

JOINT ROD and FINDINGS STATEMENT

New York City Office of Management and Budget

New York City Department of Parks & Recreation

East Side Coastal Resiliency (ESCR) Project

Borough of Manhattan

New York, New York

This Joint Record of Decision, State Environmental Quality Review Act (SEQRA), and City Environmental Quality Review (CEQR) Findings Statement (Joint ROD and Findings Statement) documents the New York City Office of Management and Budget's (OMB's) and the New York City Department of Parks and Recreation (NYC Parks) findings and decision to proceed with the proposed project as described in the Final Environmental Impact Statement (FEIS) (CEQR No. 15DPR013M) for the East Side Coastal Resiliency (ESCR) Project.

OMB is acting under the authority of the U.S. Department of Housing and Urban Development's (HUD) regulations in accordance with criteria in 40 CFR § 1501.5(c) and NEPA (42 USC § 4321 et seq.). OMB as the Responsible Entity, and as the lead agency responsible for environmental review, decision-making, and action under 42 U.S.C § 5304(g) designated by HUD, has prepared this Joint ROD and Findings Statement in accordance with the National Environmental Policy Act (NEPA; 42 USC § 4321 et seq.) and the Council on Environmental Quality (CEQ) regulations implementing NEPA 40 CFR Parts 1500 to 1508.

This Joint ROD and Findings Statement is also prepared pursuant to CEQR, Mayoral Executive Order No. 91 of 1977, and the CEQR Rules of Procedure found at Title 62, Chapter 5 of the Rules of the City of New York (CEQR), and in accordance with SEQRA New York Environmental Conservation Law (ECL) Article 8 (8-0101-8-0117). The New York City Department of Parks and Recreation (NYC Parks), as Lead Agency under SEQRA/CEQR, together with OMB, as Lead Agency under the National Environmental Policy Act (NEPA), have given consideration to the facts and conclusions relied upon in the FEIS and determined that the requirements of CEQR and Article 8, Section 8-0109 of the ECL and implementing regulations (6 NYCRR Part 617) have been met.

OMB and NYC Parks have selected Alternative 4: Flood Protection System with a Raised East River Park for the East Side Coastal Resiliency (ESCR) Project (the Preferred Alternative). This alternative is fully described in Chapter 2.0, "Project Alternatives," of the FEIS. The FEIS was signed by NYC Parks on September 13, 2019. On September 13, 2019, OMB and NYC Parks issued the joint Notice of Availability/Notice of Completion for the FEIS through publication in the New York State Environmental Notices Bulletin and newspapers of general circulation within the affected community. On September 13, 2019, the U.S. Environmental Protection Agency (EPA) published notice of its receipt and review of the FEIS in the Federal Register.

The FEIS was made available for public review via the following websites: <http://www.nyc.gov/cdbgdr> or <http://www.nyc.gov/parks/escr> and was available for public inspection at the following locations during regular business hours:

- NYC Parks, The Arsenal, Central Park, 830 Fifth Avenue, Room 401, New York, NY 10065
- OMB, 255 Greenwich Street, 8th Floor, New York, NY 10007
- New York Public Library – Seward Park Branch, 192 East Broadway, New York, NY 10002
- New York Public Library – Epiphany Branch – 228 East 23rd Street, New York, NY 10010

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This Joint ROD and Findings Statement includes responses to the comments received during the public comment period which ended at 5 PM on October 15, 2019. These comments are summarized and responded to in **Appendix A, “Response to Comments on the FEIS.”** Copies of written comments from the elected officials and organizations/agencies are included in **Appendix B, “Comments Received on the FEIS.”** In addition, a comment letter dated November 8, 2019 from Attorney General Letitia James (see **Appendix B**) was also considered.

1 PROJECT IDENTIFICATION

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 ESCR Project (the proposed project), which involves the construction of a coastal flood protection system along a portion of the east side of Manhattan and related improvements to City infrastructure.

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 East 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 River Complex, 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. The proposed flood protection system is completed on the north with a connection to the existing U.S. Veterans Administration (VA) Medical Center flood protection system.

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). The proposed project is designed to a highly protective standard by using the extreme and low probability sea-level rise projections for the 2050s. This standard is equivalent to the projections considered likely by climate scientists for 2100. Climate change is a dynamic threat and the severity of its impacts will depend on how quickly carbon emissions can be reduced worldwide. For this reason, the City has designed the proposed project for a 100-year useful life and be adaptable to accommodate future longer-term projections for sea level rise. 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

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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 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 OMB, acting under HUD’s authority.

The proposed project is subject to two City Uniform Land Use Review Procedure (ULURP) actions for the acquisition of real property by the City in the form of easements and a zoning text amendment related to the City’s waterfront zoning regulations. The ULURP application was approved by New York City Council on November 13, 2019. A future City map change action is also needed for the reconstruction of the two pedestrian bridges and will be prepared once final design and implementation are completed to record grade and treatment line adjustments, if needed. The properties where the easement acquisitions are proposed are listed in **Table 1**.

**Table 1
Proposed Easement Acquisitions**

Action	Property Owner	Block	Lot	Purpose of Action
Acquisition	Gouverneur Gardens Housing Corporation	244	p/o 19	To enable the City to operate, inspect, and maintain the proposed floodwall
Acquisition	East River Housing Corporation	321	p/o 1	To enable the City to install, operate, inspect, and maintain drainage improvements
Acquisition	New York City Housing Authority (Baruch Houses)	323	p/o 1	To enable the City to operate, inspect, and maintain drainage improvements
Acquisition	New York City Housing Authority (Riis Houses)	367	p/o 1	To enable the City to operate, inspect, and maintain the proposed floodwall
Acquisition	Con Edison	988	p/o 1	To enable the City to operate, inspect, and maintain the proposed floodwall
Acquisition	Con Edison	990	p/o 1	To enable the City to operate, inspect, and maintain the proposed floodwall
Acquisition	U.S. Department of Veterans Affairs	955	p/o 5	To enable the City to operate, inspect, and maintain the proposed floodwall
Acquisition	New York State Department of Transportation	p/o FDR Drive right-of-way	p/o FDR Drive right-of-way	To enable the City to operate, inspect, and maintain the proposed flyover bridge
Zoning Text Amendment	New York City Department of Small Business Services	Marginal Wharf, Street or Place	Marginal Wharf, Street or Place	Zoning text amendment to ZR §62-59 to allow the proposed project to satisfy the visual corridor and design requirements for lots subject to waterfront regulations.

The FEIS describes the proposed project, the project objectives and actions required to implement the project, potential effects, proposed mitigation, and the No Action alternative and alternatives that meet project objectives. The 2014 *CEQR Technical Manual* serves as a guide on the methodologies and impact criteria for evaluating the proposed project’s potential effects on the various environmental areas of analysis. In addition, specific methodologies and criteria by HUD and other federal agencies to assess potential environmental effects under NEPA were followed in completion of the technical analyses in the FEIS.

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2 PROJECT BACKGROUND

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 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 the East River Park esplanade, ballfields, and plantings, 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. 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

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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, 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 ENVIRONMENTAL REVIEW PROCESS

On behalf of the City of New York, OMB, acting under the direction of HUD and the Responsible Entity in accordance with 24 CFR 58.2(a)(7) and the lead agency responsible for environmental review, decision-making, and action under 42 U.S.C. § 5304(g), 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

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Intent to Prepare an EIS (NOI EIS) to satisfy NEPA procedural requirements in accordance with 24 CFR Part 1502. The NOI EIS was published in the Federal Register on November 6, 2015. The EIS also satisfied the requirements of SEQRA, and NYC Parks served as lead agency for purposes of SEQRA.

The Draft Scope of Work (Draft Scope) for this project was issued on October 30, 2015. The NOI EIS included notice of the public scoping session held on December 3, 2015. Oral and written comments were received during the public scoping session and the period for submitting written comments remained open until December 21, 2015. The Final Scope of Work for the DEIS was issued on April 5, 2019.

The Notice of Availability and Notice of Completion for the DEIS for the proposed project was issued by NYC Parks and OMB, respectively on April 5, 2019 through publication in the New York State Environmental Notice Bulletin and websites and newspapers of general circulation within the affected community in compliance with the City Participation Plan. The Notice of Availability of the DEIS was announced in the Federal Register on April 12, 2019. OMB and NYC Parks also held a noticed public hearing on the DEIS on July 31, 2019, at 10:00 AM at 120 Broadway, Concourse Level, New York, NY 10271 to receive oral and written comments on the DEIS. The period for submitting written comments remained open until August 30, 2019.

On September 13, 2019, NYC Parks and OMB issued the joint Notice of Availability/Notice of Completion for the FEIS through publication in the New York State Environmental Notice Bulletin and websites and newspapers of general circulation within the affected community in compliance with the City Participation Plan. The Notice of Availability of the FEIS was announced in the Federal Register on September 13, 2019. The comment period for the FEIS was opened until October 15, 2019.

Since the release of the FEIS, the City has committed to additional project enhancements, including implementing a phased construction plan, flood proofing the Fireboat House and reconstructing the bulkhead and support structures beneath this section of the waterfront esplanade, reconstructing a canopy structure at the proposed East River Park amphitheater, adding a comfort station at the redesigned Murphy Brothers Playground, elevating the area south of the amphitheater, and revising the esplanade structural support design at the existing and proposed embayments. A memorandum (Tech Memo 001) dated November 12, 2019 (see **Appendix C**) was prepared to analyze the modifications to the Preferred Alternative and confirmed that these modifications would not result in any new impacts.

4 PURPOSE AND NEED

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.

Absent the proposed project's coastal flood protection measures, residents, businesses, critical infrastructure, and valuable open space amenities within the protected area would remain vulnerable to flooding during design storm events. Although some resiliency measures are expected to be completed at NYCHA's Baruch Houses, Wald Houses, Riis Houses, and other developments, these areas as well as the broader protected area would continue to be vulnerable to flood damage during future storm events, and responders' access to the dwellings would continue to be compromised during flood events. Additionally, residents in market rate and affordable dwellings in Stuyvesant Town and Peter Cooper Village, and many

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housing units east of Avenue B, would remain vulnerable. Further, existing businesses, especially ground floor establishments along Avenues B, C, and D would remain vulnerable through potential loss of customers during flood events, and possibly by water damage to property.

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 the following:

- 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 impacts, 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.

5 DECISION

OMB and NYC Parks have selected Alternative 4: Flood Protection System with a Raised East River Park for the East Side Coastal Resiliency Project (the Preferred Alternative). With the implementation of the Preferred Alternative, the proposed project would reconstruct East River Park to protect this valuable resource from flooding during coastal storm events as well as inundation from sea level rise and enhance its value as a recreational resource in addition to providing flood protection to the inland communities. The Preferred Alternative would raise the majority of East River Park and would limit the length of exposed wall between the community and the waterfront to provide for enhanced neighborhood connectivity and integration. In addition, pedestrian bridges would be reconstructed and two embayments would be relocated to improve access, enhance the park user experience, and provide improved aquatic habitats. The Corlears Hook Bridge and the East Houston Street overpass would lead the park user directly to newly designed embayments, providing maximum opportunities for the community to connect with the waterfront. Furthermore, Stuyvesant Cove Park, Murphy Brothers Playground, and Asser Levy Playground would be reconstructed and improved. The Preferred Alternative includes the construction of a shared-use

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flyover bridge linking East River Park and Captain Patrick J. Brown Walk. This bridge will address a long-standing access deficiency along the East River Greenway near East River Dock and would substantially improve the City's greenway network. The selection of this alternative also allows for earlier deployment of the flood protection system (which is expected to be completed in mid-2023) and reduced construction disruption along the FDR Drive.

Subsequent to the FEIS, the City identified a phased construction approach in Project Area One for the Preferred Alternative where substantial portions of East River Park would be kept open throughout the construction period to partially mitigate significant adverse construction effects on open space resources. As with the construction schedule presented in the FEIS, activities under the revised construction phasing plan would commence in March 2020 and the flood protection system would be in place by the hurricane season of 2023. Although access and open space improvements for the entire project area would not be completed until 2025 under the revised construction phasing plan, unlike the previous construction plan, a substantial part of East River Park would always be available for public use during the construction period. The details of the additional project enhancements committed by the City, including implementing a phased construction plan, have been analyzed in Tech Memo 001 dated November 12, 2019 (See **Appendix C**)¹. As presented in the Tech Memo 001, the modified Preferred Alternative would not result in any new or different significant adverse effects not already identified in the FEIS.

6 ALTERNATIVES CONSIDERED

This section describes the alternatives to the proposed project that were evaluated in the EIS. Each of the With Action alternatives (i.e., all alternatives except the No Action Alternative), assume the no action projects identified in Appendix A1 of the FEIS, and propose varying configurations and combinations of the coastal flood protection components. The With Action Alternatives were developed to meet the project purpose and need (as outlined in Chapter 1.0, "Purpose and Need," of the FEIS) to respond quickly to the need for reliable coastal flood protection and resiliency for the design storm and improve access to and enhance open space resources along the waterfront. These build alternatives vary in the degree to which the coastal flood protection system is integrated with the park landscape enhancements and improvements to neighborhood connections. As described in further detail below, the Flood Protection System on the West Side of East River Park Baseline Alternative (Alternative 2) would provide flood protection but with limited open space improvements. The Flood Protection System on the West Side of East River Park – Enhanced Park and Access Alternative (Alternative 3) builds upon Alternative 2 with additional enhancements to open spaces and improvements to access to these open spaces. The Flood Protection System with a Raised East River Park Alternative (Alternative 4 – the Preferred Alternative) would integrate the flood protection in Project Area One within an elevated East River Park, providing the opportunity for a holistic reconstruction, reimagining, and expansion of the types of user experiences in the park, while also enhancing neighborhood connectivity and resiliency. The Flood Protection System East of FDR Drive Alternative (Alternative 5) is similar to the Preferred Alternative but would shift the alignment of a portion the flood protection system in Project Area Two from west of the FDR Drive to the east of the FDR Drive. In addition, since the line of protection would be closer to the shoreline under the Preferred Alternative and

¹ Since the release of the FEIS, the 2015 East Side Coastal Resiliency Project Coastal Hydraulics Report, which was referenced in the FEIS, was updated to reflect the revised alignment of the tidal flood protection system during the progression from conceptual to final design (completed October 2019). This update did not affect the analyses presented in the FEIS.

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Alternative 5, the majority of East River Park would be protected from design storm events and inundation from sea level rise.

The build year for the proposed project is 2025. Overall, while the phased construction approach for the Preferred Alternative would result in different overlapping of construction activities (completion of the flood protection system in 2023 with the completion of open space improvements and the flyover bridge in 2025) as compared to the construction plan presented in the FEIS (completion of the flood protection system and open space improvements in 2023 with the completion of the flyover bridge in 2025), each individual construction task under the revised construction phasing plan would be comparable to that for the Preferred Alternative as described in the FEIS. The revised construction phasing plan would have less overlap between construction activities, fewer simultaneous construction work areas, and would allow for significant portions of the park to remain available to the public during that time.

A summary description of the alternatives selected for analysis within the FEIS is provided below.

NO ACTION ALTERNATIVE (ALTERNATIVE 1)

The No Action Alternative assumes that no new comprehensive coastal protection system is installed in the proposed project area by the 2025 analysis year. The No Action Alternative establishes the context to assess and compare the effects among the alternatives. In the absence of this system, the existing neighborhoods within the protected area would remain at risk to coastal flooding during design storm events. Independent of the proposed project, there would be limited improvements to open space resources and access to both East River Park and the East River waterfront from other planned projects or targeted resiliency projects. Specific improvements in the project area anticipated to occur in the absence of the proposed project include the Pier 42 project and the Solar One Environmental Education Center project in Stuyvesant Cove Park.

The No Action Alternative also describes the conditions that would exist in the future without the proposed project by the 2025 analysis year. In an urban environment such as the protected area, there are both broad development trends and site-specific development projects that would affect conditions in the future. This additional development (i.e., the No Action projects) includes projects currently under construction or in development that can reasonably be expected to be constructed by 2025 due to their status in the planning and public approval process, along with proposals for rezoning and public policy initiatives likely to be undertaken. The No Action projects relevant for analyses within the FEIS include various improvements to existing facilities, amenities, and infrastructure; site-specific resiliency projects; and development projects.

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

DESIGN OBJECTIVES

The Preferred Alternative is a flood protection system comprised of a combination of floodwalls, 18 closure structures (i.e., swing and roller floodgates), and supporting infrastructure improvements that together would reduce risk of damage from coastal storms in the area proposed for protection. The inland limits of the proposed protection area are generally along First Avenue, Avenue B, Avenue C, Avenue D, and Columbia Street and includes private and public properties and streets within the Lower East Side, East Village, Stuyvesant Town, Peter Cooper Village and Kips Bay communities that are currently in the East River coastal flood hazard area. The design flood elevation for the project is 16.5 feet NAVD88, which is generally 8 to 9 feet above the existing land surface along the project alignment but diminishes in height along the inland alignments (e.g., along Montgomery Street). This design elevation was developed based on the 100-year FEMA flood level and adding to that wave effects and the 90th percentile projection for

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sea level rise through to the 2050s (30 inches) and equivalent to the projections considered likely by the New York City Panel of Climate Change (NPCC) for 2100. Climate change is a dynamic threat and the severity of its impacts will depend on how quickly carbon emissions can be reduced worldwide. For this reason, the City has designed the proposed project for a 100-year useful life and to accommodate future longer-term projections for sea level rise.

As described in greater detail below, a key element of the Preferred Alternative is elevating and reconstructing East River Park to make it more resilient to coastal storms and sea level rise inundation. The Preferred Alternative also includes integrating flood protection with open space improvements at other parks along the flood protection alignment including Murphy Brothers Playground, Stuyvesant Cove Park, and Asser Levy Playground, with an improved shared use path (bikeway/walkway) along the project length (from East 23rd Street to Montgomery Street), and a new shared-use flyover bridge to address the narrow and substandard waterfront public access along the segment at the Con Edison facility (on the east side of the FDR Drive) known as the “pinch point.”

Also proposed are redesigned and enhanced connections to the waterfront and East River Park, with the reconstruction of the Corlears Hook Bridge, the replacement of the Delancey and East 10th Street Bridges, and the above-mentioned flyover bridge. These proposed bridge improvements would create more inviting and accessible crossings over the FDR Drive to the reconstructed East River Park and the East River waterfront, including the waterfront shared-use path. With the Preferred Alternative, the reconstructed bridges at Delancey and East 10th Street have also been designed to provide more community-oriented access that supports and encourages public access to the waterfront with gentler grades that are consistent with the principle of universal access. Within the park, the bridge landings would provide an elevated gateway with expanded views of the reconstructed park and the river.

FLOOD PROTECTION ALIGNMENT AND DESIGN

The description below summarizes flood protection alignment and design for the Preferred Alternative:

Project Area One – South of East River Park

The proposed flood protection alignment begins at its southerly tieback along Montgomery about 130 feet west of South Street; at South Street the system turns north 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.

Project Area One – 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.

Within East River Park, the Preferred Alternative includes the following key design elements:

- Installing a below-grade flood protection structure (i.e., floodwall) running parallel to the existing East River Park bulkhead coupled with the elevation of a majority of East River Park (with the exception of the Fireboat House, which will be flood proofed through other mechanisms), generally beginning at the existing amphitheater and continuing northward to the northern end of the park near East 13th Street, thereby protecting park facilities and recreational spaces from design storm events and sea level rise inundation;

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- Installing the floodwall below-grade to soften the visual effect of the flood protection system;
- Raising the majority of park grade with an increase in elevation from west (the FDR Drive) to east (the East River bulkhead) to attain the flood protection design elevation, accompanied by the reconstruction of the park open space including all fields and passive spaces, and incorporating resilient landscaping and substantial tree replanting that envisions a more diverse, resilient, and ecologically robust habitat;
- Reconstructing the Tennis House, Track and Field House and East 10th Street comfort stations;
- Reconstructing most of the East River Esplanade within East River Park to increase the deck elevation to match the raised park and protect the esplanade from design storms and sea level rise;
- Improving north/south access along the waterfront with a new shared-use flyover bridge connecting the north end of East River Park with Captain Patrick J. Brown Walk;
- Improving access to the waterfront by reconstructing the Corlears Hook Bridge over the FDR Drive and replacing the existing Delancey Street and East 10th Street Bridges to be universally accessible;
- Creating an expanded and reconfigured park-side East Houston Street landing and entryway to the waterfront;
- Relocating the two existing embayments in the park with the objective of repurposing the filled areas as open space that allows for improved recreational programming and creating two new compensatory embayments which would be linked to the park entrances at the Corlears Hook Bridge and the East Houston Street overpass and would lead the park user directly to newly designed embayments, providing maximum opportunities for the community to connect with the waterfront;
- Providing improved aquatic habitat at the location of the proposed embayments over what currently exists in the embayments that are to be repurposed as open space by omitting bridges that shade aquatic habitat, which can reduce benthic productivity and biomass, and providing habitat improvements that would enhance opportunities for flora and fauna to thrive, including the creation of intertidal pools, armor blocks to serve as breakwater for tidal energies, and outfitting the existing steel piles with specially designed jackets that promote growth of benthic and sessile species;
- Reconstructing the amphitheater as an outdoor theater space with a canopy structure over the stage; and
- Reconstructing all water and sewer infrastructure in the park, some of which is reaching the end of its serviceable life, including the outfalls and associated pipes that cross the park to the East River bulkhead.

It is an objective of the design to improve the ecology of East River Park, which is susceptible to the effects of sea level rise, storm surge, and heavy rainfall events. Storm surge from severe events like Hurricane Sandy can overwhelm the park. Moreover, the threat from gradually increasing sea level rise adds to the risk of more frequent flooding from everyday storms or high tides. This flooding not only interrupts the ability for parks visitors to enjoy and utilize the amenities within East River Park, but also affects its ecology. In 2014 alone, NYC Parks removed 258 trees from East River Park due to saltwater damage from Hurricane Sandy. A comparison of LIDAR data from 2010 (pre-Hurricane Sandy) and 2017 (post-Hurricane Sandy) showed a 30 percent reduction in tree canopy in East River Park, which can largely be attributed to removals and crown dieback of London plane trees that have a low tolerance to the effects of salt water inundation.

The existing landscaping in East River Park is reflective of the popular styles of the late 1930s, when the Park was first designed and completed. The planting design is formal, with a focus on tree geometry and placement that maximizes open spaces for active recreation. Species diversity and ecology were not priorities of the original landscape design: over half of the current tree canopy is comprised of just two

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species. In the original design, plant selection relied heavily on canopy trees, such as London plane, a non-native species, and oaks.

In contrast, the proposed landscaping plan incorporates park resiliency through a design that can withstand a changing climate and consideration of species diversity, habitat, salt spray, wind, maintenance, and care. The landscape plan includes over 50 different species, reflecting research around the benefits of diversifying species to increase resiliency and adaptive capacity in a plant ecosystem. The design also focuses on creating a more layered planting approach, allowing for informal planting areas that have flexibility and plant communities that together improve ecological richness. By elevating the majority of the park and its landscape, and diversifying plant species, the landscape in the park will be more resistant to salt spray exposure, improving long-term resiliency and post-storm functionality.

Project Area Two

North of East River Park, the proposed flood protection system includes a closure structure across the FDR Drive. Two swing floodgates when deployed would close this segment of the flood protection system across the highway, but in non-storm conditions would be recessed to the sides of the highway. From there, the floodwall continues northward and aligns along the west (southbound) side of the FDR Drive, connecting into the flood protection system at the Con Edison East River Generating Station (between East 14th and East 15th Streets). A closure structure adjacent to East 14th Street near the FDR Drive would also be installed to allow Con Edison operational access. North of the East River Generating Station, a closure structure is proposed across the FDR Drive East 15th Street ramp, and the floodwall continues northward along the FDR Drive to Murphy Brothers Playground.

At Murphy Brothers Playground the proposed floodwall is aligned along the east side of the park, which would also be reconstructed with new ballfields, active recreational spaces, grading and landscaping.

Beginning at the northeast corner of Murphy Brothers Playground, the proposed flood protection system turns east along Avenue C, heading towards the East River, crossing the FDR Drive ramps (two swing gate closure structures are proposed here) and under the FDR Drive into Stuyvesant Cove Park. Within Stuyvesant Cove Park, the proposed flood protection system turns northward, where it is comprised of a combination of floodwalls with closure structures (roller gates) at the southerly entrance (from Avenue C) and at the East 20th Street entrance to allow public access into the park to the waterfront esplanade during non-storm conditions; design of this segment is also being coordinated with the new design for the Solar One Environmental Education Center and existing Citywide Ferry Service ferry landing.

North of Stuyvesant Cove Park, the system again turns west and back under the elevated FDR Drive at East 23rd Street. In this segment, a combination of floodwalls and closure structures (a combination of roller and swing gates) are needed to maintain vehicular and pedestrian circulation through this intersection during non-storm conditions, including: vehicle access to the FDR Drive ramps and service roads; pedestrian and cyclist access to and along the East River shared-use path; and, vehicle and pedestrian access to Waterside Plaza (including the U.N. School and the British International School of New York), the Skyport Marina and parking garage, and a BP service station. These closure structures are to be recessed except under storm conditions when they would be deployed to provide the proposed flood protection.

North of East 23rd Street and west of the FDR Drive, the proposed flood protection system continues northward along the sidewalk of the southbound FDR Drive service road. The proposed system then turns westward into and across the Asser Levy Park Playground (between the Asser Levy Recreation Center and the outdoor recreational space). Similar to Murphy Brothers Playground, the outdoor recreational space at

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Asser Levy Playground would be redesigned and reconstructed and a roller floodgate is proposed to connect to the VA Medical Center floodwall. The flood gate would maintain the connection between the playground and the Asser Levy Recreation Center and during a storm condition it would be deployed. The VA Medical Center flood protection system extends north and then west along East 25th Street to complete the northern tieback at First Avenue.

The Stuyvesant Cove parking lot under the elevated FDR Drive between approximately East 18th and East 23rd Streets is City owned and operated by the New York City Economic Development Corporation (EDC). This parking lot is anticipated to be used as a staging area to facilitate construction activities at the adjacent Stuyvesant Cove Park. Once construction is complete, the parking lot is proposed to be reconfigured to provide for a pedestrian plaza at East 20th Street to allow for improved pedestrian access to the waterfront and to accommodate the flood protection system alignment near East 23rd Street (see Tech Memo 001 dated November 12, 2019 in **Appendix C**).

DRAINAGE SYSTEM MODIFICATIONS

Drainage system modifications are also proposed as part of the Preferred Alternative, including measures to control flow into the drainage protected area² from the larger sewershed (i.e., drainage isolation) and measures to manage flooding within the drainage protected area (i.e., drainage management). These modifications would reduce the risk of flooding in the protected area during extreme storm events coincident with rainfall events. As part of the Preferred Alternative, the water and sewer infrastructure would be reconstructed and reconfigured where necessary to ensure that it could withstand the additional loading from the added fill materials once the Park is raised. A summary of each of these measures is provided below.

Drainage Isolation

Measures to isolate the drainage protected area from the unprotected portions of the larger sewershed would be implemented to eliminate potential pathways for storm surge waters to inundate the existing sewer system and flood inland areas. The measures include: (1) installing interceptor gates on the existing 108-inch diameter interceptor at the northern and southern extremes of the drainage protected area sewershed, generally in the vicinity of East 20th Street and Avenue C to the north and between Corlears Hook Park and the FDR Drive to the south; (2) flood proofing the regulators, manholes, and other combined sewer infrastructure on the unprotected side of the flood protection system; (3) replacing existing tide gates on the combined sewer outfall pipes that serve the drainage protected area and rerouting storm drainage; and (4) installing one isolation gate valve in the existing Regulator M-39, located within Asser Levy Playground, to isolate a branch interceptor that crosses the flood protection system alignment at the northern boundary of the drainage protected area. These measures would prevent storm surge water from entering the sewer system through existing combined sewers, the outfall pipes, or through at-grade access points (i.e., manholes and hatches) for existing sewer infrastructure on the portion of the drainage protected area that is unprotected from overland coastal surge events.

Two interceptor gates are proposed to prevent floodwaters from entering the protected area through the sewer system during a design storm event. The southernmost interceptor gate is proposed in Project Area One, just south of the Corlears Hook Bridge, and would be sited within an existing sidewalk and lawn along

² The drainage protected area encompasses the project protected area as well as the lateral sewers, regulators, outfalls, and other sewer infrastructure that serve or are tributary to those that serve the project protected area.

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the western edge of the FDR Drive right-of-way. The northern interceptor gate in Project Area Two is proposed in the right-of-way and median of East 20th Street, just west of the intersection with Avenue C. During a design storm event, these gates would be operated to allow DEP to control flow from outside the protected area into the protected area via the interceptor sewer. Once the storm surge recedes, the interceptor gates would be returned to their open positions to resume normal operations of the sewer system. While mostly below grade, the interceptor gates would each require a single-story building adjacent to the chamber that contains the controls, electrical, hydraulic, and other ancillary components to operate the interceptor gates.

Drainage isolation for the regulators and other sewer structures would involve replacing each of their existing vented access hatches with lockable vented hatches that could be sealed (i.e., flood proofed) to prevent floodwater water from entering the system. In addition, each regulator would be improved, as needed, which may include lining, patching, jet-grouting, sheet piling, or reinforcing the walls of the structure. There may also be installation of a reinforced concrete slab above each structure and low-infiltrating fill around each structure. Manhole covers on unprotected sewers would also be flood proofed to protect against loss and/or leakage during a storm event. Manholes that are less structurally stable would be either partially or fully replaced in addition to the replacement of the frame and cover. Manholes requiring additional support would follow the methods described above for external strengthening of the regulators.

To ensure proper functioning of the tide gates during the design storm event, it is proposed that the existing tide gates on the combined sewer outfall pipes that serve the drainage protected area be replaced as part of the Preferred Alternative. In addition, storm drainage that currently connects to the combined sewer system that would be located on the unprotected side of the flood protection system would be rerouted and connected to the outfalls downstream of the tide gates. This would ensure the storm drainage system is isolated from the combined sewer system within the protected area and would eliminate the need for flood proofing storm drains on the unprotected side of the flood protection system.

The Preferred Alternative also proposes that an isolation gate valve be installed within regulator M-39 on an existing sewer segment that crosses from the protected to the unprotected side of the flood protection system at the northern end of the drainage protected area. This conduit has the potential to convey floodwaters from unprotected sewers into the protected area under a design storm event.

Drainage Management

In addition to the isolation measures outlined above, the Preferred Alternative includes drainage management elements to ameliorate the reduced sewer capacity due to outfall closure during a design storm event. The proposed drainage management would reduce the risk of sewer backups and associated flooding within the drainage protected area during a design storm. These drainage elements include installing additional combined sewers, termed “parallel conveyance,” within the drainage protected area to augment the capacity of the existing sewer system. Specifically, nine parallel conveyance connections are proposed.

Parallel conveyance pipes are proposed at 9 locations, for regulators M-22, M-23, M-27, M-28, M-31, M-37, M-38, M-38A, and M-38B, to convey excess combined sewer flows to the interceptor. Each parallel conveyance pipe would consist of a new upstream connection to a regulator or lateral sewer, a downstream connection to the interceptor, and a connecting length of pipe. The parallel conveyance pipes would range in diameter from 18 to 48 inches and require no above ground features. The parallel conveyance would be sited within City rights-of-way with one exception where some parallel conveyance infrastructure is proposed on a portion of private property (Block 321, Lot 1). The parallel conveyance pipes and connections would include manholes for access, similar to the existing sewer pipes, generally every 200 to 250 feet, at

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pipe bends, and at all connections to allow access for maintenance and repairs, as needed, and would be sited within streets and paved surfaces (e.g., parking), where possible (the project includes a drainage improvement at private property, see **Table 1**).

In addition, similar to the parallel conveyance, this alternative also proposes to increase the size of the branch interceptor in order to increase the conveyance capacity to the Manhattan Pump Station for three sub-drainage areas within the protected area: M-33, M-34, and M-35.

These proposed drainage management system improvements would not alter daily operation of existing sewer infrastructure under non-storm conditions. Under rainfall events or periods of high sewer flow, combined sewer flow would be conveyed to the interceptor via the existing branch interceptors and potentially also via the parallel conveyance.

East River Park Infrastructure Reconstruction

The Preferred Alternative also includes reconstructing the water and sewer infrastructure within the portion of East River Park that would be elevated, including the outfalls, regulators, tide gates and chambers, and sewers and water supply infrastructure, to withstand the added loads of the proposed flood protection system and elevated parkland. The outfalls and regulators within the portion of East River Park to be elevated are also proposed for replacement. In most cases, the existing infrastructure would be abandoned in place and the new infrastructure would be reconstructed adjacent to the existing locations, although the outfalls would be relocated slightly along the East River Park bulkhead. Of the existing 11 outfalls, two would be combined as part of the outfall reconstruction effort.

SYSTEM OPERATION AND MAINTENANCE

An Operations and Maintenance (O&M) Manual will be developed for the proposed system to identify the procedures for deploying, inspecting, testing, and maintaining each element of the proposed flood protection system to ensure that the floodwalls, levees, and closure structures remain in proper working order and are ready to perform in advance of a design storm event.

Operation and maintenance of the proposed parallel conveyance and interceptor gates would require periodic inspection and maintenance of the piping and mechanical equipment. These inspections would be in accordance with standard operation and maintenance procedures for the City's sewer infrastructure and a pre-approved operations and maintenance protocol developed for the Preferred Alternative.

Subsequent to the FEIS, operational procedures for closure of the drainage isolation gates on a more conservative timeline have been discussed as an option to ensure protection of the drainage protected area from storm surge inundation through the sewer system. These timelines consider closures in advance of rainfall and/or storm surge arrival, as determined necessary by DEP and per the O&M Manual.

Upon completion of construction of the Preferred Alternative, the City would submit engineering plans, design modifications during construction, supporting materials (i.e., design criteria, geotechnical data, hydraulic modeling, etc.), a final O&M Plan, and relevant construction data to FEMA to demonstrate compliance with requirements listed in Chapter 44 of the Federal Code of Regulations, Section 65.10 for FEMA accreditation.

CONSTRUCTION

In response to community concerns regarding construction, the city has developed a construction phasing plan that allows portions of East River Park to remain open during construction. While construction of the

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flood protection system proposed under the Preferred Alternative would be completed by mid-2023, completion of some park amenities and other features would follow after the flood protection is in place; the entire project is anticipated to be complete in 2025. Additionally, the City is developing a program of neighborhood park improvements and recreational programming to provide replacement active and passive recreational opportunities for the community throughout the 5-year construction period. Access to the Corlears Hook ferry landing would continue to be maintained via Corlears Hook Bridge and/or Montgomery Street, and the Stuyvesant Cove ferry landing access would also be maintained. Construction activities would require the use of barges and trucks for material deliveries. Approximately 775,000 cubic yards of fill is estimated to be required for the construction under the Preferred Alternative. The sources of clean soils or fill materials to be used anywhere on the project site would be determined by the construction contractors with review and approval by DEP and/or DEC and are dictated by a number of factors, including composition, certification of suitability of intended use, quality, availability, cost, and the proximity of the soil/clean fill provider's loading site to the project area. Subsequent to the FEIS, the City has developed and committed to a revised construction phasing plan that will keep nearly half of East River Park open during the construction period, thus ensuring that local residents will have access to portions of East River Park during construction. The details of the revised construction phasing plan, and their potential environmental effects, are presented in Tech Memo 001 dated November 12, 2019 (see **Appendix C**).

LANDSCAPE RESTORATION PLAN

The landscape restoration plan for the project is comprised of several elements. First, to the extent practicable, the City would transplant existing park trees that are in excellent condition and, based on prior NYC Parks arborist experiences and approvals, are suitable for a successful transplanting. Second, approximately 1,815 trees are proposed to be planted as part of the landscape design within the project areas, which would result in a net increase of 745 trees over the existing conditions. The value of this restoration plan, in combination with approximately \$32.9 million of restitution, would be in compliance with Chapter 5 of Title 56 of the Rules of New York (NYC Parks Rules) and Local Law 3 of 2010. The restitution funds would be used towards targeted tree planting and urban forest enhancements throughout the adjacent communities, including the Lower East Side greening program, which proposes to plant up to 1,000 trees in parks and streets, and create up to 40 bioswales which started in the fall of 2019. The planting palette for the proposed park trees will consider size, growth rate, diversity, and resiliency, among other factors, in determining the tree selection. This tree planting plan including the species, distribution, and location will be included in the project's final design documents.

PROJECT ENHANCEMENTS

Since the release of the FEIS, the following enhancements have been incorporated into the Preferred Alternative based on input from the community, elected officials, and permitting agencies, as follows:

- **Flood proofing the Fireboat House and Reconstructing the Esplanade.** This includes provisions to flood proof the Fireboat House, harden key elements on the ground floor, relocate the mechanical, electrical, and plumbing (MEP) systems in the building, and reconstruct the esplanade deck, bulkhead, and support structures. Additionally, repairs to the Fireboat House to address water penetration in the hose tower would be completed as well as repainting work and leak repairs on all façades. In keeping with the proposed project's goals as a model of long-term resiliency and climate-change adaptation, all improvements and systems upgrades of the Fireboat House would comply with the City's sustainable Local Laws (LL06, LL31, and LL32) as applicable to the Fireboat House component of the project. The flood proofing of the Fireboat House would be completed by the Preferred Alternative's build year of 2025.

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- **Reconstructing a canopy structure at the proposed East River amphitheater.** As with the existing amphitheater, which has a canopy structure over the stage, a canopy structure would be built over the stage of the proposed East River amphitheater for the Preferred Alternative. The reconstruction of the amphitheater would be completed by the Preferred Alternative's build year of 2025.
- **Adding a comfort station at the redesigned Murphy Brothers Playground.** A comfort station would be added at the redesigned Murphy Brothers Playground for the Preferred Alternative. The construction of the comfort station would be completed within the construction timeline of the Murphy Brothers Playground, which is anticipated to be completed by 2024 under the revised construction phasing plan.
- **Elevating the area south of the amphitheater.** The area south of the amphitheater would be elevated for the Preferred Alternative to make this area more resilient. This work would be completed within the construction timeline for East River Park, which is anticipated to be complete by the Preferred Alternative's build year of 2025.
- **Revising the esplanade structural support design at the existing and proposed embayments.** Subsequent to the FEIS, a new design that lessens effects on jurisdictional waters was identified for the esplanade structural supports at the existing embayments, as well as at the north and south edges of the proposed embayments that uses a pile-supported structure instead of the use of bulk fill material. This work would be completed within the construction timeline for East River Park, which is anticipated to be complete by the Preferred Alternative's build year of 2025.

OTHER ALTERNATIVE (ALTERNATIVE 2): FLOOD PROTECTION SYSTEM ON THE WEST SIDE OF EAST RIVER PARK – BASELINE

Alternative 2 would provide 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. 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. As with the Preferred Alternative, a shared-use flyover bridge would be built. In Project Area Two, the flood protection alignment would be similar to that proposed in the Preferred Alternative. However, portions of Murphy Brothers and Asser Levy Playgrounds that are affected during construction under this alternative would be replaced in kind instead of reconstructed and improved. This alternative also includes modifications of the existing sewer system similar to the Preferred Alternative. 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 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.

OTHER ALTERNATIVE (ALTERNATIVE 3): FLOOD PROTECTION SYSTEM ON THE WEST SIDE OF EAST RIVER PARK – ENHANCED PARK AND ACCESS ALTERNATIVE

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 levees and other earthwork in association with the flood protection along the FDR Drive. This alternative would include a more extensive reconfiguration and reconstruction of East River Park and its programming. In addition, the existing pedestrian bridges and bridge landings at Delancey and East 10th Streets would be reconstructed, and a new raised and landscaped park-side plaza landing would

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be created at the entrance to the park from the East Houston Street overpass. In Project Area Two, the flood protection alignment would be similar to that proposed in the Preferred Alternative and, as with the Preferred Alternative, would include the reconstruction and improvements to Murphy Brothers and Asser Levy Playgrounds. As proposed in the Preferred Alternative, this alternative would include drainage components and the shared-use flyover bridge. Alternative 3 would involve construction of the flood protection system alignment along the FDR Drive and in 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 completion estimated in 2025.

OTHER ALTERNATIVE (ALTERNATIVE 5): 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 then connect to closure structures at the south end of Stuyvesant Cove Park. As with the Preferred Alternative, this alternative would also include modification of drainage components and construction of the shared-use flyover bridge. Alternative 5 is anticipated to be constructed in 5 years and completed in 2025 and this duration is driven by construction of the raised northbound lanes of the FDR Drive and the adjacent shared-use flyover bridge in this same footprint.

ALTERNATIVES CONSIDERED AND ELIMINATED

Prior to initiation of the proposed project's design in late 2014, the City evaluated and reviewed the coastal protection initiatives that were considered for New York City, Southern Manhattan, and the proposed project area, to identify any potential fatal flaws of the initiatives or incompatibility with the objectives of the proposed project. This review and comparison formed the basis of the screening process that identified initial alternatives for potential coastal protection measures as part of the proposed project.

