south of Montgomery Street, including Pier 42 and the substantial residential and NYCHA developments in close proximity to the river. (GOLES)

We think it is important to provide what the long-range plans are for the Con Edison power plant. We would advocate a long-range plan with its own DEIS to make this power plant much more renewable and significantly reduce its carbon footprint, as well as more resilient to protect low-income residents as well as the 11,000+ housing units at Stuyvesant Tower/Peter Cooper Village. The public needs some specifics about the remediation and resiliency efforts that Con Edison will undertake. (Kaufman)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a description of the design evolution of the proposed project and the coordination undertaken to date, underway, and proposed during final design of the proposed project with respect to resiliency measures that are under consideration by Con

Edison, NYCHA, and the resiliency and storm protection planning for Lower Manhattan south of the project area.

ENVIRONMENTAL REVIEW PROCESS

Comment 56: Why is so much design of the park going ahead of all the review processes? (Cohen)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a complete description of the design evolution of the proposed project, including the park design. The EIS will also describe the public outreach that has been conducted in developing that design prior to the start of the environmental review process

Comment 57: We would advocate for two additional studies for the DEIS: one on sea-level rise projections for the next 100 years and the other to show where the water is going to go in the event of another storm, hurricane, or other weather event, i.e., the projected impact of berms and deployable flood barriers or another agreed-upon solution. (Kaufman)

Response: The design parameters for the proposed project as stated in the Draft and in this Final Scope of Work, will be summarized including assumptions regarding sea level rise. The effect of the proposed flood protection system on flood conditions for adjacent, unprotected areas will be described in the EIS.

SOCIOECONOMIC CONDITIONS

Comment 58: Alternative scenarios should emphasize the growth of local small business commercial corridors and ensure that preferences be given to plans that sufficiently balance resiliency and local job growth and local business development. (Brewer)

Response: Benefits that may be realized for local businesses with the proposed project will be described in the EIS.

Comment 59: It would be helpful for the cost benefit analysis to research how each alternative scenario would reduce waste and maximize the number of achievable projects through project management and construction coordination of government funding streams and federal entities that pay for resiliency projects in both project areas. (Brewer)

Response: To implement the proposed project, the City and its federal partners have committed approximately $1.45 billion in funding. The City has entered into a grant agreement with the U.S. Department of Housing and Urban Development (HUD) to disburse $338 million of Community Development Block Grant-Disaster Recovery (CDBG-DR) funds for the design and construction of the proposed project. The City will continue to examine maximizing cost efficiencies for project implementation in both Project Areas One and Two through

examination of alternatives in the DEIS and FEIS, and the final design phases of the proposed project.

Comment 60: We are particularly glad to see the team's pledge that the proposed project will not result in any direct residential displacement and that the Draft Scope of Work anticipates the project's potential indirect effects on residential and commercial rent. We ask that the project team conduct a careful analysis of any potential indirect residential or business displacement for each action alternative, including the no action alternative, and to compare this with an analysis of potential displacement that would be spurred by extreme weather under the status quo. How, specifically, will the analysis measure potential socioeconomic changes driven by the proposed project? (Hoylman) (Kavanagh)

While the Draft Scope considers Socioeconomic Conditions as one of its impact categories for analysis, it appears that further clarification is needed to better ascertain the scope of socioeconomic change resulting from the proposed project, particularly with respect to rapidly rising rents and property values in an already increasingly unaffordable community. (GOLES)

It remains unclear what measures might be taken to mitigate rising land values and indirect displacement. In studying the socioeconomic conditions of the neighborhood and the potential for indirect displacement, emphasis must be given to the state of affordable housing stock at present and into the future, in order to ensure that any proposed flood protection and community benefit is inclusive and accessible to current residents, particularly those of moderate and low income. (GOLES)

We ask that the project team carefully consider any steps that may be taken to maintain affordability for long-time community members. (Hoylman) (Kavanagh)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a comprehensive analysis of the potential socioeconomic impacts of the proposed project, which will include the potential for any direct or indirect impacts on residential or commercial displacement or effects on affordable housing.

Comment 61: Though the Draft Scope considers many of the impacts stemming from the construction of the proposed project, there is no mention of the number of jobs expected to be created, or the source of that labor. GOLES calls for further elaboration on the potential job opportunities from the proposed project and asserts that priority for these jobs be given to local community residents. (GOLES)

We request that the DEIS note the anticipated number of jobs this project will create both during and after construction. (Hoylman) (Kavanagh)

Response: Economic benefits that may be realized for local businesses during construction of the proposed project will be described in the EIS. An estimate of expected overall employment demand generated by the proposed project will also be included.