Flood protection strategies developed by the United States Army Corps of Engineers (USACE) were reviewed and compared with initiatives that the City had considered as part of its post hurricane coastal planning to increase resiliency. The *North Atlantic Coast Comprehensive Study: Resilient Adaptation to Increasing Risk* was a comprehensive study that examined opportunities for reducing flood risks to vulnerable coastal populations, promoting resilient coastal communities, and maintaining a sustainable and robust coastal system.³ The report identified a total of 20 different strategies for managing risk of future coastal floods. The review of these coastal protection strategies revealed that non-structural measures, such as acquisition and relocation, are neither appropriate nor implementable in a densely populated urban setting such as the proposed project area. Additionally, the City and region already have advance storm warnings and emergency preparedness plans. The City already participates in the National Flood Insurance Program⁴ and is also implementing zoning policies⁵ as one strategy aimed at reducing flood risk in the neighborhoods adjacent to the proposed project area; these measures alone, however, cannot fully address the coastal

³ https://www.nad.usace.army.mil/Portals/40/docs/NACCS/NACCS_main_report.pdf, last visited December 2019.

⁴ Participation in the National Flood Insurance Program satisfies the non-structural flood protection approach of insuring vulnerable properties against damage resulting from coastal flooding events.

⁵ Examples include provisions in the New York City Waterfront Revitalization Program policies, and new Buildings Department regulations requiring that construction in a FEMA Flood Hazard Area raise critical service/infrastructure elements, like building boilers, above specified flood elevations.

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protection needs of these neighborhoods. Similarly, the natural and nature-based approaches would not be suitable along the proposed project area, which is juxtaposed between a developed urban setting and the East River. Certain structural approaches, such as seawalls, are typically large structures that could not be integrated into East River Park and Stuyvesant Cove Park, or revetments that would require extensive filling of the East River.

Floodwalls, levees, and closure structures were identified as viable flood protection strategies for the proposed project area. Multi-purpose raised landscapes can support other uses such as open space and were identified as appropriate approaches to providing coastal flood reduction along the proposed project area as part of the *PlaNYC: A Stronger, More Resilient New York* planning process, and were also identified in the BIG U proposal. These coastal protection systems would then be supported by improvements to the existing in-place drainage infrastructure.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The Council on Environmental Quality (CEQ) regulations state that the agency in issuing its ROD shall specify the alternative or alternatives which are considered environmentally preferable. The guidance issued by CEQ indicates that the environmentally preferred alternative is the one which causes the least harm to the natural and physical environment. In this case, the No Action Alternative avoids the effects to the natural environment caused by the construction under the Preferred Alternative. However, the No Action Alternative does not provide a coastal flood protection system, improve access to and enhance open space resources along the waterfront, or respond quickly to the urgent need for increased flood protection and resiliency, and by definition does not meet the purpose and need of the proposed project. A no-build action is studied to serve as a baseline and means of comparison to the build alternatives. In this case based on a thorough scoping and EIS process and consideration of alternatives, as discussed herein and in the environmental documents, the Preferred Alternative is deemed the environmentally preferred alternative. The decision to select the Preferred Alternative is based on a thorough and careful consideration of all the effects, mitigation of those effects, and accomplishing the important public interest of satisfying the purpose and need of the project.

7 IMPORTANT FACTORS IN THE DECISION-MAKING PROCESS

The environmental effects of the above alternatives were carefully evaluated in compliance with Federal, State, and local rules, and weighted along with social and economic factors and other considerations, such as the ability of the Preferred Alternative to provide increased resiliency. The Preferred Alternatives meets the purpose and need of the proposed project and includes the following benefits:

- **Provide a reliable, integrated flood protection system:** Flood protection would be provided to the inland communities and East River Park would be provided with significant risk reduction from coastal flooding and sea level rise in addition to substantial enhancements to its value as a recreational resource.
- **Improve waterfront open spaces and access to them:** Park user experiences would be enhanced with the reconstruction of East River Park and the reconstruction of pedestrian bridges, and the relocation of two embayments to improve park user access to the water's edge while also providing for improved aquatic habitat conditions. The Corlears Hook Bridge and the East Houston Street overpass would lead the park user directly to newly designed embayments, providing maximum opportunities for the community to connect with the waterfront. Additionally, a long-standing deficiency along the East River Greenway near Con Edison's East River Dock would be remedied with the construction of a shared-use pedestrian/bicyclist flyover bridge linking East River Park and Captain Patrick J. Brown

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Walk, substantially improving the City's greenway network. In addition, Stuyvesant Cove Park, Murphy Brothers Playground, and Asser Levy Playground would be reconstructed and improved, resulting in enhanced recreational spaces throughout the project area.

- **Respond quickly to the urgent need for increased flood protection and resiliency:** The selection of the Preferred Alternative allows for earlier deployment of the flood protection system (which is expected to be completed in mid-2023), and reduced construction disruption along the FDR Drive.
- **Achieve implementation milestones as established by HUD:** Implementation of the Preferred Alternative would meet the conditions attached to the funding allocations as established by HUD.

7.1 ENVIRONMENTAL IMPACT STATEMENT

The environmental record for the ESCR Project includes the DEIS and the FEIS, issued on April 5, 2019, and September 13, 2019, respectively, as well as comments on the FEIS and the post-FEIS Tech Memo 001 dated November 12, 2019, which are identified in Section 9 of this Joint ROD and Findings Statement, and the responses provided in **Appendix A**. These documents constitute the statements required by NEPA (42 USC 4321 et seq) and CEQ regulations implementing NEPA (40 CFR Parts 1500 to 1508), and under authority of HUD's regulations at (CFR) § 58.2(a)(7)(i) as the Responsible Entity, and as the lead agency responsible for environmental review, decision-making, and action under 42 U.S.C § 5304(g), and under SEQRA (Article 8 8-0101-8-0117 of the ECL and implementing regulations in 6 NYCRR Part 617). Consistent with NEPA and SEQRA, the FEIS fully and thoroughly addresses:

- The social, economic, and environmental effects of the project;
- Measures to mitigate the environmental effects of the project;
- The adverse environmental effects that cannot be avoided;
- Alternatives to the proposed project; and
- Irreversible and irremediable effects on the environment that may be involved with the project should it be implemented.
- HUD and other federal agencies have promulgated specific methodologies and criteria to assess potential environmental effects under NEPA, which were followed in completion of the technical analyses in the EIS. Additionally, because the project is located in New York City and that NYC Parks is the Lead Agency under SEQRA/CEQR, New York City's *CEQR Technical Manual* served as a guide with respect to methodologies and impact criteria for evaluating the Preferred Alternative's effects.

OPERATIONAL (LONG-TERM) EFFECTS OF THE PREFERRED ALTERNATIVE

Table 2 identifies the potential environmental effects of the Preferred Alternative once it is operational (i.e., long term effects). The FEIS identifies that operation of the Preferred Alternative would result in adverse effects to views of the East River from Grand Street. Measures to mitigate these adverse environmental effects as well as measures to minimize or avoid effects were identified in the FEIS. As presented in Tech Memo 001 dated November 12, 2019, following release of the FEIS a new esplanade structural support design at the existing and proposed embayments was identified to minimize impacts to jurisdictional waters. Measures to mitigate adverse environmental effects and measures to minimize or avoid effects are summarized in **Section 8** below.

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Table 2

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Preferred Alternative: Flood Protection System with a Raised East River Park (Alternative 4)	
Environmental Effects During the Operational Period	
Land Use, Zoning, and Public Policy	<p>No significant adverse effects</p> <p>Land use actions resulting from the Preferred Alternative include acquisition of real property, amendments to the City Map for changes related to existing and proposed pedestrian bridges following construction, and a zoning text amendment; however, these actions would not result in any adverse effects on land uses and would be consistent with zoning and public policies including the City's Waterfront Revitalization Program (WRP).</p>
Socioeconomic Conditions	<p>No significant adverse effects</p> <p>The Preferred Alternative would result in park and neighborhood connection improvements, and does not present new uses or activities to the project area that could markedly influence the study area's residential or commercial market. Additionally, the Preferred Alternative would not result in the direct or indirect displacement of any residents or businesses. Under the Preferred Alternative, residents and businesses within the 100-year floodplain in the socioeconomic study area would be less vulnerable to flooding during storm events. Under the Preferred Alternative, there would be positive socioeconomic benefits due to the avoided costs associated with flood damage that would otherwise be incurred during storm events.</p>
Open Space	<p>No significant adverse effects</p> <p>Impact avoidance measures: NYC Parks Landscape Restoration Plan</p> <p>The Preferred Alternative would not result in significant adverse effects to existing or planned open spaces within the study area. Overall, the Preferred Alternative would not alter the amount of open space, nor would this alternative introduce new worker and residential populations to the study area. By elevating East River Park and reconstructing Stuyvesant Cove Park, Murphy Brothers Playground, and Asser Levy Playground, the Preferred Alternative provides the opportunity for a holistic reconstruction, reimagining, and expansion of the types of user experiences in the park, while also enhancing neighborhood connectivity and resiliency. Increased improvements to landscaping along the waterfront and to the waterfront esplanade itself would also be included in this alternative. These benefits would ensure improved resiliency, operations, usability, and functionality of East River Park during pre- and post-storm periods. In addition, the Preferred Alternative would alleviate shared-use path congestion at the Con Edison the East River Dock facility with the construction of a flyover bridge (which would be complete by 2025). The Preferred Alternative also provides inland flood protection and allows these benefits to be available sooner than other alternatives as flood protection construction is expected to be complete in 2023. A total of 991 trees would require removal throughout the project area but will be replaced or replanted in accordance with a NYC Parks-approved Landscape Restoration Plan such that there would be a net overall increase in the number of trees within the park. The Landscape Restoration Plan would also protect the long-term viability of trees and ecological resources by protecting them from damaging salt water inundation and providing more diverse and resilient planting program.</p>
Historic and Cultural Resources	<p>No significant adverse effects</p> <p>Impact avoidance measures: design coordination related to the proposed floodwall near Asser Levy Playground and protection measures at the Fireboat House</p> <p><u>Archaeological Resources</u></p> <p>Two Phase 1A Archaeological Documentary Studies were prepared for the Area of Potential Effects (APE) in March 2016, and a Supplemental Phase IA Archaeological Documentary Study was prepared in March 2019. The March 2016 reports identified the following broad categories of historic-period archaeological resources that could be located in the APE—river bottom remains, landfill retaining structures and landfill deposits, historic street bed resources, and former city block resources. Because of the potential presence of these resources, as mitigation, additional archaeological investigation will be performed in accordance with Section 106 regulations, based on a scope of work reviewed and approved by New York City Landmarks Preservation Commission (LPC) and the State Historic Preservation Office (SHPO); The additional archaeological investigation is stipulated in a Programmatic Agreement (PA).</p>

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Environmental Effects During the Operational Period	
Historic and Cultural Resources (cont'd)	<p><u>Architectural Resource</u> (See Table 3 below on potential effects on historic and cultural resources during construction) It is not expected that the Preferred Alternative would result in any contextual effects on architectural resources. As stipulated in the PA, an effort will be made to design the floodwalls adjacent to the Asser Levy Public Baths (#12, S/NR, NYCL) so that they are compatible with the historic building, and the design will be coordinated with LPC and SHPO. Furthermore, the design of the floodwalls adjacent to the Asser Levy Public Baths will be undertaken in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.</p> <p>In a future storm condition, the following two S/NR-eligible architectural resources could experience adverse direct effects from storm surge and flooding: the Williamsburg Bridge (#2) and East River Bulkhead (#3) from Whitehall Street to Jackson Street. The portion of the FDR Drive (#1, S/NR-eligible) that runs through Project Area One would be located on the landward side of the flood protection system that would be constructed under the Preferred Alternative. It would, therefore, be protected from damage that could result from storm surge and flooding in a future storm condition. The portion of the FDR Drive (#1, S/NR-eligible) that runs through Project Area Two, however, would not be protected. Therefore, in a future storm condition, that portion of the FDR Drive could experience adverse direct effects from storm surge and flooding. The architectural resources located within the 400-foot portion of the Primary APE and within the Secondary APE are landward of the flood protection system that would be constructed under the Preferred Alternative. Therefore, they would be protected from damage that could result from storm surge and flooding in a future storm condition.</p>
Urban Design and Visual Resources	<p>Significant adverse effects – Views of the East River would be blocked on Grand Street Mitigation measures – Unmitigatable and unavoidable visual context effects from blocked waterfront views</p> <p><u>Urban Design</u> It is not expected that the floodwalls and closure structures installed under the Preferred Alternative would have adverse urban design effects to the southern end of Project Area One, Project Area Two, or the surrounding portions of the 400-foot study area. In general, the floodwalls, closure structures, and interceptor gate buildings would be new features to the public realm, but they would be installed in locations where there are existing fences and walls and where the FDR Drive runs on a viaduct. Under the Preferred Alternative, a majority of East River Park would be raised and reconstructed. While it would have a new design, the park would maintain the visual character of a landscaped, recreational waterfront park with paths, lawns, and athletic fields, and it would add improved entrances to the park from Corlears Hook Park and at Delancey Street, East Houston Street, and East 10th Street. The Preferred Alternative would result in a temporary adverse effect from the removal of existing trees in East River Park, and with this alternative 819 of the existing trees in the park would be removed. To lessen that adverse effect, the design of the alternative includes the planting of new trees and the potential transplantation of some existing trees into the raised and reconstructed park. Over time, the new tree canopy, comprised of diverse and resilient species, would fill in and would represent an improved habitat over the existing conditions. Although Stuyvesant Cove Park would be reconstructed, which would involve the removal of 48 existing trees, the new design would reference the design of the existing park and would include new trees and multiple planting elements, and there would not be an adverse effect. While the shared-use flyover bridge would be a new urban design feature, it would have beneficial urban design effects by elevating pedestrians and bicyclists above the East River Dock and the FDR Drive. In this area, pedestrians and bicyclists would no longer be immediately adjacent to vehicular traffic on the FDR Drive, but would be above it. Further, the flyover bridge would enhance pedestrian and bicyclist safety by bypassing the narrowed walkway.</p>

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Environmental Effects During the Operational Period	
Urban Design and Visual Resources (cont'd)	<p><i>Views, Aesthetic, and Visual Resources, and Viewer Groups</i></p> <p>The Preferred Alternative would maintain the visual connectivity between the waterfront and the adjacent upland neighborhoods. In Project Area One, the design of East River Park to slope down to the level of the FDR Drive would maintain views of East River Park from the adjacent neighborhoods. However, by raising East River Park, this alternative would potentially block some views of the East River. On Grand Street, views of the East River would be blocked, resulting in a significant adverse effect, but these eastward views would be of East River Park with Brooklyn in the distance. The raised park would alter views of East River Park and Brooklyn in the East 6th Street and East 10th Street view corridors and from within the Bernard Baruch, Lillian Wald, and Jacob Riis Houses compared to existing views, but these views would be of a landscaped waterfront park and there would be no potential significant adverse effects to these views. From the portions of the FDR Drive and FDR Drive service road that run through Project Area One, views would be of East River Park, similar to existing views, although occasional views of the East River would no longer be available. There are no view corridors to the waterfront between East 13th and East 18th Streets and, therefore, the flyover bridge would not block any views from the study area.</p>
Natural Resources	<p>No significant adverse effects</p> <p>Impact avoidance measures: NYC Parks Landscape Restoration Plan and restitution; wetland restoration design that meets all NYSDEC and United States Army Corps of Engineers (USACE) permit conditions</p> <p>The Preferred Alternative would result in temporary adverse effects to trees, with a total of 991 trees to be removed for the proposed flood protection system, of which 819 are located within East River Park.</p> <p>The Preferred Alternative also includes permanent in-water elements such as support foundations for the shared-use flyover bridge to connect the north end of East River Park to Captain Patrick J. Brown Walk to the north, the rehabilitation of the deck and bulkhead work at the Fireboat House, as well as the relocation of the two existing embayments. Installation of these elements would result in adverse effects to 12,126 square feet of New York State Department of Environmental Conservation (NYSDEC) unvegetated littoral zone tidal wetlands and U.S. Army Corps of Engineers (USACE) Waters of the United States within the East River.</p> <p>Adverse effects to the unvegetated littoral zone wetland have the potential to affect Essential Fish Habitat (EFH) and habitat for epifaunal benthic organisms that may provide a foraging habitat for certain fish that are protected under the Fish and Wildlife Coordination Act (FWCA). However, for fish species that would not be considered rare or transient within the study area, the EFH and habitat with the potential to be affected by the Preferred Alternative constitutes a very small portion of the available EFH and habitat within the New York Harbor Estuary waters (<0.1 percent). The proposed embayments would be of comparable size with improved habitat conditions, including the elimination of bridges that shade aquatic habitat, which can reduce benthic organism productivity and biomass. In addition, the provision of habitat enhancements designed for the recruitment of shellfish and other aquatic life along East River Park is also being explored as design advances. Specific elements of the new embayments include EConcrete® tidal pools, pile jackets installed on the existing steel esplanade piles, as well as an armor block breakwater at the southern embayment. A consultation discussing the details of the Preferred Alternative has been completed with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA NMFS) as required by the FWCA, Magnuson Stevens Fishery Conservation and Management Act, the Endangered Species Act, and the Clean Water Act.</p>

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Environmental Effects During the Operational Period	
Hazardous Materials	<p>No significant adverse effects</p> <p>Impact avoidance measures: Implementation of Site Management Plans (SMPs), that address long-term management of residual hazardous materials</p> <p>The Preferred Alternative would involve demolition and excavation activities and would have the potential to disturb hazardous materials in existing structures and the subsurface. However, with the implementation of appropriate protection measures the potential for significant adverse effects related to hazardous materials would be avoided. Following construction, with the capping layer in landscaped areas and the implementation of Site Management Plans (SMPs) that address long-term management of residual hazardous materials, there would be no pathways for exposure to park users from remaining subsurface contaminants beneath the project construction areas. Therefore, the Preferred Alternative would not have the potential for significant adverse effects related to hazardous materials during the operational stage of the proposed project. In addition, as the alignment of the Preferred Alternative includes areas that have not been fully characterized (e.g., the line of protection in East River Park, two interceptor gate house locations), additional soil and groundwater testing is also to be implemented in both Project Areas One and Two, in accordance with a work plan and Health and Safety Plan (HASP) submitted to the New York City Department of Environmental Protection (DEP) for review and approval for the purposes of identifying any soil groundwater contamination at these locations.</p>
Water and Sewer Infrastructure	<p>No significant adverse effects</p> <p>The Preferred Alternative proposes to move the line of flood protection in East River Park into the park, thereby protecting both the community and the majority of the park from design storm events, as well as increased tidal inundation resulting from sea level rise. The existing sewer system would be modified to isolate the drainage protected area⁶ from the larger sewershed during design storm events to prevent coastal floodwaters from inundating the drainage protected area. The existing sewer system would also be modified to increase its capacity to convey wet-weather flows during design storm events with coincident rainfall events, thereby managing flooding within the drainage protected area. The Preferred Alternative would also reconstruct and reconfigure the park's underground sewer and water infrastructure, including outfalls and their tide gates within the park, to withstand the loads of the proposed flood protection system and elevated parkland. The Preferred Alternative would be consistent with the Clean Water Act, CSO Control Policy, and the CSO Abatement Program and CSO Long-Term Control Plan. Therefore, there would be no adverse effects to sewer infrastructure as a result of implementation of the Preferred Alternative.</p>
Transportation	<p>No significant adverse effects</p> <p>Impact avoidance measures: Traffic Management Plans during the deployment, testing, and maintenance of the closure structures</p> <p>The Preferred Alternative is a reconstruction of the existing recreational elements in the park; therefore, the Preferred Alternative would not generate any new travel demand upon its completion or significantly affect traffic, transit, or pedestrian operations within the project area. Modifications to the streets attributable to the Preferred Alternative (e.g., conversion of East 10th Street from two-way to one-way eastbound) would also not significantly affect vehicle or pedestrian circulation patterns. Therefore, the Preferred Alternative would not result in significant adverse traffic, transit, and pedestrian effects during non-storm conditions. The <i>CEQR Technical Manual</i> states that if a quantified traffic analysis is not required, it is likely that a parking assessment is also not warranted. Therefore, a quantified parking analysis is not warranted, and the Preferred Alternative would similarly not be expected to result in any significant adverse parking effects during non-storm conditions.</p>

⁶ The drainage protected area encompasses the project protected area as well as the lateral sewers, regulators, outfalls, and other sewer infrastructure that serve or are tributary to those that serve the project protected area.

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Transportation (cont'd)	During a storm event and the periodic testing and maintenance of closure structures, certain streets, FDR Drive ramps, and segments of the FDR Drive adjacent to the closure structures would need to be temporarily closed to traffic/pedestrian use. The periodic testing and maintenance of closure structures would be temporary in nature and where feasible, would occur during off-peak hours with the necessary traffic management systems in place and therefore would not result in significant adverse effects on transportation systems. During testing and maintenance of the closure structures or under a design storm condition, access and circulation near the project area, including the Waterside Plaza complex, would be temporarily affected. Any testing and maintenance of the closure structures will be coordinated between NYCDOT, New York Police Department (NYPD), the New York City Fire Department (FDNY), and NYC Parks, to ensure emergency access routes are maintained in a coordinated manner using alternate routes.
Neighborhood Character	No significant adverse effects The Preferred Alternative would provide flood protection, increased access, and enhanced and reconfigured open spaces. The Preferred Alternative would provide additional protection for the majority of East River Park from coastal surge events and periodic inundation as a result of sea level rise. These resiliency measures, including elevating East River Park, would enhance park public access, operations, functionality, and usability during pre- and post-storm periods. These additional resiliency measures would not negatively alter or affect current uses or other features that define the character of neighborhoods within the study area but would enhance the long-term resiliency of a critical neighborhood asset. The Preferred Alternative would also provide resiliency for these open spaces and protect park resources from future design storms, thereby providing neighborhood benefits. Therefore, upon completion of construction, the Preferred Alternative is not expected to result in substantial changes to neighborhood character.
Environmental Justice	No significant adverse effects Based on the environmental analyses performed for the Preferred Alternative, no minority or low-income communities would be disproportionately or adversely impacted. In addition, all residents in the project area including minority and low-income populations would benefit from the proposed coastal flood protection. Therefore, it is concluded that the proposed project would not result in any adverse effects with respect to environmental justice.

CONSTRUCTION (SHORT-TERM) EFFECTS OF THE PREFERRED ALTERNATIVE

The FEIS included an assessment of construction activities associated with the Preferred Alternative based on the current level of engineering design. While the techniques ultimately utilized for the project may vary to some degree, the FEIS presented the most likely, worst-case scenario for construction of the project. The FEIS identifies that construction of the Preferred Alternative would result in a potential for a significant adverse effect on open space, transportation, and noise. **Table 3** identifies the potential environmental effects of the Preferred Alternative during construction. Measures to mitigate these adverse environmental effects as well as measures to minimize or avoid effects were identified in the FEIS and are summarized in **Section 8** below. Furthermore, subsequent to the FEIS, to minimize the significant adverse effects due to construction under the Preferred Alternative, the City has committed to additional project enhancements, including implementing a phased construction plan, flood proofing the Fireboat House and reconstructing the bulkhead and support structures beneath this section of the waterfront esplanade, reconstructing a canopy structure at the proposed East River Park amphitheater, adding a comfort station at the redesigned Murphy Brothers Playground, elevating the area south of the amphitheater, and revising the esplanade structural support design at the existing and proposed embayments. The details of the modified Preferred Alternative have been analyzed in Tech Memo 001 dated November 12, 2019 (see **Appendix C**).

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Table 3

Summary of Environmental Effects of the Preferred Alternative—Construction Period

Preferred Alternative: Flood Protection System with a Raised East River Park (Alternative 4)	
Environmental Effects During the Construction Period	
Construction— Socioeconomics	<p>No significant adverse effects</p> <p>Construction activities would not directly displace businesses, nor would they require the temporary closure of businesses within or surrounding the project area, including businesses on routes of access to/from construction sites. NYC Parks will work with the operators of two pushcarts and a tennis pro concessionaire, regarding accommodation options during project construction. Construction activities would, at times, affect pedestrian and vehicular access in the immediate vicinity of construction activities. However, construction activities in the project area are located at a sufficient distance from businesses such that access to businesses would not be impeded. Lane and/or sidewalk closures and construction staging areas would not obstruct entrances to any existing businesses, or obstruct major thoroughfares used by customers. Businesses would not be significantly affected by any temporary reductions in the amount of pedestrian foot traffic or vehicular delays that could occur as a result of construction activities. The temporary use of properties during construction would not result in any impacts on socioeconomic conditions. Therefore, construction activities associated with the Preferred Alternative would not generate significant adverse socioeconomic effects during construction.</p>
Construction— Open Space	<p>Significant adverse effects: Temporary displacement of recreational facilities and open space amenities, including sections of East River Park, over the 5-year construction period; significant adverse noise effects at the Asser Levy Recreation Center.</p> <p>Mitigation measures: On-site and off-site measures to mitigate the effect to the greatest extent practicable are being implemented by the city, including accommodating youth permit users within existing facilities under the NYC Parks jurisdiction; working with other entities with open space resources, such as the DOE and NYCHA, to identify recreational resources that may be opened to the community during construction; implementing a Lower East Side greening program and planting up to 1,000 trees in parks and streets and up to 40 bioswales which started in the fall of 2019; purchasing solar lighting to be used at 6 Lower East Side parks to extend playing time at fields for permitted use during construction; improving the synthetic turf at 7 park locations; installing new sports coating at seven sites; painting playgrounds and park equipment at up to 16 parks; enhancing existing Parks barbecue areas; identifying alternative tennis locations; increasing staffing for recreation and maintenance and operations; and exploring open space improvements at Waterside Pier. In addition, the NYCDOT will re-route bicyclists to the on-street bike network, primarily the protected bike lanes along First Avenue and Second Avenue, as well as those on Allen Street/Pike Street and Clinton Street and is committed to expanding the City's bicycle network, including adding more protected bike lanes. These measures will partially mitigate construction effects on open space resources. In addition, the City has identified a phased construction approach to allow parts of East River Park to remain open throughout the construction period. Refer to "Construction—Noise and Vibration" below for potential noise mitigation measures on open space resources during construction. Furthermore, to minimize the construction effects under the Preferred Alternative, since the release of the FEIS, the City has committed to additional project enhancements, including implementing a phased construction plan, flood proofing the Fireboat House and reconstructing the bulkhead and support structures beneath this section of the waterfront esplanade, reconstructing a canopy structure at the proposed East River Park amphitheater, adding a comfort station at the redesigned Murphy Brothers Playground, elevating the area south of the amphitheater, and revising the esplanade structural support design at the existing and proposed embayments.</p> <p>The Preferred Alternative would result in temporary significant adverse direct and indirect effects on open space. However, subsequent to the FEIS, the City has developed and committed to a revised construction phasing plan that will keep nearly half of East River Park open throughout the construction period, thus ensuring that local residents will have access to portions of East River Park during construction. The construction open space effects with the revised construction phasing plan under the modified Preferred Alternative have been substantially reduced from the Preferred Alternative analyzed in the FEIS as nearly half of East River Park would remain open from fall of 2020 through winter of 2025. Although the modified Preferred Alternative extends the temporary significant adverse effects on the availability of open space identified in the FEIS to 2024 and 2025, a majority of construction activities under the modified project would start in the fall of 2020 instead of the spring of 2020, such that these temporary significant adverse open space effects would be extended for approximately 1.5 years in portions of the park. Under the modified Preferred Alternative, the significant effects would also be lessened because approximately half of the open spaces in East River Park between the fall of 2020 and winter of 2025 would remain available for public use while under the Preferred Alternative presented in the FEIS, the entire park would be closed while construction was ongoing. Therefore, over the course of construction, there will be greater availability of active and passive open space available to the public under the modified project.</p>

National Environmental Policy Act and New York State Environmental Quality Review Act, and City Environmental Quality Review

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Environmental Effects During the Construction Period	
Construction— Open Space (cont'd)	<p>Although there is the potential for temporary significant adverse effects on open space during construction for the 2021 to 2025 analysis years under the revised construction phasing plan, once completed, the modified Preferred Alternative would have a positive direct effect on East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, and Asser Levy Playground as it would provide the public with refurbished and improved open spaces. The modified Preferred Alternative would result in reconstructed open space resources with upgraded facilities and improved connectivity that would ultimately enhance the user experience of these open space resources.</p>
Construction— Historic and Cultural Resources	<p>No significant adverse effects</p> <p>Impact avoidance measures: Archaeological testing and Construction Protection Plans (CPPs) and monitoring where needed to avoid impacts to structures as stipulated in the PA.</p> <p><u>Archaeological Resources</u> Two Phase 1A Archaeological Documentary Studies were prepared for the Area of Potential Effects (APE) in March 2016, and a Supplemental Phase 1A Archaeological Documentary Study was prepared in March 2019. The March 2016 reports identified the following broad categories of historic-period archaeological resources that could be located in the APE—river bottom remains, landfill retaining structures and landfill deposits, historic street bed resources, and former city block resources. Because of the potential presence of these resources, as mitigation, additional archaeological investigation will be performed in accordance with Section 106 regulations, based on a scope of work reviewed and approved by New York City Landmarks Preservation Commission (LPC) and the State Historic Preservation Office (SHPO); The additional archaeological investigation is stipulated in a PA.</p> <p><u>Architectural Resources</u> Construction of the Preferred Alternative would directly affect the FDR Drive, which is an architectural resource that has been determined eligible for listing on the S/NR (#1, S/NR-eligible). Therefore, as stipulated in the PA, the City, in consultation with LPC and SHPO, will develop and implement a CPP for the FDR Drive to avoid inadvertent construction-period damage from ground-borne vibrations (i.e., from pile driving), falling debris, collapse, dewatering, subsidence, or construction equipment. The plan will follow the guidelines of DOB's <i>TPPN #10/88</i>, which "requires a monitoring program to reduce the likelihood of construction damage to adjacent historic structures and to detect at an early stage the beginnings of damage so that construction procedures can be changed." It is expected that the CPP will also be prepared in accordance with LPC's guidance document <i>Protection Programs for Landmarked Buildings</i> and the National Park Service's <i>Preservation Tech Notes, Temporary Protection #3: Protecting a Historic Structure during Adjacent Construction</i>. In addition, construction affecting the FDR Drive will be coordinated with NYCDOT to ensure that it is protected during construction of the Preferred Alternative.</p> <p>Construction under the Preferred Alternative would occur within 90 feet of the following architectural resources: the FDR Drive (#1, S/NR-eligible); Williamsburg Bridge (#2, S/NR-eligible); East River Bulkhead (#3, S/NR-eligible); Engine Co. 66 Fireboat House (#4, S/NR-eligible); Gouverneur Hospital (#5, S/NR); Gouverneur Hospital Dispensary (#6, S/NR-eligible); a portion of the Vladeck Houses within the Lower East Side Historic District (#7, S/NR); a portion of the Baruch Houses (#9, S/NR-eligible); the Asser Levy Public Baths (#12, S/NR, NYCL); a portion of the East River Housing Cooperative (#13, S/NR-eligible); a portion of the Jacob Riis Houses (#15, S/NR-eligible); a portion of Stuyvesant Town (#16, S/NR-eligible); and a portion of Peter Cooper Village (#17, S/NR-eligible). Therefore, as stipulated in the PA, the City, in consultation with LPC and SHPO, will develop and implement CPPs for these architectural resources to avoid inadvertent construction-period damage from ground-borne vibrations, falling debris, collapse, dewatering, subsidence, or construction equipment.</p>
Construction— Urban Design and Visual Resources	<p>No significant adverse effects</p> <p>It is anticipated that the portion of East River Park under construction would be fenced off to keep the public out of the working areas. The closed and fenced East River Park during construction would obstruct views from the FDR Drive and the upland neighborhood towards the East River. Therefore, construction of the Preferred Alternative could detract the experience of pedestrians in the vicinity and would have temporary adverse visual effects. In addition, the pedestrian experience in the vicinity of the existing bridge landings would temporarily be adversely affected during construction and views of the East River would be temporarily blocked. Murphy Brothers Playground, Stuyvesant Cove Park, Asser Levy Playground, and a portion of</p>

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	<p>Captain Patrick J. Brown Walk would be closed and temporarily fenced off during construction. Closure of these open space resources would detract from the experience of pedestrians in the immediate vicinity and would also cause temporary adverse effects on the urban visual context.</p>
Construction— Natural Resources	<p>No significant adverse effects</p> <p>Impact avoidance measures: Trees will be replaced or replanted in accordance with a NYC Parks-approved Landscape Restoration Plan and restitution; a Stormwater Pollution Prevention Plan (SWPPP) and a Spill Prevention, Control, and Countermeasure Plan (SPCCP) will be implemented; cushion block, turbidity curtains or turbidity booms employed; installation of cofferdams for outfalls will occur outside of National Marine Fisheries Service (NMFS) in-water restrictions.</p> <p>Construction of the Preferred Alternative will be performed in accordance with all applicable rules and regulations of USACE, EPA, NOAA/NMFS, NYSDEC, DEP, DDC, and other regulatory agencies and procedures.</p> <p>Construction of the Preferred Alternative includes the following in-water elements: the use of construction barges, the installation of shafts to support a shared-use flyover bridge, the reconstruction of sewer outfalls, the demolition of the existing bulkhead for the installation of a new cut-off wall, the rehabilitation of the platform and bulkhead of the Fireboat House, and the demolition of the existing embayments and existing piles and formwork associated with the esplanade in these areas. These construction activities have the potential to result in temporary adverse effects to NYSDEC littoral zone tidal wetlands and USACE Waters of the United States, surface water resources, benthic resources, essential fish habitat (EFH), and threatened and endangered species. Turbidity curtains and booms, water-tight cofferdams, and debris nets will be used as applicable to minimize the potential for these effects.</p> <p>Consultation with NOAA's NMFS identified two endangered species, the shortnose sturgeon and Atlantic sturgeon, as potentially occurring within the study area. EFH and FWCA species were also identified and analyzed for potential impacts due to construction of the Preferred Alternative. The City has committed to using the following BMPs for applicable construction practices to minimize impacts to Endangered Species Act (ESA)-listed species, EFH, and FWCA species:</p> <ul style="list-style-type: none"> • Turbidity curtains to prevent sediment from entering the East River waterbody to the maximum extent practicable • Debris nets to minimize the amount of debris falling into the waterway • Cushion blocks to dampen the noise of the pile hammer • Ramping up pile driving gradually to give fish opportunities to vacate the construction area • Bubble curtains to reduce underwater sound levels of pile driving <p>A consultation discussing the details of the Preferred Alternative has been completed with NOAA NMFS as required by the FWCA, Magnuson Stevens Fishery Conservation and Management Act, the Endangered Species Act, and the Clean Water Act. NOAA NMFS recommended the following conservation measure in addition to the BMPs to avoid impacts to EFH and FWCA species:</p> <ul style="list-style-type: none"> • Avoid installing cofferdams within winter flounder early life stage EFH between January 15 and May 31 to minimize impacts to winter flounder eggs and larvae <p>Upon completion of construction, the spuds, barges, cofferdams, turbidity curtains and debris nets will be removed, and the affected area will be allowed to naturally restore to pre-construction conditions. Therefore, while there would be adverse effects to NYSDEC and USACE regulated tidal wetlands resulting from construction of the Preferred Alternative, they would not significantly adversely affect natural resources in the area.</p> <p>In addition, temporary adverse effects to terrestrial resources due to the removal of trees are anticipated as a result of both construction of the proposed project and to accommodate the proposed design for the Preferred Alternative. The project will implement a comprehensive planting program as part of a landscape restoration plan and restoration for the tree removals in combination with \$32.9 million dollars in restitution payments will be provided in compliance with Chapter 5 of Title 56 of the Rules of New York (NYC Parks Rules) and Local Law 3 of 2010. Within a half-mile radius of the project area, a total of 183 acres of tree canopy cover will be available for birds and other wildlife to seek temporary replacement habitat. Within the 183 acres, 5.6 acres is made up of community gardens, which provide diverse plant life and suitable habitat for insects, including</p>

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Environmental Effects During the Construction Period	
	monarch butterflies and bumblebees. Therefore, no significant adverse effects to terrestrial resources are anticipated as a result of construction of the Preferred Alternative. No significant adverse effects to other natural resources are anticipated.
Construction— Hazardous Materials	<p>No significant adverse effects</p> <p>Impact avoidance measures: Implementation of all applicable regulatory requirements and a Remedial Action Plan (RAP), a Construction Health and Safety Plan (CHASP), and a Mitigation Work Plan (MWP).</p> <p>The Preferred Alternative has the potential to disturb subsurface hazardous materials in existing structures and the subsurface, as it would involve demolition and excavation activities. However, with the implementation of appropriate measures governing the construction (such as air monitoring, proper storage and handling of materials, and, if required, odor suppression), the potential for significant adverse effects related to hazardous materials would be avoided.</p>
Construction— Water and Sewer Infrastructure	<p>No significant adverse effects</p> <p>Construction of the Preferred Alternative will be performed in accordance with all methods and standards approved by NYSDEC, DEP, DDC and other appropriate regulatory agencies and procedures. Prior to excavation, interferences with existing water and sewer infrastructure would be identified. Existing water and sewer infrastructure would be protected, supported, and maintained in place throughout the duration of work. Water mains and sewers will be replaced, where required, per DEP and DDC standards. All construction activity associated with drainage isolation, drainage management, infrastructure reconstruction, or relocation/replacement of existing water and sewer infrastructure would be undertaken without affecting the conveyance of flow through the water or combined sewer system. This work will be performed throughout the duration of construction in accordance with methods and standards approved by DEP and DDC. Therefore, no disruption to existing water or sewer services is anticipated, and no adverse impacts to water or sewer infrastructure would occur.</p>
Construction— Energy	<p>No significant adverse effects</p> <p>Impact avoidance measures: measures will be taken to minimize vibration, to carefully control excavation around existing infrastructure, and to manage the placement of fill and soil stockpiles.</p> <p>The Preferred Alternative would involve excavation, pile driving, and other potentially disruptive construction activities in proximity to existing energy transmission and generation infrastructure. To avoid potential adverse effects, protective measures will be implemented to ensure that construction of the proposed project would not disrupt the function of this infrastructure and the electrical supply in Lower Manhattan.</p>
Construction— Transportation	<p>Significant adverse effects: Significant adverse traffic effects at the intersections of East 23rd Street and First Avenue and East 23rd Street and Avenue C during the 6:00 to 7:00 AM construction analysis peak traffic hour; temporary significant adverse effects for users of the East River bikeway/walkway.</p> <p>Mitigation measures: Traffic effects could be fully mitigated with standard traffic mitigation measures (e.g., signal timing changes); pedestrian/bicyclist rerouting plan.</p> <p>Construction of the Preferred Alternative would generate 251 passenger car equivalents (PCEs) during the 6:00 to 7:00 AM peak hour and 131 PCEs during the 3:00 to 4:00 PM peak hour, exceeding the <i>CEQR Technical Manual</i> analysis threshold of 50 vehicle trips. Based on this trip generation, traffic assignments were prepared and six intersections for the AM peak hour and one intersection for the PM peak hour were selected for detailed traffic analysis. The analysis disclosed temporary significant adverse traffic effects at the intersections of East 23rd Street and First Avenue and East 23rd Street and Avenue C during the AM peak hour. However, these effects could be fully mitigated by implementing standard traffic mitigation measures (e.g., signal timing changes). Additionally, with the full reconstruction of East River Park, barging of fill materials to East River Park could be employed, thereby reducing the volume of truck trips from what would otherwise be needed to reconstruct and raise the park.</p>

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Table 3

Summary of Environmental Effects of the Preferred Alternative—Construction Period

Preferred Alternative: Flood Protection System with a Raised East River Park (Alternative 4)	
Environmental Effects During the Construction Period	
Construction— Transportation (cont'd)	<p>An inventory of on- and off-street parking within a ¼-mile radius of the project area showed approximately 70 on-street parking spaces available near Project Area One and 30 on-street parking spaces available near Project Area Two. The off-street survey showed approximately 60 spaces available near Project Area One and 800 spaces available near Project Area Two. Construction under the Preferred Alternative is anticipated to generate a maximum parking demand of 92 spaces for Project Area One and 52 spaces for Project Area Two. In addition to the construction parking demand, up to 50 off-street parking spaces could be temporarily displaced during construction at the East River Housing Corporation surface parking lot. The Project Area Two parking demand would be fully accommodated by the large inventory of available on- and off-street parking spaces near the project area. The Project Area One demand would not be fully accommodated within ¼-mile and could result in a parking shortfall of up to approximately 35 spaces. It is expected that excess parking demand within Project Area One would need to be accommodated by on-street parking or off-street parking beyond a ¼-mile walk from the project area. Alternatively, motorists could choose other modes of transportation. As stated in the <i>CEQR Technical Manual</i>, a parking shortfall resulting from a project located in Manhattan does not constitute a significant adverse parking impact, due to the magnitude of available alternative modes of transportation. Therefore, construction of the preferred Alternative would not result in any significant adverse parking effects.</p> <p>Construction of the Preferred Alternative would generate 144 transit trips (total of Project Area One and Project Area Two) during the peak hour of the peak construction period, below the <i>CEQR Technical Manual</i> analysis threshold of 200 transit trips. Therefore, construction of this alternative would not result in any significant adverse transit effects.</p> <p>Construction under the Preferred Alternative would generate 200 pedestrian trips for Project Area One and 112 pedestrian trips for Project Area Two. Given the number of available pedestrian routes to/from area parking facilities and transit services and the various access/egress points to the East River Park, no sidewalks or crosswalks are expected to experience 200 or more pedestrian trips during an hour. However, because this alternative would require a rerouting of the bikeway/walkway along the proposed project area to inland routes, it is concluded to result in temporary significant adverse effects for users of the East River bikeway/walkway. Thus, the Preferred Alternative will develop and implement a rerouting plan.</p>
Construction— Air Quality	<p>No significant adverse effects</p> <p>Impact avoidance measures: Measures will be taken to reduce pollutant emissions, including dust suppression measures, idling restriction, and the use of ultra-low sulfur diesel (ULSD) fuel and best available tailpipe reduction technologies.</p> <p>Measures will be taken to reduce pollutant emissions during construction in accordance with all applicable laws, regulations, and building codes as well as New York City Local Law 77. These include dust suppression measures, idling restriction, and the use of ultra-low sulfur diesel (ULSD) fuel and best available tailpipe reduction technologies. With the implementation of these emission reduction measures, construction of the Preferred Alternative would not result in any predicted concentrations above the National Ambient Air Quality Standards (NAAQS) for nitrogen dioxide (NO₂), carbon monoxide (CO), and particulate matter (PM₁₀ or the <i>de minimis</i> thresholds for PM_{2.5}) from nonroad and on-road sources. Therefore, no significant adverse air quality impacts are predicted from the construction of the Preferred Alternative. Annual emissions from nonroad and on-road sources over the scheduled construction duration would not exceed any of the <i>de minimis</i> criteria defined in the general conformity regulations. Therefore, construction of the Preferred Alternative would conform to the relevant State Implementation Plan (SIP) and does not require a general conformity determination.</p>