OPEN SPACE

Comment 62: We encourage the project team to carefully consider the best ways to preserve and enhance physical and visual access to East River Park and Stuyvesant Cove Park. (Hoylman) (Kavanagh)

Response: As stated in both the Draft and this Final Scope of Work, the design objectives of the proposed project include both preserving and enhancing access to waterfront open space. The alternatives to be evaluated within the EIS differ in the access and open space improvements, which will also be discussed within the EIS.

Comment 63: We ask that the project team detail how various alternatives would affect popular recreational park infrastructure and waterfront activity—in particular, playgrounds, barbecuing areas, and sports fields in East River Park, and the planned kayak launch at Solar 2, a project initially envisioned in the East River Blueway Plan. (Hoylman) (Kavanagh)

East River Park has long been a hub of community activity across the neighborhood. Proposed redevelopment of East River Park must consider a potential increase in park usage, as well as maintain its diversity of uses from open space to sports and other recreational uses. (GOLES)

We're concerned about the berm for taking away our barbecue area, our park areas. What are you giving our children? You're taking away everything that we have left there. I think that people who have money should be able to make something better for us than a berm which is going to be only for sunbathing for the upper class. We don't need stairs to sit there and take sun. We could do that in the park. (Velez)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a comprehensive description of East River Park and Stuyvesant Cove Park and the existing and proposed open space uses and improvements that are projected under each of the alternatives.

Comment 64: Do not take away the sports fields which are always active and serve the community as a place to engage in structured team activities. (Weiss)

I'm concerned about all the remodeling on the East River Park, which will take away the park area. We're concerned about that as far as health is concerned and where are you going to put our children to play. You're also taking the baseball park away. (Velez)

The park is a vital amenity for this community. The berm and walls will block visibility into the park and to the river, creating a dangerous park. The negative effects will be directly felt by the NYCHA residents. (Cohen) (Cole)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a comprehensive impact analysis of the potential impacts of each of the alternatives on parkland acreages and uses, the allocation of active space, and visual resources and view corridors.

HISTORIC AND CULTURAL RESOURCES

Comment 65: It is important that all of the alternative scenarios incorporate elements that recognize the unique challenges and opportunities historic resources present and include creative solutions for protecting the East Side historic sites and corridors. (Brewer)

Of special note here is the East River bandshell, a historical community fixture that should be considered in the proposed project as a historical and cultural resource. (GOLES)

The Draft Scope of Work for the ESCR Project disregards likely short- and long-term negative impacts on a number of historic and cultural resources within the project area, and the Draft Scope of Work overlooks a number of buildings, sites, objects and districts that deserve full protection under Section 106 of the 1966 National Historic Preservation Act (NHPA), and other Federal, State and local processes. As suggested by members of local history and preservation groups including the Friends of the Lower East Side, the proposed field survey must be expanded to include the project area's multitude of National Register-eligible buildings, including but not limited to Baruch Baths, the most significant historic property at risk of damage or adverse effects from the proposed project. Built in 1901 and also known as Rivington Street Baths, this handsome neoclassical structure was the first of a series of public baths built by New York City to improve sanitation and public health. Other later baths, including Asser Levy Baths on 23rd Street, are official NYC Landmarks Preservation Council (LPC) landmarks, and included in the Draft Scope of Work. In 1917, the City changed the name of the Rivington Street bathhouse, dedicating it to Dr. Simon Baruch for his unswerving commitment to public health, and in 1939, Bernard Baruch (1870-1965), son of Dr. Simon Baruch and noted financier, donated the land to the City for NYC Park's Baruch Playground and the surrounding NYCHA Baruch Houses public housing. The baths were later adapted as a NYC Recreation Center, but this recreation center has been closed since the NYC financial crisis of the mid-1970s. (Jensen)

The Draft Scope also overlooks a number of other sites worthy of inclusion on the National Register, including the East River Bandshell and the Knickerbocker Village moderate-income subsidized housing project built in 1934 on site of notorious 'Lung Block' slum, located on two city blocks bounded by Catherine

Street, Monroe Street, Market Street, and Cherry Street. In addition, the Draft Scope overlooks many officially designated NYC LPC landmarks, including Wheatworth Bakery (444 E. 10th Street), First Houses (112 E. 3rd Street), Congregation Beth Hamedrash Hagadol (242 E. 7th Street), the Public National Bank of NY (106 Avenue C), the 11th Street Public Bath (540 E. 11th Street) and an entire NYC Landmarks Preservation Commission-designated East 10th Street Historic District opposite Tompkins Square Park, that have been left off the draft map of historic and cultural resources (Figure 17). (Jensen)

The Rivington Street Baths is public, NYC Parks-owned property, and re-opening this 50,000-square-foot recreational center could serve as a center of information and education for a more resilient Lower East Side, and in the short term could serve as valuable mitigation to make up for the loss of access to the sport fields of East River Park and other negative impacts resulting from construction of the proposed project. (Jensen)

We heard that you will extend the construction area from 23rd Street to 25th Street given the fact that Asser Levy Bathhouse is a landmark and right now it's relatively unprotected. And so we would like to be assured that, in fact, either 23rd Street or 25th Street, whichever you decide is engineering-wise most effective, will be incorporated in the plan. (Imbimbo)

Response: A comprehensive analysis of the potential impacts of the proposed project on historic resources will be presented in the EIS. The analysis will be prepared in accordance with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as implemented by federal regulations appearing in 36 CFR § 800. The purpose of the Draft and Final Scope of Work is to provide the methodology for conducting the historic and cultural resources assessment to be provided in the EIS. Figure 19 in the Draft Scope of Work—Historic and Cultural Resources, Study Area—only provided a preliminary identification of known historic and cultural resources within a proposed 400-foot "Area of Potential Effect." As described in the Draft and this Final Scope of Work, the EIS will include a comprehensive inventory of historic resources within this Area of Potential Effect that may be affected by the proposed project. This inventory will include potential architectural resources—properties that appear to meet National Register and/or New York City Landmark eligibility criteria—identified through a field survey by a qualified historian and archival research and considering public comments. The East River amphitheater and Rivington Street Baths will both be considered. As described in the Draft and this Final Scope of Work, the EIS will assess the potential impacts of each of the alternatives on the comprehensive inventory of known and potential architectural resources and the protections and the need for any mitigation measures.

URBAN DESIGN AND VISUAL RESOURCES

Comment 66: The floodwalls will block view corridors. (Cohen)

A lot of our enjoyment of the river and of the park is through visual access. And looking at the plans, it looks like that wall is really a solid concrete wall. So those of us who are on the land side are just going to see a solid concrete wall. (Andreyko)

Response: As described in the Draft and also in this Final Scope of Work, the EIS will include a comprehensive assessment of the potential urban design and visual character impacts associated with each of the alternatives. This will include assessing the potential impacts of the proposed flood protection systems on existing view corridors and views across and within the park. This Final Scope of Work also includes additional details on the urban design and visual resource analyses to be provided in the EIS.

Comment 67: Correction to Figure 18: The northward Avenue C view corridor (toward the Queensboro Bridge) is an important view corridor, but here is not shown by any arrow in the drawing. I suggest that it be included and also include the direction that whatever deployables are going to be utilized are oriented so that this view corridor is preserved. (Scheyer)

Response: As described in the Draft Scope of Work, Figure 20—Urban Design and Visual Resources, Study Area and Visual Corridors—provided a preliminary identification of existing inland views to the waterfront. Figure 20 in this Final Scope of Work has been modified to include the northward view corridor from Avenue C, which will be evaluated in the EIS.

Comment 68: Below Corlears Hook Park, there are no sight lines to the water. By putting a wall in that area, you're going to reduce those sight lines—whatever is left—and that needs to be examined. (Holland)

Response: As described in the Draft and in this Final Scope of Work, the EIS will describe and illustrate with photo simulations the urban design and visual character of the project area and the surrounding area and the inland locations that provide views of the waterfront. The assessment will describe the potential changes to urban design and visual resources with the proposed project in comparison with the No Action Alternative. In addition, Figure 20 in the Draft and in this Final Scope of Work shows view corridors to the waterfront from around Corlears Hook Park that will be assessed in the EIS.

Comment 69: With the new East 10th Street Bridge, we're not going to be able to have a view. (Velez)

Response: As shown on Figure 20 of the Draft and of this Final Scope of Work, the East 10th Street view corridor to the waterfront will be assessed in the EIS.

HAZARDOUS MATERIALS

Comment 70: The project should try to clean up issues of water pollution at the 23rd Street gas stations. (Devita)

Response: While the EIS will address existing pollution sources that may have affected the proposed project area and potentially are attributable to the existing gas station, it is not the objective of the proposed project to remediate ground or surface water pollution that may be associated with this gas station occurring outside of the footprint of the proposed project.