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Table 3

Summary of Environmental Effects of the Preferred Alternative—Construction Period

Preferred Alternative: Flood Protection System with a Raised East River Park (Alternative 4)	
Environmental Effects During the Construction Period	
Construction—Greenhouse Gas	<p>No significant adverse effects</p> <p>Impact avoidance measures: Potential measures for further reductions of emissions under consideration may include the use of biodiesel, expanded use of recycled steel and aluminum, and construction waste reduction.</p> <p>The total fossil fuel use in all forms associated with construction under the Preferred Alternative would result in up to approximately 48,889 metric tons of CO₂e emissions. Potential measures for further reductions of emissions from construction of the Preferred Alternative are under consideration and may include the use of biodiesel, expanded use of recycled steel and aluminum, as well as expanded construction waste reduction. The City is seeking to achieve verification under the Envision rating system, version 3. The Envision rating system focuses on five categories (Quality of Life, Leadership, Resource Allocation, Natural World, and Climate/Resilience). The proposed project will pursue the design verification pathway with post-construction review follow-up in order to maintain the Envision verification status. Projects verified under the Envision rating system are able to demonstrate a sustainable and resilient infrastructure design. In addition, the City is currently evaluating specific energy efficiency measures and design elements that may be implemented, and is seeking to achieve certification under the Leadership in Energy and Environmental Design (LEED) for Building Design and Construction rating system, version 4. The City will target achieving at minimum LEED Silver for the comfort station, tennis center, equipment storage building, and maintenance buildings.</p>
Construction—Noise and Vibration	<p>Significant adverse noise effects: Predicted at sensitive receptor locations near the flood protection alignment and the reconstructed pedestrian bridges.</p> <p>Mitigation measures: Potential to partially mitigate the effects to the greatest extent practicable are being implemented by the City include noise level restrictions for certain night-time and weekend activities, increases usage of barges of materials deliveries, and selection of quieter equipment models.</p> <p>No significant adverse vibration effects</p> <p>Impact avoidance measures: CPPs and monitoring where needed to avoid impacts to structures as stipulated in the PA.</p> <p>Construction of the Preferred Alternative is predicted to result in significant adverse noise effects at 621 Water Street, 605 Water Street, 315-321 Avenue C, 620 East 20th Street, 601 East 20th Street, 8 Peter Cooper Road, 7 Peter Cooper Road, 530 East 23rd Street, 765 FDR Drive, 819 FDR Drive, 911 FDR Drive, 1023 FDR Drive, 1115 FDR Drive, 1141 FDR Drive, 1223 FDR Drive, 570 Grand Street, 455 FDR Drive, 71 Jackson Street, 367 FDR Drive, 645 Water Street, 322 FDR Drive, 525 FDR Drive, 555 FDR Drive, 60 Baruch Drive, 132 Avenue D, 465 East 10th Street, 520 East 23rd Street, 123 Mangin Street, and the Asser Levy Recreation Center. The predicted significant adverse construction noise effects would be of limited duration and would be up to the mid 80s dBA during daytime construction and up to the mid 70s dBA during nighttime construction. Noise levels in this range are typical in many parts of Manhattan along heavily trafficked roadways. The buildings at 315-321 Avenue C, 620 East 20th Street, 601 East 20th Street, 8 Peter Cooper Road, 7 Peter Cooper Road, 530 East 23rd Street, 911 FDR Drive, 1023 FDR Drive, 1115 FDR Drive, 1141 FDR Drive, 1223 FDR Drive, 570 Grand Street, 455 FDR Drive, 71 Jackson Street, 367 FDR Drive, 645 Water Street, 322 FDR Drive, 525 FDR Drive, 555 FDR Drive, 60 Baruch Drive, and 520 East 23rd Street already have insulated glass windows and an alternative means of ventilation (i.e., air conditioning), and would consequently be expected to experience interior L₁₀₍₁₎ values less than 45 dBA during much of the construction period, which would be considered acceptable according to CEQR criteria. The buildings at 621 Water Street, 605 Water Street, 765 FDR Drive, 819 FDR Drive, 132 Avenue D, 465 Avenue D, 123 Mangin Street, and the Asser Levy Recreation Center appear to have monolithic glass (i.e., non-insulating) and would consequently be expected to experience interior L₁₀₍₁₎ values up to the high 60s dBA, which is up to approximately 23 dBA higher than the 45 dBA threshold recommended for residential use according to CEQR noise exposure guidelines. Any of the above buildings or units within the above-mentioned buildings that do not have an alternate means of ventilation (i.e., air conditioning) to allow for the maintenance of a closed-window condition, would also be expected to experience interior L₁₀₍₁₎ values up to the high 60s dBA, which is up to approximately 23 dBA higher than the 45 dBA threshold recommended for residential use according to CEQR noise exposure guidelines.</p>

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Table 3

Summary of Environmental Effects of the Preferred Alternative—Construction Period

Preferred Alternative: Flood Protection System with a Raised East River Park (Alternative 4)	
Environmental Effects During the Construction Period	
Construction— Noise and Vibration (cont'd)	<p>At other receptors near the project area, including open space, residential, school, and hospital receptors, noise resulting from construction of the proposed project may at times be noticeable, but would be temporary and would generally not exceed typical noise levels in the general area and so would not rise to the level of a significant adverse noise effect. In addition, it is anticipated that construction activities around the Asser Levy outdoor pool would take place during the off-season of the pools (mid-September to early June) and not affect the operational season of the pools.</p> <p>At a minimum, vibration monitoring will be required for all historic structures within 90 feet of the project work areas according to the project's Construction Protection Plan (CPP) to ensure vibration levels do not exceed the acceptable limit to avoid damage. In terms of potential vibration levels that would be perceptible, the pieces of equipment that would have the most potential for producing levels that exceed the 65 VdB limit are pile drivers. They would produce perceptible vibration levels (i.e., vibration levels exceeding 65 VdB) at receptor locations within a distance of approximately 230 feet. However, the operation would only occur for limited periods of time at a particular location. While the vibration may be noticeable at times, it would be temporary and would consequently not rise to the level of a significant adverse effect. The need for additional vibration monitoring and reporting can also be implemented to avoid any construction related vibration impacts on non-historic structures.</p>
Neighborhood Character	<p>There would be temporary effects to neighborhood character under the Preferred Alternative during the construction period due to the displaced recreational facilities and open space amenities in both Project Areas One and Two, including East River Park, Murphy Brothers Playground, Stuyvesant Cove Park, Asser Levy Playground, and a portion of Captain Patrick J. Brown Walk, all of which would be temporarily enclosed by fencing as they are reconstructed. An enclosed East River Park would temporarily prohibit waterfront access and obstruct views from the FDR Drive and the upland neighborhood towards the East River. In addition, the pedestrian experience from the existing bridge landings would be temporarily eliminated. The Preferred Alternative would not adversely affect neighborhood socioeconomic conditions during construction and would not directly or indirectly displace any residents, businesses, or business corridors. Similarly, construction of the Preferred Alternative would avoid affecting the neighborhoods historic and archaeological resources by implementing CPPs and with pre-construction investigations to determine if there are any potential archaeological resources that may be of importance to the community. Construction would result in temporary traffic effects that are limited in location and which will be mitigated by implementing standard traffic mitigation measures; a rerouting plan for users of the East River bikeway/walkway will also be implemented. Noise emissions are also proposed and while project construction noise would at times and locations be noticeable, it would generally not rise to the level of a significant adverse noise effect across the neighborhood as a whole.</p>
Public Health	<p>No significant adverse effects</p> <p>The Preferred Alternative would not result in unmitigated significant adverse effects in air quality, water quality, or hazardous materials, but could potentially result in unmitigated significant adverse construction-period noise effects at receptors in the vicinity of the proposed project's construction work areas. However, construction of the proposed project would not result in chronic exposure to high levels of noise, prolonged exposure to noise levels above 85 dBA, or episodic and unpredictable exposure to short-term effects of noise at high decibel levels, as per the <i>CEQR Technical Manual</i>. Consequently, construction of the proposed project would not result in a significant adverse public health effect. In accordance with Executive Order (EO) 13045, Protection of Children from Environmental Health Risks and Safety Risks, an assessment of the proposed project's potential to affect children's health was conducted. The analysis concluded that the temporary significant adverse effects identified under the Preferred Alternative would not disproportionately affect children.</p>

INDIRECT AND CUMULATIVE EFFECTS OF THE PREFERRED ALTERNATIVE

Indirect Effects

This section of the FEIS evaluated any indirect effects, both adverse and beneficial, that may occur as a result of the Preferred Alternative. The CEQ regulations 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” (40 CFR 1508.8). Indirect effects can occur within the full range of affected areas, such as changes in land use,

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economic conditions, traffic congestion, air quality, noise, vibration, and water and natural resources. Examples of indirect effects can include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rates, and related effects on air and water and other natural systems. For the Preferred Alternative, this section evaluates any indirect social and economic effects such as the avoided costs associated with flood damage that would otherwise be incurred during design storm events, as well as the reduced likelihood of business closures due to flooding during a design storm event. Indirect hazardous materials effects are evaluated by describing how the proposed project would serve to reduce certain adverse effects associated with flooding, such as mobilization of existing contaminants (e.g., in soil or tanks), and generation of contaminants (e.g., mold or carbon monoxide).

Indirect Social and Economic Effects

The Preferred Alternative would not result in any new uses or activities that could markedly influence the study area's residential or commercial market and would not generate socioeconomic conditions that are substantively different from existing conditions and trends in the area. Therefore, it is concluded that the Preferred Alternative would not result in any indirect displacement effects.

The Preferred Alternative would also not introduce a new use to the project area that would substantively affect real property value. The project is not expected to affect trends in local property values and there are also multiple NYCHA housing developments where units are not subject to market rate influences.

Likewise, the Preferred Alternative is also not expected to result in increases in commercial rents that could lead to significant indirect business displacement pressures within the study area. First, to the extent that commercial rents are influenced by consumer spending, should there be some increase in visitation attributable to the Preferred Alternative, there are few businesses directly abutting the project area that would be affected by any increases in expenditure potential. Second, most of the businesses in the study area are located several blocks away from the project area, and not located on streets leading to the improved park connections across the FDR Drive, where businesses could be affected by any increased pedestrian traffic. Third, with multiple residential projects expected to be completed by 2025 and the associated increases in population and spending potential, any effects on commercial rent increases would be attributable to these projects and not the Preferred Alternative. Finally, although this alternative would provide park and neighborhood connection improvements, it does not present new uses or activities to the project area that could markedly influence the study area's commercial market.

Under the Preferred Alternative, residents and businesses within the 100-year floodplain in the socioeconomic study area would be less vulnerable to flooding during design storm events. Thus, the key objective of the proposed project—to respond quickly to the need for reliable coastal flood protection and resiliency for the design storm—would be met. Under the Preferred Alternative, there would be positive socioeconomic benefits due to the avoided costs associated with flood damage that would otherwise be incurred during storm events.

Indirect Hazardous Materials Effects

The Preferred Alternative, by reducing the likelihood of and extent of flooding of upland neighborhoods, would reduce the potential for hazardous materials effects due to flooding. This may include, for example, such as release of existing contaminants (e.g., in soil or tanks), and generation of new contaminants (e.g., mold or carbon monoxide). By avoiding or reducing the likelihood of these effects, the Preferred Alternative would have beneficial indirect effects related to hazardous materials.

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During Hurricane Sandy, many tanks were inundated and failed. Additionally, power failures resulting from flooding are known to result in increased incidents of carbon monoxide releases due to indoor use of portable space heaters and generators.

The Preferred Alternative requires excavation and off-site disposal of contaminated soils and removal and treatment of contaminated groundwater (as a result of dewatering). All this work must be performed in accordance with a RAP and a CHASP. Additionally, by implementing these measures there would be reductions, over the long term, in contaminant migration into the East River from the project area.

Lower Manhattan Coastal Resiliency (LMCR)-Two Bridges Project⁷

In addition to the Preferred Alternative, resiliency measures are being developed for the Two Bridges neighborhood immediately south of the proposed project area. The study area for the Two Bridges project is bounded by Montgomery Street on the north and the Brooklyn Bridge to the south and includes the esplanade under the FDR Drive, two crossings across South Street for the tie-backs, Pier 35/36, and the East River Waterfront. The City received funding through HUD's National Disaster Resilience Competition (NDRC) to initiate a coastal flood mitigation project in this area. The LMCR–Two Bridges Project is in the design phase. It proposes improvements that would similarly protect from coastal flooding and would create opportunities for new programming and enhanced community access (where possible) in the Two Bridges neighborhood. The approaches to providing flood protection with this project would be similar to those under the Preferred Alternative, include floodwalls and closure structures, and would also include a deployable flip-up barrier.

While the LMCR–Two Bridges Project will be subject to a separate environmental review under NEPA, SEQRA, and CEQR, the LMCR–Two Bridges Project could have similar indirect influence on socioeconomic and hazardous materials effects as those described above for the Preferred Alternative.

Cumulative Effects

The FEIS acknowledges cumulative effects by comprehensively defining the environmental setting expected in the No Action Alternative, which assumes that no new comprehensive coastal flood protection system is installed in the proposed project area by the 2025 analysis year (build year) presented in this FEIS. The cumulative effects analysis relied on the technical analyses of the FEIS and summarizes the Preferred Alternative's potential effects in combination with expected conditions in the future without the proposed project, including a description of the potential cumulative effects from the Preferred Alternative and projects listed in Appendix A1 of the FEIS planned to be completed within the 2025 analysis year, inclusive of the LMCR–Two Bridges Project. **Table 4** provides a summary of the relevant past, current, and future projects associated with the anticipated conditions in the future without the proposed project that could have a cumulative effect when considered in combination with Preferred Alternative, along with a description of reasonably foreseeable potential effects associated with each project.

Cumulative effects result from the incremental consequences of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions (40 CFR 1508.7) are presented in **Table 5**. The cumulative effects of an action may be undetectable when viewed in the individual context of direct and even indirect effects, but nevertheless can eventually lead to

⁷ Since the release of the FEIS, the Lower Manhattan Coastal Resiliency (LMCR)-Two Bridges Project, which is a separate project from the proposed project, has been renamed as the Brooklyn-Bridge Montgomery Coastal Resiliency (BMCR) project.

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a measurable environmental change. Cumulative effects are the net result of both the Preferred Alternative and other projects planned near and around the project site. According to the *CEQR Technical Manual*, cumulative effects are two or more individual effects on the environment that, when taken together, are significant or that compound or increase other environmental effects. As presented in **Table 5**, in consideration of the range of technical analyses presented in this EIS, the proposed project has little or no potential to result in any cumulative effects, except in the following areas: major beneficial cumulative effects for land use, zoning, and public policy under the operational period; moderate beneficial cumulative effects for socioeconomics under the operational period; major cumulative adverse effects for open space and noise during the construction period; and moderate cumulative adverse effects for transportation, hazardous materials, and public health during the construction period.

Land Use, Zoning, and Public Policy

The Preferred Alternative would be consistent with existing or planned land use, zoning, and public policies within the study area, and would be anticipated to have long-term beneficial effects to land uses within the study area from the improvement of open spaces and implementation of a comprehensive flood protection system, which would also greatly advance public policies that seek to improve access to open spaces, enhance open spaces, and provide coastal flood protection to Lower Manhattan.

Several planned projects will be completed in the land use, zoning, and public policy study area by the 2025 build year, including various residential and commercial development projects rezoning projects, open space projects, and resiliency projects. Several of the projects specifically involve alterations to land uses and zoning within the study area. However, these projects are subject to review under applicable City regulations, including CEQR and ULURP, and therefore would be anticipated to be largely consistent with long-term zoning and land use objectives for the study area. The open space and resiliency projects would be expected to result in long-term beneficial effects to land uses within the study area by improving or enhancing open spaces and providing protection from storm events, which would complement the long-term beneficial effect on land uses anticipated to result from implementation of the proposed project. Similarly, these projects would be anticipated to be compatible with public policies that seek to improve open spaces and consistent with the initiatives to protect Lower Manhattan from coastal surge events and provide access to waterfront parks as discussed in City and local plans. Therefore, it is concluded that cumulative land use effects would be major beneficial in the long-term.

Socioeconomics

The Preferred Alternative's flood protection system and open space and connectivity improvements, and the various residential and commercial development projects rezoning projects, open space projects, and resiliency projects in the study area, could lead to increases in residential property values and market rate rents by making the area more attractive as a residential neighborhood. Although the cumulative socioeconomic effects would be moderate beneficial in the long-term, the Preferred Alternative would not generate socioeconomic conditions that are very different from existing conditions and trends in the area. Potential increases in property values are not expected to result in cumulative significant adverse effects in the area of indirect residential displacement for the same reasons outlined in the "Indirect Social and Economic Effects," section, above.

Construction—Open Space

In combination with the construction under the Preferred Alternative, there is the potential for cumulative adverse effects on open space during overlapping periods of construction activities at nearby planned

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projects. Under the Preferred Alternative, the effects of construction on open space are significant and adverse and would occur over multiple analysis years due to the displacement of most park features within East River Park and Stuyvesant Cove Park in addition to closures of Asser Levy Playground and Murphy Brothers Playground. Although partial mitigation measures (as described in Chapter 6.2, “Construction—Open Space,” as well as the additional measures identified after the release of the FEIS as presented in Tech Memo 001 dated November 12, 2019) have been identified, it is concluded that there would be temporary significant adverse effects on open space during construction under the Preferred Alternative.

Construction—Noise

The cumulative construction effects on noise resulting from the proposed project and other projects near the project area would be dependent on the construction schedules and peak construction intensity of each project. Taking into consideration the varying construction schedules per project, the construction of the proposed projects under the No Action Alternative, including Pier 42 just south of the project area and Solar One Environmental Education Center in Project Area Two, would occur at the same time as construction under the proposed project. Significant adverse construction noise effects for these No Action projects are expected to be similar to those under the Preferred Alternative. Depending on the construction schedule and peak construction intensity of each project, this adverse effect could be exacerbated by the concurrent construction of other projects within or immediately adjacent to the project area, further increasing the temporary noise effects within the study area. Therefore, there is potential for cumulative significant adverse noise effects during construction. However, similar to the Preferred Alternative, it is expected the No Action projects will implement path and source control measures required by the *New York City Noise Control Code* to minimize noise emissions.

Construction—Hazardous Materials

Subsurface investigation of the project area identified areas with subsurface contamination consistent with wastes from historical MGP contamination and, throughout the project area, as expected, historical fill material. Under the No Action Alternative, no new comprehensive coastal flood protection systems would be installed, but a number of projects planned or under construction in the project area might disturb hazardous materials, possibly including MGP wastes, and potentially increase pathways for human or environmental exposure. Additional procedures would need to be set out for projects in the study area, including Pier 42 and Solar One Environmental Education Center in the project area.

The Preferred Alternative would have the potential for significant adverse effects related to hazardous materials since it involves both demolition and excavation. However, with the implementation of appropriate protection measures governing the construction and operational phases, the potential for significant adverse effects related to hazardous materials will be mitigated. Similarly, the planned projects in the study area might disturb the subsurface and any hazardous materials present there, and potentially increase pathways for human or environmental exposure. However, these projects will also need to comply with applicable regulatory requirements. Therefore, no significant adverse cumulative effects to hazardous materials as a result of the Preferred Alternative and the other projects in the study area are expected.

Construction—Transportation

Several planned large-scale development projects will be under construction in the study area at the same time as the Preferred Alternative. These projects include, but are not limited to, Brookdale Campus, One Manhattan Square/Extell, Alexandria Phase 3, and the Two Bridges development. The cumulative construction effects on transportation resulting from the Preferred Alternative and other projects within the

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transportation study area would be dependent on the construction schedules and peak construction intensity of each project. Typically, construction managers for simultaneous projects on nearby construction sites within New York City would generally coordinate their activities to avoid delays and inefficiencies. Further, Maintenance and Protection of Traffic (MPT) plans will be developed for any temporary curb-lane, sidewalk, and roadway closures. Under the Preferred Alternative, during the installation of closure structures (including gates and associated foundations) across the FDR Drive near East 13th Street as per the preliminary designs, the FDR Drive may require a temporary full closure during construction. Depending on the type of closure and the duration, vehicular traffic from the FDR Drive would need to be diverted to the local roadways in the study area. Approval of the MPT plans and implementation of all temporary closures during construction will be coordinated with NYCDOT's Office of Construction Mitigation and Coordination (OCMC). Therefore, taking into consideration these factors and the varying construction schedules per project, the cumulative construction transportation effects from the proposed project and nearby proposed projects within the study area could be moderately significant. These effects may be mitigated with the implementation of standard traffic mitigation measures such as signal timing changes and lane restriping.

If additional road closures were needed as part of any other No Action projects then additional significant adverse traffic effects could also be identified during construction.

Construction—Public Health

As presented in FEIS Chapter 6.13, "Construction—Public Health," the analyses concluded that the Preferred Alternative would not result in unmitigated significant adverse effects in air quality, water quality, or hazardous materials. The analysis presented in Chapter 6.12, "Construction—Noise and Vibration," determined that construction activities could potentially result in unmitigated significant adverse construction-period noise effects at receptors in the vicinity of construction work areas. However, construction of the Preferred Alternative would not result in chronic exposure to high levels of noise, prolonged exposure to noise levels above 85 dBA, or episodic and unpredictable exposure to short-term effects of noise at high decibel levels, as per the *CEQR Technical Manual*. Similarly, under the No Action Alternative, a number of projects planned or under construction in the project area might also result in significant adverse noise effects. However, similar to the Preferred Alternative, it is expected the No Action projects will implement path and source control measures required by the *New York City Noise Control Code* to minimize noise emissions. Therefore, no significant adverse cumulative effects to public health as a result of the Preferred Alternative and the other projects in the study area are expected. With the implementation of the Preferred Alternative, residents would be less vulnerable to flooding during design storm events. Combining with other resiliency projects in the study area, including NYCHA and the LMCR-Two Bridges projects, the cumulative effects of the Preferred Alternative and these resiliency projects are anticipated to have long-term beneficial effects to the residents in the study area.

National Environmental Policy Act and New York State Environmental Quality Review Act, and City Environmental Quality Review

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Table 4

No Action Projects with the Potential for Cumulative Effects

Project	Description	Potential for Cumulative Effects with Preferred Alternative
Relevant Past Projects		
Con Edison Resiliency Upgrades	Upgrades to power generating facilities and installation of flood protection measures	Proposed project would provide flood protection for critical power infrastructure
Citywide Ferry Service	Expansion of ferry service throughout New York City	Proposed project would not impede ferry terminal service
VA Hospital Resiliency Upgrades	Installation of flood protection measures	Proposed project would further enhance flood protection for this community facility
Relevant Current and Reasonably Foreseeable Future Projects		
Resiliency Projects		
LMCR–Two Bridges Project	Resiliency measures for the Two Bridges neighborhood immediately south of the proposed project area	This project is similar in purpose to the proposed project and could have the potential to result in cumulative effects in natural resources and visual resources as well as open space and transportation during construction, and the potential for cumulative effects to visual resources upon project completion.
NYCHA Resiliency Projects	Various coastal flooding protection measures underway at Jacob Riis, Jacob Riis II, Lillian Wald, Campos Plaza II, Lavanburg, Baruch, and LaGuardia Houses, and Two Bridges Urban Renewal Area Site 7	Proposed project would further enhance flood protection and construction effects would not overlap
Open Space Projects		
Pier 42 – Phase IB	Construction of public waterfront open space	Would increase open space upon completion in 2021, there is a potential for construction of Pier 42 to overlap with construction of the proposed project.
Tompkins Square Park Reconstruction	Reconstruction of two playgrounds in Tompkins Square Park with new play equipment, safety surfacing, spray showers, seating, and fencing	Improved open space/public amenity; temporary loss of open space during construction. Potential to be open by September 2019 so there would not be cumulative temporary loss of open space resources.
Luther Gulick Playground Reconstruction	Reconstruction of playground facilities	Improved open space/public amenity; temporary loss of open space during construction. Potential to be re-opened by September 2020 so there would not be cumulative temporary loss of open space resources.
Corlears Hook Park Dog Run	Reconstruction of the dog run, adding stable ground surface, water features and dog waste containers, and replacing fencing	Improved open space/public amenity. The proposed project would not alter reconstruction activities and the peak construction periods would not overlap so there would not be cumulative effects for this project.
Baruch Playground Synthetic Turf Field Reconstruction	Reconstruction of turf field	Improved open space/public amenity. The proposed project would not alter reconstruction activities and the peak construction periods would not overlap so there would not be cumulative effects for this project.
Seward Park Reconstruction	Reconstruction of a portion of Seward Park	Improved open space/public amenity. The proposed project would not alter reconstruction activities and the peak construction periods would not overlap so there would not be cumulative effects for this project.
Solar One Environmental Education Center	Existing facility is proposed to be replaced with a new green arts and energy education center	Improved open space/public amenity; there is a potential for construction of the Solar One Center to overlap with construction of the proposed project.
HUD-The Trust for Public Land Green Playgrounds Program	Renovation and improvement of existing playground facilities at two public schools in the Two Bridges neighborhood	Improved open space/public amenity; the proposed project would not alter renovation activities and the construction periods would not overlap so there would not be cumulative effects for this project.
East River Waterfront Esplanade – Phase IV	Resurfacing, new seating, and play equipment between Catherine Slip and Pike Slip	Improved open space/public amenity; the proposed project would not alter activities and the construction periods would not overlap so there would not be cumulative effects for this project.

National Environmental Policy Act and New York State Environmental Quality Review Act, and City Environmental Quality Review

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Table 4

No Action Projects with the Potential for Cumulative Effects

Project	Description	Potential for Cumulative Effects with Preferred Alternative
Transportation Infrastructure Projects		
Traffic Calming and Bike Route Connections	Traffic calming measures and bike lane installation/connections at various locations, including Delancey, Grand, and Montgomery Street	Improved traffic conditions and bicycle access. Minimal construction activities associated with the No Action project so there would not be cumulative construction effects for this project.
L Train Tunnel Repair	Repair of L train tunnel under the East River	Potential temporary adverse traffic and transit effects during construction however the peak construction periods would not overlap so there would not be cumulative effects for this project.
Rezoning Projects		
Lower East Side Rezoning—various locations	Rezoning to facilitate the development of new residential projects with ground floor retail	Potential changes to land use patterns in rezoned areas; the proposed project would not affect this rezoning.
Other Projects		
Various Residential and Commercial Development Projects	Proposed mixed-use developments (residential and commercial) including Two Bridges, Extell One Manhattan, Alexandria Science Center, Brookdale Campus, and Essex Crossing	While there may be potential population inducing effects and potential socioeconomic effects from these other projects, the proposed project would not have the potential to induce development, and would not result in any significant adverse socioeconomic effects; therefore, the proposed project would not result in any significant adverse cumulative secondary impacts related to induced growth or socioeconomic conditions; there is also the potential for cumulative construction transportation effects.
NYCHA Infill at 50 Pitt Street	NYCHA plans to rebuild, expand, and preserve public and affordable housing stock by developing on underutilized land	Potential population inducing effects, but the proposed project would not introduce new housing or population so there would not be cumulative effects for this project.
New York City Community Garden Coalition Gardens Rising (Gardens Rising)	Green infrastructure investments for community gardens to manage stormwater	Potential beneficial effects due to increased infiltration, decreased stormwater runoff and decreased stormwater flow within the combined sewer system during rainfall events that would not be affected by the proposed project.

National Environmental Policy Act and New York State Environmental Quality Review Act, and City Environmental Quality Review

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**Table 5
Summary of Cumulative Effects (40 CFR § 1508.7)**

Resource	Proposed Preferred Alternative Effects		Effects of No Action Projects	Cumulative Effects
	Short-term (Construction)	Long-term (Operation)		
Land Use, Zoning, and Public Policy	Minor	Major beneficial	Minor	Major beneficial
Socioeconomic Conditions	Minor	Moderate Beneficial	Minor	Moderate Beneficial cumulative effects due to employment, compensation, and total economic activity
Open Space	Major adverse	Major beneficial	Moderate Adverse due to temporary loss of neighborhood open space during construction; moderate beneficial effects upon completion	Major adverse cumulative effects to availability of open space during construction; long-term major beneficial due to improved open space, waterfront enhancement and flood protection of open spaces
Historic and Cultural Resources	Minor	Minor	Minor	Minor
Urban Design and Visual Resources	Moderate Adverse	Moderate Beneficial with elevated shared-use flyover bridge (urban design); major adverse due to blocked waterfront views (visual resources)	Minor	Minor
Natural Resources	Moderate adverse effects to terrestrial resources; temporary and permanent moderate adverse effects to littoral zone wetlands and Waters of the United States	Major beneficial (terrestrial resources); minor adverse (Wetlands and Waters of the United States)	Minor	Minor
Hazardous Materials	Moderate adverse	Major beneficial contamination in East River Park underlying soils would be removed	Moderate adverse	Moderate adverse
Water and Sewer Infrastructure	Minor	Major beneficial	Minor	Minor
Transportation	Moderate Adverse	Moderate Beneficial due to improved access to waterfront	Moderate adverse	Moderate adverse cumulative construction effects on transportation that is dependent on the construction schedules and peak construction intensity of each project
Neighborhood Character	Minor	Major beneficial	Minor	Minor
Environmental Justice	Minor	Major beneficial	Minor	Minor
Energy	Minor	Minor	Minor	Minor
Air Quality	Moderate Adverse	Minor	Moderate adverse	Minor
Greenhouse Gas Emissions	Minor	Minor	Minor	Minor
Noise and Vibration	Major Adverse	Minor	Major adverse during construction	Potential major adverse cumulative construction effects on noise that is dependent on the construction schedules and peak construction intensity of each project
Public Health	Moderate Adverse	Minor	Minor	Moderate Adverse

7.2 FEDERAL REGULATIONS

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT

The EIS was 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, in consultation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP), acting in its capacity as the

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New York State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP), and the New York City Landmarks Preservation Commission (LPC). Comment letters from SHPO, LPC, the Delaware Nation, the Delaware Tribe of Indians, and the Stockbridge-Munsee Community Band of Mohicans are included in Appendix E of the FEIS.

Two Phase 1A Archaeological Documentary Studies were prepared for the Area of Potential Effect (APE) in March 2016, and a Supplemental Phase IA Archaeological Documentary Study was prepared in March 2019. The March 2016 reports identified the following broad categories of historic-period archaeological resources that could be located in the APE—river bottom remains, landfill retaining structures and landfill deposits, historic street bed resources, and former city block resources. Because of the potential presence of these resources, as mitigation, additional archaeological investigation will be performed in accordance with Section 106 regulations, based on a scope of work reviewed and approved by LPC and SHPO; this archaeological investigation will include pre-construction testing and/or monitoring during project construction performed in accordance with the Secretary of the Interior’s *Standards and Guidelines for Archaeology*, ACHP’s *Section 106 Archaeological Guidance*, and the New York Archaeological Council’s *Standards for Cultural Resource Investigations and Curation of Archaeological Collections*. The scope of work for additional archaeology will include: a sampling strategy that will select specific areas of the APE to be further investigated; identification of those areas that are believed to be most sensitive for recovering landfill retaining structures across the overall APE; a description of the basis for the proposed sampling design, including a tabulation of the various archaeological contexts within the APE and a quantification of the sample fraction for each context; and an unanticipated discoveries protocol. If significant archaeological resources are identified during testing and/or monitoring, further archaeology and/or mitigation will be completed in accordance with *CEQR Technical Manual* guidance. In written communications dated April and May 2016, representatives of the Delaware Nation, Delaware Tribe of Indians, and Stockbridge-Munsee Community Band of Mohicans requested, in the case of an unanticipated discovery of an archaeological site or artifacts, that work be halted until the tribe is notified and the artifact can be evaluated by an archaeologist. The additional archaeological investigation is stipulated in the PA executed on December 4, 2019; the Final PA is included in **Appendix F**. The PA is executed among OMB, SHPO, and ACHP, and also signed by five consulting parties—NYC Parks, LPC, the Municipal Art Society, the Lower East Side Preservation Initiative (LESPI), and the New York Landmarks Conservancy.

BALD AND GOLDEN EAGLE PROTECTION ACT (16 USC §§ 668 TO 668C)

Requests for information regarding endangered, threatened, and special concern species were made to the New York Natural Heritage Program (NYNHP), and U.S. Fish and Wildlife Service (USFWS). USFWS protected species with the potential to occur in the study area were identified via their online Information for Planning and Consultation (IPaC) tool and produced a report with no federally listed endangered species within the project area.

The Golden Eagle (*Aquila chrysaetos*), was extirpated from New York’s breeding bird fauna in the 1970s mainly due to loss of habitat from human persecution and chemical contamination (NYNHP 2019). The species, which prefers wild, remote mountainous areas with open habitat where small game is abundant and cliffs are available for nesting, is currently known only as a few scattered individuals during breeding season and in migration, and one consistently occupied winter territory in Dutchess County. No Golden Eagle habitat is present within the study area and no records of its occurrence within the project area were returned by NYNHP or USFWS.

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Similarly, although Bald Eagles (*Haliaeetus leucocephalus*) are known to breed throughout New York State and while populations have recently begun to increase, the species prefers relatively undisturbed, wooded areas near wetlands or large bodies of water with abundant fish (NYNHP 2019). No Bald Eagle habitat is present within the study area and no records of its occurrence within the project area were returned by NYNHP or USFWS.

CLEAN WATER ACT (33 USC §§ 1251 TO 1387)

The Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), is the primary federal law in the United States governing water pollution. It regulates point sources of water pollution, such as discharges of municipal sewage and industrial wastewater, and the discharge of dredged or fill material into navigable waters and other waters of the United States. The Act also regulates non-point source pollution from sources other than the end of a pipe, such as runoff from streets, agricultural fields, construction sites and mining that enter waterbodies. Through the CWA, states identify where water quality may be compromised due to pollutants. The East River was included on the 2014 New York State list of affected waterbodies due to CSO events, contaminated sediment, and urban runoff.

Under Section 401 of the Act, any applicant for a federal permit or any license for an activity that may result in a discharge to navigable waters must provide to the federal agency issuing a permit a certificate, either from the state where the discharge would occur or from an interstate water pollution control agency, that the discharge will comply with Sections 301, 302, 303, 306, 307, and 316(b) of the Clean Water Act. Applicants for discharges to navigable waters in the State of New York must obtain a Water Quality Certificate from the New York State Department of Environmental Conservation (NYSDEC).

Section 402 of the Act provides guidance on the National Pollutant Discharge Elimination System (NPDES), which governs the issuance of permits to control and prevent water pollution at point sources that discharge pollutants. In the State of New York, the NPDES permit program is administered through NYSDEC's State Pollution Discharge Elimination System (SPDES) permit program, described below.

Under the Preferred Alternative, construction of the shared-use flyover bridge would require support shafts to be placed in the East River. The support shafts and associated concrete fill would result in adverse effects to 260 square feet of unvegetated and shaded littoral zone tidal wetland habitat. Some of the support shafts would be placed in a portion of the East River that is shaded by the East River Park Promenade and/or numerous other support shafts for existing infrastructure and would therefore not alter the operational character or habitat of these tidal wetlands. The support shafts would not affect tidal exchange or tidal patterns in the study area.

In addition, under the Preferred Alternative the two existing embayments in East River Park would be relocated with the objective of improving community access to the water's edge, a principal objective of the proposed project, and providing adequate space to redesign heavily utilized active recreation facilities. The relocated embayments would be designed for improved ecological enhancement, described in further detail below. Filling of the existing embayments would permanently affect 12,526 square feet of unvegetated littoral zone tidal wetland habitat that consists largely of rip rap. The pedestrian bridges at the two existing embayments would be redesigned as a continuation of the proposed esplanade, therefore requiring installation of new pipe piles for proper structural loading. The installation of new pipe piles at the existing embayments would result in approximately 167 square feet (0.004 acres) of fill.

The two proposed embayments would be comparable in size and would be similarly located within East River Park. The proposed embayments would provide improved habitat type over what currently exists in

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the embayments that are to be filled by removal of the existing bridges that shade aquatic habitat, which can reduce benthic productivity and biomass. Additional ecological benefits would come from the installation of EConcrete® elements, described in greater detail below, which in addition to the proposed riprap, would result in approximately 3,099 square feet (0.071 acres) of fill within the proposed embayments. New pile supported platforms are also proposed at the edges of the proposed embayments in order to accommodate the Americans with Disabilities Act (ADA) accessible pathways to the water's edge. The pipe piles would result in approximately 47 square feet (0.001 acres) of fill. Design studies focused on increasing the ecological benefits of the proposed tidal wetland habitat enhancements in the new embayments include the following:

- Eliminating the pedestrian walkways over embayments
- Utilizing materials such as EConcrete® to create intertidal tide pools
- Installation of subtidal EConcrete® armor blocks to serve as a “breakwater” along the toe of the revetment of the proposed embayments
- Leaving some of the steel piles of the existing esplanade exposed above the mudline at areas of proposed embayments and wrapping with EConcrete® Pile Jackets

These products provide the necessary structural elements of an urban waterfront while also providing opportunities for flora and fauna to thrive. The proposed tide pools would be installed within the intertidal zone of the proposed embayments in place of some of the rip rap, which will serve to stabilize the shoreline, a particularly useful ecological enhancement in a fast-flowing river such as the East River. Moreover, the proposed embayments would include a shallower slope to allow for a more stratified transition from wetland to upland habitat, enriching the ecology of the landscape. Together, these elements would create a stable habitat that provides shallow, water retaining, moist niches that are absent from standard coastal infrastructure. The ecological enhancements listed above are designed for the recruitment of shellfish and other aquatic life, which is consistent with New York City's WRP policies to protect and restore sensitive natural resources such as wetlands.

As introduced in Tech Memo 001 dated November 12, 2019, the City has identified an additional project component of the Preferred Alternative consisting of flood proofing the historic Fireboat House and the rehabilitation of the existing platform and bulkhead. Investigations have showed moderate to severe deterioration of support piles from marine borer activity and rot and, as a result, the piles are nearing the end of their effective service lives. The piles in the four rows on the seaward side of the fireboat house platform would be cut to competent timber and replaced with a composite post that is fastened to the existing timber pile with steel fish plates and to the pile cap with an angle and plate bearing connection. Piles near the landward edge of the bulkhead would be encased in concrete. Stay-in-place formwork would be placed between pile rows D and E and the area inshore of this formwork would be filled with lean concrete fill. The lean concrete fill is a low strength concrete that flows easily, is self-leveling, and is an ideal material to place around the piles in a confined space for purposes of encasing the piles and preventing future water damage. The encasement of the fireboat house platform support piles would result in approximately 1,773 square feet (0.041 acres) of fill within jurisdictional waters. Turbidity booms would be installed prior to all rehabilitation work to minimize loosened sediment from dispersing throughout the East River. Project components contributing to permanent adverse effects to wetlands are summarized in **Table 6**.

While this alternative would result in adverse effects to tidal wetland habitat, it will be mitigated for in accordance with all NYSDEC and USACE permit conditions which will conform with applicable regulations, including CWA, Section 10 of the Rivers and Harbors Act, ECL Article 25, NYCRR Part 661,

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and ECL Article 15, NYCRR Part 608. This mitigation will include in-kind, on-site replacement of improved habitat as well as the purchase of credits from the Saw Mill Creek Wetland Mitigation Bank or the creation of new tidal wetland habitat off-site. Details of the proposed mitigation are provided in Section G, “Mitigation,” of FEIS Chapter 5.6, “Natural Resources.”

The Preferred Alternative will require authorization from the Secretary of the Army acting through USACE for activities that would result in a permanent or temporary discharge to navigable waters and Waters of the United States, including mooring of temporary construction barges, the placement of support structures for the proposed shared-use flyover bridge, relocation of embayments, Fireboat House platform rehabilitation, and modifications of CSO outfalls to the East River. These activities will also require a Water Quality Certificate from NYSDEC that the discharge from such activities will comply with the CWA. Coordination with USACE and NYSDEC to acquire these authorizations via the Joint Permit Application process is ongoing.