WATER AND SEWER INFRASTRUCTURE

Comment 71: Regular flooding is an existing problem along the FDR Drive and many of the local streets. The storm drains are already failing. Severe rain events occur on a regular basis due to weather patterns. Relying on pumps and storm drains, especially during storm events is risky; storm drains can clog, the power and pumps can fail; creating serious flooding on an ongoing basis. (Cohen) (Lau) (Andreyko)

The walls/berms are being created to form a bathtub to hold storm surge in the park in the event of another Sandy, (which is considered a 250–500 year storm, an atypical hurricane, not a rain event). The berms/walls will create a dam on the backside of the park, adjacent to the FDR drive. Storm drains and pumps will be relied on to take rainwater to a 1-acre underground storage tank buried in the park. (Cohen)

The proposed walls along the East River Park will severely compromise the quality of life for Lower East Side residents, and in all likelihood worsen regularly occurring stormwater flooding. (Cohen)

The proposed plans to construct walls along East River Park seem ineffective and misleading. Rather than protect Lower East Side residents from flooding, which will be an increasingly common event with the current weather patterns and climate change, these walls may end up causing more flooding, especially if they rely too heavily on storm drains and pumps. The overall plan seems far too expensive to be so ineffective. It is not a good long-term solution to a long-term problem (flooding and storms), and the City should focus on creating more environmentally friendly and aesthetically pleasing solutions, which are definitely possible. (Peake)

The project is relying on storm sewers and pumps. These can easily fail, and massive flooding may occur. (Cohen)

Further analysis is needed regarding the measures planned to prevent flow reversing in the sewer systems as was seen during Sandy. (Waterside)

We are pleased to see that the Draft Scope of Work includes a detailed analysis of the effects on water and sewer infrastructure for each alternative. We ask that

the project team give particular attention to drainage at low points on the FDR Drive and aging sewer infrastructure at NYCHA developments along East River Park. (Hoylman) (Kavanagh)

Response: As described in the Draft and this Final Scope of Work, the EIS will include a comprehensive description of the elements of the proposed project that are related to addressing infrastructure drainage with an assessment of the potential impacts of the proposed project, both positive and adverse, on the City's water and sewer infrastructure.

Comment 72: It's very hard to work with infrastructure that's buried under ground. It's costly and time consuming. For these reasons, I suggest we also consider green infrastructure improvements in our streets to improve drainage conditions from storm water. (Altman)

We suggest that the DEIS give serious consideration to a mixture of green and gray drainage infrastructure. Rain gardens and other such green infrastructure upgrades that absorb storm water rather than directing it into the sewer system have the potential to increase drainage capacity while simultaneously reducing the strain on the sewer system. Reducing the strain on the sewer system would reduce sewer overflow into local waterways during major storms, limiting serious water pollution. (Hoylman) (Kavanagh)

The ESCR Draft Scope needs to be expanded to include careful study of the project area's complex soils and drainage, resulting from historic landfill alterations to Manhattan's natural marshland. NYCCGC and Gardens Rising may want to ask that the proposed project broaden the scope to include upland flooding locations, and potential "day-lighting" of buried or subterranean streams, along with use of green infrastructure treatments of streets and community gardens to absorb stormwater. (Jensen) (NYCCGC)

Holistic consideration of the entire Design Study Area is especially crucial considering the historic natural connections between upland areas and the East River coastline, which will be impacted by the proposed project. (Jensen) (NYCCGC)

The ESCR Draft Scope of Work to Prepare a DEIS needs to incorporate the Gardens Rising project in evaluations of the need for modifications and improvements to the City's public sewer system, with particular regard and attention paid to components such as green infrastructure, use of parallel conveyance conduits, and the proposed construction of underground stormwater storage tanks (such as that depicted in the figures of the draft Scope of Work). (Jensen) (NYCCGC)

Response: An analysis of drainage needs related to a rainfall simultaneous with a tidal flood events will be included in the EIS. The EIS will discuss the modeling undertaken to inform the proposed sewer infrastructure, which identified the volume of flow

that would be necessary to manage under design storm events. This volume exceeds the capacity of green infrastructure management approaches, although these approaches continue to be of value during less intensive storm conditions.

Comment 73: The EIS should consider whether there is a way to capture excess water from another weather event. (Kaufman)

Response: The EIS will examine the proposed coastal flood protection measures for the 100-year tidal storm event with assumptions on sea level rise through the 2050s and will also include an analysis of the rainfall impacts on the sewer system.

NATURAL RESOURCES

Comment 74: Please consider the environmental impact of the development on the birds that nest on the Stuyvesant Cove beach. (Devita)

Response: The examination of the potential impacts of the alternatives on natural resources, including terrestrial resources, will be included in the EIS.

Comment 75: Please don't build around proposed ferries, which would negatively impact wildlife. (Devita)

Response: The potential impact on wildlife from the ferries and ferry landings was addressed under a separate environmental review and will be included in the EIS as a No Action condition.

Comment 76: We ask that the project team examine how to best preserve as many mature trees as possible, particularly those currently in Stuyvesant Cove Park that create a canopy of shade for community members. If these trees cannot be preserved with the installation of a berm or another resiliency option, what options are available to promote the growth of new trees or to provide shade through another visually appealing medium? (Hoylman) (Kavanagh) (Scheyer) (Bassett)

The trees are an important part of the natural ecosystem in Stuyvesant Cove Park. (Bassett)

Response: As described in the Draft and in this Final Scope of Work, the examination of the impacts of tree clearing and replacement tree planting in both East River Park and Stuyvesant Cove Park will be included in the EIS.

Comment 77: The nearest shore waters of the Hudson River and the East River are home to hundreds of marine species which are important food, important to fisheries up and down the Atlantic. That means food, and it means jobs, and we really need to protect them by staying out of the river. We need those fisheries. (Tupper)

Response: As described in the Draft and also in this Final Scope of Work, the examination of the projected impacts of the alternatives on the East River and its aquatic resources will be included in the EIS.

TRANSPORTATION

Comment 78: The corner of FDR Drive and Grand Street is very active already: two lanes of (often very impatient) traffic exit onto Grand Street because they are trying to get onto the Williamsburg Bridge entrance. During the day the M-21 bus turns the corner here, sanitation trucks access the building, many work trucks (electricians, plumbers, construction and maintenance vehicles, snow plows, etc.) need that corner, and there are two small entrances to the East River Housing Cooperative building, one for a Childcare center. Moving the Delancey Street pedestrian bridge from Delancey Street to Grand Street will add hordes of non-resident pedestrian and bicycle and skateboard traffic there and would be very destructive. (Weiss)

Response: The Delancey Street pedestrian bridge is not being moved to Grand Street. The examination of the potential impacts of the project alternatives on circulation patterns related to pedestrian bridge reconstruction will be included in the EIS.

Comment 79: Within Project Area One, we are pleased to hear that some Proposed Alternatives would involve rebuilding pedestrian bridges at East 6th Street and East 10th Street with the goal of improving access to the East River Park. In this analysis, we ask that the DEIS give particular attention to the impact on pedestrian access for those NYCHA developments closest to the East River, including Campos Plaza, Gompers Houses, Riis Houses I and II, Wald Houses, Baruch Houses, and Lavanburg Homes, as well as other residents of the Lower East Side. Many of these residents rely heavily on East River Park for recreational space. We support rebuilding pedestrian bridges with gentler slopes to increase access for disabled New Yorkers, but ask that steps be taken to ensure that new neighborhood access points are not all located so far from their current sites that they become less accessible for residents and further isolate these developments. (Hoylman) (Kavanagh)

Response: The proposed landing points for reconstructed pedestrian bridges would be at approximately the same location as existing conditions and access to the NYCHA campuses would not be affected.

Comment 80: The Draft Scope analysis disregards the proposed project's likely significant negative impacts on pedestrian and cycle travel along the bikeway, especially at the notoriously narrow "chokepoint" adjacent to the Con Edison facilities along the East River at 13th Street ("Reach K" and "Reach L" in the ESCR terminology). While the "winning" proposals for the HUD CDBG-DR project submitted as part of the RBD/ "Big U" proposal included bicycle improvements, no significant improvement or mitigation of the proposed project's negative impacts appears in the schematics of the alternatives being considered. (Jensen)

Response: The examination of the potential impacts of the alternatives on access to the park with a focus on impacts, both positive and adverse, along the narrow esplanade

segment in the design reach just north of East River Park, will be addressed in the EIS. In addition, as described in this Final Scope of Work the proposed project has been modified to include the installation of a bridge crossing in this segment under each of the build alternatives in the EIS.

Comment 81: I'm concerned about the traffic of people with the new East 10th Street Bridge. If you extend the bridge, you're going to have traffic, bicycles, and all kinds of people walking there. (Velez)

We're concerned about taking away our sidewalk from the new East 10th Street Bridge, half of our sidewalk on East 10th Street and taking away parking areas. (Velez)

Response: As described in the Final Scope of Work, the examination of the potential impacts of the alternatives with an improved pedestrian bridge at East 10th Street will be included in the EIS. This will include an examination of any potential impacts on traffic, pedestrian, and bicycle circulation and parking.

Comment 82: Within Project Area Two, we are particularly concerned with the safety of crossing intersections at Avenue C Loop/East 18th Street, Avenue C/East 20th Street, and Avenue C/East 23rd Street. We ask the project team to consider ways to ensure these crossings can safely accommodate an increase in pedestrian traffic. (Hoylman) (Kavanagh)

Response: As will be described in the EIS, the proposed project does not generate increased pedestrian or bicycle traffic. The proposed project modifications at the intersections of Avenue C at East 18th Street, East 20th Street, and East 23rd Street would not adversely affect vehicular or pedestrian safety.

Comment 83: If the proposed garage is sited at the Brookdale location, how will the project team take increased traffic due to DSNY vehicles into consideration? (Hoylman) (Kavanagh)

Response: As described in the Draft and also in this Final Scope of Work, the examination of potential traffic impacts will take into account projects that are expected to occur in the No Action condition (i.e., the future without the proposed project). The EIS traffic analysis will, therefore, take into account the proposed DSNY garage facility at the Brookdale location.