**Table 6
Permanent Adverse Effects to Tidal Wetlands under the Preferred Alternative**

Project Component	Area (Acres)	Area (square feet)	Volume of Fill (cubic yards)
Flyover Bridge Substructure (shafts)	0.006	260	1,008
Filling Northern Embayment	0.172	7,484	1,286
Filling Southern Embayment	0.116	5,042	960
Filling for new Pipe Piles at Existing Embayments)	0.004	167	346
Fill for Riprap and EConcrete® Elements Seaward of Existing Bulkhead at Proposed Embayments	0.071	3,099	698
Fill for New Pipe Piles at Proposed Embayments	0.001	47	115
Fill for Fireboat House Platform and Bulkhead Rehabilitation	0.037	1,600	291
Total	0.407	17,699	4,704
Note: * This table has been updated for the FEIS and Tech Memo 001 dated November 12, 2019 (see Appendix C).			

ENDANGERED SPECIES ACT OF 1973 (16 USC §§ 1531 TO 1544)

Construction of the Preferred Alternative will be performed in accordance with all applicable rules and regulations of USACE, EPA, NOAA NMFS, NYSDEC, DEP, DDC, and other regulatory agencies and procedures, as applicable. Consultation with NOAA NMFS identified two endangered species, the shortnose sturgeon and Atlantic sturgeon as potentially present in the study area.

To avoid impacting these species, the City has committed to using the following Best Management Practices (BMPs) for applicable construction practices to minimize impacts to ESA-listed species:

- Turbidity curtains or turbidity booms to prevent sediment from entering the East River waterbody to the maximum extent practicable
- Debris nets to minimize the amount of debris falling into the waterway
- Cushion blocks to dampen the noise of the pile hammer
- Ramping up pile driving gradually to give fish opportunities to vacate the ensonified area
- Bubble curtains to reduce underwater sound levels of pile driving

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The FEIS also disclosed that operation of the Preferred Alternative would permanently affect 29,825 square feet (12,321 cubic yards) of wetlands. The final design completed after publication of the FEIS uses a pile-supported structure instead of the use of bulk fill material for the proposed embayments, resulting in a significant reduction to area and fill impacts to jurisdictional waters. Therefore, although the rehabilitation of the deck and bulkhead work at the Fireboat House would result in an additional 291 cubic yards of permanent fill within tidal wetlands, the modified project results in an overall reduction of permanent impact area and fill in jurisdictional waters from what was disclosed in the FEIS.

A consultation with NOAA NMFS was completed as required by the ESA. A response letter dated May 21, 2019 indicated NOAA NMFS's concurrence that the Preferred Alternative is not likely to adversely affect any NMFS ESA-listed species or designated critical habitat.

FISH AND WILDLIFE COORDINATION ACT (PL 85-624; 16 USC §§ 661 TO 667D) AND MAGNUSON STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT (16 USC §§ 1801 TO 1883)

A consultation with NOAA NMFS was reinitiated to reflect the Preferred Alternative as required by the Fish and Wildlife Coordination Act (FWCA), and Magnuson Stevens Fishery Conservation and Management Act (MSA). A response letter dated August 15, 2019 indicated NOAA NMFS's concurrence that the project would not result in substantial impacts to Essential Fish Habitat (EFH) and FWCA species with the implementation of conservation measures. NOAA NMFS recommended the following conservation measures, pursuant to Section 305 (b)(4)(A) of the MSA, in addition to the BMPs discussed above under Endangered Species Act of 1973, to avoid impacts to EFH and FWCA species:

- Avoid installing cofferdams within winter flounder early life stage EFH between January 15 and May 31 to minimize impacts to winter flounder eggs and larvae; and
- Avoid pile driving, sheetpile installation, and other in-water construction activities outside of the cofferdams from March 1 to June 30 to minimize adverse effects to migrating anadromous fish.

Subsequent to the FEIS, supplemental information was provided to NOAA NMFS demonstrating that a sufficient cross-section of the East River will be unaffected by project-generated noise and turbidity to allow anadromous fish to migrate unimpeded to their upstream spawning grounds.

On September 9, 2019, NOAA NMFS issued a letter withdrawing the requirement of the conservation measure to avoid pile driving, sheetpile installation, and other in-water construction activities outside of the cofferdams from March 1 to June 30 to minimize adverse effects to migrating anadromous fish. Additional information on project related impacts to federally managed species, along with all consultation material, can be found in Appendix G of the FEIS. The supplemental information and subsequent response from NOAA NMFS are provided in **Appendix D**.

MIGRATORY BIRD TREATY ACT (16 USC §§ 703 TO 712)

The USFWS IPaC tool was also used to generate a list of 58 migratory birds that could potentially occur in the project area. This list includes birds that are on the USFWS Birds of Conservation Concern (BCC) or warrant special attention to the project location (see Table 5.6-6 of the FEIS). Of the 58 migratory birds listed by IPaC, 4 species were observed and identified during the natural resource surveys that took place on June 19, 2015 and July 10, 2015 (see Appendix F1 of the FEIS). Those species are double-crested cormorant (*Phalacrocorax auritus*), great black-billed gull (*Larus marinus*), herring gull (*Larus argentatus*), and ring-billed gull (*Larus delawarensis*).

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The New York State Breeding Bird Atlas was also consulted regarding the potential presence of breeding birds within the study area. The Breeding Bird Atlas is a comprehensive, statewide survey of the distribution of breeding birds in New York that was last updated in 2008. The study area is located in Block 5850A which includes the Lower East Side of Manhattan. Breeding birds potentially present in the study area are provided in Table 5.6-7 of the FEIS. Five of the breeding bird species listed by the Atlas were observed during the natural resource surveys conducted in 2015. Those species are rock pigeon (*Clumba livia*), mourning dove (*Zenaida macroura*), American robin (*Turdus migratorius*), European starling (*Sturnus vulgaris*), and house sparrow (*Passer domesticus*).

Wildlife observed during site investigations conducted on June 19, 2015, and July 10, 2015, consisted mostly of common or disturbance-tolerant species. Birds observed utilizing or flying through the study area included American robin (*Turdus migratorius*), barn swallow (*Hirundo rustica*), black-crowned night-heron (*Nycticorax nycticorax*), Canada goose (*Branta canadensis*), common grackle (*Quiscalus quiscula*), double-crested cormorant (*Phalacrocorax auritus*), European starling, gray catbird (*Dumetella carolinensis*), great egret (*Ardea alba*), house sparrow, laughing gull (*Leucophaeus atricilla*), mallard (*Anas platyrhynchos*), mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), ring-billed gull (*Larus delawarensis*), and rock pigeon. Other birds that were not observed in the study area but were documented by the 2000–2005 New York State Breeding Bird Atlas as breeding or potentially breeding in the census block in which the study area is located (5850A) include chimney swift (*Chaetura pelagica*), downy woodpecker (*Picoides pubescens*), northern mockingbird (*Mimus polyglottos*), and northern cardinal (*Cardinalis cardinalis*). Potential nesting habitat for these species is present in the study area. As noted above, targeted surveys for peregrine falcons were conducted in the study area near the Williamsburg Bridge on June 19, 2015 and July 10, 2015. No peregrine falcons were observed.

While the initial loss of tree canopy may represent a loss of habitat for migratory birds and other wildlife found in the parks, the project area does not contain a unique habitat in the region, and migratory birds would be expected to seek out similar resources in the area. Additionally, there is no habitat in the project area to support any bird species that are associated with a forest understory or forest floor, or other habitat types such as shrubland, wetland, or grassland/old field. Further, nearly half of the trees are non-native species and therefore unlikely to provide an abundance of arthropods or quality fruits needed by arboreal bird species for stopover refueling (Smith et al. 2007, Tallamy 2009).

A desktop analysis using high-resolution land cover data revealed that, within a half-mile of the project area, a total of 183 acres of tree canopy cover would be available for birds and other wildlife to seek temporary replacement habitat. As stated in the FEIS, over time, the tree canopy in the proposed project area would mature and fill in and provide an improved habitat over existing conditions, with a more diverse plant species and habitat for wildlife.

RIVERS AND HARBORS ACT OF 1899, SECTION 10 (33 USC §§ 403)

Section 10 of the Rivers and Harbors Act of 1899 as administered through USACE is to protect navigation and navigable channels. Any structure built up to the mean high-water line in navigable water requires authorization from USACE. The East River is classified as a navigable Waters of the United States and, as such, structural improvements along this waterbody, such as the project components described above under the Clean Water Act, are subject to this federal statute.

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EXECUTIVE ORDER 11988 – FLOODPLAIN MANAGEMENT

Executive Order (EO) 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse effects associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Floodplain mapping used to identify the presence of a floodplain in a project area is managed by FEMA. FEMA issues maps, called Flood Insurance Rate Maps (FIRMs), as part of the National Flood Insurance Program. For HUD, which is providing partial funding for the Preferred Alternative, Title 24 of the Code of Federal Regulations Section 55 specifically states HUD must comply with EO 11988.

The applicable HUD regulations for Executive Order 11988 are contained in Code of Federal Regulations Title 44, §9.6, which includes an Eight-Step Decision Making Process. This analysis discusses why the Preferred Alternative must be situated within the floodplain and provide the full range of effects associated with the Preferred Alternative. Further, the analysis requires a discussion of any reasonable alternative to locating the Preferred Alternative in a floodplain. This analysis can be found in Appendix L of the FEIS. Pursuant to 24 CFR Part 55, an Early Notice and Public Review for the proposed project was published on February 22, 2019. Publication of this notice was followed by a 28 day comment period, in which several public comments were received. The City responded to these comments and published a Final Notice and Public Explanation for the proposed project on September 13, 2019. The comment period for the Final Notice was open until September 23, 2019; one comment on the Final Notice was received. The Early Notice and Public Review, Response to Public Comments on the Early Notice, and Final Notice and Public Explanation can be found in Appendix L of the FEIS. The Response to Comment on the Final Notice and Public Explanation can be found in **Appendix E** of this Joint ROD and Findings Statement.

The Preferred Alternative would install new flood protection structures to the SFHA that would not be introduced under the No Action Alternative. No residential or commercial structures would be introduced to the SFHA. While the Preferred Alternative includes construction of two new, one-story industrial structures for the operation and maintenance of certain drainage components, these structures would be located behind the flood protection alignment and along City right-of-way. These industrial structures would therefore neither increase potential for damages to these buildings due to flooding nor reduce the capacity of the floodplain to manage storms. The structures proposed under the Preferred Alternative are designed to reduce the risk of flood loss; to minimize the effect of floods on human safety, health, and welfare; and to preserve the beneficial value of the existing floodplain as determined by the Eight-Step Decision Making Process, which is consistent with EO 11988 (see Appendix L of the FEIS).

EO 11990 PROTECTION OF WETLANDS

Executive Order 11990 requires federal agencies to avoid to the extent possible the long- and short-term adverse effects associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Title 24 of the Code of Federal Regulations Section 55 specifically states HUD, which is providing partial funding for the Preferred Alternative, must comply with Executive Order 11990. In addition, under Code of Federal Regulations Title 44, §9.6, an analysis pursuant to HUD's Eight-Step Decision Making Process would be required to evaluate adverse effects to wetlands associated with the project as well as reasonable alternatives that would minimize or eliminate those adverse effects. This analysis can be found in Appendix L of the FEIS.

A detailed analysis of the Preferred Alternative's compliance with EO 11990 – Protection of Wetlands as determined by the Eight-Step Decision Making Process is located in Appendix L of the FEIS. That analysis concludes that the Preferred Alternative would be in compliance with Executive Order 11990. In addition,

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the adverse effects would not affect the classification of the East River; would likely not diminish the habitat for a resident or migratory endangered, threatened or rare animal or plant species or species of special concern; would not contribute to a cumulative loss of habitat or function which diminishes the ability of littoral zone habitat to perform its primary function; would not affect a resource that is large, unusual or singular, or noticeably decrease this resource's ability to serve its various functions. Therefore, the Preferred Alternative would not result in significant adverse effects to tidal wetland resources.

EO 12898: COUNCIL ON ENVIRONMENTAL QUALITY GUIDANCE

EO 12898—Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations—requires federal agencies to consider whether a proposed federal action may result in disproportionately adverse environmental or human health effects on low-income or minority populations. Since the Preferred Alternative requires federal approval from HUD and is subject to review under NEPA, FEIS Chapter 5.11, “Environmental Justice,” considers the Preferred Alternative’s potential to disproportionately impact minority and low-income populations in accordance with the guidance and methodologies outlined in the CEQ’s Environmental Justice Guidance under NEPA (December 1997). In addition, EO 12898 requires federal agencies to work to ensure greater public participation by low-income and minority populations in the decision-making process. Public outreach and coordination with the proposed project has been ongoing since its inception and is described in greater detail in Chapter 3.0, “Process, Coordination, and Public Participation,” of the FEIS, and in accordance with 24 CFR Parts 50 and 58 and EO 11988.

The CEQ, which has oversight of the federal government’s implementation and compliance with EO 12898 and NEPA, developed its guidance to assist federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed.

The CEQ methodology involves collecting demographic information for the geographical area where the Preferred Alternative may cause significant adverse effects; identifying low-income and minority populations in that area using census data; and identifying whether the project’s adverse effects are disproportionately high on the low-income or minority populations in comparison with those of other populations. A disproportionately high and adverse effect is a significant adverse impact on minority or low-income populations that “appreciably exceeds or is likely to appreciably exceed those on the general population or other appropriate comparison group.” Mitigation measures should be developed and implemented for any disproportionately high and adverse effects. Under NEPA, the potential for disproportionately high and adverse effects on minority and/or low-income populations should then be one of the factors the federal agency considers in making its finding on a project and issuing a Record of Decision.

The public involvement activities for the proposed project have been guided by the Community Engagement Plan (CEP), which was originally developed during the conceptual design for this project as a “living” document and has continued through preparation of this EIS. The key goal of the community outreach during the design phase was to inform interested parties about the proposed project and seek input on a wide range of issues. The specific details of the proposed project’s public participation process is presented in Chapter 3.0, “Process, Coordination, and Public Participation,” of the FEIS.

Based on the environmental analyses performed, the Preferred Alternative would not result in any disproportionately high and adverse effects on minority or low-income communities for any of the analyzed alternatives. An analysis was undertaken of the Preferred Alternative’s potential for disproportionately high and adverse effects on environmental justice populations. That analysis identified the following such that there would not be any public health impacts, or any impacts that are disproportional to minority or low-

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income groups; positive socioeconomic benefits with the avoided flood damage costs; limited urban design impacts from blocked waterfront and/or East River views from certain locations; wetland impacts that are to be addressed through a wetlands mitigation plan; tree removals that would be addressed through a tree restoration plan; no impacts related to the transportation systems or any related air quality or noise conditions during project operations; disturbance of subsurface contamination and hazardous materials would be managed to avoid impacts to workers, the community, and the environment; during construction there would be impacts such as the temporary loss of open space that would be addressed by an open space mitigation plan with a diversion plan for the bikeway/walkway; temporary traffic impacts requiring mitigation; and air quality and control measures to be implemented during construction to minimize air quality and noise impacts. Residents in the project area, including minority and low-income populations, would benefit from the proposed coastal flood protection. Therefore, the Preferred Alternative would not result in adverse effects with respect to environmental justice.

EO 13045-PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS

EO 13045-Protection of Children from Environmental Health Risks and Safety Risks specifies prioritization of the identification and assessment of potential environmental health and safety risks that may disproportionately affect children, and to ensure policies, programs, activities, and standards address those risks. Analysis and disclosure of these potential effects under NEPA are necessary because some physiological and behavioral traits of children render them more susceptible and vulnerable than adults to environmental health and safety risks. It should be noted that in general the regulatory standards and guidelines, used for comparison purposes, already incorporate protection of sensitive individuals, including children. If adverse effects are identified, CEQR requires that the effects be disclosed and mitigated or avoided to the greatest extent practicable.

In accordance with EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, an assessment of the Preferred Alternative's potential to affect children's health was conducted. The analysis concluded that the temporary significant adverse effects identified under the Preferred Alternative would not disproportionately affect children. As stated in Chapter 6.0, "Construction—Overview," of the FEIS, a variety of measures will be implemented during construction to ensure the safety of the general public, including children.

The maximum predicted exterior construction noise levels (as would be experienced outside the 123 Mangin Street School including at the playground), are moderately high for and would be within the range experienced by many New York City children who use school yards and open spaces are near heavily trafficked roadways. The predicted construction noise at this location would be temporary and would occur only during the period of floodwall construction and landscaping immediately adjacent to the school, which would not be expected to last more than 11 months. Consequently, while the predicted construction noise at the 123 Mangin Street School was determined to result in a significant adverse effect, it would not constitute a potential environmental health or safety risk to the students. Additionally, the maximum predicted noise level increment at the 84 Montgomery Street School (as would be experienced at the playground) during daytime hours is approximately 2 dBA, which would be considered just noticeable and would not constitute a significant adverse impact, and consequently would not have the potential to disproportionately affect the health of children.

Daycare uses present in the construction noise analysis study area would be subject to the same noise impact criteria as residences, and as such the general discussion of public health above would apply, indicating that

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children in daycare facilities experiencing noise as a result of construction of the Preferred Alternative would not experience chronic exposure to high levels of noise (i.e., high levels of noise that occur indefinitely and do not fluctuate or abate), prolonged exposure to noise levels above 85 dBA (the *CEQR Technical Manual* recommended threshold for potential hearing loss), or episodic and unpredictable exposure to short-term effects of noise at high decibel levels. As a result, construction would not have the potential to disproportionately affect the health of children in daycare facilities. Furthermore, any daycare facilities in this study area would tend to be in ground-floor spaces, which would see the greatest benefit from noise reduction measures such as noise barriers.

The temporary significant adverse direct and indirect effects identified under the Preferred Alternative for the displacement of open space during construction would not disproportionately affect children. There would be comparable resources available within and immediately adjacent to the open space study area that would be accessible to the public, including children. Although the amenities within the displaced open space resources utilized by the 15–19 year old user group would experience an overburdening of existing facilities, the mitigation measures proposed would reduce this burden on children. Therefore, the temporary significant adverse direct and indirect effects identified under the Preferred Alternative would not disproportionately affect children.

All safety requirements will be followed, and construction of the Preferred Alternative will be conducted with care to minimize the disruption to the community. Therefore, construction of the Preferred Alternative would not result in a significant adverse public health effect.

NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

The Clean Air Act (CAA), as amended in 1990, defines non-attainment areas (NAA) as geographic regions that have been designated as not meeting one or more of the NAAQS. When an area is designated as non-attainment by EPA, the state is required to develop and implement a SIP, which delineates how a state plans to achieve air quality that meets the NAAQS under the deadlines established by the CAA, followed by a plan for maintaining attainment status once the area is in attainment.

In 2002, EPA re-designated New York City as in attainment for carbon monoxide (CO). Under the resulting maintenance plans, New York City is committed to implementing site-specific control measures throughout the City to reduce CO levels, should unanticipated localized growth result in elevated CO levels during the maintenance period. The second CO maintenance plan for the region was approved by EPA on May 30, 2014.

Manhattan, which had been designated as a moderate NAA for PM₁₀, was reclassified by EPA as in attainment on July 29, 2015.

On April 18, 2014, EPA re-designated the New York City Metropolitan Area as in attainment. Previously, it had been nonattainment with the 2006 24-hour PM_{2.5} NAAQS since November 2009. The area, now under a maintenance plan for this standard, includes the same ten-county area as the maintenance area for the 1997 annual PM_{2.5} NAAQS.

Effective June 15, 2004, EPA designated Nassau, Rockland, Suffolk, Westchester, and the five New York City counties (NY portion of the New York–Northern New Jersey–Long Island, NY-NJ-CT, NAA) as a “moderate” non-attainment area for the 1997 8-hour average ozone standard. EPA designated the New York–Northern New Jersey–Long Island, NY-NJ-CT NAA as a “marginal” NAA for the 2008 ozone NAAQS, effective July 20, 2012. On August 23, 2019, as requested by New York State, EPA reclassified the area as a “severe” NAA. New York State has begun submitting SIP documents in December 2014. The

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state is expected to be able to meet its SIP obligations for both the 1997 and 2008 standards by satisfying the requirements for a moderate area attainment plan for the 2008 ozone NAAQS.

New York City is currently in attainment of the annual average NO₂ standard. EPA has designated the entire state of New York as “unclassifiable/attainment” of the 1-hour NO₂ standard effective February 29, 2012. Since additional monitoring is required for the 1-hour standard, areas will be reclassified once three years of monitoring data are available.

EPA has established a new 1-hour SO₂ standard, replacing the former 24-hour and annual standards, effective August 23, 2010. Based on the available monitoring data, all New York State counties currently meet the 1-hour standard. In December 2017, EPA designated most of the State of New York, including New York City, as in attainment for this standard.

Measures will be taken to reduce pollutant emissions during construction in accordance with all applicable laws, regulations, and building codes as well as New York City Local Law 77. With the implementation of these emission reduction measures, construction of the Preferred Alternative would not result in any predicted concentrations above the NAAQS. Therefore, no significant adverse air quality impacts are predicted from the construction of the Preferred Alternative.

7.3 STATE REGULATIONS

CONFORMITY WITH NEW YORK STATE AIR QUALITY PLANS

The conformity requirements of the CAA and regulations promulgated thereunder limit the ability of federal agencies to assist, fund, permit, and approve projects that do not conform to the applicable SIP. To implement the Preferred Alternative, the City is proposing to enter into a grant agreement with HUD. Therefore, general conformity regulations would apply to the proposed project.

The pollutants of concern on a regional basis are CO, PM₁₀, PM_{2.5}, NO_x, and VOC. Emissions from on-road trucks and worker vehicles and from nonroad construction equipment were calculated on an annual basis.

Under the general conformity regulations, a general conformity determination for federal actions is required for each criteria pollutant or precursor in non-attainment or maintenance areas where the action’s direct and indirect emissions have the potential to emit one or more of the six criteria pollutants at rates equal to or exceeding the prescribed *de minimis* rates for that pollutant. In the case of this project, the prescribed annual rates are 50 tons of VOCs and NO_x, 100 tons of CO, PM_{2.5}, or SO₂.

The pollutant emissions associated with construction of the Preferred Alternative would be well below any of the *de minimis* criteria. Therefore, Preferred Alternative would conform to the SIP.

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (ECL ARTICLE 17; 6 NYCRR PART 750)

Title 8 of ECL Article 17 authorizes the creation of SPDES to regulate discharges to New York State’s waters. Activities requiring a SPDES permit include point source discharges of wastewater into surface or groundwater of the State, including the intake and discharge of water for cooling purposes, constructing or operating a disposal system, discharge of stormwater runoff, and construction activities that disturb one or more acres. As the Preferred Alternative would include modifications to the combined sewer system, which is regulated under a SPDES permit for Newtown Creek Wastewater Treatment Plant (WWTP), an analysis of compliance with this regulation is warranted.

Under the Preferred Alternative, the combined sewer system within the study area would continue to comply with conditions set by the Newtown Creek WWTP SPDES permit and be consistent with the CWA,

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CSO Control Policy, and the CSO Abatement Program and CSO Long-Term Control Plan. The Preferred Alternative would therefore not affect the use classification or function of the East River, or directly or indirectly affect a significant, sensitive, or designated resource which is consistent with the City's WRP policies regarding protection of water quality. Therefore, no significant adverse effects to surface water resources are anticipated.

TIDAL WETLANDS ACT (ECL ARTICLE 25, 6NYCRR PART 661)

Tidal wetland regulations apply anywhere tidal inundation occurs on a daily, monthly, or intermittent basis, such as the East River. NYSDEC administers the tidal wetlands regulatory program and the mapping of the State's tidal wetlands. A permit is required for almost any activity that would alter tidal wetlands or tidal wetland adjacent areas (within the limits of the City of New York, tidal wetland adjacent areas are identified up to 150 feet inland from a tidal wetland boundary). As the Preferred Alternative would include temporary and permanent alterations to NYSDEC littoral zone tidal wetlands, an analysis of the Preferred Alternative's compliance with this Act was developed as part of the NYSDEC Joint Permit Application process.

The Preferred Alternative would result in a total of 17,699 square feet of adverse effects to tidal wetland habitat, described above in detail under the Clean Water Act and summarized in **Table 6**, which will be addressed in accordance with all NYSDEC and USACE permit conditions and will conform with applicable regulations, including CWA, Section 10 of the Rivers and Harbors Act, ECL Article 25, NYCRR Part 661, and ECL Article 15, NYCRR Part 608. This mitigation will include on-site, in-kind replacement of habitat as well as the purchase of credits from the Saw Mill Creek Wetland Mitigation Bank in Staten Island, NY, where credits may be purchased to mitigate adverse effects to tidal wetlands, or through the creation of new tidal wetland habitat off-site. Selection and implementation of off-site tidal wetland mitigation will be coordinated with EDC, NYC Parks, and other involved agencies.

PROTECTION OF WATERS, (ECL ARTICLE 15, 6NYCRR PART 608)

NYSDEC administers the Protection of Waters Permit Program to prevent unregulated effects to surface waters of New York. The Protection of Waters Program regulates the following: protected streams including their bed and banks; the construction of or modification to dams or other impoundment structures; the construction of or modification to docks, piers, wharves, or other floating structures in navigable waters; and the excavation or placement of fill in navigable waters and adjacent areas. Additionally, the Protection of Waters Program issues Water Quality Certifications for actions that result in discharges to Waters of the United States in accordance with Section 401 of CWA. As the Preferred Alternative would involve placement of fill in navigable waters, described above in detail under the Clean Water Act and summarized in **Table 6**, an analysis of the Preferred Alternative's compliance with the Protection of Waters Permit Program was developed as part of the NYSDEC Joint Permit Application process.

ENDANGERED AND THREATENED SPECIES OF FISH AND WILDLIFE; SPECIES OF SPECIAL CONCERN (ECL ARTICLE 11, 6 NYCRR PART 182)

The Endangered and Threatened Species of Fish and Wildlife; Species of Special Concern regulations prohibit the taking, import, transport, possession, or selling of any endangered or threatened species of fish or wildlife, or any hide, or other part of these species as listed in 6 NYCRR §182. 6. The Preferred Alternative involves substantial modifications to habitat and as such an analysis of the Preferred Alternative's consistency with this statute was conducted.

Requests for information regarding endangered, threatened, and special concern species were made to the NYNHP. The NYNHP provided a record of peregrine falcons (*Falco peregrinus*; NYS Endangered) nesting

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on the Williamsburg Bridge (see Appendix H1 of the FEIS). Reconnaissance field surveys for peregrine falcons in the study area were conducted on June 19, 2015, and July 10, 2015 (see Appendix F1 of the FEIS). Peregrine falcons commonly nest on buildings and bridges in urban areas, including New York City, demonstrating a tolerance of human disturbance and an ability to exploit resources in human-modified environments (Cade et al. 1996, White et al. 2002). The closest nest site to the study area is on the Williamsburg Bridge. Peregrine falcons are aerial hunters, and in urban areas primarily feed on rock pigeons (*Columbia livia*; DeMent et al. 1986, Rejt 2001). Peregrine falcons associated with the nest site on the Williamsburg Bridge have the potential to pass briefly through the study area on occasion in pursuit of pigeons or other prey. No peregrine falcons were observed during targeted surveys of the species that were conducted within the study area on June 19, 2015, and July 10, 2015 (see Appendix F1 of the FEIS).

As stated above, there is neither golden eagle (*Aquila chrysaetos*) nor bald eagle (*Haliaeetus leucocephalus*) habitat in the study area and no records of its occurrence within the project area were returned by NYNHP or USFWS.

The Preferred alternative would not result in any adverse effects to currently existing habitat for peregrine falcons (i.e., the Williamsburg Bridge). The falcons that nest on the Williamsburg Bridge are likely to range over large portions of Manhattan, Queens, and Brooklyn on a daily basis, as peregrine falcons have home-ranges that typically span more than 50 square kilometers and will commonly hunt for prey dozens of kilometers away from their nest (Enderson and Craig 1997, Jenkins and Benn 1998). They have the potential to briefly perch in a tree, or on a lamppost or other such structure in East River Park on occasion, as they do just about anywhere within their large home-range. The bridge will not be altered with the implementation of the Preferred Alternative. There would be no change in the likelihood that peregrine falcons would continue to nest on the Williamsburg Bridge, and no change in their condition, survival, or reproductive productivity. Therefore, the Preferred Alternative would not be in conflict with the 6NYCRR Part 182, and no significant adverse effects to New York State listed threatened, endangered, or special concern species or habitats are anticipated for operation of the Preferred Alternative.

***COMBINED SEWER OVERFLOW ABATEMENT PROGRAM AND COMBINED SEWER OVERFLOW
LONG-TERM CONTROL PLAN***

Implemented by DEP, the objective of this program and long-term control plan is to reduce pollution in and around the City's waters. The CSO abatement program is under a 2005 Consent Order, which was executed between NYSDEC and DEP and contains milestones for the completion of various projects and planning documents associated with the program. A 2011 modification to the Consent Order contained changes to various planned and ongoing CSO abatement construction projects, as well as to long-term control plan (LTCP) milestones, funding for green infrastructure, and fines for any missed LTCP milestones. A Citywide Open Waters LTCP is currently in the early development stage and includes the East River within the study area. Consistency with the long-term control plan is evaluated for the Preferred Alternative as changes are proposed to the existing combined sewer system.

The Preferred Alternative would not adversely affect surface water resources or water quality in the study area of conflict with the City's CSO abatement program. The flood protection elements of the Preferred Alternative would not result in changes to overland flow into the East River.

In addition, under this alternative, the existing sewer infrastructure would be modified to reduce or eliminate flow into the protected area from the East River and the larger sewershed during design storm events, as described in FEIS Chapter 5.8, "Water and Sewer Infrastructure." The construction of the proposed water and sewer infrastructure is not anticipated to cause disruption to existing water and sewer services. Under

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non-storm conditions, implementation of the Preferred Alternative would not alter the normal function and performance of the combined sewer system. The large interceptor gates and the isolation gate valve in regulator M-39 would remain open. However, under rainfall events or periods of high sewer flow, combined sewer flow would be conveyed to the interceptor via both the existing branch interceptors and the parallel conveyance. During design storm rainfall events, there is a potential for redistribution of overflows across the outfalls in the study area due to the modifications described above. However, the overall volume of CSO would not vary substantially from existing conditions and is not anticipated to impact water quality in the East River. A hydraulic model simulation indicated that with the proposed parallel conveyance in place, CSOs from outfalls within the project area would decrease compared to the No Action Alternative, while CSOs from outfalls upstream of the project area would increase by approximately the same volume. While the annual CSO volumes vary depending on annual rainfall and tidal conditions, this model simulation indicates no anticipated increase in total CSO volume from the study area as a result of the Preferred Alternative. During wet weather events, storm water that flows into the reconfigured storm drainage system on the unprotected side of the flood protection system would flow to the outfalls, instead of to the combined sewer system as it does under existing conditions. This increase in storm water flows to the outfalls would not increase the volume of CSO from the outfalls.

Under design storm conditions, the outfalls along the river would be closed as a result of increased surge height. In contrast to the No Action Alternative, the Preferred Alternative would provide drainage isolation elements, such as interceptor gates and an isolation gate valve that would be operated to shield the protected area sewer system from storm surge inundation in the larger sewershed. The Preferred Alternative would also manage the increased combined sewer flow within the protected area while the outfall tide gates are closed, and isolation elements are activated. Drainage management elements (i.e., parallel conveyance and upsized sewers) would be installed and deployed under the Preferred Alternative. Use of these drainage management elements would allow combined flow from the protected area to be directed to the Manhattan Pump Station and then to the Newtown Creek WWTP in Brooklyn, New York. These drainage management elements would reduce the potential for sewer surcharge in the protected area. As the storm surge recedes, the tide gates on the outfalls would reopen, allowing combined flow that exceeds the capacity of the pump station to outlet to the East River. Under the Preferred Alternative, the combined sewer system within the study area would continue to comply with conditions set by the Newtown Creek WWTP SPDES permit and be consistent with the CWA, CSO Control Policy, and the CSO Abatement Program and CSO Long-Term Control Plan. The Preferred Alternative would therefore not affect the use classification or function of the East River, or directly or indirectly affect a significant, sensitive, or designated resource which is consistent with the City's WRP policies regarding protection of water quality. Therefore, no significant adverse effects to surface water resources are anticipated.

NEW YORK STATE DEPARTMENT OF STATE (NYS DOS) COASTAL MANAGEMENT PROGRAM

Since the Preferred Alternative is located in the coastal zone, an assessment for compliance with Coastal Zone Management Act (CZMA) was conducted. A full consistency analysis is available in Appendix D of the FEIS.

As described in detail in the FEIS, it is concluded that Preferred Alternative is consistent with the City's WRP as discussed in FEIS Chapter 5.1, "Land Use, Zoning, and Public Policy," and documented in Appendix D of the FEIS. Specifically, as documented in the WRP, physical and recreational access to the waterfront would be provided along the esplanade with stepped seating areas to offer additional locations for passive recreation and waterfront views. Improving the resiliency of the park, coupled with expanded public access, furthers the enhancement of East River Park for public access, operations, functionality, and

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usability during pre- and post-storm periods. The addition of resiliency measures to park amenities and facilities proposed under this alternative would reduce impacts to East River Park as a result of design storm events and sea level rise, and be consistent with the policy goals to preserve, maintain, and protect existing physical and recreational access to the waterfront.

NYSDEC COMMISSIONER POLICY 29 GUIDANCE

The environmental justice analysis presented in FEIS Chapter 5.11, “Environmental Justice,” complied with Commissioner Policy 29 (CP-29), “Environmental Justice and Permitting,” which requires an environmental justice analysis to identify and address effects on minority and low-income communities. The analysis relied 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.

Like the CEQ methodology, the methodology set forth in CP-29 as presented in FEIS Chapter 5.11, “Environmental Justice,” involved the following steps: (1) identifying potential adverse environmental effects and the area to be affected (i.e., establishing a study area); (2) determining whether potential adverse environmental effects are likely to affect a potential environmental justice area (i.e., whether low-income and/or minority populations are present in the study area); and (3) identifying whether potential adverse environmental effects of the proposed action would disproportionately affect low-income and minority populations. In accordance with CP-29 guidance, the environmental justice analysis also (4) identified the potential for cumulative environmental burdens in the study area; and (5) seek public participation from the affected community.

8 ENVIRONMENTAL COMMITMENTS

As presented in **Tables 2 and 3**, the Preferred Alternative would result in:

- a potential for temporary significant adverse effects due to the temporary loss of open space, transportation, and noise during construction, and
- unmitigable and unavoidable adverse effects from blocked views of the East River from Grand Street.

All mitigation measures identified above in **Tables 2 and 3** to address the potential temporary significant adverse effects as well as other measures to minimize and avoid significant adverse effects have been adopted and are described in further detail below.

8.1 OPEN SPACE

The Preferred Alternative would remove 991 trees within the project area and vicinity, but trees will be replaced or replanted in accordance with a NYC Parks-approved landscape restoration plan. The landscape restoration plan is comprised of a several elements. First, to the extent practicable, the City will transplant existing park trees that are in excellent condition and, based on prior NYC Parks arborist experiences and approvals, are suitable for a successful transplanting. Second, approximately 1,815 trees are proposed to be planted as part of the landscape design within the project areas, which would result in a net increase of 745 trees over the existing conditions. The value of this restoration plan, in combination with approximately \$32.9 million of restitution, would be in compliance with Chapter 5 of Title 56 of the Rules of New York (NYC Parks Rules) and Local Law 3 of 2010. The restitution funds will be used towards targeted tree planting and urban forest enhancements throughout the adjacent communities, including the Lower East Side greening program, which proposes to plant up to 1,000 trees in parks and streets, and create up to 40 bioswales which started in the fall of 2019.

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The landscape restoration plan will also aim to improve ecological habitat and be resistant to the effects of salt spray and wind using the concept of different spatial planting concepts, which will be featured in an ecological mosaic throughout the project areas. The landscape restoration plan will incorporate these planting concepts with a diverse mix of tree species, shrubs, and groundcover for ecology, shade, and resiliency and will depart from the existing formal landscape to allow the park user to experience an escape from the hard surfaces of the urban landscape.

8.2 HISTORIC AND CULTURAL RESOURCES

ARCHAEOLOGICAL RESOURCES

As stipulated in the PA, additional archaeological investigation will be performed prior to or during construction in accordance with Section 106 regulations (see **Appendix F**). A scope of work will be prepared in consultation with LPC and SHPO, and this further phase of archaeological work will include testing and/or monitoring conducted in consultation with LPC and SHPO and in accordance with the Secretary of the Interior's *Standards and Guidelines for Archaeology*, ACHP's *Section 106 Archaeological Guidance*, and the New York Archaeological Council's *Standards for Cultural Resource Investigations and Curation of Archaeological Collections*. The testing and/or monitoring would not be done during the EIS process but will occur before and/or during project construction. The scope of work for additional archaeology will include: a sampling strategy that will select specific areas of the APE to be further investigated; identification of those areas that are believed to be most sensitive for recovering landfill retaining structures across the overall APE; a description of the basis for the proposed sampling design, including a tabulation of the various archaeological contexts within the APE and a quantification of the sample fraction for each context; and an unanticipated discoveries protocol. If significant archaeological resources are identified during testing and/or monitoring, further archaeology and/or mitigation will be completed in accordance with Section 106 regulations and consistent with the guidance in the *CEQR Technical Manual*. In written communications dated April and May 2016, representatives of the Delaware Nation, Delaware Tribe of Indians, and Stockbridge-Munsee Community Band of Mohicans requested, in the case of an unanticipated discovery of an archaeological site or artifacts, that work be halted until the tribe is notified and the artifact can be evaluated by an archaeologist.

ARCHITECTURAL RESOURCES

The City, in consultation with LPC and SHPO, will develop and implement CPPs for the following architectural resources, or portions of multi-building resources, located within 90 feet of project construction: the FDR Drive (#1, S/NR-eligible); Williamsburg Bridge (#2, S/NR-eligible); East River Bulkhead (#3, S/NR-eligible); Engine Co. 66 Fireboat House (#4, S/NR-eligible); Gouverneur Hospital (#5, S/NR); Gouverneur Hospital Dispensary (#6, S/NR-eligible); a portion of the Vladeck Houses within the Lower East Side Historic District (#7, S/NR); a portion of the Baruch Houses (#9, S/NR-eligible); the Asser Levy Public Baths (#12, S/NR, NYCL); a portion of the East River Housing Cooperative (#13, S/NR-eligible); a portion the Jacob Riis Houses (#15, S/NR-eligible); a portion of Stuyvesant Town (#16, S/NR-eligible); and a portion of Peter Cooper Village (#17, S/NR-eligible) to avoid inadvertent construction-period damage to these architectural resources. The CPPs will also be developed in consultation with NYC Parks, the Municipal Art Society, and the New York Landmarks Conservancy; the development and implementation of the CPPs are stipulated in the PA. In addition, as stipulated in the PA, an effort will be made to design the floodwalls that will be located adjacent to the Asser Levy Public Baths (#12, NYCL, S/NR) under the Preferred Alternative, so that they are compatible with the architectural resource, and the design of the floodwalls will be coordinated with LPC and SHPO. Further, the design of the floodwalls

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adjacent to the Asser Levy Public Baths will be undertaken in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. Subsequent to the release of the FEIS, the City is proposing to protect the Engine Co. 66 Fireboat House (S/NR-eligible) against flooding. The addition of the flood proofing measures to the Fireboat House has been integrated to the PA prepared for the Preferred Alternative.

8.3 URBAN DESIGN AND VISUAL RESOURCES

The Preferred Alternative would potentially result in significant adverse visual effects by blocking views to the waterfront and East River from multiple locations within the study area. These potential significant adverse effects would not be visually mitigated, resulting in unavoidable significant adverse effects. Not raising East River Park under the Preferred Alternative to allow continued views to the waterfront and East River would impair the ability of the proposed project to provide adequate flood protection to the surrounding communities and would not meet the project goals. The Preferred Alternative would maintain views to East River Park, because the park would slope down to the grade of the FDR Drive and there would be no floodwalls along the park's western edge.

8.4 NATURAL RESOURCES

Where possible, the Preferred Alternative has been designed to avoid and minimize adverse effects to natural resources to the greatest extent practicable. The esplanade elevation and reconstruction work is largely replacement in-kind that utilizes existing piles and sheetpile walls instead of extending the bulkhead eastward with bulk fill of tidal wetlands. In addition, the footprint of the flyover bridge shafts would be minimized to the maximum extent practicable as design progresses.

The Preferred Alternative would result in temporary adverse effects to terrestrial resources with the removal of 991 trees within the study area. Mitigation for the temporary adverse effects to terrestrial resources will be provided through the implementation of a landscape restoration plan, which is comprised of several elements as explained above in Section 8.1.

The landscape restoration plan includes over 50 different species, reflecting research around the benefits of diversifying species to increase resilience and adaptive capacity in a plant ecosystem and also pays special attention to species that can withstand salt spray, strong winds, and extreme weather events. The design also focuses on creating a more layered planting approach, allowing for informal planting areas that layer plant communities together to express ecological richness. A more diverse native plants palette can better adapt to climate change stressors. Once planted and established, the new landscape would represent an improvement in ecological sustainability, habitat creation, and adaptability in the face of a changing climate.

The removal of trees would occur principally within the waterfront parks and is not expected to result in any disproportionately high or adverse effects on minority and low-income populations within the inland neighborhoods. Over a period of years to decades, depending on many factors such as tree specific growth rates and climatological factors such as drought and seasonal temperature variations, the new tree canopy, comprised of diverse and resilient species, would mature and fill in, and would represent an improved habitat over the existing conditions (see Figure 5.6-9 of the FEIS).

Temporarily disturbed lawn and landscaped areas within East River Park, Stuyvesant Cove Park, including the National Wildlife Federation (NWF)-designated "Certified Wildlife Habitat" and the Monarch Watch designated "Monarch Waystation," and other upland spaces such as Murphy Brothers Playground and Asser Levy Playground would also be restored with the landscape restoration plan and would include plantings

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that would support typical urban wildlife upon completion of construction, including four different milkweed species that attract and support monarch butterflies.

As noted above, the Preferred Alternative would result in a total of 17,699 square feet of adverse effects to tidal wetland habitat, which will be addressed in accordance with all NYSDEC and USACE permit conditions and will confirm with applicable regulations, including CWA, Section 10 of the Rivers and Harbors Act, ECL Article 25, NYCRR Part 661, and ECL Article 15, NYCRR Part 608. This mitigation will include on-site, in-kind replacement of habitat as well as the purchase of credits from the Saw Mill Creek Wetland Mitigation Bank in Staten Island, NY, where credits may be purchased to mitigate adverse effects to tidal wetlands, or through the creation of new tidal wetland habitat off-site. Selection and implementation of off-site tidal wetland mitigation will be coordinated with EDC, NYC Parks, and other involved agencies.

8.5 CONSTRUCTION—OPEN SPACE

The Preferred Alternative would result in temporary significant adverse direct and indirect effects on open space during the construction period. However, these effects have been substantially reduced under the modified Preferred Alternative compared to the Preferred Alternative analyzed in the FEIS as nearly half of East River Park would remain open from fall of 2020 through winter of 2025. Although the modified Preferred Alternative extends the temporary significant adverse effects on the availability of open space identified in the FEIS to 2024 and 2025, a majority of construction activities under the modified project would start in the fall of 2020 instead of the spring of 2020, such that these temporary significant adverse open space effects would be extended for approximately 1.5 years in portions of the park. Under the modified Preferred Alternative, the significant effects would also be lessened because approximately half of the open space in East River Park between the fall of 2020 and winter of 2025 would remain available for public use while under the Preferred Alternative presented in the FEIS, the entire park would be closed while construction was ongoing. Therefore, over the course of construction, there will be greater availability of active and passive open space available to the public under the modified project.

MITIGATION MEASURES

As per *CEQR Technical Manual* guidance, various mitigation efforts will be implemented to improve existing open spaces in the study area and increase the utility, safety, and capacity of those resources. To that end, the mitigation measures that will be implemented by the City for the Preferred Alternative include the following:

- NYC Parks will accommodate youth permit users within existing facilities under NYC Parks jurisdiction. Due to the high volume of permitted use across all NYC Parks, permittees may have to limit playing time to be accommodated;
- The City is working with other entities with open space resources, such as DOE and NYCHA, to identify recreational resources that may be opened to the community during construction;
- NYC Parks is implementing a Lower East Side greening program and planting up to 1,000 trees in parks and streets, and up to 40 bioswales;
- NYC Parks is purchasing solar lighting to be used at six Lower East Side parks to extend playing time at fields for permitted use during construction of the Preferred Alternative;
 - Park sites may include Coleman Playground, Columbus Park, Corlears Hook Park, Sara D. Roosevelt Park, Baruch Playground, and Chelsea Park

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- NYC Parks will improve the synthetic turf at seven park locations; these sites may include the following:
 - New synthetic turf installation at five sites – sites include LaGuardia Bathhouse/Little Flower Playground, St. Vartan Park, Tanahey Playground, and Robert Moses Playground
 - Turf improvements at two sites – Columbus Park, and Baruch Playground
- NYC Parks will install new sports coating at seven sites; these sites may include the following:
 - Tanahey Playground, Sara D. Roosevelt Park, Al Smith Recreation Center, St. Vartan Park, Columbus Park, Coleman Playground, and Al Smith Playground
- NYC Parks will paint playgrounds and park equipment at up to 16 locations in Lower East Side Parks;
- NYC Parks will enhance existing Parks barbeque areas;
 - Install new picnic tables at Coleman Playground and replace existing barbeques at Al Smith Recreation Center
- NYC Parks has identified alternative tennis locations;
 - John Jay Park courts will be re-stripped to formalize tennis area
 - Queensboro Oval (in Manhattan) will be opened to NYC Parks tennis permit holders as of the summer of 2019, and for even more time (increasing from 12 weeks to 22 weeks) per summer
 - Randall’s Island tennis facility is expanding with additional courts, which will be opened to NYC Parks tennis permit holders
- NYC Parks is increasing staffing for recreation, as well as O&M in Lower East Side Parks;
 - New Playground associates (nine new staff lines) will provide new programming and help organize events and activities for park users
 - All existing O&M staff for East River Park will remain on the east side of Manhattan, below 34th Street
- The City will utilize quieter construction methods (i.e., press in pile), to partially mitigate noise effects that would be experienced at the Asser Levy Recreation Center.

Subsequent to the FEIS, the City has identified a phased construction approach where portions of East River Park will be kept open throughout the construction period to partially mitigate significant adverse construction effects on open space resources. In addition, since the release of the FEIS, the City has also committed to the following:

- Installing amenities to activate the open space area in Waterside Pier, which may include synthetic turf, additional seating, and programming;
- Opening certain Lower East Side (and broader Manhattan) New York City Department of Education (DOE) schoolyards and athletic fields to the public; and
- Reusing the recently installed turf at the Track and Field Complex in East River Park providing that the quality of the turf is in good condition when it is time for reconstruction.

In addition, as discussed in FEIS Chapter 6.9, “Construction—Transportation,” the following measures will be implemented to accommodate pedestrians and bicyclists at this area during construction under the revised construction phasing plan:

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- During construction, the East River Greenway will be closed from East 23rd Street to Montgomery Street. NYCDOT will re-route bicyclists to the on-street bike network, primarily the protected bicycle lanes along First and Second Avenues, as well as those on Allen Street/Pike Street and Clinton Street. These protected bicycle lanes will provide a reasonable alternative for many of those bicyclists who use the Greenway as a transportation route, as they are proximate to numerous destinations in the neighborhoods that run alongside the Greenway, and may actually provide a more direct route for many trips. NYCDOT is currently upgrading a number of intersections along these corridors with offset crossings to provide a more comfortable riding experience on these routes.
- NYCDOT is committed to expanding the City's bicycle network, including adding more protected bicycle lanes. In July 2019, Mayor de Blasio unveiled the Green Wave Bicycle Plan, which, amongst other improvements, increases the number of planned protected bicycle lane miles to be installed each year to 30 miles city-wide. As part of these ongoing efforts to expand the bicycle lane network, NYCDOT is currently evaluating the feasibility of installing new north-south protected bicycling lanes in the East Village that will provide additional options for bicyclists during the Greenway closure and beyond.
- Access to the ferry landings at Stuyvesant Cove Park from First and Second Avenues will be maintained via the two-way protected bicycle lane along East 20th Street.

Full mitigation of the temporary significant adverse open space effects during construction is not possible, as it is not feasible to acquire enough land to develop new open spaces in the study area. The measures proposed above will mitigate, to the extent practicable, the construction effects on open space resources and are considered partial mitigation. There are other open space resources immediately adjacent to the open space study area that offer comparable resources of similar type and quality (e.g., Tompkins Square, Madison Square, Union Square, Sara D. Roosevelt Park, Hester Street Playground, Coleman Playground, etc.). Although farther away, these open space resources would be available to the public during the construction period. Furthermore, the Preferred Alternative would substantially improve existing open space resources. All temporary displacement would be met with the refurbishment and re-construction of the displaced open space facilities. After construction, Murphy Brothers Playground, Stuyvesant Cove Park, and Asser Levy Playground would be redesigned and reconstructed and East River Park would be reconstructed as a newly landscaped and raised open space with pathways, which would enhance the user experience of the park. Upon completion of the Preferred Alternative, the upland open space resources in the ½-mile study area would be protected against future storm events, thus increasing the utility and safety of those resources. Furthermore, the Preferred Alternative would be beneficial for the open space resources in East River Park, as the alternatives seek to enhance the park features to be fully resilient in future design storm events. The flood protection measures proposed to be integrated into park features aim to reduce the effects from future design storm events on the community.

IMPROVEMENT OF EXISTING PARKS

Consistent with the guidance in the *CEQR Technical Manual*, improving existing open spaces in the study area to increase their utility, safety, and capacity to meet identified needs in the study area is considered a mitigation measure. Although construction would temporarily displace open space resources in East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, Asser Levy Playground, and Captain Patrick J. Brown Walk under the With Action Alternatives, the end result would be a refurbished open space resource. After construction, East River Park would be a newly landscaped and raised park with pathways, which would enhance the user experience of the park, under the Preferred Alternative. In addition, the upland open space resources in the ½-mile study area would be protected against future storm events, thus increasing

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the utility and safety of those resources. The Preferred Alternative would be especially beneficial for the open space resources in East River Park, as it includes a full reconstruction of the park, raising it by approximately eight feet to meet the design flood protection criteria. These enhancements would ensure that East River Park would be more resilient in future storm events, as well as sea level rise. The flood protection measures proposed to be integrated into park features aim to reduce the effects from future storm events on the community. The Preferred Alternative proposes the replacement of pedestrian crossings at the Delancey Street, East 10th Street, and Corlears Hook Bridges. The enhancement of pedestrian bridges to East River Park would improve the east–west connectivity for residents in the ½-mile study area to East River Park upon project completion. The improvements to these open space resources under the Preferred Alternative would be considered partial mitigation. By remedying a long-standing restriction/obstacle at the Con Edison “pinch-point,” the Preferred Alternative would significantly improve the usability and access to the greenway with the construction of the shared-use flyover bridge.

IMPROVEMENT OF NON-MOTORIZED ACCESS TO PARKS

The Preferred Alternative would include the replacement of the Delancey Street, East 10th Street, and the Corlears Hook Bridges. The enhancement of these bridges to East River Park would improve the east–west connectivity for residents in the ½-mile study area to East River Park upon project completion.

The Preferred Alternative would also include a shared-use flyover bridge in the East River Bikeway along the East River Dock between East 13th Street and East 15th Streets. This would allow pedestrians and cyclists to travel between Stuyvesant Cove Park and the East River Esplanade/East River Bikeway without conflict with visitors travelling in the opposite directions or requiring cyclist dismounts. Consistent with guidance in the *CEQR Technical Manual*, by remedying a long-standing restriction/obstacle to waterfront access, the Preferred Alternative would significantly improve the usability and access of the Manhattan Greenway.

8.6 CONSTRUCTION—HISTORIC AND CULTURAL RESOURCES

ARCHAEOLOGICAL RESOURCES

Additional archaeological investigation will be performed prior to or during construction as stipulated in the PA. A scope of work will be prepared in consultation with LPC and SHPO, and the City will complete any further phase of archaeological work per the guidance in the *CEQR Technical Manual* and in accordance with the Secretary of the Interior’s *Standards and Guidelines for Archaeology*, ACHP’s *Section 106 Archaeological Guidance*, and the New York Archaeological Council’s *Standards for Cultural Resource Investigations and Curation of Archaeological Collection*.

ARCHITECTURAL RESOURCES

As stipulated in the PA, the City, in consultation with LPC and SHPO, will develop and implement CPPs for architectural resources located within 90 feet from the construction area of the Preferred Alternative to avoid inadvertent construction-period damage from ground-borne vibrations, falling debris, collapse, dewatering, subsidence, or construction equipment. The CPPs will also be developed in consultation with NYC Parks, the Municipal Art Society, and the New York Landmarks Conservancy.

8.7 CONSTRUCTION—NATURAL RESOURCES

Mitigation associated with installation of permanent features, such as the installation of shafts for the flyover bridge and the filling of the existing embayments is discussed in detail in Chapter 5.6, “Natural Resources,” of the FEIS. Wetland mitigation for adverse effects associated with these features includes a combination of on- and off-site wetland habitat restoration. Ongoing coordination with NYSDEC will

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determine the need for mitigation, if any, in response to the temporary in-water impacts. All in-water work under the Preferred Alternative will comply with conditions stipulated by USACE and NYSDEC permits, including tidal wetland compensatory mitigation requirements. Turbidity curtains or booms, water-tight cofferdams, and debris nets will be used as applicable to minimize the potential for temporary in-water impacts and will be mitigated for in accordance with NYSDEC and USACE permit conditions. Cofferdams will not be installed in areas shallower than six meters between January 15 and May 31 to avoid adversely affecting winter flounder early life stage EFH in compliance with consultations completed with the NOAA NMFS. All construction activities will be subject to and performed in accordance with NYSDEC's technical standards for erosion and sediment control, which will be implemented in accordance with an approved SWPPP to minimize potential adverse effects to water quality and aquatic biota. An EPA Spill Prevention, Control, and Countermeasure (SPCC) Plan will also be implemented, and all construction performed in accordance with the SPCC. During construction, erosion control BMPs will be used to prevent sediment, trash, and debris from entering the waterway. Any surplus excavated soils will be disposed of in accordance with all applicable rules and regulations at a pre-approved NYSDEC disposal facility. The proposed restoration for tree loss associated with the Preferred Alternative will be conducted with a pre-approved NYC Parks landscape restoration plan, as described in Chapter 5.6, "Natural Resources," of the FEIS, and in compliance with Chapter 5 of Title 56 of the Rules of New York (NYC Parks Rules) and Local Law 3 of 2010.

8.8 CONSTRUCTION—HAZARDOUS MATERIALS

Construction of the Preferred Alternative has the potential to disturb hazardous materials due both to demolition and excavation. Demolition will be addressed in accordance with the existing regulatory programs, e.g., for asbestos-containing materials (ACM) and LBP. Asbestos surveys will be completed by a qualified individual/contractor, and all ACM that would be disturbed by the demolition will be removed in advance, accordance with local, state, and federal regulations and guidelines. LBP will be addressed in accordance with applicable regulatory requirements including OSHA *Lead in Construction* requirements. If PCBs, or mercury containing fluorescent lights or older thermostats require removal, disposal will be performed in accordance with applicable regulations and guidelines. In addition, disposal of any chemicals will be performed in accordance with applicable local, state, and federal regulations and guidelines.

To avoid any impacts due to the potential presence of subsurface hazardous materials during project construction, the following measures will be included as part of the construction specifications:

- A Materials Handling Plan that covers the management, handling, transportation, and disposal of non-hazardous contaminated soils, regulated hazardous wastes, and all other soil/fill will be prepared and submitted to DDC for review and approval.
- It is expected that dewatering would be necessary for construction of the Preferred Alternative. If dewatering is proposed to discharge into a New York City sewer, then a DEP Sewer Discharge Permit must be obtained in advance of dewatering. In addition, any discharges proposed to the East River, either directly or via a storm sewer, must comply with NYSDEC effluent discharge limitations and a NYSDEC SPDES permit will likely be required. Pretreatment may also be required prior to discharge. It is expected that additional water sampling will also be required as part of the review of these approvals.
- Prior to demolition or excavation activities with the potential to disturb aboveground or underground petroleum storage tanks, the tanks will be properly closed and removed along with any associated

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contaminated soil in accordance with applicable regulations and guidelines, including NYSDEC spill reporting and tank registration requirements.

- Dust suppression will be employed during excavation, grading and other soil disturbing activities and it is expected that a Community Air Monitoring Plan (CAMP) will be implemented to provide protections for the workers and the surrounding community from potential airborne releases.
- To address contamination in the soil and groundwater during construction, a MWP, RAP, and CHASP will be prepared and submitted to NYSDEC and/or DEP for review and approval. The MWP will provide soil and groundwater management procedures for any excavated material with MGP-related contamination including criteria for identifying, handling, storing, transportation, and disposal of soil and groundwater affected by MGP-related wastes.
- The RAP will provide soil management procedures for all other soils, including soils for filling and grading (including raising the grade of East River Park) and the appropriate clean fill importation criteria; criteria for allowable reuse of soil as backfill; handling; stockpiling; testing; transportation; and disposal.
- The RAP will also address encountering known and unexpected petroleum storage tanks.
- The CHASP, describing worker safety protocols will ensure that subsurface disturbance will be performed in a manner protective of workers, the community, and the environment and will also address odor, dust and nuisance control. The CHASP will include security measures to prevent public access (to areas where soil disturbance is taking place or where other hazards might be present).
- Additionally, to reduce the potential migration of MGP-related contamination, the design plan for recovery wells, as part of the MWP, will be updated and then implemented in conjunction with construction. The MWP will be submitted to NYSDEC for review and approval.
- Both NYSDEC and DEP agencies will also approve SMPs, addressing post-construction requirements. The DEP SMP will address site-wide inspection and maintenance of the cap and procedures to be followed should excavation or other disturbance beneath the cap be required. The NYSDEC MGP-SMP will address additional procedures to be followed should MGP materials need to be disturbed, as well as operation and maintenance of the MGP-related recovery wells.

ACM and LCP surveys were conducted in 2018 of the East 10th Street Comfort Station, and the East 10th Street and Delancey Street Bridges (Asbestos and Lead Paint Survey Report for East Side Coastal Resiliency, AKRF, Inc., revised June 2018). No ACM was identified in samples collected but ACM may be present in areas that were not accessible. Before any demolition or other disturbance, additional testing will be performed once it is possible to obtain samples from the inaccessible areas and contractor specifications will address the contingency that ACM is hidden or will otherwise not be encountered until later. Lead was detected in nine of the 22 paint chip samples. Demolition or other activities with the potential to disturb lead-based paint and LCP must be performed in accordance with applicable regulations (including OSHA 29 CFR 1926.62-Lead Exposure in Construction). Based on the testing results, all paint on steel components of the East 10th Street Comfort Station and East 10th Street Bridge, and all paint throughout the Delancey Street Bridge should be considered to be LCP. Independent of the environmental review associated with the proposed project, management and/or removal of these materials during construction is subject to a large number of federal, state, and local regulatory requirements that will be incorporated into the project documents and contractor specifications.

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8.8 CONSTRUCTION—TRANSPORTATION

The Preferred Alternative would have the potential to result in significant adverse traffic effects at the intersections of East 23rd Street and First Avenue and East 23rd Street and Avenue C during the 6:00 to 7:00 AM construction analysis peak traffic hour, which could be fully mitigated with the implementation of standard traffic mitigation measures (e.g., signal timing changes). The Preferred Alternative could also result in temporary significant adverse effects for users of the East River bikeway/walkway and that construction under the Preferred Alternative would not result in any significant adverse transit and parking effects.

MITIGATION MEASURES

Table 7 itemizes the recommended mitigation measures that address the identified effects under the construction of the Preferred Alternative. With the implementation of these standard traffic mitigation measures (signal timing changes), which are subject to review and approval by the NYCDOT, the temporary significant adverse traffic effects identified above could be fully mitigated.

**Table 7
Recommended Mitigation Measures: Preferred Alternative
Weekday AM Peak Hour**

Intersection	No Action Signal Timing	Recommended Mitigation Measures	Recommended Signal Timing
East 23rd Street and First Avenue	EB-T/WB-T: Green = 7 s EB-T/WB-T/WB-R: Green = 19 s EB-L/EB-T: Green = 11 s NB-T/NB-R: Green = 15 s NB-L/NB-T/NB-R: Green = 11 s	Shift 1 second of green time from the NB TR phase to the EB T/WB TR phase	EB-T/WB-T: Green = 7 s EB-T/WB-T/WB-R: Green = 20 s EB-L/EB-T: Green = 11 s NB-T/NB-R: Green = 14 s NB-L/NB-T/NB-R: Green = 11 s
East 23rd Street and Avenue C	EB-R (SR)/WB: Green = 13 s EB-LTR (ML)/WB: Green = 23 s NB/SB: Green = 19 s NB: Green = 6 s NB /WB: Green = 9 s	Shift 1 second of green time from the EB-R (SR)/WB phase to the NB/SB phase	EB-R (SR)/WB: Green = 12 s EB-LTR (ML)/WB: Green = 23 s NB/SB: Green = 20 s NB: Green = 6 s NB /WB: Green = 9 s
Notes: EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; L = Left; T = Through; R = Right			

A discussion of the recommended mitigation measures is provided below. **Table 8** provides the LOS and lane group delays for the affected intersections under the 2022 No Action Alternative, the Preferred Alternative, and mitigation conditions for the 6:00 AM to 7:00 AM peak hour.

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**Table 8
Level of Service Analysis**

Weekday AM Peak Hour – Preferred Alternative

Intersection	Weekday 6:00 AM to 7:00 AM												
	No Action Alternative				Preferred Alternative				Mitigation				
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	
East 23rd Street and First Avenue													
EB	L	0.64	55.8	E	L	0.64	55.8	E	L	0.64	55.8	E	
	T	0.36	16.2	B	T	0.36	16.2	B	T	0.35	15.5	B	
WB	T	0.34	26.4	C	T	0.37	26.9	C	T	0.36	26.0	C	
	R	0.93	90.8	F	R	0.95	97.2	F+	R	0.89	81.5	F	
NB	L	0.80	71.4	E	L	0.82	74.9	E	L	0.82	74.9	E	
	TR	0.70	28.0	C	TR	0.70	28.2	C	TR	0.73	29.5	C	
		Intersection		33.3	C	Intersection		33.8	C	Intersection		33.5	C
East 23rd Street and Avenue C													
EB (Mainline)	LTR	0.88	47.1	D	LTR	0.89	49.1	D	LTR	0.89	49.1	D	
WB	LTR	0.08	14.1	B	LTR	0.10	14.2	B	LTR	0.10	14.8	B	
NB	LTR	0.43	18.9	B	LTR	0.43	18.9	B	LTR	0.42	18.2	B	
SB	LTR	1.02	77.5	E	LTR	1.05	86.0	F+	LTR	0.99	70.0	E	
EB (Service Road)	R	0.23	38.0	D	R	0.23	38.0	D	R	0.25	39.7	D	
		Intersection		47.8	D	Intersection		51.3	D	Intersection		45.9	D
Notes: L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection + Denotes a significant adverse traffic effect.													

East 23rd Street and First Avenue

The significant adverse effect at the westbound right-turn of this intersection during the weekday AM peak hour could be fully mitigated by shifting 1 second of green time from the northbound through/right-turn phase to the eastbound through/westbound through/westbound right-turn phase.

East 23rd Street and Avenue C

The significant adverse effect at the southbound approach of this intersection during the weekday AM peak hour could be fully mitigated by shifting 1 second of green time from the eastbound right-turn (service road)/westbound phase to the northbound/southbound phase.

CONCLUSIONS

Traffic conditions were evaluated at six intersections for the weekday 6:00 AM to 7:00 AM peak hour and one intersection for the 3:00 PM to 4:00 PM peak hour under the Preferred Alternative. In 2022 with the Preferred Alternative, there would be the potential for significant adverse traffic effects at the intersections of East 23rd Street and First Avenue and East 23rd Street and Avenue C during the weekday 6:00 AM to 7:00 AM peak hour.

At the intersections of East 23rd Street and First Avenue and East 23rd Street and Avenue C where significant adverse traffic effects are predicted to occur could be fully mitigated with the implementation of standard traffic mitigation measures (e.g., signal timing), which are described above.

PEDESTRIANS

Because the Preferred Alternative may require a rerouting of the bikeway/walkway along the proposed project area to inland routes, it is concluded to have the potential to result in temporary significant adverse

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effects for users of the East River bikeway/walkway. Thus, the Preferred Alternative will require the development and implementation of a rerouting plan.

The following measures will be implemented to accommodate pedestrians and bicyclists at this area during construction:

- During construction, the East River Greenway will be closed from 23rd Street to Montgomery Street. NYCDOT will re-route bicyclists to the on-street bike network, primarily the protected bicycle lanes along First and Second Avenues, as well as those on Allen Street/Pike Street and Clinton Street (see Figure 6.9-20 of the FEIS). These protected bicycle lanes will provide a reasonable alternative for many of those bicyclists who use the Greenway as a transportation route, as they are proximate to numerous destinations in the neighborhoods that run alongside the Greenway, and may actually provide a more direct route for many trips. NYCDOT is currently upgrading a number of intersections along these corridors with offset crossings to provide a more comfortable riding experience on these routes. In addition, signs will also be installed one block west of the East River Greenway to inform pedestrians of the closure.
- NYCDOT is committed to expanding the City's bicycle network, including adding more protected bicycle lanes. In July 2019, Mayor de Blasio unveiled the Green Wave Bicycle Plan, which, amongst other improvements, increases the number of planned protected bicycle lane miles to be installed each year to 30 miles city-wide. As part of these ongoing efforts to expand the bicycle lane network, NYCDOT is currently evaluating the feasibility of installing new north-south protected bicycling lanes in the East Village that will provide additional options for bicyclists during the Greenway closure and beyond.
- Access to the ferry landings at Stuyvesant Cove Park from First and Second Avenues will be maintained via the two-way protected bicycle lane along East 20th Street.

8.9 CONSTRUCTION—AIR QUALITY

Measures will be taken to reduce pollutant emissions during construction in accordance with all applicable laws, regulations, and building codes as well as New York City Local Law 77. These include dust suppression measures, idling restriction, and the use of ULSD fuel and best available tailpipe reduction technologies. With the implementation of these emission reduction measures, construction of the Preferred Alternative would not result in any predicted concentrations above NAAQS for NO₂, CO, and PM₁₀ or the *de minimis* thresholds for PM_{2.5} from nonroad and on-road sources. Therefore, no significant adverse air quality impacts are predicted from the construction of the Preferred Alternative.

Annual emissions from nonroad and on-road sources over the scheduled construction duration would not exceed any of the *de minimis* criteria defined in the general conformity regulations. Therefore, construction of the Preferred Alternative would conform to the relevant SIP and does not require a general conformity determination.

8.10 CONSTRUCTION—GREENHOUSE GAS

The Preferred Alternative would not introduce any substantial new buildings or other uses which would require electricity use, fuel consumption, or generate transportation needs. Therefore, consistency with the efficient buildings goal, clean power goal, and transit-oriented development and sustainable transportation goal defined in CEQR as part of the City's GHG reduction goal would not be relevant for the Preferred Alternative. Since the Preferred Alternative would not result in substantial carbon dioxide equivalent (CO₂e) emissions once in operation, the quantified analysis of CO₂e emissions focuses on construction of the

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Preferred Alternative. Potential measures for further reductions of emissions under consideration may include the use of biodiesel, expanded use of recycled steel and aluminum, and construction waste reduction.

8.11 CONSTRUCTION—NOISE AND VIBRATION

Even with the noise control measures described in “Noise Control Measures” of Chapter 6.12, “Noise and Vibration,” of the FEIS, construction of the Preferred Alternative would result in potential temporary significant adverse noise effects at 621 Water Street, 605 Water Street, 309 Avenue C Loop, 315-321 Avenue C, 620 East 20th Street, 601 East 20th Street, 8 Peter Cooper Road, 7 Peter Cooper Road, 530 East 23rd Street, 765 FDR Drive, 819 FDR Drive, 911 FDR Drive, 1023 FDR Drive, 1115 FDR Drive, 1141 FDR Drive, 1223 FDR Drive, 570 Grand Street, 455 FDR Drive, 71 Jackson Street, 367 FDR Drive, 645 Water Street, 322 FDR Drive, 525 FDR Drive, 555 FDR Drive, 60 Baruch Drive, 132 Avenue D, 465 East 10th Street, and 520 East 23rd Street, 123 Mangin Street, and the Asser Levy Recreation Center. The predicted significant adverse construction noise effects would be of limited duration and would be up to the high 80s dBA during daytime construction and up to the mid 70s during nighttime construction. Because the analysis is based on worst-case construction phases, it does not capture the natural daily and hourly variability of construction noise at each receptor. The level of noise produced by construction fluctuates throughout the days and months of the construction phases, while the construction noise analysis is based on the worst-case time periods only, which is conservative.

Source or path controls beyond those already identified in “Noise Reduction Measures” of Chapter 6.12, “Noise and Vibration,” of the FEIS, were considered for feasibility and effectiveness in reducing the level of construction noise at the receptors that have the potential to experience significant adverse construction noise impacts. These measures will include the following:

- Pile installation activities associated with the floodwall and closure structures that are within 50 feet of residences and the Asser Levy Recreation Center, will produce no more than an 80 dBA L_{max} noise level (i.e., sound pressure level) at a distance of 50 feet. For example, a hydraulic press-in pile installation method will be used instead of the standard impact pile driving method.
- Pile installation activities, where feasible and practicable, will be limited to between the hours of 7 AM and 6 PM. This excludes any activities that need to occur adjacent to the FDR Drive where work would need to be conducted during nighttime as per DOT’s OCMC requirements.
- Using barging for deliveries of construction materials (including concrete) and importing of fill to the project sites, rather than trucks on roadways to from the construction work areas, will provide approximately 3 to 6 dBA reduction in noise levels from dump trucks and/or delivery trucks. If noise from pile installation is reduced by one of the means described above, the trucks would be the next greatest contributor to the total construction noise level, so this reduction measure could be effective in further reducing the total construction noise levels at surrounding receptors. However, it may result in conflicts with esplanade work, in which case truck deliveries would be unavoidable.
- Selecting quieter equipment models for cranes, generators, compressors, and lifts may result in up to a 10 dBA reduction in noise levels from construction if the pile installation and truck noise are reduced by the means described above. This is subject to the availability of quieter equipment in the quantities necessary to complete the Preferred Alternative in the projected timeframe.
- Construction equipment that would operate on barges or within the river will be required to comply with all of the same regulations and commitments as on-land equipment that are subject to the New York City Noise Control Code.

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In addition to the source and path control measures described above, the following operational commitments will be used to limit construction noise at nearby residences during night-time hours, when residences are most sensitive to noise:

For construction activity that would occur during night-time (i.e., 6 PM to 7 AM) and weekend hours within 50 feet of a residence, the $L_{eq(1)}$ noise level resulting from construction must not exceed 80 dBA as measured at the exterior façade of any residential dwelling unit.

8.10 MONITORING/ENFORCEMENT/ON-GOING COORDINATION

The above described environmental commitments will be monitored by DDC, OMB and NYC Parks and/or its agents, and other appropriate federal, state, and local agencies to ensure conformance. Agency and stakeholder coordination will continue during project development, design and the permit process. Construction monitoring and enforcement programs will be implemented and included in contract documents to verify that construction contractors carry out project construction in accordance with contract provisions and design plans, required permit conditions, adopted environmental commitments and mitigation requirements. DDC will be the agency responsible for overseeing the construction of the Preferred Alternative.

A firm with relevant construction experience will serve as an owner's representative providing guidance and oversight of the construction process for the ESCR Project. After construction completion, the project area will be turned over to NYC Parks, NYCDOT, and DEP, as stipulated in the O&M Manual. These agencies will own and take full responsibility for affected areas including maintenance and monitoring of the structures and facilities.

An O&M Manual is being developed for the proposed flood protection system to identify the procedures for deploying the system during a storm event and its periodic testing and maintenance. Oversight and implementation of this manual and the proposed flood protection systems would be managed in coordination with a plan to be developed with input from NYCEM, NYCDOT, NYPD, FDNY, NYC Parks, and other City and state agencies including MTA for coordination with respect to transit operations.

9 COMMENTS ON THE FEIS

On September 13, 2019, OMB and NYC Parks issued the joint Notice of Availability/Notice of Completion for the FEIS through publication in the New York State Environmental Notices Bulletin and websites and newspapers of general circulation within the affected community in compliance with the City Participation Plan. The Notice of Availability of the FEIS was announced in the Federal Register on September 13, 2019. The document was available for public review until October 15, 2019. During the public review period, written comment letters and emails were received from agencies, elected officials, organizations, and the public. New or substantive comments on the project are addressed in **Appendix A** of this Joint ROD and Findings Statement. In summary, comments were received on: project purpose and need; project alternatives; process, coordination, and public participation; open space; historic and cultural resources; urban design and visual resources; natural resources; transportation; environmental justice; project construction; and general comments.

Copies of written comments from the elected officials and organizations/agencies are included in **Appendix B, "Written Comments Received on the FEIS."**

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New York City Office of Management and Budget

New York City Department of Parks & Recreation

10 CONCLUSION

Having carefully considered the environmental record noted above, the mitigation measures as required herein, the written and oral comments offered by other agencies and the public on this record, and the written responses to the comments, OMB and NYC Parks have determined that (1) adequate opportunity was offered for the presentation of views by all parties with a significant economic, social, or environmental interest; (2) fair consideration has been given to the preservation and enhancement of the environment and to the interests of the communities in which the Preferred Alternative is located; (3) all reasonable steps have been taken to minimize adverse environmental effects of the Preferred Alternative; and (4) where adverse effects remain, there exists no feasible and prudent alternative to avoid or further mitigate such effects.

On the basis of the careful evaluation and weighing of environmental effects with social, economic and other considerations as presented, and the mitigation measures proposed in the East Side Coastal Resiliency FEIS, Tech Memo 001 dated November 12, 2019, and this Joint ROD and Findings Statement, as well as the written and oral comments offered by the public and public agencies, OMB and NYC Parks determine in accordance with 24 CFR Part 58, 6 NYCRR Part 617, and City Environmental Quality Review the following:

- The requirements of 24 CFR Part 58, 6 NYCRR 617, and 40 CFR Parts 1500 to 1508 have been met as the DEIS and FEIS were duly prepared under NEPA, and the FEIS along with the Technical Memorandum are sufficient to make findings under 6 NYCRR Part 617.11 as permitted by 6 NYCRR 617.15;
- Consistent with social, economic and other essential consideration, from among the reasonable alternatives available, the Preferred Alternative is one that avoids or minimizes adverse environmental effects to the maximum extent practicable and that adverse environmental effects will be avoided or minimized to the maximum extent practicable by adopting those mitigation measures and other environmental commitments that were identified as practicable;
- Alternative courses of action were evaluated and decisions were made in the best overall public interest based upon a balanced consideration: of the need to address coastal flooding vulnerability in a manner that reduces the flooding risk while enhancing waterfront open spaces and access to the waterfront;
- The proposed project is consistent with the applicable policies of Article 42 of the Executive Law, as implemented by 19 NYCRR 600.5 and consistent to the maximum extent practicable with the New York City approved Local Waterfront Revitalization Program (LWRP);
- The proposed project, to the fullest extent possible, incorporates all environmental investigations, reviews, and consultations in a single coordinated process;
- Compliance with all applicable environmental requirements are reflected in the environmental review record required under NEPA, and as applicable, SEQRA and CEQR; and
- Public involvement and a systematic interdisciplinary approach were essential parts of the development process for the Proposed Actions.

National Environmental Policy Act and New York State Environmental Quality Review Act, and City
Environmental Quality Review

JOINT ROD and FINDINGS STATEMENT
New York City Office of Management and Budget
New York City Department of Parks & Recreation

Signatories:

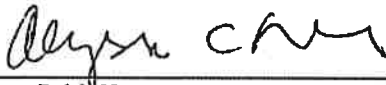


Eram Qadri

Unit Head – Environmental Review, Community
Development Block Grant – Disaster Recovery at
NYC Office of Management and Budget

December 6, 2019

Date



Alyssa Cobb Konon

Deputy Commissioner, Planning and Development
at NYC Department of Parks & Recreation

December 6, 2019

Date

Appendix A
Response to Comments on the FEIS

A. INTRODUCTION

This document summarizes and responds to comments on the Final Environmental Impact Statement (FEIS) for the East Side Coastal Resiliency (ESCR) Project (the proposed project). The New York City Office of Management and Budget (OMB), as Lead Agency under the National Environmental Policy Act (NEPA), and the New York City Department of Parks and Recreation (NYC Parks), as Lead Agency under City Environmental Quality Review (CEQR) and the State Environmental Quality Review Act (SEQRA), released the FEIS on September 13, 2019. OMB coordinated with the U.S. Environmental Protection Agency (EPA) to publish a Notice of Availability of the FEIS in the Federal Register on September 13, 2019, which officially opened the NEPA public comment period on the document. The public comment period remained open through 5 PM on October 15, 2019. During the public comment period, OMB accepted written comments submitted via mail, email, and through the project website.

FEIS AVAILABILITY

At the start of the public comment period, OMB and NYC Parks sent electronic and/or hard copy notices to elected officials, interested organizations, stakeholders, Involved, Interested, and Cooperating Agencies, other regulatory agencies, and members of the public, informing them that the FEIS was available for review, providing information on the comment period and how to make comments, and inviting them to the public hearing at which comments could be made. In addition, OMB and NYC Parks posted notices with information on the availability of and instructions for how to comment on the FEIS. These notices were posted on the project website and in the project document repositories listed below.

The FEIS is available for review on the following websites: <http://www.nyc.gov/cdbgdr> or <http://www.nyc.gov/parks/escr> and is available for public inspection at the following locations during regular business hours:

- NYC Parks, the Arsenal, Central Park, 830 Fifth Avenue, Room 401, New York, NY 10065
- OMB, 255 Greenwich Street, 8th Floor, New York, NY 10007
- New York Public Library – Seward Park Branch, 192 East Broadway, New York, NY 10002
- New York Public Library – Epiphany Branch – 228 East 23rd Street, New York, NY 10010

PUBLIC COMMENTS

During the public comment period, OMB accepted public comments made in a number of different ways:

- Email: CDBGDR-Enviro@omb.nyc.gov
- Online: <http://www.nyc.gov/cdbgdr>

- Mail or Hand Delivery: New York City Office of Management and Budget, 255 Greenwich Street, 8th Floor, New York, NY 10007

This document summarizes and responds to the comments received through these mediums during the public comment period for the FEIS. In addition, recommendations made in the October 10, 2019 East Side Coastal Resiliency Project Review report prepared by Deltares are also considered in this document.

B. CONTENTS OF THIS APPENDIX

Section C lists the organizations and individuals that provided comments relevant to the FEIS. Section D 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 FEIS. Where more than one commenter expressed similar views, those comments have been grouped and addressed together. All written comments from elected official and organizations/agencies are included in Appendix B, “Written Comments Received on the FEIS.”

C. LIST OF ORGANIZATIONS AND INDIVIDUALS WHO COMMENTED ON THE DEIS

ELECTED OFFICIALS

1. Gale Brewer, President, Borough of Manhattan – City of New York, letter dated October 14, 2019 to Olga Abinader, Acting Director of the Environmental Assessment Review Division at the Department of City Planning (Brewer_23)
2. Carlina Rivera, Council Member, 2nd District, City of New York, letter dated October 15, 2019 to Olga Abinader, Acting Director of the Environmental Assessment and Review Division at the Department of City Planning (Rivera_27)

GENERAL PUBLIC/ORGANIZATIONS/AGENCIES

3. Elia Glenn, resident, email dated September 13, 2019 (Glenn_01)
4. Peter Braun, email dated September 16, 2019 (Braun_02)
5. Kate Sjevold, email dated September 17, 2019 (Sjevold_03)
6. Bryan Keller, email dated September 21, 2019 (Keller_04)
7. Jeany Lee, email dated September 24, 2019 (Lee_05)
8. Andy Friedberg, resident, email dated September 29, 2019 (Friedberg_06)
9. The United States Environmental Protection Agency (EPA), letter dated September 26, 2019 (EPA_07)
10. Danielle Chu, email dated October 1, 2019 (Chu_08)¹
11. Milena Leznicki, resident, email dated October 2, 2019 (Leznicki_09)
12. Tanya Uhlmann, resident, email dated October 3, 2019 (Uhlmann_10)
13. Fannie Ip, resident, email dated October 2, 2019 (Ip_11)²

¹ This comment letter was submitted in response to the Substantial Action Plan Amendment (“SAPA”). However, since the comments are more relevant to the FEIS, they are addressed within this document.

² The responses to this comment letter are included in the SAPA Response to Comments document since the comments are related to the action plan amendment.

14. Serena Wood, resident, email dated October 3, 2019 (Wood_12)
15. Nat Buchbinder, email dated October 6, 2019 (Buchbinder_13)
16. Charles Krezell, resident, email dated October 3, 2019 (Krezell_14)
17. Dan Hoeg, President, the Hoeg Corporation, email dated October 7, 2019 (Hoeg_15)
18. Dianne Lake, resident, email dated October 14, 2019 (Lake_16)
19. Wendy Brawer, resident, emailed dated October 14, 2019 (Brawer_17)
20. Dr. Amy Berkov, Department of Biology, City College of New York, email dated October 14, 2019 (Berkov_18)
21. Cyndi Kerr, resident, email dated October 14, 2019 (Kerr_19)
22. Stephen Albonesi, The Municipal Art Society of New York (MASNYC), email dated October 15, 2019 (Albonesi_20)
23. Victor Gallo, Associate Counsel, Law Department, Con Edison, email dated October 15, 2019 (Gallo_21)
24. Kate Horsfield, resident, email October 15, 2019 (Horsfield_22)
25. Howard Brandstein, Executive Director, Sixth Street Community Center, emailed dated October 15, 2019 (Brandstein_24)
26. Laura Sewell, Lower East Side Preservation Initiative (LESPI), Section 106 Consulting Party for the East Side Coastal Resiliency Project, email dated October 15, 2019 (Sewell_25)
27. Karin Weiss, resident, email dated October 15, 2019 (Weiss_26)
28. Dan Tainow, email dated October 15, 2019 (Tainow_28)
29. Karin Weiss, email dated October 15, 2019 (Weiss_29)
30. Carolyn Ratcliffe, 9BC Tompkins Square Block Association, emailed dated October 15, 2019 (Ratcliffe_30)
31. Deltares, East Side Coastal Resiliency Project Review, report dated October 10, 2019 (Deltares_31)

D. COMMENTS AND RESPONSES

1.0 PURPOSE AND NEED

Comment 1: In general, so many people rely on the benefits provided by the East River Park that it demands protection. While the community certainly also needs protection against water surge from the river, both objectives can undoubtedly be achieved: preservation and protection. (Glenn_01)

Finding ways to incorporate the needs of the community now and throughout the project completion is just as necessary as securing future flood protection. (Sjovold_03)

Response: One of the City's priorities with the Preferred Alternative is to ensure that flood protection is delivered as quickly as possible so that tens of thousands of residents are protected from the risk of damage from coastal storms. Subsequent to the release of the FEIS, the City has identified an approach that will allow for phased construction, including safely keeping parts of East River Park open and reopening parts of East River Park, as well as developing a robust neighborhood park improvements program that provides active and passive recreational areas for the community throughout the 5-year construction period. A technical

memorandum (Tech Memo 001 - see Appendix C) has been prepared to assess the environmental effects of the modified Preferred Alternative, including the revised construction phasing plan, and concluded that the modified Preferred Alternative would not result in any new significant adverse effects not identified in the FEIS.