Comment 84: The Draft Scope of Work fails to account for Waterside Plaza's unique location, which is only accessible to vehicles from East 23rd Street. Vehicles exiting Waterside may only do so through East 23rd Street or by driving along a service road to East 34th Street. (Waterside)

The EIS must evaluate how long Waterside Plaza will be cut off from normal traffic circulation when the ESCR barriers are deployed. This evaluation should consider not just the amount of time that it takes to put the barriers into place, but

also how far in advance of a storm the barriers would be erected, and how long after a storm they will remain in place. (Garodnick)

With respect to the construction of the various flood protection systems, traffic, transit, and pedestrian impact analyses are warranted to determine the effect upon residents, commercial uses, the British International School of New York, and the United Nations International School, as well as the impact upon Waterside Plaza's marginal road, again the only way into Waterside. (Waterside)

The length of time the barriers are deployed is important for several reasons. First, Waterside is likely to be under an evacuation order in the event that the ESCR barriers are deployed, and vehicle access affects evacuation. The least expensive way out of Waterside is the M34A bus. Once that bus can no longer access Waterside, it becomes much more difficult for residents to evacuate. Consequently, it is important to determine how long before a storm Metropolitan Transportation Authority (MTA) buses will cease to be available to Waterside residents. (Garodnick)

In each of the alternative ESCR designs, there is a set of barriers that, in the event of a forecast flood, are proposed to be deployed in such a way that they block the northbound FDR Drive service road at 23rd Street. These barriers would block the sole existing point of vehicle access to Waterside Plaza. When the 23rd Street entrance is blocked off by a deployable flood wall, how will emergency vehicles access residents in need of services, both during a large-scale emergency event and in the days leading up to a potential storm? We must ensure that emergency vehicles, including ambulances and fire trucks, can access Waterside while the barriers are deployed. (Garodnick) (Hoylman) (Kavanagh) (Waterside)

During the period that there is no access to Waterside Plaza via normal traffic patterns, it is important to consider how food, water and other essential supplies can reach those Waterside residents who will be sheltering in place. (Garodnick) (Waterside)

Response: Once a design storm impact on the City is determined to be increasingly likely, NYCEM would initiate emergency preparedness actions to ensure that transportation routes critical to evacuation are managed in a coordinated manner. If evacuations are required as a result of an impending design storm event, closure of the proposed closure structures will require management of traffic circulation patterns in coordination with NYCDOT, NYPD, and FDNY. The closure structures at East 23rd Street and the west service road, once actuated, would affect access/egress to Waterside Plaza. Traffic management to allow for circulation of emergency vehicles and local Waterside Plaza traffic would be implemented and maintained by NYPD, FDNY, and NYCDOT. Any testing and maintenance of the closure structures would be coordinated between NYPD, FDNY, and NYC Parks, to ensure emergency access routes are maintained in a coordinated manner using alternate routes.

NOISE

Comment 85: With regard to Figure 21, the noise monitoring locations, I was surprised that there is no noise monitoring station at East 10th Street, since there's consideration for improving the East 10th Street bridge. (Smolney)

I think the traffic and the noise is going to impact us. We already have the FDR Drive traffic going on, and that's enough for us to live in and not be able to sleep. So people coming in and out at night on that bridge (at 10th Street), if you extend it, is going to make things worse. (Velez)

Response: As will be described in greater detail in the EIS, the East 10th Street pedestrian bridge only serves pedestrians and bicyclists. Therefore, operation of the improved existing bridge would not result in any increases in traffic noise levels. The construction noise analysis will examine potential noise resulting from bridge construction. For these analysis points in the construction noise analysis, as with all of the analysis sites in the construction noise analysis, No Action noise levels were determined based on nearby noise levels.

Comment 86: Project Area Two has a single noise monitoring location, and it seems like the distribution of monitoring locations is a little off in Area Two compared with Area One. (Smolney)

Response: Two additional noise survey locations within or adjacent to Project Area Two have been added to the detailed construction noise analysis. Because of the heavily trafficked FDR Drive running through Project Area Two, existing noise levels are relatively consistent throughout the area, and consequently are well represented by the noise survey location along the FDR Drive at East 20th Street. However, the additional survey locations will cover the existing condition noise levels on East 23rd Street in Project Area Two and along Avenue D, which is a potential approach for construction-related vehicles to Project Area Two.