Comment 2: We need to ask why are other areas of the Manhattan coast not going to be demolished and raised 10 feet. Are they continuing the Big U plan? How would raising only our section, not force the flooding to go around this new little mountain? The buildings along the coast have their own flood protection from what I have read so demolishing the park is not for their protection as the city would like us to think. Would plans of more luxury waterfront towers being built in the Lower East Side have anything to do with this new surprise plan? (Leznicki_09)

Response: The proposed project is the first element in a comprehensive plan for flood protection in Manhattan referred to as the Big U extending along the Hudson River from West 57th Street to the Battery, and then north up the East River to East 42nd Street, that responds to the urgent need for flood protection and resiliency improvements following Hurricane Sandy in recognition of the tens of thousands of residents within the protected area who would benefit from its implementation. Construction of the Preferred Alternative is anticipated to commence in the spring of 2020, while other aspects of the Big U planned concept, including Brooklyn Bridge-Montgomery Coastal Resiliency, Battery Coastal Resiliency, and Battery Park City Resiliency, are anticipated to be constructed starting in 2020 to 2021 based on currently available information. The planning, design, and implementation for these projects is being coordinated by the City to ensure they function together as an integrated flood protection system for Lower Manhattan.

As described in FEIS Chapter 2.0, "Project Alternatives," the flood protection system is designed to provide flood protection while not increasing flooding in the adjacent community during a design storm event. Three projected storm surge events were modeled using existing conditions, as well as with the future flood protection system in place (current 100-year storm, current 500-year storm, and future 100-year storm with 2.5 feet of sea level rise). The outputs of the models for the pre- and post-project conditions were then compared to evaluate whether the flood protection system would have an impact on adjacent or nearby areas. The flood modeling analysis, which examined maximum storm surge and maximum waves, concluded that the proposed project would not affect the flooding conditions in neighborhoods to the north and south of the project area as well as east of the East River in Brooklyn which are all related to the effect of similarly abnormally high tides. The 2015 *Coastal Hydraulics Report* referenced in the FEIS, as well as the updated *Coastal Hydraulics Report* (October 2019) that reflects the revised alignment of the tidal flood protection system during the

progression from conceptual to final design, are available on the project's website³ for public inspection.

Comment 3: There are so many recently redone parts of the park that will be destroyed including huge trees. I don't understand this waste of money. (Uhlmann_10)

Please do not destroy the park. (Buchbinder_13)

Destroying all the mature trees, to be replaced by saplings which may not ever have a chance to mature, is not "protecting this valuable resource" or "enhancing its value." Residents were using the East River Park Esplanade, and jogging around the track, a short time after Sandy—so it is hardly necessary to destroy the park to protect it. (Berkov_18)

Perhaps the city needs to redefine community. RBD, which spent years incorporating feedback from the community, recommended a more natural, floodable park. The city appears to be primarily interested in protecting its assets. (Berkov_18)

Response: In other design alternatives, while the park was being reconstructed, it remained susceptible to flooding. While protecting the park means elevating and then reconstructing the facilities, this design will provide long-term protection against flooding and sea level rise in East River Park, thereby avoiding the loss of open space resources due to another significant tidal storm and the need to incrementally replace impacted vegetation and facilities.

As described in FEIS Chapter 5.6, "Natural Resources," the tree planting palette for the project considers size, growth rate, diversity and resilience, amongst other factors. Trees and plant material would be covered under a guarantee period, as stipulated by contract specifications, such that any tree that is dead, in an unhealthy or unsightly condition, or has lost its natural shape due to dead branches, excessive pruning, inadequate or improper maintenance, vandalism or other causes, would be replaced during the following planting season.

Comment 4: The new United Nations report, the International Panel on Climate Change, warns that sea levels will rise between 8 inches and 6.6 feet by 2100. The ESCR project has not updated the plan for the East River to accommodate these new predictions and is therefore based on faulty reasoning. (Krezell_14)

The city, in planning for projected sea level rise only through the 2050s, will oblige the next generation to withstand another acrimonious planning process, and all of the ills that accompany closure and construction of a large and beloved city park. (Berkov_18)

³ <https://www1.nyc.gov/site/escr/progress/environmental-review.page>

According to the New York City Panel on Climate Change (NPCC) 2019 Report Executive Summary, 2.5 feet of sea level rise is the most severe projection for the 2050s. Midlevel scenarios for 2100 range from 1.83 to 4.17 feet of sea level rise. For the ESCR project, in planning for 2.5 feet of sea level rise, gets you somewhere in the middle of the mid-range estimates. The preferred plan only offers projection against all mid-range estimates if we assume another 2 feet of park elevation (and then what happens to the new plantings and all of the expensive new infrastructure)? Even with a second round of destruction/construction, the project will fail to offer flood protection: (1) if sea levels rise as predicted in the high-range “business as usual” estimates (4.83 feet in the 2080s, 6.25 feet by 2100), or (2) if the Antarctic experiences rapid ice melt (6.75 feet by the 2080s, 9.5 feet by 2100; these estimates were considered low probability but high impact). The Deltares report points out Alternatives 3 and 4 were designed to protect against 2050s estimates of sea level rise only. “Elevating the park with an additional two feet in 2050 would require the removal of all biodiversity and fully grown trees,” and because “sea levels are rising faster than previously predicted (as reported in the September 2019 IPCC report 6)... additional elevation would likely be required at that time.” It’s not clear to me why any of the Alternatives could not be adapted to protect through 2100, rather than the 2050s. It doesn’t make sense to invest \$1.45 B in a plan that will only offer flood protection, and a usable park, for a couple of decades. (Berkov_18)

While Design Alternative 3 and the Preferred Alternative both meet the minimum levels of protection for 2050 sea level rise, I urge the Applicants to consider the future of both designs beyond 2050 with regards to sea level rise and the East River Park’s relationship to the FDR. (Brewer_23)

Based on the community’s resistance to the removing of trees and vegetation, it is recommended including the additional two feet of fill be considered in the current project, rather than leaving it as a future option. Including it in the current project would avoid having to remove the mature vegetation around the 2050s, when sea level will likely reach a level that the two additional feet will be needed. (Deltares_31) (Brewer_23)

Response: The design criteria for the proposed project is based on the NPCC 2050s 90th percentile, the high-end projections for sea level rise. It is equivalent to the mid-range projection for 2100 which is considered a likely scenario for climate scientists. The City is striking a balance between durable flood protection over the life of the project and the associated community effects and costs of implementing flood protection. Climate change is a dynamic threat and the severity of its impacts will depend on how quickly carbon emissions can be reduced worldwide. For this reason, the City has designed the proposed project to be adaptable in the decades beyond 2050 to accommodate future longer-term projections for sea level rise. Any future plan to increase the resiliency in this area would require design and technical analyses, in addition to meeting

environmental review requirements and obtaining approvals, as warranted. The City will continue to work with the neighboring community and other stakeholders to provide information and documentation about the Preferred Alternative.

Comment 5: What about the middle class and working class such as the Naturally Occurring Retirement Community (NORC) at East River Housing? You have no concerns for us? (Weiss_26)

Response: One of the City's priorities with the proposed project is to ensure that flood protection is delivered as quickly as possible so that tens of thousands of residents, including the NORC at East River Housing, are protected from the risk of damage from coastal storms. The City understands the importance of East River Park to the community and as a result has developed an interim recreation plan that includes a phased approach to construction in East River Park to allow parts of the park to safely remain open to the community at all times during the construction period.

Comment 6: The north side of the project area is the northern edge of the Big U and therefore has no connecting flood protection system. Securing the area needs to be taken into consideration in the final detailed designs of any of the alternatives. It is recommended a hydraulic study be conducted to investigate whether floodwater can enter the city north of 25th Street. Such a study would help to show whether or not additional measures are needed by extending the ESCR Project area or by another flood protection project for this area. (Deltares_31)

Response: The northern segment of the proposed floodwall connects into the Veteran Affairs (VA) Medical Center floodwall that extends westward along East 25th Street to First Avenue to fully enclose the protected area. With this connection, based on the flood modeling conducted for the proposed project,⁴ no floodwater can enter the protected area from East 25th Street. A separate flood protection system is being designed for the segment north of East 25th street.

Comment 7: Community reports indicate that urban flooding in the project area that may not or may only be partly mitigated with the proposed stormwater and sewer drainage system. It is therefore recommended a study be conducted on urban flooding to identify the extent of the issue. This study could be connected to the City's green infrastructure program. (Deltares_31)

⁴ The 2015 *Coastal Hydraulics Report* referenced in the FEIS, as well as the updated *Coastal Hydraulics Report* (October 2019) that reflects the revised alignment of the tidal flood protection system during the progression from conceptual to final design, are available on the project's website for public inspection.

Response: Studies were undertaken to assess the potential for effects on the sewer system from high-intensity rainfall during a design storm event. It was determined that green infrastructure systems cannot provide the necessary percolation rates that would eliminate street and property flooding. The drainage system modifications proposed as part of the ESCR project have been designed to provide adequate storm and drainage system management for the protected area during a design storm event including the effects of simultaneous tidal and rainfall conditions. Interceptor gates are proposed at the northern and southern ends of the drainage protected area to isolate the protected area from the adjacent sewershed during design storm events and to prevent flooding in the protected area. The existing sewer system in the protected area is also proposed to be modified with parallel conveyance and upsized sewers to increase its capacity to convey wet-weather flows during design storm events with coincident rainfall events, thereby managing flooding within the drainage protected area. During a design storm event, the combined sewer flows would be conveyed via the interceptor to the Manhattan Pump Station for conveyance to the Newtown Creek Wastewater Treatment Plant, as under existing non-storm conditions.

Comment 8: Groundwater and Basement Flooding: To help alleviate concerns about groundwater and basement flooding, it is recommended a geohydrological study on shallow groundwater dynamics in the part of the project area be conducted around the East Village area that is susceptible to basement flooding, perhaps in combination with a geotechnical study on basement leakage. Such a study could include a monitoring program to identify and assess the extent of the problem. This would help formulate initiatives to mitigate basement flooding in addition to the mitigations proposed by the ESCR project. (Deltares_31)

Response: Hydrologic conditions have been evaluated and it was determined that installation of the below-ground seepage barrier will not cause basement flooding or groundwater surcharge. Investigation and monitoring of site groundwater levels was included in geotechnical studies conducted as part of the proposed design. Using this data, the design team performed groundwater analyses beginning in August 2017 to demonstrate the effect of the proposed seepage barrier on the groundwater table. The intended system of seepage prevention proposed for the Preferred Alternative blocks seepage along the eastern edge of the East Village neighborhood. The seepage barrier will block groundwater rise caused by flood events in the East River by impeding water from seeping underground from the river toward land, which would otherwise cause groundwater levels to increase during periods of high river levels. Note that the groundwater is anticipated to continue to fluctuate during normal rain events in a pattern similar to its current pattern. Basements will continue to experience groundwater fluctuation, and if they currently flood regularly, sump pumps or waterproofing will still be required. The seepage barrier will not enclose groundwater in the area and any accumulating groundwater will still be free to stabilize its elevation after rainfalls

by moving west, south or north from points of infiltration. However, the additional improvements due to the parallel conveyance upgrades and backflow preventers will help reduce the potential for flows within the conveyance system to result in sewer backups.

2.0 PROJECT ALTERNATIVES

Comment 9: I am writing to express my strong opposition to the current ESCR plan that would destroy the existing park, deprive tens of thousands of residents' critical access to recreation and green space for years, and enshrine the FDR Drive in its current form for decades to come. The older plan, which has community buy-in, proposed building a flood wall along the FDR Drive. It has become clear that the driving force behind the new plan is to preserve unfettered automobile access to the FDR Drive at all costs, as the former plan would have required intermittent closures of a land of traffic at all times. If the current plan goes forward, future generations will look back at this project and think, "they knew that seas were rising, they knew that this was in large part due to excessive automobile usage, yet the project they prioritized was keeping as many cars on the road as possible." They will look at this response as short-sighted, ill-conceived, and disgraceful. I urge you to revise this plan in a way that preserves access to the park, addresses climate change (not just the symptoms of) and considered the deleterious effects of the FDR Drive in its current form. (Keller_04)

As a longtime Lower East Side (LES) resident, I urge you to go back to the first plan for East River Park. (Friedberg_06)

Response: As described in FEIS Chapter 2.0, "Project Alternatives," the City's priority is to ensure that flood protection is delivered as quickly as possible (within 3.5 years), so that the tens of thousands of Lower East Side residents are protected and the risk of damage from coastal storms in the area proposed for protection is reduced. In addition, with the implementation of the Preferred Alternative, East River Park would be reconstructed to protect this valuable resource from flooding during coastal storm events as well as inundation from sea level rise and enhance its value as a recreational resource in addition to providing flood protection to the inland communities. Protection of the park cannot be achieved without elevating the park and reconstructing it as a more resilient park.

Compared to other alternatives analyzed in the EIS, the Preferred Alternative provides the best opportunity to achieve this priority with less overall disruption to the surrounding community, and dramatic enhancements to East River Park, which is consistent with the community's stated goals throughout the design process. In addition, with the implementation of the Preferred Alternative, East River Park would be reconstructed to protect this valuable resource from flooding during coastal storm events as well as inundation from sea level rise and enhance

its value as a recreational resource in addition to providing flood protection to the inland communities.

Comment 10: There have been previous propositions for environmental protection, including the Big U plan, which does not destroy the park we have and need. If the Big U plan is no longer the best option for us, and the East Side Coastal Resiliency project destroys everything we have, we really owe it to our communities and to the city we love to find a plan that works for everyone. What I am asking is that we work together—the city and the communities—to create the best plan for our future. There must be a better plan to protect the city from climate change while not destroying our existing eco system. There is also a huge socioeconomic factor, this park serves not only our Lower East Side communities, but also is the home to countless sports teams, school activities, families and individuals for whom this is the only great outdoors they know. (Leznicki_09)

Response: As stated in the FEIS, the proposed project is an element in a comprehensive plan for flood protection in Manhattan referred to as the Big U 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 Big U comprehensive plan, the ESCR Project would construct a coastal flood protection system from Montgomery Street to East 25th Street along the waterfront. Compared to other alternatives analyzed in the EIS, the Preferred Alternative provides the best opportunity to achieve the principal objectives and design considerations outlined in Chapter 1.0, “Purpose and Need.” Furthermore, unlike the previous design, with the implementation of the Preferred Alternative, East River Park would be reconstructed to protect this valuable resource from flooding during coastal storm events as well as inundation from sea level rise and enhance its value as a recreational resource in addition to providing flood protection to the inland communities. Subsequent to the FEIS, the City has developed and committed to a revised construction phasing plan that would that will keep nearly half of East River Park open throughout the construction period, thus ensuring that local residents will have access to portions of East River Park during construction. Additionally, the revised construction phasing plan maximizes public access to open space resources in Project Area Two. Since the release of the FEIS, the City has also committed to additional project enhancements, including flood proofing the Fireboat House and reconstructing the bulkhead and support structures beneath this section of the waterfront esplanade, reconstructing a canopy structure at the proposed East River Park amphitheater, adding a comfort station at the redesigned Murphy Brothers Playground, elevating the area south of the amphitheater, and revising the esplanade structural support design at the existing and proposed embayments. The details of the modified Preferred Alternative have been analyzed in Tech Memo 001 (see Appendix C). FEIS Chapter 5.2, “Socioeconomic Conditions,” examined the potential effects of the proposed

project on residential and commercial market conditions, including rents, and found that the project would not result in any significant adverse effects.

Comment 11: The Fireboat House is preserved and the ground is not raised there. How is this safe and improving flood protection for Grand Street, which is where the water came in during Sandy? Will this design really protect us and help us with reducing our flood insurance? Want a specific guarantee in writing—legal guarantee that East River Housing will be removed from floodplain. (Weiss_26)

Response: Since the release of the FEIS, the City has committed to flood proofing the Fireboat House as part of the Preferred Alternative. This includes provisions to flood proof the Fireboat House, harden key elements on the ground floor, relocate the mechanical, electrical, and plumbing (MEP) systems in the building, and reconstruct the esplanade deck, bulkhead, and support structures. Additionally, repairs to the Fireboat House to address water penetration in the hose tower would be completed as well as repainting work and leak repairs on all facades. In keeping with proposed project’s goals as a model of long-term resiliency and climate-change adaptation, all improvements and systems upgrades of the Fireboat House would comply with the City’s sustainable Local Laws (LL06, LL31, and LL32) as applicable to the Fireboat House component of the project. In addition, during construction, the existing LESEC’s educational programming will continue out of the Park House at Seward Park.

Once the proposed flood protection system is installed, the City would submit final designs and supporting materials (i.e., design criteria, geotechnical data, hydraulic modeling, etc.), a final operations and maintenance plan, and relevant construction data to the Federal Emergency Management Agency (FEMA) to demonstrate compliance with requirements listed in Chapter 44 of the Federal Code of Regulations, Section 65.10 for FEMA accreditation. The FEMA accreditation process considers all components of the flood protection system, including elements for resisting storm induced surge (storm tide) and the existing and proposed alterations to the interior drainage system for removing all interior waters (rainfall and dry weather flow) from the protected area. As described in FEIS Chapter 2.0, “Project Alternatives,” part of achieving FEMA accreditation and recognition of the Preferred Alternative on Flood Insurance Rate Maps (FIRMs), the City would submit documentation that the entire length of the flood protection system has been adequately designed, and that operation and maintenance systems are in place to provide reasonable assurance the system would be able to perform as designed throughout the accreditation period and identification of any known risks. During the Letter of Map Revision process with FEMA, it is anticipated that the protected area as defined in the FEIS, which includes East River Housing, would be reflected differently on FEMA FIRMs.

Comment 12: The principal objective of the proposed project should not be quick and dirty-driven by a deadline to spend federal funds. The project should aim to keep the affected neighborhoods as stable as possible while planning for a solution that will stand the test of time. (Berkov_18)

Community Board (CB) 3 requested the city to be certified before the DEIS was finalized. Furthermore, ENVISION certification is not the same as having the design process reviewed by scientists, as well as engineers. Borough President Brewer and City Councilwoman Rivera should not have had to bring in an external reviewer at their own cost, when the Department of Housing and Urban Development (HUD) CDBG-DR grant included 13.7 million for feasibility analyses. Because this project is so large and interdisciplinary, it would have been more convincing to see review not only by a hydrologist, but also environmental scientists, a social scientist informed on environmental justice issues, and any other appropriate engineers. It's not clear why Deltares was only charged with comparing EIS Alternatives 3 and 4, given that Alternative 3 was already so different from the RBD-community plan. Finally, it is incomprehensible that Deltares was not provided with the reports that might have enabled them to determine how these designs could differ in flood protection: East Side Coastal Resiliency Project, Coastal Hydraulics Report, Arcadis, 2015, and the City's value engineering report. This alone should be enough to stop the Uniform Land Use Procedure (ULURP) clock. (Berkov_18)

We need more than one consultant to look at the facts. (Leznicki_09)

Response: The design has been ongoing for several years in advance of the presentation of the Preferred Alternative in the DEIS in April 2019. The alternatives analysis was an integrated process with input from the community, the design team, City, state and federal agencies, and elected officials. The process considered site constraints, engineering challenges, cost, constructability, and other factors, including the urgent need to provide flood protection. Additionally, a constructability review was performed when design reached the necessary level of detail where construction risks could be assessed. Extensive expert review has also been conducted through preparation of the DEIS and FEIS.

This document also addresses comments raised by Manhattan Borough President's consultant, Deltares, submitted to the City on October 10, 2019.

Comment 13: I am concerned about impact this project will have on the Lower East Side Ecology Center (LESEC), which provides environmental education, free workshops and classes focused on sustainability, community composting services, and e-waste collection. The new plan is much more disruptive to the normal park operations and the LESEC programming will be impacted as a result. (Sjovold_03)

A commitment must be made in close consultation with the LESEC for a temporary relocation nearby during construction and plans for a resilient long-term home in East River Park for the organization, inclusive of additional and new facility options. (Rivera_27)

Response: During construction, LESEC’s educational programming will continue from the Park House at Seward Park. The City is committed to identifying an alternative site for the existing compost yard in advance of the construction of the Preferred Alternative.

Comment 14: The design does not address the risk of increased flooding outside of the protected area (“bath tubs”), for example at East 25th north of the end of the proposed flood barrier. This includes the area of Asser Levy Park, where DDC plans to build a flood-control wall and a sliding gate that would protect the landmarked Asser Levy Recreation Center. However, this proposal would leave the playing fields unprotected, and East 25th Street susceptible to tidal surge and flooding. Due to these design considerations, it is imperative that the Applicants agree to renovate and rehabilitate the unprotected playing fields at Asser Levy Park in the event of a disaster, since they have been excluded from protection of the ESCR project. (Brewer_23)

Response: As described above, the Preferred Alternative would not increase tidal flooding outside of the protected area; the interceptor gates are specifically designed to avoid the sewer system acting as a conduit for floodwaters to enter the protected area.

As described in FEIS Chapter 2.0, “Project Alternatives,” the proposed alignment of the flood protection within Asser Levy Park extends through the park between the Asser Levy Recreation Center and the Asser Levy Playground. This design alignment achieves protection of the Asser Levy Recreation Center while keeping the north portion of the park open to the street as it is today. Furthermore, the proposed sliding gate design would ensure that the park connection with Asser Levy Recreation Center remains opened during non-storm conditions. Under the Preferred Alternative, the Asser Levy Playground will be reconstructed to incorporate resilient landscaping and design measures so that any storm surge-induced flooding during a design storm event would result in reduced damage to park infrastructure, compared to the existing condition.

3.0 PROCESS, COORDINATION, AND PUBLIC PARTICIPATION

Comment 15: I am concerned by the quick change of plans which throw out months of community engagement for a plan that has not been reviewed by outside source. This is an issue of equity. Where the voices of a broad cross section of the community is left out. (Braun_02)

This new plan is very different than the plans community members were expecting, considering the months or years of input and communication that went into the plan development. (Sjovold_03)

Myself, and countless members of the local communities, as well as hundreds of thousands of people who frequent the East River Park on a regular basis, are opposed to the East Side Coastal Resiliency Project. This project was a surprise announcement to demolish the recently renovated park in order to fill it with 10 feet of landfill and build on top of it. To this day, many people have no idea what the city is planning. We need to look to other global cities who have faced similar issues. We need more information from the city so that we are not hit with another surprise plan to demolish our park. (Leznicki_09)

I have lived on the LES for 30 years and I am opposed to the East River plan. I demand an independent review that was promised. I am very disappointed that this reviewer has a stake in the new project. (Kerr_19)

Anyone attending these meetings realizes that public engagement for Alternative 4 has been a joke. We've spent countless hours sitting through DDC presentations and, if we're lucky, get two minutes. We've been asking the same questions, and making many of the same suggestions, for the past 10 months. The LESEC has spent decades working on environmental programing; they have been completely sidelined. (Berkov_18)

The Municipal Art Society (MASNYC) maintains that the ESCR project should set a standard for how large-scale resiliency projects are planned, coordinated, and implemented in New York City and elsewhere. While we recognize the challenges of coordinating a project of this magnitude, protecting the East River community requires more thorough and engaged planning that has occurred thus far. (Albonesi_20)

You need to go to every building bordering the park have a meeting and then post the minutes from the meeting publicly or even disseminate copies to each apartment. (Weiss_26)

As we have maintained throughout the process, the success of ESCR will depend on how well the City engages with the community and responds to its needs. MASNYC agrees with the recommendations from the Manhattan Borough President that a task force be formed to coordinate the effort. We also expect the highly anticipated results of the third-party project evaluation to be considered. (Albonesi_20)

The agreement to phase construction came only one day before the application's New York City Council Subcommittee public hearing held on October 3, 2019. I strongly urge that the Applicants henceforth inform and engage the community well in advance of changes in plan. Since the submission of my comments on the Project's DEIS nearly three months ago on July 30, 2019, the City still has taken no action to create the Community Advisory Group (CAG) that would consist of

appointees from the Community Boards, City Council Members, and the Borough President's office. This forum is intended to provide input and advise the community through all phases of the project. According to the Applicants, the agencies representing ESCR have reached out to the public and stakeholders through 45 community engagement meetings since 2015. They have used flyers, e-communications, open houses, and websites. The applicants also opened a 52-day comment period in 2015 to receive oral and written testimony that was then posted on the project website. In addition, details were made available in 4 languages, and representatives of NYC Parks and the DDC attended various CB3 and CB6 meetings to present changes to the project. After the Design Alternative 3 was rejected by CB3 and CB6 in 2018, the Applicants and the City went ahead to make major design changes without any community input. The resolutions so called Preferred Alternative or Design Alternative 4. In response CB3 wrote, "For many in the community, the ESCR process since fall 2018 has frayed trust in government and public agencies because of the drastic change in plan design done without community consultation, despite the needs of the community who look to their government to supply desperately needed protection of their lives and homes, (and often both)." Residents and community members must be fully informed and active participants in oversight of the project. It is imperative that as this project moves forward, the ESCR team regularly consults with the CAG, including CB3 and CB6. In addition to coordination with the Community Advisory Board the Applicants must be transparent in their decision making and communicate about design and timeline progress using social media, community meetings, open houses and information sessions in several languages including Spanish, Mandarin, and Cantonese. These steps are basic to building trust in the ESCR process. There must also be a strong emphasis on outreach to residents of the NYCHA campuses. There are approximately 28,000 NYCHA residents living in the area adjacent to the proposed project, of an estimated total population of 198,549. The goal of the ESCR resiliency project is to benefit and protect all members of the community. The project scope declares that no communities of color or low-income communities would be disproportionately affected. However, families living adjacent to the project site are worried that children will play there. The applicants must ensure that the construction areas are secure and that neighbors are given adequate notice about road and area closures. The application does not mention specific negotiations with any property owners who would be affected by the proposed acquisitions of easements. It is imperative that the Applicants conduct outreach to all property owners with detailed information concerning the proposed easements and respond in a timely manner to the questions, concerns, and rights of these owners. Furthermore, any and all businesses and non-profits within the East River Park that are directly impacted or displaced by the construction of the ESCR project must be offered relocation assistance by the Applicants. (Brewer_23)

Once construction begins, a number of measures must be taken regarding transparency. There needs to be momentum to create the CAG that would consist of appointees from the Community Boards, City Council Members, and the Borough President's office that would be able to provide input and advise the community through all phases of the project. (Rivera_27)

Communication and stakeholder involvement: Though difficult to evaluate in technical terms, one theme which appeared often in the comments of the interviewed stakeholders and in the conversation with the City was communication. The stakeholders considered the communication from the City to have been insufficient while City staff were under the impression considerable information had been made public via the FEIS and community presentations. Discussions with stakeholders indicated that tensions between the City and the community could be partially alleviated by establishing a CAG. CAGs exist for other projects in New York City, and can result in more community involvement and support of the project. In addition, establishing a commission of environmental experts that advise on execution of the project can help alleviate some of the community's concerns. Community representatives find it imperative to be involved in the late, detailed stages of project design. The interviewees voiced the need for regular social media updates. (Deltares_31)

Response: As described in detail in FEIS Chapter 3.0, "Process Coordination and Public Participation," a comprehensive public participation program was developed and implemented for the proposed project. This program consisted of several discrete public participation components, all working in tandem to elicit feedback from interested stakeholders, public officials, and the broader community that lives, works, and uses the facilities along the proposed project areas. Three primary avenues to engage the public were used in this process: regularly scheduled Joint Waterfront Task Force Meetings (convened by Manhattan CB3 and CB6); Community Engagement Meetings/Workshops; open houses; and a series of targeted thematic stakeholder meetings. Meetings have been held continually with the public and individual stakeholders through the design and environmental review processes in which the City has shared the project's design as it has evolved. Coordination will continue through final design and the construction phase of the Preferred Alternative. In addition, in consideration of the non-English speaking populations, meeting flyers, newspaper ads, and engagement activity materials were published in English, Chinese, and Spanish, and foreign language interpreters (Spanish, Mandarin, and Cantonese) were provided at all of the large area-wide Community Engagement Meetings/Workshops (in addition, Fujianese interpreters were provided for meetings covering topics in Project Area One South). Comments or requests for information including explanation of the content of the DEIS were accepted in all languages.

Much of the input from the public engagement process is reflected in the Preferred Alternative, including a phased approach to construction in East River Park,

leaving acres of open spaces available to the community at all times during construction. The fundamental aspects of the Preferred Alternative's design and approach, including park programming, infrastructure and bridge layouts, and waterfront access, have all been driven by the community input provided during the public engagement process.

In addition, a construction program management team has been retained by the City to assist with day-to-day oversight and to help ensure the project remain on schedule. Construction contracts will also have meaningful incentives for contractors to deliver the project on schedule. Additionally, during the construction period, DDC will have a robust community outreach plan in place, including dedicated onsite Community Construction Liaisons (CCL) for the Preferred Alternative. The CCLs will act as representatives on behalf of DDC and an extension of the DDC Office of Community Outreach and Notification, and would be tasked with keeping stakeholders informed by identifying, documenting, and resolving issues, as well as providing regular updates and advisories, including any upcoming lane and/or road closures. Furthermore, subsequent to the release of the FEIS, the City has established a CAG composed of local stakeholders who will provide community input on the Preferred Alternative throughout the final design process and during construction.

Comment 16: Transparency of the decision-making process by City agencies may help rebuild trust and gain support of the community. This would include making available the documentation that was used in the decision-making process, such as the technical studies, hydraulic and geotechnical field surveys and/or modelling, that form the technical basis of the project design, and a clear explanation how the City chose the Preferred Alternative. The reasoning on which the decision was based, if explained well and supported by background documentation, may help build consensus among the public for the preferred alternative. It would be beneficial to communicate clearly the limitations of the project scope to manage community expectations. For example, that the project does not include burying or placing green decking over FDR Drive, installing blue-green infrastructure, or mitigating groundwater and basement flooding. A clear understanding of the features that are not included in the project would allow for the community to address these separately and discuss additional initiatives, projects or programs, with or without the City. It would create more trust and relieve community concerns if the City were to provide more detailed mitigation plans for construction dust and particulates, hazardous materials, noise and vibration in addition to the conclusions of the FEIS. (Deltares_31)

Response: The design process has been iterative and has involved multiple City agencies, where decisions were made not only based on field investigations and technical analyses, but also discussions to understand and address the sometimes competing needs and design and operational standards of various City agencies. The 2015 *Coastal Hydraulics Report* referenced in the FEIS, as well as the updated *Coastal*

Hydraulics Report (October 2019) that reflects the revised alignment of the tidal flood protection system during the progression from conceptual to final design, are available on the project's website⁵ for public inspection. The City will continue to work with the neighboring community and other stakeholders to provide information and documentation about the Preferred Alternative.

Comment 17: This entire project is being built around the Con Edison plant, yet Con Edison has not participated in any public discussions. Comments on the draft EIS by Victor J. Gallo of Con Edison's Law Department lead one to question the competence of the City's entire methodology and planning. (Krezell_14)

Response: The City has been coordinating with Con Edison since the inception of the proposed project and will continue to coordinate with Con Edison through the project's final design. All activities related to the construction around Con Edison transmissions lines will continue to be coordinated with Con Edison and agreed upon prior to construction.

Comment 18: Everything is so tiny on the website and when you try to expand it, it has very little definition and it just turns into a blobs of pixels so you cannot see what is there. (Weiss_29)

Response: All public presentations provided on the project websites are in high resolution and available for download to improve readability.

5.3 OPEN SPACE

Comment 19: The proposed configuration of paths and surfaces provide universal accessibility throughout the project area. As cited in Chapter 5.3, "Open Space," under the Preferred Alternative, the active and passive open space ratio would remain the same as compared to the No Action Alternative. There is a net loss of 2.87 acres in the Park.⁶ You must show this comparison with the No Action Alternative, as this chart simply refers to previous approach, and page 5.3-13 of the DEIS does not show this in a chart. Comment 110 and 114: also affected by this lack of information, so show the chart. In addition, compare the square footage and acres of turf, concrete, greenery on soil, other permeable surfaces in East River Park from each alternative. (Brawer_17)

Response: There is no net loss of acreage in East River Park overall; the referenced chart indicates that there will be a 2.87 acre increase of active open space and a 2.87 acre decrease of passive open space. Therefore, the Preferred Alternative would

⁵ <https://www1.nyc.gov/site/escr/progress/environmental-review.page>

⁶ <https://www1.nyc.gov/html/mancb3/downloads/waterfront/ESCR%20-%20Comparison%20Chart.pdf>

reconstruct the park to better meet the active recreational needs of the community, while also developing a more diverse and resilient passive landscape.

Under the Preferred Alternative, modifications of the park landscape would result in minor redistributions of active and passive open spaces. Of the 23.05 acres of active space in East River Park under the No Action Alternative, 0.06 acres would be converted to passive open space under the Preferred Alternative, resulting in 22.99 acres of active space and 22.89 acres of passive space. East River Park's overall amount of open space would remain 45.88 acres and would not alter the open space ratios in comparison to the No Action Alternative. Redesign of the park would provide tree planting and other landscaped passive spaces in accordance with a NYC Parks approved landscape restoration plan.

Comment 20: The park is not enhanced; it is diminished because designers only interested in team sports and large concrete paths. What is recreation? Does it not include sitting in a quiet space enjoying the river, walking on a quiet path surrounded by trees and native plants observing nature and wildlife. New design gives no respite from city. (Weiss_26)

Response: The objective of the proposed design for East River Park is to enhance waterfront open spaces and access, increase areas dedicated to multipurpose use and play for park users of varying ages, and providing a balance between passive and active areas. The proposed configuration of paths and surfaces provide universal accessibility throughout the project area. The City and the design team will continue to seek input from the community and assess opportunities to respond to the variety of park uses and needs identified by the community during the ongoing outreach and final design process.

Comment 21: According to the Alienation Handbook 2017 p. 5: Alienation is a substantial intrusion on municipal parkland use for non-park purposes, even if the landowner does not convey title or intends to eventually restore the parkland. Converting a large municipal park into a floodwall is not a "proper park purpose," and several elected officials agree. (Berkov_18)

Response: Construction activities associated with the Preferred Alternative would be undertaken to, among other things, maintain, rehabilitate, improve, protect, and/or renovate parkland. The Preferred Alternative will make the park resilient from the effects of climate change including rising seas and increasingly severe storms (which the FEIS shows have taken a toll on the Park in recent years), thus protecting this resource for the long term.

Comment 22: I hope you will work and vote to prevent the destruction of our beautiful East River Park and its replacement with a plan that does not continue to support our community. I bicycle through the park every day on the way to either the Hamilton Fish pool or the Asser Levy pool, and many other days on various trips

uptown. It is the safest route and a time to absorb a feeling of peacefulness from the river 365 days a year. I see joggers, cyclists, strollers, picnickers, fishermen, Tai Chi groups, dog walkers, etc. all equally enjoying the park. I see beautiful trees and landscaping. The new design does not accommodate us. The new design puts the bicycle path next to the FDR Drive, not by the river as it is now, and commuters on electric bicycles and scooters going up to 39 mph are favored over average cyclists going 8 mph, and parents with children etc. Cities tend to build bike lanes along direct commuting routes, privileging the convenience of workers, often young men, disregarding the needs of other cyclists who bicycle for pleasure and exercise, and women who want a network of safe, connected routes, rather than a few isolated, point-A-to-point-B lines. The new design should foster equity. (Weiss_26)

Design of new bike path is unacceptable for normal cyclists going 8 mph or less. (1) It is next to the pollution of the FDR Drive with no protection from fumes—there needs to be a wide and thick planting of bushes and trees. What you have designed is minimal—a few trees and some grass—no protection from the pollution of the FDR Drive. (2) It accommodates only commuters, not recreational cyclists who want and need to have access to the beauty of the river and the cool river breezes in the summer. The esplanade by the water must be shared as it is now by pedestrians and cyclists. There must be markings permanently in the ground that clearly permit this. Do not tell people they must walk their bikes for the entire length of the park by the river. (Weiss_26)

The designers of the new park do not come at the designs from living them—they come at them from their French curves Architectural Digest and the CAD (Computer Aided Design) instead of spending real time at the sites they are designing. They live in a virtual world—not in our world, which is how they come up with a high speed bicycle path that cuts across the entrances to the park so cyclists and pedestrians are on a collision course. This is how they forgot that there are more than one type of bicyclist and didn't bother to notice that high speed 39 mph scooters and electric bicycles are proliferating and will dominate their one asphalt path right next to the FDR Drive with all its polluting fumes. Vision Zero established speed limits of 25 mph on most city streets. You know you will not be able to enforce any bans on electric vehicles. They left no place for normal bicyclists, children and older people to ride by the river. The conclusion that pedestrians and cyclists and joggers can't and shouldn't share the beautiful space by the river is wrong. As it is now, cyclists have two choices as do pedestrians and joggers: (1) the beautiful esplanade by the river and (2) the asphalt road next to the FDR Drive with all its traffic and pollution. This works, but requires that everyone has to pay attention and share and accommodate each other, and guess what—New Yorkers can do that. Solutions include incorporating markings that clearly permit bicycles next to water on alternate bicycle paths as they have at Battery Park. Safety from floods is the first priority but as you are designing a new park that affects the health and well-being of New Yorkers for the next 50

years you need to put a little more effort into coming up with something for everyone. Try thinking outside of the “design” box and back into the people box. The flood control features are separate from the park features—the park will be heavily used 365 days a year—and the design affects the health and well-being of everyone who uses it plus all residents of nearby housing. (Weiss_29)

Bikeways and walkways are not improved and designed only for speedy commuters and motorized scooters and bikes. You know from experience that people riding scooters often ride on the sidewalk, even if they are going 25 miles an hour they will not ride on the FDR Drive with cars, where they belong. Some of the motorized bicycles are really just like motorcycles, but again, they will not ride on the FDR Drive with cars. You know there will be no enforcement if you put up a little sign saying Please don’t go over 8 mph! You must include another bicycle path next to the river and mark the ground to show bicycles are permitted. (Weiss_26)

Response: The proposed arrangement with a formal bike path along the western edge of the park and an esplanade along the waterfront allows for many of the same park utilization patterns as currently in East River Park. Final design and management of the park is subject to the review and approval by the Public Design Commission (PDC) with input and coordination by NYCDOT and NYC Parks.

Comment 23: The design for the amphitheater does nothing to mitigate the noise that plagues this residential neighborhood relentlessly all summer long. The issue is the loudness not personal taste in music. The issue is sub bass sounds with hertz (Hz) levels—they can’t be blocked out with earplugs of any kind. Sounds you can’t hear can still hurt your ears. The Amphitheater is a beautiful venue for plays, and other performances or gatherings that don’t require amplification—it is not a concert arena. Nothing in the new design is a barrier to sound, which travels in all directions especially up, and bounces and intensifies off the water. The architects need to make a design that will totally contain the noise; sensors that alert the police that decibels have exceeded the limit do very little because the police can’t always be there. You must design it, not leave the problem for others to regulate and enforce. The design for the amphitheater takes away comfortable tiered bench seating in favor of grassy areas where people are supposed to lie around on the grass or plastic turf—not suitable for older or disabled people none of the designers live near the park and so would not have to live with the consequences of their designs. Solutions include moving the Amphitheater to where Con Ed is, away from residential housing, build a deck over the FDR at that point where it won’t obscure views of residents of NYCHA or East River Housing, or move the amphitheater to where the gazebo was, next to the restrooms. Build a structure that will contain the sound. Require all concerts to use silent disco technology. The new design does not have the same atmosphere as the old park which has many smaller islands of grass, semi secluded paths, areas where people can have some privacy. The new park is designed only for sports with some very boring

passive space—just a few little open fields of grass without shade—and mostly large concrete paths—no place for moms with strollers to wander or sit quietly, for elders to sit and read or contemplate, for everybody to repose in nature. Seating is provided by uncomfortable concrete bleachers (cold in winter, hot in summer, ergonomic disaster: don't fit the human body) and not enough old fashioned benches made of wood that are comfortable in all weather. I am very opposed to adding another BBQ area anywhere near Corlears Hook—as the current BBQ area people play very loud amplified music—different parties play different music each trying to drown out the other. Sound at 85 decibels on the ground translates to 75 decibels in our apartments, even through double paned windows. Coordinate mitigation with East River housing residents. Amphitheater must be designed to have no noise. Current enforcement is impossible—police have to give noise complaints short shrift—concerts go on forever and ruin whole weekends with amplified music and base beats going way below comfortable level—nothing below 500 Hz should be allowed—it should be moved to Con Ed site (pinch point) where it won't affect residential housing—build a decking over the drive there not in front of residential housing which will obscure views for residents on lower floors and views from the neighborhood streets. Expand the flyover bridge to accommodate the Amphitheater. (Weiss_26)

Response: NYC Parks and DDC convened meetings with the Amphitheater Task Force stakeholders during the spring and summer of 2019 and the City will continue to coordinate with stakeholders to further discussions related to the amphitheater design as part of the final design process. Design of the amphitheater is also subject to the review and approval by PDC. Additionally, an acoustical study is underway as part of the final design to consider potential noise effects of the reconstructed East River Park Amphitheater, which will consider potential noise effects on the surrounding community during all potential hours of amphitheater use.

Comment 24: Can't tell from the physical model if there are benches or if everything is this new idea of bleachers which are uncomfortable because you can't lean back on them because the seat base is too wide so your feet have to stick out straight, you cannot tuck your feet under like you can on a bench or chair, and there are people hovering behind and above you so there is no privacy if you just want to have a nice conversation with a friend. If they're made out of concrete they are cold in the winter and hot in the summer—they don't drain, they will be wet or icy. There is not enough grass. Currently there are many separate areas where people can lie on grass and have some privacy—not giant open fields. (Weiss_29)

There is no variety in the layout of the park just giant athletic fields and a reduction in the grassy areas that people really enjoy. They zigzagged the entrances to the park so they would be parallel not perpendicular to the paths that people are walking and bicycling on; they designed lots of areas with different feeling/atmosphere so New Yorkers could get sway for a little bit from the

crowded hyper New York world and enjoy another kind of New York minute: in nature, maybe a little secluded, some privacy, a place where you could spread your blanket on an island of grass not touching someone else's blanket, to read or work, not near the radios blasting at the barbeque areas or the noisy amphitheater. The design will shape what people do in the park—please make places for everyone. (Weiss_29)

Response: The proposed project is in final design and the proposed park seating elements are being assessed as part of the design process. Currently, proposed park seating includes a mix of circular table and chair fixtures, picnic tables with umbrellas, steel bleachers, and 1964 World's Fair-style chairs, bar stools, chaise lounges, porch swings, and benches. These seating and table features are currently designed to include an array of compositions, including stainless steel and recycled plastic lumber. All park seating will include accessible options. The City and the design team will continue to assess opportunities to respond to the variety of park uses identified by the community as part of the final design process.

5.4 HISTORIC AND CULTURAL RESOURCES

Comment 25: The Lower East Side Preservation Initiative (LESPI) would first like to call attention to an erroneous footnote on pg. 5.4-7 which states: "In addition, the Historic Districts Council, *Lower East Side Preservation Initiative* (emphasis added)...did not respond to invitations to be consulting parties." LESPI in fact accepted this invitation from the OMB, and invested considerable effort in composing comments on the Draft EIS, which are included in Appendix M. (Sewell_25)

Response: Prior to completion of the FEIS, LESPI did not respond to OMB's invitation to be a Consulting Party and was therefore not identified as such in the FEIS. LESPI has since been added to the list of Consulting Parties and is engaged in the ongoing Section 106 consultation.

Comment 26: First opened in 1937, the East River Park has three historic structures which date from its early years: The Marine Engine Co. 66 Fireboat House, currently home of the LESEC, and two Art Deco-style Comfort Stations. All three of these buildings would be seriously impacted or destroyed by the Preferred Alternative (Alternative 4) Resiliency Plan. The NY State Historic Preservation Office (SHPO) has determined the Marine Engine Co. 66 Fireboat House to be eligible for the State and National Register. LESPI agrees with the SHPO that this building has architectural and historic value that warrants preservation. LESPI also believes that, because the Fireboat House has historically had a strong tie to the waterfront, it should be preserved in place. This scheme presents challenges, primarily that any plan to raise the height of the Park will have a significant effect on the public's ability to view and appreciate this building; and that the building

could potentially be damaged when flood waters surge and back-flow between the building and the new 9-foot wall behind it. We believe that these challenges can be met, and encourage the City to take the opportunity provided by the new construction timeline to conduct a structural engineering study to explore options to better incorporate the building into the Park design. LESPI seeks a commitment from the City to ensure the viability of the Fireboat House, a humble but historically significant structure which now serves as the home of the Lower East Side Ecology Center, and a commitment that the final design will not only allow, but enhance the building's ability to serve its valuable purpose and continue the organization's programs, which are of great value to the community. In addition to their renowned electronics recycling and composting activities, LESEC personnel serve as environmental educators and volunteer stewards of East River Park, responsible for many of the Park's plantings and wildlife habitats as well as efforts to revitalize the estuary. (Sewell_25)

On April 3rd, 2019, I [Manhattan Borough President Gale A. Brewer] sent a letter to NYC Parks and NYC DDC regarding East River Park's Fireboat House, which serves as the headquarters for the LESEC Ecology Center. The LESEC Ecology Center has played an invaluable social and educational role in East River Park, the surrounding neighborhoods, and the Borough of Manhattan as a whole. Since 1998, when their headquarters moved to the Fireboat House, they have acted as key stewards for the park. Since our letter and the submission of my comments on the DEIS on July 30, 2019, there have been no commitments on the part of the City to reconstruct and raise the Fireboat House out of the 2050 floodplain. The City has cited that the age of the building's pilings prevent re-construction above the floodplain. However, there has been no detailed rationale to the public for how the project team came to that conclusion. By comparison, the Solar One Center is being completely rebuilt above the 2050 floodplain. I believe that the same could be done for the Fireboat House. The scale of construction for the rebuilding of East River Park must not exclude the opportunity to preserve the Fireboat House and the LESEC Ecology Center while providing new spaces for programming and sorely needed public restrooms. This new construction would also provide the opportunity to expand the existing NYC Parks' storage space. NYC Parks and the NYC DDC must make commitments to provide displacement and relocation support to the LESEC Ecology Center prior to and during the closure of East River Park. (Brewer_23)

Response: Since the release of the FEIS, the City has committed to flood proofing the Fireboat House as part of the Preferred Alternative. This includes hardening key elements on the Fireboat House's ground floor, relocate the MEP systems in the building, and reconstruct the esplanade deck, bulkhead, and support structures. Additionally, repairs to the Fireboat House to address water penetration in the hose tower would be completed as well as repainting work and leak repairs on all facades. In keeping with proposed project's goals as a model of long-term resiliency and climate-change adaptation, all improvements and systems upgrades

of the Fireboat House would comply with the City's sustainable Local Laws (LL06, LL31, and LL32) as applicable to the Fireboat House component of the project. In addition, during construction, the existing LESEC's educational programming will continue out of the Park House at Seward Park. The City is committed to identifying an alternative site for the existing Lower East Side compost yard in advance of project construction.

Comment 27: LESPI believes that the two Art Deco Comfort Stations, located at the Brian Watkins Tennis Center (Broome Street) and the East River Park Track (near East 6th Street) should be identified as architectural and historic resources. Because of the rarity of Art Deco buildings on the Lower East Side, LESPI recommends their preservation and reuse or repurposing. Decorated with charming terra cotta river motif details, metal ornamentation and intact slate roofs, these Comfort Stations evoke the early phases of East River Park's history and demonstrate the high level of craftsmanship employed in creating even the most utilitarian WPA structures. Protecting and preserving these architectural resources was dismissed in the Final EIS because the LPC and SHPO had not identified them as such, but to the best of LESPI's knowledge the LPC has not had the opportunity to study them. LESPI believes it is well worth the effort to preserve these reminders of an important era of Lower East Side history. (Sewell_25)

Response: As part of the environmental review for the project, the comfort stations were inventoried and the data was submitted to LPC and SHPO. Subsequently, LPC reviewed the full list of 13 potential architectural resources, including the comfort stations, and did not find any of them to be eligible as New York City Landmarks (NYCLs). SHPO made a preliminary determination on April 25, 2016 that the comfort stations (and East River Park amphitheater) appeared to meet the eligibility criteria for State and National Register listing as part of East River Park, but not as individual structures. In the summer and fall of 2016, additional information on East River Park was provided to SHPO—who as described in Chapter 5.4, "Historic and Cultural Resources," of the FEIS, determined in December 2017 that East River Park, including the comfort stations and amphitheater, did not meet the eligibility criteria for S/NR listing due to a loss of integrity.

5.5 URBAN DESIGN AND VISUAL RESOURCES

Comment 28: While we do need to construct storm protections, we must make every effort to preserve important historic and cultural resources in the park, including all art related to the "Arts in the Park" program at John V. Lindsay Playground. (River_27)

NYC Parks manages an "Art in the Parks" program that collaborates with a diverse group of arts organizations and artists to bring temporary installations to

many park locations, including the East River Park. While I am confident that NYC Parks will maintain the completion, some art works not included in the “Art in the Parks” program will be demolished, and others not returned to the completed park. The City has promised to preserve and relocate the 27 animal sculptures at the John V. Lindsay Playground. The sculptures were commissioned in 2002 and include 18 larger-than-life size seals and 9 turtles and crabs that have brought enjoyment to visitors for over 17 years. Up until June 20, 2019, the sculptor was left unaware and was not notified by the Applicants that his sculptures were excluded from the new design of East River Park and would therefore be demolished. While the artist’s work will be saved and relocated, I urge that NYC Parks, the DDC, and the Applicants conduct a public study of all existing art pieces in the project area that would be affected by ESCR’s construction and immediately contact all artists about the future of their work. NYC Parks, DDC, and the Applicants must strive to include these permanent installations as part of ESCR’s new landscaping and design. Should an artists’ work be excluded from the ESCR design, each artist should either be commissioned for new work and/or generously compensated for the removal of their valued pieces. No pre-existing artworks are to be demolished during construction; instead they must be moved off-site through consultation with the artist. (Brewer_23)

Response: Final design is ongoing and existing park elements that could be retained for inclusion in the redesigned park are being assessed. NYC Parks is collaborating with the artist of the seal, crab, and turtle sculptures in East River Park regarding opportunities for reuse and installation of these pieces. The Arts in the Parks Program fosters the creation and installation of temporary public art in parks throughout the five boroughs. These temporary installations are defined by an exhibition period of less than one year and typically remain on view for three to six months.

5.6 NATURAL RESOURCES

Comment 29: I protest the current plan of chopping down 1,000 trees and planting landfill along the East coast. It will be environmentally and ecologically devastating. (Wood_12)

I think it will be hard enough to get saplings to survive, and wouldn’t predict much success with larger trees (not to mention the expense). If the vegetation does survive, it will eventually accumulate and accommodate urban wildlife again, but not necessarily within the roughly two-decade life span of this project. In the early 1990s, when I started studying plant-insect interactions, I planted milkweeds to try to attract milkweed beetles (*Tetraopes tetraphthalmus*)... and it took 16 years. (Berkov_18)

Response: Implementation of the Preferred Alternative requires the clearing of trees in East River Park. As described in FEIS Chapter 5.6, “Natural Resources,” a total of 1,815 trees are also proposed to be planted as part of the Preferred Alternative. Trees and other landscaped areas that are planted as a result of a NYC Parks-approved landscape restoration plan for the construction of the flood protection system would include salt tolerant native species, among a diverse selection of 52 tree species.

To facilitate the grow-in of replacement tree canopy, the City will examine opportunities to plant larger caliper trees to the extent possible, as well as transplanting trees that are in good condition and suitable for replanting. More broadly, the tree planting palette for the project considers size, growth rate, diversity and resilience, amongst other factors. Trees and plant material would be covered under a guarantee period, as stipulated by contract specifications, such that any tree that is dead, in an unhealthy or unsightly condition, or has lost its natural shape due to dead branches, excessive pruning, inadequate or improper maintenance, vandalism or other causes, would be replaced during the following planting season. While there would be a growing period for the vegetation, the value of East River Park as a habitat is expected to be improved with the Preferred Alternative.

Comment 30: In response to our comment addressing the fate of removed trees, the FEIS states that “Consistent with NYC Parks specifications, remains from tree clearing will be removed from the site or otherwise disposed of to the satisfaction of the project engineer.” This response provides no further information on whether or not removed trees will be mulched or composted. Given the magnitude of the number of trees to be removed, EPA encourages OMB and NYC Parks to include this information in the Record of Decision. (EPA_07)

Response: Comment noted. Trees to be removed would be topped, limbed, felled, and chipped by experienced workpeople to produce mulch. The mulch would then be transported to a City yard to be made available for City use.

Comment 31: According to the FEIS, the overall purpose to the filling of the embayments is recreational and compensatory mitigation will be offered. In our comments on the DEIS, EPA commented that this is not a purpose consistent with the concept of environmental minimization of impacts or of 404(b) Guidelines. Therefore, EPA is concerned that the project may not receive the permit necessary to complete the discharge of fill into tidal wetlands. EPA encourages the Governor’s Office of Storm Recovery (GOSR) to continue working with federal partners to address this issue. (EPA_07)

Response: As described in Tech Memo 001, subsequent to the FEIS and through discussions with permitting agencies and design team meetings to address minimization of impacts to wetlands and jurisdictional waters, a revised design for the existing

and proposed embayments has been identified that significantly reduces the area and fill impacts. Compensatory mitigation associated with impacts to Waters of the United States and NYSDEC Regulated Tidal Wetlands, described in Chapter 5.6, “Natural Resources,” is being finalized as part of ongoing permit coordination with NYSDEC and USACE and the project would conform with applicable regulations, including the Clean Water Act (CWA), Section 10 of the Rivers and Harbors Act, ECL Article 25, NYCRR Part 661, and ECL Article 15, NYCRR Part 608.

As described in Chapters 5.6, “Natural Resources,” and 6.5, “Construction—Natural Resources,” under the Preferred Alternative the two existing embayments in East River Park would be relocated with the objective of improving community access to the water’s edge, a principal objective of the proposed project; providing adequate space to redesign heavily utilized active recreation facilities; and providing for improved aquatic habitat conditions. The proposed embayments would provide improved habitat type over the existing embayments by the removal of the existing bridges that shade aquatic habitat, which can reduce benthic productivity and biomass and the inclusion of additional ecological benefits from the installation of EConcrete® elements, which are designed to provide the necessary structural elements of an urban waterfront while also promoting opportunities for flora and fauna to thrive.

Comment 32: The FEIS fails to adequately address concerns related to air pollution and the large increase in particulate matter that will be generated, as well as water contamination and pollution, in the demolition of East River Park and ensuing construction that must meet the standards of the federal Clean Water Act and other statutes. The DEIS also fails to adequately address the environmental impact on air quality in the removal of almost 1,000 trees and on biodiversity with the destruction of all animal and insect habitat and the complete removal of all fertile soil in the demolition and construction process. Furthermore, the source and full content of the landfill to be loaded onto the park is unidentified. (Brandstein_24)

Response: As described in Chapter 6.10, “Construction—Air Quality,” of both the DEIS and the FEIS, to minimize dust emissions from construction activities, a dust control plan including a robust watering program would be required as part of contract specifications. For example, all trucks hauling loose material would be equipped with tight-fitting tailgates with their loads securely covered prior to leaving the project area; water sprays would be used for all excavation and transfer of soils to ensure that materials would be dampened as necessary to avoid the suspension of dust into the air. Loose materials (e.g., on-site material storage piles) would be watered or covered. All Construction-related dust reduction measures would be implemented in accordance with the New York City Department of

Environmental Protection (DEP)'s *Construction Dust Rules*⁷ and required as part of DDC's construction specifications.

The benefits of urban trees are considerable, including their air quality benefits. However, the clearing of the trees in East River Park would not adversely affect air quality conditions in local neighborhoods. As discussed in FEIS Chapter 5.6, "Natural Resources," a desktop analysis using high-resolution land cover data revealed that, within a half-mile of the project area, a total of 183 acres of tree canopy cover is present that will continue to provide air quality benefits to the neighborhood throughout the construction period and the maturation of the proposed enhanced urban forest. Although construction of the Preferred Alternative would result in the removal of 991 trees, restoration of trees would be conducted in accordance with a pre-approved NYC Parks landscape restoration plan. This landscape restoration plan includes over 50 different species, reflecting research around the benefits of diversifying species to increase resilience and adaptive capacity in a plant ecosystem and also pays special attention to species that can withstand salt spray, strong winds, and extreme weather events. The landscape restoration plan would ultimately result in a net increase of 745 total trees within the project area. Additionally, NYC Parks has committed to planting up to 1,000 trees and approximately 40 bioswales throughout CB3 and CB6, which started in the fall of 2019. In regard to the soil disturbance concern during construction, the existing surficial soils in the study area consist of highly modified urban soils. The proposed sources of clean soils or fill materials to be used on the project site would be determined by the construction contractors and approved by the appropriate regulatory agencies, and are dictated by a number of factors, including composition, certification of suitability for intended use, availability, cost, and the proximity of the soil/clean fill provider's loading site to the project area. Soils would need to meet the required soil criteria included in the Soil and Groundwater Management Plan (SGMP), a plan that would be approved by DEP.

Comment 33: What improved aquatic habitats? How are unsupervised children safe if they have direct access to the water? See Figure S-11 Reach G East Houston Street. (Weiss_26)

Response: Under the Preferred Alternative, the two existing embayments, created as part of the esplanade redesign from 2005 to 2008, are to be reconstructed as new open space and two new embayments are proposed to be created. The proposed embayments would provide improved habitat type over the existing embayments by the removal of the existing bridges that shade aquatic habitat, which can reduce benthic productivity and biomass and the inclusion of additional ecological benefits from the installation of EConcrete® elements, which are designed to

⁷ <https://www1.nyc.gov/assets/dep/downloads/pdf/air/construction-dust-rules.pdf>

provide the necessary structural elements of an urban waterfront while also promoting opportunities for flora and fauna to thrive. For safety purposes, railing would be installed along the water's edge of the entire esplanade, including at the two new embayments, to prevent park users from accessing the water.

Comment 34: The Preferred Alternative has the potential to result in adverse impacts the New York State Department of Environmental Conservation tidal wetlands due to the installation of support shafts and footings. In-water work and construction delivery barges would affect surface water resources as well as several aquatic species including winter herring and striped bass, as well as the two identified endangered species, the Shortnose sturgeon and the Atlantic sturgeon. The removal of as many as 991 trees (819 of which are located within East River Park) during construction represents a loss of habitat for insects and migratory birds. It is estimated that 775,000 cubic yards of fill will be required for the construction. All fill used in the construction of this project must be clean fill that has met the criteria for the Soil and Groundwater Management Plan (SGMP) and approved by DEP protection. The collection and conveyance of storm water should furthermore not result in the erosion, instability, or compositional changes to geology or soils. A more in-depth review should be conducted of the ESCR project's impact upon wildlife and plant species, as well as bird and insect migration during and after construction; we cannot rely on the notion that species will naturally return to East River Park when the project is completed. The Applicants must work with park stewards such as those from the LESEC and the Solar One Center to identify and protect biodiversity during and after construction. NYC Parks "is exploring a Lower East Side Greening program with the opportunity to plant up to 1,000 trees in parks and streets, and create up to 40 bioswales" starting in fall of 2019. Through this program, NYC Parks must work with local community organizations, CB3 and CB6 to conduct tree planting and tree guard installation operations, including the creation of concrete plans for the care of the trees. In February 2019, CB3 passed a resolution to support the proposal of a LES Community Tree Canopy Initiative that would communicate with NYC Parks when and where the proposed trees will be installed and how they will be maintained. The Applicants must immediately create these additional bioswales, tree canopy plantings, and permeable pavers as temporary mitigations against dust, local flooding, and adverse weather conditions during construction. While 991 trees will be removed during construction, 1,815 new trees will be added into the new landscaped park. The use of a variety of topsoil and salt resistant indigenous plants in the re-establishment of passive areas in the park must be included in the project's mitigation efforts. (Brewer_23)

Response: Construction of the Preferred Alternative would be performed in accordance with all applicable rules and regulations of USACE, EPA, National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), NYSDEC, DEP, DDC, and other regulatory agencies and procedures,

as applicable. As discussed in FEIS Chapter 6.5, “Construction Natural Resources,” wetland mitigation for adverse effects associated with the installation of permanent features, such as the installation of shafts for the flyover bridge and the filling of the existing embayments, includes a combination of on- and off-site wetland habitat restoration. Ongoing coordination with NYSDEC will determine the need for mitigation, if any, in response to the temporary in-water impacts. All in-water work under the Preferred Alternative would comply with conditions stipulated by USACE and NYSDEC permits, including tidal wetland compensatory mitigation requirements, and would be developed in close coordination with both agencies. Turbidity curtains, water-tight cofferdams, and debris nets would be used as applicable to minimize the potential for temporary in-water impacts to surface water resources and aquatic species, and to avoid impacting endangered species such as the shortnose sturgeon and Atlantic sturgeon. Cofferdams would not be installed in areas shallower than six meters between January 15 and May 31 to avoid adversely affecting winter flounder early life stage EFH in compliance with consultations completed with the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA NMFS). All construction activities would be subject to and performed in accordance with NYSDEC’s technical standards for erosion and sediment control, which would be implemented in accordance with an approved SWPPP to minimize potential adverse effects to water quality and aquatic biota. An EPA Spill Prevention, Control, and Countermeasure (SPCC) Plan would also be implemented, and all construction performed in accordance with the SPCC. During construction, erosion control BMPs would be used to prevent sediment, trash, and debris from entering the waterway. Any surplus excavated soils would be disposed of in accordance with all applicable rules and regulations at a pre-approved NYSDEC disposal facility.

A comprehensive impact analysis of the potential terrestrial resources effects of the Preferred Alternative was included in the FEIS. As concluded in those chapters, effects to terrestrial resources would not result in significant adverse impacts and the proposed project design is expected to improve the overall habitat values and attractors at the park. Additional design input related to enhancing habitat values and diversity at the park will continue to be addressed as the project moves into final design.

Restoration of the landscape and tree plantings in the project area as a result of the Preferred Alternative would be conducted in accordance with a pre-approved NYC Parks tree planting program. This tree planting program includes over 50 different species, reflecting research around the benefits of diversifying species to increase resilience and adaptive capacity in a plant ecosystem and also pays special attention to species that can withstand salt spray, strong winds, and extreme weather events. The design also focuses on creating a more layered planting approach, allowing for informal planting areas that layer plant communities together to express ecological richness. A more diverse native plants

palette has the ability to better adapt to climate change stressors. Once planted and established, the new landscape would represent an improvement in ecological sustainability, habitat creation, and adaptability in the face of a changing climate. The landscape restoration plan would ultimately result in a net increase of 745 total trees within the project area. While these trees would not be as mature as some existing trees, over time, the new tree canopy would fill in and represent an improved habitat over the existing condition, which is largely dominated by London plane trees, known for their poor response to salt-water inundation.

As described in the FEIS, the landscape restoration plan is comprised of several elements. First, to the extent practicable, the City would transplant existing park trees that are in excellent condition and, based on prior NYC Parks arborist experiences and approvals, are suitable for a successful transplanting. Second, approximately 1,815 trees are proposed to be planted as part of the landscape design within the project areas, which would result in a net increase of 745 trees over the existing conditions. The value of this restoration plan, in combination with approximately \$32.9 million of restitution, would be in compliance with Chapter 5 of Title 56 of the Rules of New York (NYC Parks Rules) and Local Law 3 of 2010. The restitution funds would be used towards targeted tree planting and urban forest enhancements throughout the adjacent communities, including the Lower East Side greening program, which proposes to plant up to 1,000 trees in parks and streets, and create up to 40 bioswales throughout CB3 and CB6, which started in the fall of 2019. The planting palette for the Preferred Alternative incorporates native and salt-resistant plantings with a topsoil layer that would support the proposed vegetation. As discussed in FEIS Chapter 2.0, “Project Alternatives,” the proposed landscape restoration plan includes over 50 different species, reflecting research around the benefits of diversifying species to increase resilience and adaptive capacity in a plant ecosystem and also pays special attention to species that can handle salt spray, strong winds, and extreme weather events. These design parameters will be incorporated into the final design of the Preferred Alternative. The planting palette for the proposed park trees will consider size, growth rate, diversity, and resiliency, among other factors, in determining the tree selection. This tree planting plan including the species, distribution, and location will be included in the project’s final design documents.

Commitments to clean fill soil requirements for the project are provided in FEIS Chapter 6.6, “Construction—Hazardous Materials.” Construction will be performed in accordance with all the necessary measures to protect the health and safety of the public, construction workers, and the environment. A Remedial Action Plan (RAP) will be prepared that will identify the appropriate clean fill importation criteria (both for surface soils in landscaped areas and for other material used in the subsurface as well as criteria for allowable reuse of excavated soils). The sources of clean soils or fill materials that meet these requirements will be identified by DDC and the testing protocols for the fill materials will be approved by DEP as part of the RAP. Additional information regarding fill

material and soil sampling are provided in FEIS Chapter 6.5, “Construction – Natural Resources,” and FEIS Chapter 6.6, “Construction – Hazardous Materials.”

Comment 35: Despite the City’s continuing efforts to characterize the East River Park as a hardscape compilation of athletic fields and a biodiversity desert, those of us who spend time there know that this is not true—regardless of how it appears on an aerial map. East River Park may not be as full of natural riches as Inwood Hill Park, but Inwood has fewer natural riches than my tropical rain forest field sites. This doesn’t stop diverse and unexpected species from taking up residence in East River Park, and it doesn’t stop us from appreciating what nature we have in our urban environments! For kids growing up in the LES, the East River Park is their backyard, full of mystery and adventure. (Berkov_18)

Response: The natural resources assessment in the FEIS was informed by natural resources surveys conducted in 2015, 2017 and 2019 in accordance with *CEQR Technical Manual* guidance. As concluded in those chapters, effects to terrestrial resources would not result in significant adverse impacts and the proposed project design is expected to improve the overall habitat values and attractors at the park. Additional design input related to enhancing habitat values and diversity at the park will continue to be addressed during final design.

Comment 36: The illustrations and models that we have seen do not communicate “an escape from the hard surfaces of an urban landscape.” We are not talking about plant material, we are talking about living organisms. Many trees—even the much-maligned London Planes—potentially have much longer life cycles than humans. What will happen if trees do not die within the one-year guarantee period, but are simply under-nourished, under watered, and failing to thrive? If the new saplings do survive the harsh, lunar, conditions, many will just be reaching maturity in the 2050s. This is when the city will probably need to elevate the park again, requiring, according to the Deltares report, “the removal of all biodiversity and fully grown trees.” (Berkov_18)

Response: NYC Parks will be responsible for the maintenance of open space resources in City parkland including the landscaping maintenance of the new tree plantings. As stated above, any future plan to increase the resiliency in this area would require design and technical analyses, in addition to meeting environmental review requirements and obtaining approvals, as warranted.

Comment 37: What is the value of the trees that are scheduled to be killed, and was this accounted for in the city’s Cost-Benefit Analysis? (Berkov_18)

Response: The total valuation of trees affected by the project was estimated at approximately \$36.8 million, which was used to develop the proposed tree restitution plan.

Comment 38: FEIS Comment 139 was not restricted to birds, or other vertebrates. No effort at all was made to document plant or arthropod biodiversity. The NY Natural Heritage Program pointed out the deficiency of data available for the East River Park: “For most sites, comprehensive field surveys have not been conducted... further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.”(Berkov_18)

Response: A thorough analysis of potential effects to East River Park terrestrial resources, including flora and fauna, was conducted as part of the EIS process. Supplementary analysis conducted following the publication of the DEIS is available in FEIS Chapter 6.5, “Natural Resources,” and FEIS Chapter 6.5, “Construction—Natural Resources.” As concluded in those chapters, effects to terrestrial resources would not result in significant adverse impacts and the proposed project design is expected to improve the overall habitat values and attractors at the park. As stated in the FEIS, the majority of East River Park is dedicated to active recreational uses and it contains extensive fields and recreational surfaces. Given its current primary purposes, design, and functions, it is not a critical park for terrestrial natural resources or arthropod diversity.

Comment 39: Given the vagility of most birds, it is disingenuous to propose that the East River Park represents a site where “migrating birds are lured into poor conditions for refueling.” Also, this patronizing response assumes that the ESCR project will be taking place in a vacuum. We are all aware that there will be coastal disturbances throughout the New York waterfront, and elsewhere, and I don’t believe that anyone can predict the impact that these will have on wildlife that is already experiencing declines. The response completely fails to mention the NYS Critically Imperiled, High Priority Species of Greatest Conservation Need, the Golden Northern Bumble Bee, *Bombus fervidus*. It is referenced by name four times, and while it may not have a legally protected status, it would be ethically reprehensible to intentionally destroy the thriving colonies in the East River Park. (Berkov_18)

Response: The responses developed for the FEIS were prepared based on the scientific evidence and field investigations by a qualified ornithologist. The decline of the Golden Northern Bumble Bee populations is largely due to the loss of grassland habitat in their range. The habitat of East River Park is primarily recreational habitat and while there are grasses, the park does not have a cohesive grassland habitat that is critical in the range of the Golden Northern Bumble Bee such that populations would be adversely affected. In addition, with the Preferred Alternative a more diverse habitat of grasses and flowering plants is proposed to be planted, which should be beneficial for this species.

Comment 40: The response to FEIS Comment 142 focuses almost exclusively on birds, which are an easily identified and well-known component of overall biodiversity.

Scattered street trees are not likely to provide the same habitat value as even trees clustered in an urban park. Community gardens are high in plant diversity and offer abundant nectar sources for butterflies and bumble bees, but do not necessarily offer sufficient larval host plants or nest sites. I suspect that the prevalence of sites available to ground-nesting bees explains the success of the Golden Northern Bumble Bee in the East River Park. Furthermore, if the responders spent a little more time in the Park making observations, and a little less time in front of a computer, they might understand and show a little more appreciation for the efforts that have been invested—over decades—in fostering biodiversity in the East River Park. For instance, following the introduction of both milkweed and goldenrod plants (larval host plants and nectar sources), the East River Park was filled with hundreds of migrating monarchs last week. (Berkov_18)

Response: As discussed in FEIS Chapter 5.6, “Natural Resources,” construction of the Preferred Alternative would temporarily disturb lawn and landscaped areas within East River Park, Stuyvesant Cove Park, including the National Wildlife Federation (NWF)-designated “Certified Wildlife Habitat” and the Monarch Watch designated “Monarch Waystation,” and other upland spaces such as Murphy Brothers Playground and Asser Levy Playground. With the Preferred Alternative, these disturbed areas would be restored in accordance with a pre-approved NYC Parks landscape restoration plan. The pre-approved landscape restoration plan would include plantings that would support typical urban wildlife upon completion of construction, including four different milkweed species that attract and support monarch butterflies. Additionally, by raising the park and its recreational fields, passive use lawns, and other permeable park surfaces such as the esplanade, flooding of the park is eliminated or greatly reduced in the event of a design storm, as is scouring, erosion, and sediment transport to the East River, thereby improving the resiliency and long-term health of the terrestrial habitat.

Comment 41: Microhabitats benefit lots of organisms, not simply birds. Even if areas are *not* “unique, limited, or otherwise significant,” they support a surprisingly rich complement of species, co-existing in communities including butterflies with their host plants, bees with their nest parasites, etc. (Berkov_18)

Response: As was stated in the FEIS, the majority of East River Park is comprised of surfaces designed for active recreational park uses that have non-vegetated land cover recreational surfaces (56.19 percent) with landscaped park surfaces (29.32 percent) or structures and paved paths or other land cover (13.95 percent) and water (0.54 percent). The 13.45 acres (30.09 percent) of landscaping that is primarily park ornamental or buffer landscaping with non-native vegetation provides low quality habitat for wildlife and primarily non-native vegetation. The majority (9.58 acres) of the total landscaped area is categorized as “Low Quality Habitat,” dominated by mowed grass, trees with mowed grass, and trees set within Belgian block/wood chips, and 3.87 acres (8.44 percent) were categorized as

“Potential Habitat,” given the presence of vegetation types with shrubs, tall grasses, planted flower gardens, green roofs, and soil that may attract a greater diversity of wildlife. The remaining park acreage contains isolated rows or small clusters of street trees with managed and mowed park lawn (or impervious surface). There is no habitat in these areas that is of critical importance to any individual species or supports any substantive populations. Finally, with the Preferred Alternative, habitats within the park would be enhanced and protected from the effects of future flooding.

Comment 42: Microhabitats benefit lots of organisms, not simply birds. Also, it may be politically expedient, but is not ecologically meaningful, to consider each segment of shoreline in isolation. (Berkov_18)

Response: As discussed in FEIS Chapter 5.6, “Natural Resources,” natural resources surveys and design studies performed for the proposed project, conducted along the shoreline, confirmed that at low tide, no substrate type other than riprap was observed. On the lowest riprap, green algae and rockweed were observed. No other invertebrates or plants, and no fish were observed in this area. The two existing embayments, created as part of the esplanade redesign in 2005–2008, consist of narrow areas that allow tidal water from the East River to flow beneath pedestrian bridges along the esplanade onto a rip rap slope that ends at the bulkhead. Rip rap does not provide suitable attachment habitat for most sessile organisms, such as oysters and mussels, or adequate refuge for prey fish and benthic organisms.

Comment 43: I’m pretty sure that “filling of the existing embayments and creation of the new embayments” is NOT necessary “to increase community access to the water’s edge.” Why wouldn’t it be possible to create step-downs at the existing embayments? It is disingenuous to maintain that filling the existing embayments will not have a negative impact because the affected area is so small and then that removing the bridges will be advantageous because it will reduce (dappled) shade. Park users love the bridges; this is another slap in the face! (Berkov_18)

Response: As discussed in FEIS Chapter 5.6, “Natural Resources,” the objectives in filling the two existing embayments in East River Park are to improve the open space design in East River Park and to improve aquatic habitat conditions. Thus, the proposed embayments would be of comparable size with the potential for improved habitat designs. The relocated embayments would also improve community access to the water’s edge, including ADA accessibility, a principal objective of the proposed project. Publicly accessible step-down areas are proposed in the vicinity of the proposed embayments; however, direct access to the water in these locations is not permissible due to public safety concerns. In addition, design enhancements that could improve the opportunity for the

recruitment of shellfish and other aquatic life within the embayments are also being explored.

Comment 44: The only adequate field survey was the previously conducted detailed tree survey. All other field observations were based on two four-hour mid-summer walkthroughs. Citizen scientists documented much more extensive biodiversity (189 bird and insect species, versus the 18 recorded on the walkthroughs). These included 10 animal species on the NY State Natural Heritage Program (NYNHP) list of rare animal species. No mitigation is offered. I am appalled to think that the city's incomplete and inaccurate assessment, and generally cavalier attitude towards biodiversity, represent full compliance with federal, state, and city regulations. (Berkov_18)

Response: The EIS was prepared in compliance with NEPA, SEQRA and in alignment with guidance from the 2014 *CEQR Technical Manual*, and in consultation with and review by expert agencies during the scoping, the preparation and certification of the DEIS, and the preparation and certification of the FEIS. A thorough analysis of potential effects to avian and terrestrial species of East River Park, including flora and fauna, was conducted as part of the EIS process. Supplementary analysis conducted following the publication of the DEIS is available in Chapter 5.6, "Natural Resources," and Chapter 6.5, "Construction—Natural Resources," of the FEIS. As concluded in those chapters, effects to terrestrial resources would not result in any significant adverse impacts and the proposed project design is expected to improve the overall habitat values and attractors at the park. Rather, it is expected that with the proposed design habitat values of the park will be enhanced.

5.9 TRANSPORTATION

Comment 45: You did not respond to comment 200 of the FEIS, it was not rhetorical. Why is ferry access being prioritized, and at what cost? (Brawer_17)

Response: The community has expressed on numerous occasions that access to the Corlears Hook and Stuyvesant Cove ferry landings must be maintained. It is also a City policy objective to promote and support ferry service and it is one of the City's priorities to develop a construction plan that includes safe and continuous commuter access to the ferry landings throughout the construction period. In addition, NYCDOT understands the significance of the planned partial closure of the East River Greenway during construction of the Preferred Alternative and is committed to providing safe alternative routes for pedestrians and bicyclists during the period of construction. It is therefore proposed to re-route bicyclists to the on-street bike network, primarily the protected bicycle lanes along First and Second Avenues, as well as those on Allen Street/Pike Street and Clinton Street. The rerouting plan design will continue to be finalized through the final design

process of the Preferred Alternative. NYCDOT also will continue to take input from the community as the details of the rerouting plan are finalized.

Comment 46: Table 5.9-3 reports crash data from 2015 and 2017. Crashmapper.org provides data through the most recently completed month. Update the data in the EIS. Given that crashes, deaths and injuries are rising steadily—your response is a disservice. (Brawer_17)

Response: The crash data presented in the FEIS was prepared following the guidance of the *CEQR Technical Manual* and NYSDOT verified information.

Comment 47: We're up to 33,737 total crashes so far in 2019. I'm asking for speed limit signs. For what reason should the City wait to alert drivers? Aesthetics? Old fashioned? Please complete the response. (Brawer_17)

Response: A thorough investigation of crash data was conducted per the *CEQR Technical Manual* guidance, and one high crash location at the intersection of First Avenue and East 23rd Street was identified. As stated in the FEIS, appropriate additional safety measures which may include the installation of signage warning vehicles to yield to pedestrians in the crosswalk will be implemented to improve pedestrian safety at this intersection. These measures will be given further consideration during the project's implementation phase.

5.11 ENVIRONMENTAL JUSTICE

Comment 48: I asked about the inclusion of 7 additional census tracts in Chapter 5.11, Environmental Justice. That comment was completely ignored. My question stands: Why is it included? It looks like the City was attempting to dilute the effects of construction on frontline environmental justice communities by adding in Gramercy Park! (Lake_16)

Berkov, Response to Response, Comment 215 [of the FEIS]: This response is so clearly written by someone with no familiarity with the neighborhoods adjoining the affected parks. Attorney General Tish James pointed out the city aimed to reduce the appearance of impact on Environmental Justice communities by joining low and high income neighborhoods in the analysis. (Berkov_18)

Response: The FEIS was prepared in accordance with NEPA, SEQRA, and consistent with guidance of the *CEQR Technical Manual*. As discussed in FEIS Chapter 5.11, "Environmental Justice," the study area is the area where the proposed project may cause significant and adverse effects on minority and low-income populations. The environmental justice study area encompasses any area potentially affected by the proposed project and, therefore, includes the combined extent of all study areas from all chapters within the FEIS. The identification of minority and low-income block groups presented in the FEIS is based on data

from the 2012–2016 American Community Survey (ACS), and covers 135 census block groups, the majority of which are located within a ½-mile from the project area. While the chapter presents the percentage of the study area as a whole that is minority or low-income, the assessment of potential for adverse effects to minority and low-income communities was performed at the census block group level. Additionally, potential adverse effects to the identified environmental justice populations are considered in the technical chapters throughout the EIS (e.g., Chapter 6.2, “Construction—Open Space”).

One of the City’s priorities with the proposed project is to ensure that flood protection is delivered as quickly as possible so that tens of thousands of residents are protected from the risk of damage from coastal storms. The residents in the protected areas of both Project Area One and Two would equally benefit from project implementation with commensurate temporary losses of open spaces due to the adverse effects related to construction that are necessary to install the proposed flood protection system and reconstruct the parks, which is the project objective. Neither the design considerations, nor the associated temporary adverse effects associated with construction, are disproportionately skewed towards census tracts with concentrations of low income or minority populations along the proposed project alignment.

Comment 49: If the city is in compliance with regulations, then why did Attorney General Tish James comment: “...the Draft EIS’s environmental justice analysis and its treatment of impacts to open space uses, tree canopy and air quality do not meet the requirements of the federal, state, and New York City law governing environmental review. These treatments are also arbitrary and capricious in violation of federal and state administrative law requirements.” (Berkov_18)

Response: As stated in response to this comment in the FEIS, Chapter 10.0, “Response to Comments on the DEIS,” the DEIS and this FEIS were examined in accordance the Federal and State environmental justice procedures and were reviewed by federal agencies. It should be noted that in a follow-up letter dated November 8, 2019 (see Appendix B), Letitia James, Attorney General for the State of New York, stated that individuals from the Attorney General office had the opportunity to communicate with multiple City agencies and that they “appreciate the City’s willingness to address the issues raised in our comments by modifying the Project and providing further explanation in the FEIS regarding the other issues that we raised in our comments.”

6.0 CONSTRUCTION—OVERVIEW

Comment 50: It is important that the City ensure that minority-owned business enterprise (MWBE) developers and contractors are being allocated jobs consistent with NYC requirements. (Hoeg_15)

East Side Coastal Resiliency

Response: DDC is committed to using M/WBE contractors. DDC's Office of Diversity and Industry Relations develops, implements, and monitors innovative policies and procedures to promote compliance with New York City requirements for M/WBE hiring.

Comment 51: In the event of a storm, how would those impervious surface covers (covering many acres?) be anchored? Why would temporary flood protection, recommended in the Deltares report, add delays in project design and implementation? (Berkov_18)

Response: Impervious surface covers would be anchored using typical methods and all applicable Best Management Practices. Details regarding surface covers would be included as part of the construction management plan for the project that would be overseen by DDC.

Interim Flood Protection Measures, or IFPMs, are designed to protect against more frequent, but less severe storms. For the Preferred Alternative, preliminary analysis shows that the floodplain largely extends into East River Park but not the inland neighborhood. Analyses are being conducted to assess the potential for the implementation of IFPMs at critical areas. If the study determines that IFPMs are beneficial, those elements would be subject to a separate review and approval process as appropriate.