Comment 87: I'm concerned that the solid walls are going to reflect a lot of noise back to the residents who live along the waterfront. (Andreyko)

Response: An examination of the potential for reflected noise with the proposed floodwalls along the east side of the FDR Drive was examined during the impact analysis screening assessment when developing the Draft Scope of Work. It was the conclusion of that screening assessment that the proposed floodwall would not result in any noise impacts related to noise reflection and no further noise impact analysis was necessary. The screening analyses that were performed as part of the EIS scoping process will be included in the EIS.

NEIGHBORHOOD CHARACTER

Comment 88: We are concerned by the likely negative impacts of the proposed project on neighborhood character. In particular, excluding the Two Bridges neighborhood

from the Project Area One protected zone will divide what has been a coherent and cohesive community, as shown by the collective, community-based mutual aid of LES-Ready and other groups that emerged after Superstorm Sandy. (Jensen) (NYCCGC)

Response: As described in the Draft and also in this Final Scope of Work, the EIS will examine and take into account any potential impact on neighborhood character. The proposed project will not physically separate the project area from the Two Bridges neighborhood. Further, in January 2016, the Mayor's Office announced an award of $176 million from HUD's National Disaster Resilience Competition for the City's Lower Manhattan integrated flood protection system. This award will further the City's advanced planning for integrated flood protection strategies to prevent and mitigate upland flooding around Lower Manhattan, from Montgomery Street south to the Battery and up to the west side of Manhattan to the northern terminus of Battery Park City at Jay Street. This plan will complement the ESCR Project and this project will be evaluated as a No Build project within the EIS as well as the potential cumulative effects of both projects.

CONSTRUCTION IMPACTS

Comment 89: The negative impacts resulting from the loss of public access to existing East River Park sports and recreational facilities during the 5+ year construction period needs to be addressed in the EIS process. (Jensen) (NYCCGC)

We ask that the DEIS include a careful analysis of how access to parkland will be impacted during construction. (Hoylman) (Kavanagh)

We would like any approved ESCR design to ideally maintain existing playing fields, unless reconfiguration is crucial to the overall resiliency plan. The community should be allowed to continue its recreation throughout the construction period. There is a cost benefit to maintaining as much of the existing park assets in our opinion. (Kaufman)

Response: As described in the Draft and also in this Final Scope of Work, the examination of potential construction period impacts in the EIS will be based on a comprehensive description of the construction phasing. Any construction impacts on open space, including East River Park, will also be evaluated. It is recognized that the flood protection, reconstruction of three existing pedestrian bridges, foundations for a new shared use flyover bridge, and park access features for the proposed project (Preferred Alternative) are expected to complete the reconstruction of East River Park in 3.5 years. The pre-fabricated bridge span would be installed in 2025.

Comment 90: We anticipate that this project will result in a lengthy construction period during which the community will experience increased traffic, noise, and related quality of life disturbances. We ask that all reasonable efforts be taken to minimize the impact of construction on residents and to preserve access to currently open

parkland. What procedures will be established to balance the need for swift construction with potential burdens on residents? What noise mitigation procedures will be put into place? (Hoylman) (Kavanagh)

Construction of the proposed flood wall will only exacerbate pollution, particularly of traffic noise but also by concentrating air pollutants on the inland side of the FDR Drive, which is home to more than 5,000 low-income residents. These significant adverse impacts in terms of air quality and noise pollution must be assessed in detail, addressed by detailed design solutions and mitigated to reduce the significant negative impacts on public health. (Jensen) (NYCCGC)

New York City is in non-attainment/maintenance for ozone and particulate matter ($PM_{2.5}$) in that order. Therefore, as discussed at the end of Section 6.5.12.9 Air Quality, the proposed project's construction emissions are subject to the General Conformity Rule and the EIS should include a general conformity applicability analysis. This analysis will include all direct and indirect emissions including but not limited to marine engines (tugboats, dredges), construction equipment (cranes, bulldozers), trucks, and other mobile sources. If emissions are above the *de minimus* levels in the rule, a general conformity determination must be completed. (USEPA)

Response: As described in the Draft and also in this Final Scope of Work, the examination of potential construction period impacts in the EIS will be comprehensive and will take into account the construction impacts on traffic, air, noise and neighborhood character. This analysis will include an assessment of conformance with General Conformity Rules with respect to carbon monoxide (CO), particulate matter (PM_{10} and $PM_{2.5}$), nitrogen oxides (NO_x), and volatile organic compounds (VOCs). If significant construction period impacts are disclosed by these analyses, mitigation measures will also be presented, as required under NEPA, SEQRA, and CEQR.

Comment 91: We ask that the DEIS include detailed plans for communication with area residents regarding the timeline of construction, including planned construction dates and hours. (Hoylman) (Kavanagh)

Response: As described in the Draft and in this Final Scope of Work, the EIS will include a comprehensive description of the proposed construction program based on the current level of design. It is expected that the construction program will be refined as part of the final design process and that there will be additional community outreach during the final design development, and extensive outreach during construction. This is expected to include the establishment of a construction task force to keep residents and local businesses informed of project construction activities.

Comment 92: We hope the project team will analyze the effects of construction on local marine life and the ecological health of the East River. (Hoylman) (Kavanagh)

Response: As described in the Draft and also in this Final Scope of Work, the EIS will examine the potential for construction period impacts on water quality and aquatic resources of the East River.

Comment 93: As we move forward with the proposed project, we must consider the immediate effects of climate change. According to a 2012 report released by the IPCC, extreme weather events are already becoming both more common and more dangerous. With this in mind, we request that the DEIS include a study of how the proposed project may affect resiliency in Manhattan during construction. In particular, a DEIS for this project should address whether any of these alternatives might make our communities more vulnerable to extreme weather events during any stage of construction, which alternatives provide the most immediate protection from flooding, and what steps, if any, can be taken during construction to mitigate the potential impact of extreme weather events that take place while the proposed project is underway. (Hoylman) (Kavanagh)

Response: Exposure of the communities in the design study area to the effects of climate change is not expected to be exacerbated during the proposed construction phase but would be reduced once construction is complete and the proposed project is implemented.

Comment 94: Who will be responsible for construction of the proposed project? (Jackson)

Response: The New York City Department of Design and Construction (DDC) will lead the construction of the proposed project.

Comment 95: To the maximum extent possible, we encourage the recycling of materials generated onsite (i.e., demolition debris/materials). (USEPA)

Response: The EIS will include a discussion on material recycling during construction. This has been included in this Final Scope of Work.

Comment 96: How will the project team coordinate with the proposed construction timelines of the following projects: Solar Two, various ferry projects in the project areas, the planned Veterans' Affairs Medical Center flood walls, resiliency efforts at Con Edison facilities, and the proposed sanitation garage at the CUNY-Hunter Brookdale site? (Hoylman) (Kavanagh)

The proposed project and the proposed sanitation garage on East 25th Street are on similar construction timetables. Additional analysis is needed regarding the impact of both and any mitigation measures relative to transportation, noise, and air quality. If the proposed project and the proposed sanitation garage are constructed simultaneously, how will this impact Waterside Plaza's exclusive means of vehicle egress on East 23rd Street, and pedestrian access on East 23rd and East 25th Streets? (Waterside)

Response: The analyses in the EIS of potential construction period impacts will account for other nearby projects in the No Action condition. Additional text has been added to this Final Scope of Work to confirm the inclusion of these projects in the EIS.

Comment 97: Construction of the barriers at the northern end of the proposed project could affect Waterside Plaza in the same manner as would the deployed barriers themselves if construction were to block the access road. Construction must be planned so as to ensure that access to Waterside is unaffected. (Garodnick)

Response: The EIS analyses of potential construction period impacts on traffic and circulation patterns will take into account the project elements at East 23rd Street.

Comment 98: On December 18, 2014, the Council on Environmental Quality (CEQ) released revised draft guidance for public comment that describes how Federal departments and agencies should consider the effects of greenhouse gas (GHG) emissions and climate change in their NEPA reviews. Recognizing the difficulties in attributing specific climate impacts to individual projects, CEQ recommends that agencies use the projected GHG emissions and potential changes in carbon sequestration and storage as the proxy for assessing a proposed project's potential climate change impacts. (USEPA)

Response: As described in the Draft and also in this Final Scope of Work, the EIS will include an examination of greenhouse gases and emission control measures that would be implemented during construction. The proposed project would not involve new buildings or development with potential for substantial energy demand during the operation phase, which would result in an associated increase in greenhouse gas emissions.

Comment 99: We're concerned about our health issues due to construction going on for the next three years. (Velez)

Response: Additional text has been added to this Final Scope of Work to confirm the inclusion of an assessment of construction-period public health impacts in the EIS.

ENVIRONMENTAL JUSTICE

Comment 100: We would specifically like to ask that this environmental review look at several important issues that relate to environmental justice and socioeconomics. In particular, whether there is equitable distribution of the allocated HUD funds along the East River stretch. A large stock of low-income and affordable housing is located below 14th Street and is certainly one of the main factors for the initial HUD grant. It is important for the review team to consider this when looking at the proposed project in totality. The issue of equity not only applies to funding but also to design, engineering, resources and open green space. Also, the EIS should consider the impact of a huge block-type flood wall and how it affects the

neighborhood, both from a social and from an economic standpoint, and whether walling in this area is the proper thing to do. (Holland)

Response: As described in the Draft and also in this Final Scope of Work, the EIS will include an examination of potential environmental justice impacts for the proposed project. ✷