Comment 52: I asked about including more detail in the Construction Schedule, so that the community can see evidence that the plans are realistic. Obviously the new phasing plan changes the timelines. Does the City plan to update the FEIS with the phasing plan and include information that will validate the suggested phasing timelines? (Lake_16)

We were pleased with the announcement that the project construction will be phased, as this was one of our chief concerns. We expect that the FEIS will be revised comprehensively to address the effect construction phasing will have on project impacts, mitigation, scheduling, and timelines. (Albonesi_20)

The latest FEIS released on September 13, 2019 does not include the City's announcement on October 2, 2019 that the Proposed Project will be phased through 5 years of construction, with the Proposed Project's flood protection to be completed in mid-2023 and the entire Project completed by the end of 2025. While I appreciate that the City has taken into consideration the agreement to not fully close East River Park during the duration of construction, the news came too late for robust community review and input. In fact, the news to agree to project phasing came only one day before the application's New York City Council Subcommittee on Landmarks, Public Sitings and Dispositions public hearing held on October 3, 2019. The late reveal of the Project's new phasing schedule does not instill community trust in the City whose choice of the "preferred

alternative” came after little or no engagement with the community after 3 years of input about the previous design. In order to complete construction by the end of 2025 I urge the city to take into account all conditions that could hinder the Project’s timely completion, such as weather and storm related delays. (Brewer_23)

Response: Subsequent to the FEIS, the City has developed and committed to a revised construction phasing plan that would that will keep nearly half of East River Park open during the construction period, thus ensuring that local residents will have access to portions of East River Park during construction. In order to also provide flood protection by fall 2023, an aggressive construction schedule has been developed. That updated conceptual construction scheduling is provided in Tech Memo 001 (see Appendix C). In addition, a construction program management team has been hired that will assist with day-to-day oversight and to help ensure the project stays on schedule. Construction contracts will also have meaningful incentives for contractors to deliver the project on time. Additionally, during the construction period, DDC will have a robust community outreach plan in place, including dedicated onsite CCLs for the Preferred Alternative. The CCLs will act as representatives on behalf of DDC and an extension of the DDC Office of Community Outreach and Notification, and would be tasked with keeping stakeholders informed by identifying, documenting, and resolving issues, as well as providing regular updates and advisories. Furthermore, subsequent to the release of the FEIS, the City has established a CAG composed of local stakeholders who will provide community input on the Preferred Alternative throughout the final design process and during construction.

Comment 53: I asked about shade during construction. The City responded by talking about shade in the new park. That was not the question. Our questions about shade and temperature during construction remain unanswered in the FEIS. (Lake_16)

Response: The construction plan presented in the FEIS for the Preferred Alternative assumes that East River Park would be closed during construction. Accordingly, shading would not be provided within East River Park during construction under the previous construction plan. The City has also identified a phasing approach to construction that will then clear the park shade trees in phases. The phased construction approach will also allow for tree clearing and planting in stages to minimize effects on shade and temperature.

Comment 54: The only factors that should be considered are the composition, certification of suitability of intended use, and quality-valuing cost and convenience over the future health and safety of the neighboring communities and the future park users is viciously irresponsible. Re: safety of landfill need guarantees—must have daily inspections so they don’t sneak substandard landfill in. You are not transparent

and specific about what landfill will be used and you are not giving local residents/neighbors to the park real input. (Weiss_26)

Soils should be the starting point, especially because plants will be introduced to a barren, lunar landscape. Porosity is obviously important, because it either favors drainage or the retention of water and nutrients. And what about soils with appropriate microbial composition? (Berkov_18)

I am not satisfied that good high quality clean, safe, enduring landfill will be used; I don't see any commitment for that. Do not bring in any landfill that will degas emitting methane over time, any landfill with toxins such as mercury, any landfill with organic materials. How long will it take to settle? No one seems to know! SOLUTION: Why use landfill? Why not build a good foundation with sustainable materials. (Weiss_26)

Response: Commitments to clean fill soil requirements for the project are stated in the FEIS Chapter 6.6, "Construction—Hazardous Materials," construction will be performed in accordance all the necessary measures to protect the health and safety of the public, construction workers, and the environment. A Remedial Action Plan (RAP) will be prepared that will identify the appropriate clean fill importation criteria (both for surface soils in landscaped areas and for other material used in the subsurface as well as criteria for allowable reuse of excavated soils. The sources of clean soils or fill materials that meet these requirements will be identified by DDC and the testing protocols for the fill materials will be approved by DEP as part of the RAP. Additional information regarding fill material and soil sampling are provided in FEIS Chapter 6.5, "Construction—Natural Resources," and FEIS Chapter 6.6, "Construction—Hazardous Materials." Furthermore, an air emissions reduction plan and a construction noise mitigation plan would be implemented for the Preferred Alternative to minimize the air quality and noise effects of construction activities on the surrounding community. Additional information regarding the emissions reduction plan and the construction noise mitigation plan are presented in FEIS Chapter 6.10, "Construction—Air Quality," and FEIS Chapter 6.12, "Construction—Noise and Vibration."

Comment 55: The FEIS mentions that construction workers will be on site from 7:00am to 6:00pm on weekdays with the possibility of expanded hours to meet deadlines. Nevertheless, the City should not depend on after hours construction as a regular occurrence, and all permit applications for afterhours construction must be shared with the CAG and go through Community Board review. (Brewer_23)

Construction should be limited to normal hours except in extreme circumstances, and all permit applications for after-hours construction must be provided to local constituents in advance of their issuance. (Rivera_27)

Response: DDC will work with the community and its elected officials to establish appropriate communication protocols for notifying stakeholders when construction activities are anticipated outside of the typical permissible hours (i.e., outside of 7AM to 6PM on weekdays). For example, as stated in the FEIS, construction activities that are adjacent to the FDR Drive would need to be conducted during nighttime as per NYCDOT's OCMC requirements.

Comment 56: The Applicants must apply and qualify for an Envision Certification from the Institute of Sustainable Infrastructure to ensure sustainable construction standards (Brewer_23)

The City must include as part of this effort an Envision Certification from the Institute of Sustainable Infrastructure to ensure sustainable construction standards are being followed—agency officials have committed to seek this certification to my office, this must be memorialized in any final letters of purpose and project descriptions. (Rivera_27)

Response: The City is seeking project certification under the ENVISION Rating System administered by the Institute for Sustainable Infrastructure (ISI). Documentation demonstrating ENVISION compliance will be compiled and submitted at the completion of design. In the interim, the City's Program and Construction Management consultant will be conducting an evaluation to assess the project under ENVISION's criteria. Additional detail relating to the ENVISION process is provided in Chapter 6.11, "Construction—Greenhouse Gas," of the FEIS.

Comment 57: I am a 78 year old woman with lung disease and have been following both the comments from the community and responses from the city on the environmental impact. I am very concerned our health is not a top priority equal to flood protection. I am concerned that we do not know enough about this project and its benchmark measurements to believe it will not impact the health of our community. Even the 'outside consultant' hired by Gale Brewer and Carlina Rivera could not figure out how to evaluate the standards that formed the basis of the environmental impact in the ESCR Proposal. I find it absolutely incredible that the project proposes to dig up 58 acres of land known for holding environmental toxins then bringing in 900 thousand tons of landfill to raise the park while claiming this will not have adverse effects on the health of the community. Who could really believe this? I am asking for those responsible for the approval of this project to please pay attention now before the project goes through final approval. Lives are at stake here. I would like to request that the city council, borough president and local councilwoman request clarification of the benchmark standards used in the ESCR environmental evaluation of the report and that they review to guarantee that our health will not be adversely affected by this project. Please look closely to guarantee that false or unrealistic claims are not supported by your approval. And please make it possible for any and all

members of our community to understand the expected (and potential unanticipated) environmental hazards to our air, water, noise levels and projected health outcomes for us living close to the project. Since losing the park is already a profound loss for us I believe we deserve assurances that our health will not be destroyed along with the park we love. We deserve this from the city. And to prove the city is operating in good faith I would like to request monitoring stations along the project that measure ongoing air (and noise quality?) like the DEP water testing station along Avenue D. And a clearly defined methodology for the community to know about and complain directly to project managers if these monitoring stations indicate poor air quality. We need transparency and accountability to help us maintain trust while this awful project proceeds. (Horsfield_22)

Response: As detailed in FEIS Chapters 6.6, “Construction Hazardous Materials,” 6.10, “Construction Air Quality,” and 6.13, “Public Health,” the Preferred Alternative would not result in unmitigated significant adverse effects to air quality, water quality, hazardous materials, or public health, with only the potential for unmitigated temporary significant adverse construction period noise effects at locations in the vicinity of the Preferred Alternative’s construction work areas during certain phases of construction (e.g., pile installation).

Measures would be taken to reduce pollutant emissions during construction in accordance with all applicable laws, regulations, and building codes as well as New York City Local Law 77. These include dust suppression measures, idling restrictions, and the use of ultra-low sulfur diesel (ULSD) fuel and best available tailpipe reduction technologies. With the implementation of these emission reduction measures, construction of the Preferred Alternative would not result in significant adverse air quality impacts.

Construction-related noise level increases would not result in chronic exposure to high levels of noise, prolonged exposure to noise levels above 85 decibels (dBA) of noise level, or episodic and unpredictable exposure to short-term effects of noise at high decibel levels, as per guidance in the *CEQR Technical Manual*. It is therefore concluded in the FEIS that construction of the Preferred Alternative would not result in any significant adverse public health effects.

Subsequent to the FEIS, the City has developed and committed to a revised construction phasing plan that would that will keep nearly half of East River Park open during the construction period, thus ensuring that local residents will have access to portions of East River Park during construction. The details of the modified Preferred Alternative, including the revised construction phasing plan, and their potential environmental effects, are presented in Tech Memo 001 (see Appendix C). As presented in Tech Memo 001, the modified Preferred Alternative would not result in any new or different significant adverse effects not already identified in the FEIS.

DDC will continue to coordinate with the elected officials on establishing appropriate protocols for sharing air, soil, and noise monitoring data during construction. In addition, subsequent to the release of the FEIS, the City has established a CAG composed of local stakeholders who will provide community input on the Preferred Alternative throughout the final design process and during construction.

Comment 58: The Community Construction Liaisons managed and staffed by a Borough Outreach Coordinator from pre-construction through the project's completion are intended to serve as direct community contacts. They must be available 24/7 through a dedicated hotline and email to report unsafe conditions and log complaints and concerns. The information for this hotline and email must be posted prominently on the construction sites, on social media, the CBs, local elected officials, and on the websites of all involved agencies. All workers who maintain and repair the floodwall infrastructure and parallel conveyance system must receive thorough training and be provided with a safety manual. As flood gates will be closed manually before storm events, I urge the Applicants to conduct a study on ways to ensure the proper training and safety of all workers involved in storm preparation and the operation of the flood control systems. (Brewer_23)

Response: During project construction, DDC will have a robust community outreach plan in place, including dedicated onsite CCLs. The CCLs will act as representatives on behalf of DDC and an extension of the DDC Office of Community Outreach and Notification and will be tasked with keeping stakeholders informed by identifying, documenting, and resolving issues, as well as providing regular updates and advisories. In addition, subsequent to the release of the FEIS, the City has established a CAG composed of local stakeholders who will provide community input on the Preferred Alternative throughout the final design process and during construction.

An Operations and Maintenance Manual is also being developed for the proposed flood protection system to identify the procedures for deploying, inspecting, testing, and maintaining each element of the proposed flood protection system to ensure that the floodwalls and closure structures remain in proper working order and are ready to perform in advance of a design storm event. This manual will include requirements for the proper training and safety of all workers involved in operating and inspecting the proposed flood protection system.

6.2 CONSTRUCTION—OPEN SPACE

Comment 59: While I applaud the efforts to address concerns due to hurricane flooding and protection of the East side neighborhood, I am concerned about a few aspects of the proposed plan. First, the human impact during construction of this plan is

extensive. Many people in the surrounding neighborhood will not have access to green space for 3 years and will lose access to a transportation hub at the edge of the park. (Braun_02)

While it is necessary to ensure flood protection for the future, the present needs of the community are ignored in this new plan. As climate change raises sea levels and threatens to produce more dramatic storms and storm surges, this resiliency project is essential to protecting residents. However, closing the park for the entire duration of the project, 3.5 years, leaves the neighboring community without green space, recreation areas, and safe play environments in the meantime. Opening sections of the park to the public during the completion of the project would ensure that community members have access to some public park spaces. (Sjovold_03)

I enjoy using the running track on East 6th Street in the East River Park daily. I am very concerned about the possible closure of the East River Park for 4 years, leaving me and many others without a place to run in the community. The East River Park has recently gone through a lovely facelift and many of my fellow neighbors are enjoying it. Many of us are very fearful that the city's plans to destroy it to elevate it will leave an entire neighborhood without a park for four years. Additionally, the East River Coastal Resiliency plan will interfere with my ability to enjoy a large park. Every other neighborhood in Manhattan has their park; our neighborhood needs ours. I ask that you support a way for the East River Coastal Resiliency plans to become more transparent to the community and find a way to keep the East River Park open to the community during a possible phased construction. If the city is permitted to execute their "preferred alternative" without modifications, they will close, demolish, and bury 57 acres of park for a minimum of three years. Children, seniors, those with fewer resources and the plants and animals in the East River Parks will all be the biggest losers. (Lee_05)

Phased Construction and Open Space Mitigation: The East River Park is of vital importance to many in the community. Much of the resistance to the project could be alleviated by agreeing to a phased construction within the park so that portions remain open to the public. In addition, it is important to ensure sufficient alternative active and passive open space recreational resources. (Deltares_31)

Response: The City understands the importance of East River Park to the community and, in particular, requests that construction be phased over a period of years so that portions of the park will remain available to the public during that time. Since the release of the FEIS, the City has developed and is committed to a plan that will keep nearly half of East River Park open at all times for the duration of project construction, thus ensuring that local residents will still have access to portions of East River Park at all times. Additionally, the revised construction phasing plan maximizes public access in Project Area 2. Although the phasing approach would extend the overall project timeline, the City has found a way to meet the community's request for phasing while still ensuring flood protection in time for

the 2023 hurricane season. The details of the revised construction phasing plan have been analyzed in Tech Memo 001 (see Appendix C).

Comment 60: Where will the sports teams go while we do not have a park? The wealthier West Side does not have the space, and sending these kids all the way to Randall’s Island is logistically difficult. (Leznicki_09)

Response: As stated above, since the release of the FEIS, the City has developed and committed to a plan that will keep nearly half of East River Park open at all times for the duration of project construction, thus ensuring that local residents will still have access to portions of East River Park at all times. Additionally, NYC Parks is committed to accommodating permit time for all local youth leagues and is prioritizing local youth groups during construction of the Preferred Alternative. The apron facing the East River along Pier 36 is an existing public access area that is open daily from 9 AM to dusk 7 days a week. Additionally, the esplanade along Pier 35 (eco-park) recently opened in spring 2019. The City will also continue to coordinate with other entities to explore expanding recreational opportunities within NYCHA, schoolyards, and streets.

Comment 61: I see that some demographic data was added to Chapter 6.2, “Construction—Open Space,” but the main concerns still aren’t addressed. The FEIS completely ignore my comments about the “29 other open spaces” the City claims will help mitigate the loss of open space. As my original comments pointed out, there will not be 29 other spaces, as at least 7–8 of the 30 spaces will be under construction for all or part of the ESCR project, including the East River Park itself. (Lake_16)

There is nothing new in this chapter that reassures the community that the city is thinking creatively and taking seriously the need for meaningful healthy recreation during construction. (Lake_16)

The new phasing plan helps somewhat, but as currently proposed, it closes all but 2 ballfields (and the 2 that remain open are the lowest quality ones), the tennis courts, and the 10th Street grill/picnic areas. While it will be nice to have some access to the esplanade, there is still a significant loss of open space, and we still need quality mitigations. (Lake_16)

Response: Subsequent to the release of the FEIS, the City has identified an approach that will allow for phased construction, including safely keeping parts of East River Park open and reopening parts of East River Park, as well as developing a robust neighborhood park improvements program that provides active and passive recreational areas for the community throughout the 5-year construction period. The details of the revised construction phasing plan have been analyzed in Tech Memo 001 (see Appendix C). Temporary significant adverse effects to open space during construction were identified in the FEIS for the Preferred Alternative; however, these effects were found to be unavoidable and could not be fully

mitigated. Mitigation measures that NYC Parks committed to in the FEIS included: accommodating youth permit users within existing facilities under the NYC Parks jurisdiction; working with other entities with open space resources, such as the Department of Education (DOE) and NYCHA to identify recreational resources that may be opened to the community during construction; implementing a Lower East Side greening program and planting up to 1,000 trees in parks and streets and up to 40 bioswales, which started in the fall of 2019; purchasing movable solar lighting to be used at six Lower East Side parks to extend playing time at fields for permitted use during construction; improving the synthetic turf at seven park locations; installing new sports coating at seven sites; painting playgrounds and park equipment at up to 16 parks; enhancing existing Parks barbecue areas; identifying alternative tennis locations; and increasing staffing for recreation, maintenance and operations. Since the release of the FEIS, in addition to phasing the closure and reconstruction of East River Park, the City has also additionally committed to the following measures: installing amenities to activate the open space area in Waterside Pier, extending hours at local DOE schoolyards and athletic fields; and reusing the currently installed turf at the Track and Field Complex where feasible.

Comment 62: My [Manhattan Borough President Gale A. Brewer's] office met with a number of local youth leagues that utilize the East River Park's sports facilities. Even with the new project phasing, removing these facilities from public use would create a financial and physical hardship for sports teams that will have to commute to sports fields outside of their neighborhood during the 5 years of due to closures. The Applicants must work with all local youth sports leagues to identify alternative facilities and identify transportation to these sites. At the completion of the project, the Applicants are to guarantee field priority for local youth leagues. It is vital that the location and funding for these programs are disclosed and discussed with the CBs and the CAG to ensure financial feasibility and value to residents. I support further research into options for open space mitigation. However, it is imperative that the installation of turf and other renovations be brought to their respective CBs for community input and approval. I ask that (1) the Applicants conduct robust community outreach to mitigate such disputes before finalizing design decisions for temporary, alternative spaces, and (2) that a finalized proposal, map, and timeline for the closure and opening of all proposed, alternative spaces be published for public comment well in advance of implementation. Before the first summer season of the East River Park's closure, temporary water parks or water play features must be made available. Cooling centers and comfort stations in the project area—specifically, at Murphy Brothers Playground must be included in the final design and the decision to include them not deferred to a later time. (Brewer_23)

Response: NYC Parks is committed to accommodating local youth play in the neighborhood and is also committed to neighborhood park improvements to minimize

construction period effects. NYC Parks will continue to take suggestions on additional measures that can be implemented quickly to offset the adverse effects of the Preferred Alternative’s construction as the project moves into final design and implementation. As part of this effort, the City is committed to continuing its public engagement efforts throughout each phase of construction to minimize these adverse effects. The City will also continue to coordinate with other entities with open space resources, such as DOE and NYCHA, to explore expanding recreational opportunities within NYCHA, schoolyards, and streets. Since the release of the FEIS, the City is committed to extending hours at local DOE schoolyards and athletic fields to open for public use. In addition, the athletic field at Murry Bergtraum High School would be available for use by local youth baseball/softball leagues during Phase 1 construction (fall 2020 to fall 2023) under the revised construction phasing plan.

6.6 CONSTRUCTION—HAZARDOUS MATERIALS

Comment 63: The FEIS has failed to disclose all pertinent documentation related to the remediation of hazardous materials. This includes but is not limited to correspondence between the Applicants and all environmental oversight agencies (i.e., EPA, NYSDEC, New York City Mayor’s Office of Environmental Remediation [OER]), an asbestos-containing materials study, RAP, Site Management Plan, Soil Management Plan, and a Construction Health and Safety Plan. For all these and other reasons the proposed Option 4 must be rejected. (Brandstein_24)

According to the DEIS construction will expose nearby residents to many hazardous materials including lead, petroleum waste, asbestos, PCBs, variable and sometimes elevated levels of a range of contaminants, especially certain metals and semi-volatile organic compounds (SVOCs). Excavation, especially in areas with Manufactured Gas Plant (MGP) contamination, can result in odor concerns—the plans to protect us from the contaminants are not sufficient and rely mainly on the contractor not the community to decide when to implement. (Weiss_26)

Response: A comprehensive analysis of the soil and groundwater conditions in the project area is provided in FEIS Chapter 6.6, “Construction—Hazardous Materials.” As described in detail, project construction will be performed in accordance with a RAP, approved by DEP, and to be implemented by DDC during construction. The RAP will include appropriate procedures to manage disturbed soils including: dust control procedures; criteria for reuse of existing soils and other materials; and criteria for clean soil/fill importation including testing protocols for both surface soils in new landscaped areas and deeper subsurface materials. Additionally, project construction as it pertains to MGP wastes will be conducted in accordance with a Memorandum of Agreement with NYSDEC whereby a

Mitigation Work Plan (MWP), subject to approval by NYSDEC, will be implemented.

For the Preferred Alternative, as on all large projects, the contractor would also be required to develop a Construction Health and Safety Plan (CHASP), in accordance with US Occupational Safety and Health Administration requirements and implement the measures accordingly. The CHASP would ensure that soil disturbances are performed in a manner protective of workers, the community, and the environment, including procedures for odor, dust, and nuisance control.

The MWP, in combination with the RAP, CHASP, will outline measures and requirements pertaining the removal, handling, and disposal of asbestos, which will be implemented during construction to avoid impacts on workers, the public, and the environment.

Comment 64: Do not use foams to cover exposed odorous soils, chemical odorants in spray or misting systems spray Febreze which damages your ability to smell, or any other chemical that can provoke asthma. Just another chemical polluting our environment instead of cleaning it up, just to save money. (Weiss_26)

Response: NYSDEC requires odor control to be performed and, in their guidance document “New York State’s Approach to the remediation of Former Manufactured Gas Plant Sites,” discusses use of a variety of control measures, including spraying of active excavations and stockpiles with detergents or odor-suppressing foams. Such measures will be used if and as necessary during the proposed construction. Such measures have previously been used at locations throughout the City.

Comment 65: The FEIS confirms that subsurface contamination and sources of petroleum waste consistent with historical MGPs were found in the soil and the groundwater in the project area. Other hazardous materials found include asbestos and lead-based paint, byproducts of gas production (i.e., coal tar, fuel, and gasoline, Volatile Organic Compounds (VOCs), pesticides, herbicides, and rodenticides, and metals) from the auto repair shops, gas stations, and the Con Ed Station located in and near the project area. Flood protection must be provided for these existing facilities in and near the project area that may be impacted by storms. In an effort to reduce the potential of MGP-related contamination, a series of MGP-related recovery wells are to be installed prior to the project’s construction. Structural construction of the approved Pier 42 upland project, the flood protection system on the west and east side of the FDR Drive, and the reconstruction of the Solar One Center would involve demolition and excavation activities that have the potential to disturb the subsurface containing hazardous materials. All VOCs, petroleum storage tanks, and other hazardous materials must be removed from affected sites in accordance with federal, state and local regulations prior to project construction. Further investigations in the form of an asbestos survey, Site

Management Plans, a Mitigation Work Plan, a RAP and a Construction Health and Safety Plan shall be included in the FEIS. The subsurface investigation shall be conducted in conjunction with DEP and any construction and occupancy permits would only be issued once DEP receives and approves a Remedial Closure Report that is certified by a New York licensed professional engineer and approved through DEP reviews. (Brewer_23)

Response: During subsurface investigations, contamination consistent with historical MGPs was encountered. As described in DEIS Chapter 6.6, “Construction—Hazardous Materials,” excavation and other soil disturbance during construction would be performed in accordance with a Memorandum of Agreement with NYSDEC whereby a MWP, subject to approval by NYSDEC, addressing MGP wastes would be implemented. This MWP would address both avoiding subsurface migration and airborne releases of MGP wastes. In addition, all soil and groundwater that is disturbed during construction would be managed in accordance with a project-specific Remedial Action Plan RAP and CHASP, that would be approved by DEP, implemented as required by the contractor, and overseen by DDC. The RAP will include but not be limited to procedures for soil screening, excavated material characterization, disposal, demarcation, stockpiling, material reuse, backfill and cover soil import, water and other fluid management, and a contingency plan (see also Chapter 6.6, “Construction—Hazardous Materials,” in this FEIS).

The auto repair shops and the portion of the Con Edison East River Complex west of the FDR Drive are located within the proposed project’s protected area. Furthermore, Con Edison has implemented storm-hardening improvements at its East River Complex. The existing BP gas station is located on the waterfront shoreline and cannot be protected without the installation of flood protection infrastructure, such as a floodwall, along the shoreline or in the East River. Such an alignment would negatively affect the design goals for the balance of the Stuyvesant Cove Park area, since it would require the line of flood protection to be shifted and sited immediately along the shoreline.

DDC will continue its ongoing coordination with the public and elected officials on establishing appropriate protocols for sharing reports related to hazardous material. In addition, subsequent to the release of the FEIS, the City has established a CAG composed of local stakeholders who will provide community input on the Preferred Alternative throughout the final design process and during construction.

6.7 CONSTRUCTION—WATER AND SEWER INFRASTRUCTURE

Comment 66: While the FEIS states that, “if a storm is forecast, the sewer system would be inspected and cleaned as needed,” it is imperative that there be routine checks on these systems, not only when the risk of flooding is imminent. While the new

parallel conveyance system is intended to limit flooding from storm surges within the study area. (Brewer_23)

Response: DEP maintains and inspects the sewer system on a regular basis. The reference in the FEIS was to pre-storm inspections. As described in FEIS Chapter 2.0, “Project Alternatives,” under the description of the Preferred Alternative, the operations and maintenance of all infrastructure, including the sewer infrastructure, will be performed by appropriately trained personnel and in accordance with an Operations and Maintenance Manual that will specify these requirements for both pre-storm and normal year-round procedures. As described in FEIS Chapter 5.8, “Water and Sewer Infrastructure,” the study area will continue to be serviced by combined sewer infrastructure that is managed by DEP in accordance with all applicable Federal, State, and local laws. During storm events that result in combined sewer overflows (CSOs), the Preferred Alternative includes the redistribution of combined flows in the study area sewer system. The Preferred Alternative cannot eliminate the discharge of combined sewer overflows to the East River during storm events; however, the overall volume of CSO from outfalls in the Water and Sewer study area would not substantially increase from existing conditions and is not anticipated to impact the water quality in the East River.

Comment 67: I was told that the new drainage system which is being implemented will not incorporate the underground streams that intersect my neighborhood. I think that the proposed plan as is represents a danger to my neighborhood as it could easily become a soup bowl once the flood gates are closed and if we have heavy rainfall. I prefer the original plan over what you are currently proposing. (Ratcliffe_30)

Response: While historically there may have been streams in this area, they have all been filled as the area was developed and these historic wetlands and streams no longer exist. To address the need for drainage management in the protected area during construction, drainage system modifications proposed as part of the ESCR project are specifically designed to provide adequate drainage for the protected area during a design storm event. Interceptor gates are proposed at the northern and southern ends of the drainage protected area to isolate the area from the larger sewershed during design storm events to prevent coastal floodwaters from inundating the drainage protected area. The existing sewer system would also be modified with parallel conveyance and upsized sewers to increase its capacity to convey wet-weather flows to Manhattan Pump Station during a design storm event, thereby reducing the risk of flooding and sewer backups within the drainage protected area. The drainage improvements have not been modified since the original plan and would function similarly across all of the design alternatives.

6.9 CONSTRUCTION—ENERGY

Comment 68: The Preferred Alternative will conduct excavation, pile driving, and other disruptive construction activities in and around existing energy transmission and generation infrastructural sites, such as the Con Ed Station. To avoid significant damages and service disruptions, construction plans must fully protect the existing water, electrical and high voltage electrical transmission lines that extend beneath the entire length of East River Park. Construction must aim to minimize vibration and control excavation measures including the placement of fill and soil in order to not disrupt any vital infrastructure that serves the surrounding community. (Brewer_23)

Bulkhead under Con Edison is not slated for rebuilding as part of this project, but appears to be in severe disrepair, doesn't it jeopardize some element of safety and longevity of the project? In the ESCR construction documents, Con Ed's high voltage transmission lines will need to be moved in the project area. Who is responsible for moving these lines and how will they be coordinated with the overall construction? Does the required hand work move miles of high voltage lines pose a threat to timeline for this project? Is it good planning to keep Con Edison on the edge of the island? It should be time to move the facility out of Flood Zone 1. Energy sources should not be in these high-risk areas for international good practice. (Krezell_14)

Response: As described in Chapter 6.8, "Construction—Energy," to avoid damage to or disruption of the transmission lines during the construction of the Preferred Alternative, measures would be taken to minimize vibration, to carefully control excavation around existing infrastructure, and to manage the placement of fill and soil stockpiles. Because the transmission lines are highly sensitive to vibration, installation of sheet piles in proximity to the lines could be achieved with a press-in sheet piling machine, rather than vibratory hammer. To avoid unexpected utility line strikes or other hazardous conditions, the location of transmission lines would be confirmed via test pits inspections performed by Con Edison.

Since Hurricane Sandy, Con Edison has installed resiliency measures to protect their critical resources in this area. These resiliency measures include: raising or relocating critical equipment such as the elevated East 13th Street Substation control room; installing submersible equipment to withstand flooding; construction or upgrading perimeter walls, flood walls and barriers around critical equipment in the electric substations and the East River Generating Station; installing pumps with redundant power supply and backup generators; and installing flood protection measures that safeguard utility tunnels. Additionally, the proposed project's design team has coordinated with Con Edison and their resiliency design team on their storm hardening improvements implemented at the Con Edison East River Complex. As the property owner, Con Edison leads the design, funding, and public review of these efforts.

During construction of the Preferred Alternative, Con Edison would undertake the wrapping of their existing live transmission lines located belowground in a protective carbon fiber material. Carbon fiber wrapping activities would be performed in conjunction with the installation of the flood protection measures. The City would continue to coordinate with Con Edison on implementation of these protective measures.

Comment 69: Consolidated Edison Company of New York, Inc. (Con Edison) supports the overall purpose and need for the ESCR Project. We are disappointed that the EIS does not yet provide the requested information necessary to ensure that the project is constructed and maintained in a manner that does not interfere with Con Edison’s ability to provide safe, reliable utility service, maintain the security of its property, and respond promptly to customer emergencies. Over the past two years, Con Edison has repeatedly asked the City to provide information regarding its plans to use Con Edison’s property and the specific property interests the City is proposed to acquire from Con Edison for the ESCR Project. We have also repeatedly advised the City that it cannot acquire easements from Con Edison for the Project without the consent and approval of the New York State Public Service Commission (PSC) after a statutory review process that can take more than a year with no assurance that the PSC will approve the acquisitions the City will propose. The need for details on the City’s access, construction, operation, maintenance and inspection were recently laid out again on pages 2 and 7 of our August 30 comment letter on the draft EIS. We ask the lead agencies to note these unresolved risks to utility service and to the ESCR Project’s construction schedule in their Record of Decision and Statement of Findings. (Gallo_21)

Response: Design of the Preferred Alternative is being undertaken in close coordination with Con Edison. As part of this design process, considerations have been made in the design of the flood protection system to: minimize the depth of additional fill to be placed above the conduits to minimize detrimental effects on transmission; revise the alignment of the system to reduce conflicts and crossings of the conduits by the flood protection elements; reduce potential effects of construction vibration; and wrap the lines with carbon fiber to provide enhanced corrosion protection. All activities related to the construction around Con Edison transmissions lines will be coordinated with Con Edison and agreed upon prior to construction.

The general area of acquisition and the purpose and need for the acquisition (to operate, maintain, and inspect the system) is provided in the ULURP application and is described in the FEIS in Chapter 2.0, “Project Alternatives,” under the description of the Preferred Alternative. With respect to the deployment and operation of floodgates, an Operations and Maintenance Manual will be developed for the proposed flood protection system to identify the procedures for deploying, inspecting, testing, and maintaining each element of the proposed flood protection system, including those at the Con Edison East River Complex,

to ensure that the floodwalls and closure structures remain in proper working order and are ready to perform in advance of a design storm event. As the proposed ESCR and Con Edison projects are integrated systems, it is expected that Con Edison would be an important participant in the preparation of that manual and through this active coordination any conflicts would be avoided. The City continues to coordinate with Con Edison including recent Operations and Maintenance Manual and Emergency Response Plan (ERP) meetings and workshops.

6.9 CONSTRUCTION—TRANSPORTATION

Comment 70: The East River Park is an essential recreational and commuting area/route for those of us who live on the LES. Please, respect our homes and keep a bike route open and some of the field open during construction. (Uhlmann_10)

According to DOT, the East River bikeway/walkway “carried 2,077 cyclists on weekdays and 1,974 cyclists on weekends during daylight hours in 2018, numbers that were expected to rise by 5 percent annually.” DOT and the Applicants must ensure that the closed bikeway will be replaced by equally safe, protected routes at avenues A, B, C, or D. (Brewer_23)

A sufficient detour in Alphabet City for bicyclists who rely on the East River Greenway is needed—as First and Second Avenues and a partially open Greenway will not suffice. (Rivera_27)

I asked about mitigations during construction, especially the re-routing of the Greenway. There is no explanation of where runners and walkers can go that is safe and traffic-free; the First/Second Avenue bike lanes are still the solution for cyclists; and the gathering and play mitigations are the same ones the City has been proposing since May. (Lake_16)

Response: Since the release of the FEIS, the City has developed and is committed to a plan that will keep nearly half of East River Park open at all times for the duration of project construction, thus ensuring that local residents will still have access to portions of East River Park at all times. However, the East River Greenway will need to be closed from East 23rd Street to Montgomery Street. NYCDOT understands the significance of the planned closure of the East River Greenway during construction of the Preferred Alternative and is committed to providing safe alternative routes for pedestrians and bicyclists. It is therefore proposed to re-route bicyclists to the on-street bike network, primarily the protected bicycle lanes along First and Second Avenues, as well as those on Allen Street/Pike Street and Clinton Street. These protected bicycle lanes would provide a reasonable alternative for many of those bicyclists who use the Greenway as a transportation route, as they are proximate to numerous destinations in the neighborhoods that run alongside the Greenway, and may actually provide a more direct route for many trips. NYCDOT is currently upgrading intersections along these corridors

with offset crossings to provide a more comfortable riding experience on these routes. Additionally, bicyclists are encouraged to use existing local routes Avenues A, C and Clinton Street. NYCDOT is currently upgrading a number of intersections in the East Village with offset crossings to provide a more comfortable experience for bicyclists and also currently examining the potential to install protected bicycle lanes permanently on Avenues A, B and C. A rerouting plan design will continue to be finalized through the final design process of the Preferred Alternative. NYCDOT also will continue to take input from the community as the details of the rerouting plan are finalized.

Comment 71: I make the following recommendations: (1) Signal timing changes should be implemented at the intersections of East 23rd Street/First Avenue and East 23rd Street/Second Avenue to mitigate adverse traffic effects; (2) DOT plan addressing the narrow lanes of traffic on East 20th Street during the construction of the interceptor gate house must be submitted for CB6 approval; (3) a new crosswalk must be added at the intersection of Avenue C and the north side of the FDR Drive's Exit 7 to create a more direct, pedestrian access pathway across Avenue C to the waterfront and Stuyvesant Cove Ferry Landing; (4) the exit ramp from the FDR must be modified to provide a legal left turn onto Avenue C at the East 18th street traffic signal, with appropriate signage for improved pedestrian safety. Parking for construction workers must not further impact reduced street parking for residents. Parking space must be provided within unused areas of the construction site or at other off-street parking sites. DDC and related agencies must verify that safe and convenient pedestrian access to both ferry stations is maintained during construction. If disruptions prove unavoidable, the CBs and ferry users must be notified well in advance. A study of traffic volumes and patterns prior to a storm major event should be undertaken approved by the CBs. This study must include information on potential road closures or blockage, the availability of public transit, parking restrictions, and evacuation scenarios for residents and businesses in the vicinity. (Brewer_23)

Response: A comprehensive analysis of potential traffic impacts with the Preferred Alternative during construction was undertaken in the FEIS. As presented in FEIS Chapter 6.9, "Construction—Transportation," temporary significant adverse traffic effects during construction were identified at the intersections of East 23rd Street/First Avenue and East 23rd Street/Avenue C, which could be mitigated with signal timing modifications. (No significant adverse effects were identified at the intersection of East 23rd Street and Second Avenue.) The implementation of these signal timing adjustments are subject to review and approval by NYCDOT. Acceptable lane widths will be maintained along East 20th Street during construction of the interceptor gate house. MPT plans will be developed and the approval and implementation of these plans will be coordinated with NYCDOT's OCMC. NYCDOT has reviewed the proposed designs at this intersection and also completed pedestrian enhancement measures at the

intersection of Avenue C and 18th Street in 2018 that included the widening of three pedestrian ramps to accommodate shared bicycle and pedestrian uses. Remaining work to be completed includes refurbishing crosswalk markings and installing new street markings to realign bicycle traffic with the newly widened ramps.

NYCDOT has also evaluated the feasibility of a left-turn lane for the FDR Drive Exit 7 off-ramp. Initial analysis showed that a left turn lane for vehicles exiting northbound FDR Drive, Exit 7 at Avenue C and 18th Street would need its own signal phase due to the geometry of the intersection. In the current intersection configuration, a left turn from this location would have conflicts in each of the three existing signal phases. In order for the left turning movement to be safe, either the left turn would need its own signal phase or the off-ramp and its intersection with Avenue C and 18th Street would need to be completely redesigned, likely including the relocation of FDR Drive support columns. Relocating the northern crosswalk per the suggestion would not address the conflict with vehicles or the southern crosswalk. Furthermore, if the crosswalk were recessed from the intersection, it would also require an additional signal phase per DOT standards.

As shown in the FEIS, the Preferred Alternative could result in a parking shortfall of up to 35 spaces within Project Area One during peak construction activities and would not result in a parking shortfall within Project Area Two; however, the projected parking shortfall in Project Area One is a temporary condition during peak construction activities only. During construction, safe pedestrian access to the ferry stations will be maintained. As discussed in the FEIS, the extent of effects on transportation systems during storm deployment conditions would be managed in coordination with a plan to be developed with input from NYCEM, NYCDOT, NYPD, FDNY, NYC Parks, and other City and state agencies including the MTA for coordination with respect to transit management, and a quantified study of storm conditions is not required.

6.10 CONSTRUCTION—AIR QUALITY

Comment 72: I asked about Air Quality during construction, especially given the loss of tree cover/carbon sequestration. There are very few changes to Chapter 6.10, “Construction—Air Quality,” between the Draft and Final versions. The City continues to state that air quality will be acceptable with precautions, but never explains how the loss of tree canopy will affect us. Even in the phased plan, much of the tree canopy will disappear during Phase 1. Please note that the Deltares report recommends additional air quality monitoring given the extensive destruction and fill work proposed. This is a major concern for the frontline community. (Lake_16)

Response: The benefits of urban trees are considerable, including their air quality benefits. However, the clearing of the trees in East River Park would not adversely affect air quality conditions in local neighborhoods. As discussed in FEIS Chapter 5.6, “Natural Resources,” a desktop analysis using high-resolution land cover data revealed that, within a half-mile of the project area, a total of 183 acres of tree canopy cover is present that will continue to provide air quality benefits to the neighborhood throughout the construction period and the maturation of the proposed enhanced urban forest. Although construction of the Preferred Alternative would result in the removal of 991 trees, restoration of trees would be conducted in accordance with a pre-approved NYC Parks landscape restoration plan. This landscape restoration plan includes over 50 different species, reflecting research around the benefits of diversifying species to increase resilience and adaptive capacity in a plant ecosystem and also pays special attention to species that can withstand salt spray, strong winds, and extreme weather events. The landscape restoration plan would ultimately result in a net increase of 745 total trees within the project area. Additionally, NYC Parks has committed to planting up to 1,000 trees and approximately 40 bioswales throughout CB3 and CB6, which started in the fall of 2019.

A Community Air Monitoring Plan (CAMP) would be implemented as part of the construction management plan for the Preferred Alternative and would be overseen by DDC. DDC will work with the elected officials on establishing appropriate protocols for sharing results of air monitoring. In addition, subsequent to the release of the FEIS, the City has established a CAG composed of local stakeholders who will provide community input on the Preferred Alternative throughout the final design process and during construction.

Comment 73: Has the City analyzed the project’s effects on air quality along the bike paths beneath and adjacent to the FDR? (Weiss_26)

Response: As with the existing conditions, the proposed shared-use path adjacent to Stuyvesant Cove Park will be located under the FDR Drive and separated from the traffic circulation on Avenue C. As described in FEIS Chapter 6.10, “Construction—Air Quality,” an analysis of air quality during construction was performed that included a quantitative analysis of both on-site and on-road sources of air emissions in accordance with guidance in the *CEQR Technical Manual* regarding methodology. An emissions reduction program would be implemented for the Preferred Alternative to minimize the air quality effects of construction activities on the surrounding community. These requirements would include dust suppression measures, use of ULSD fuel, idling restrictions, and best available technologies. With these emission reduction measures in place, the analysis of construction emissions determined that no significant adverse air quality effects from construction would occur with the Preferred Alternative.

Comment 74: Construction equipment must use building materials with low carbon intensity and ultra-low-sulfur diesel or biodiesel blends of 20 percent (B20) exclusively for all diesel engines. In addition, a dust control plan (including a watering program) must be ensured. Restrictions must be placed upon trucks' idling time to 3 minutes except for those vehicles not using their engines to load, unload, or process materials, and electrical equipment must be used in place of diesel equipment whenever possible. These regulations for the reduction of emissions from engines and idling vehicle use, as well the required use of recycled steel, aluminum, and efforts toward construction waste reduction, and heightened care during material extraction and production must be written into all agreements with contractors, bids, and Requests for Proposals (RFPs). (Brewer_23)

Response: As detailed in FEIS Chapter 6.10, "Construction—Air Quality," an emissions reduction program would be implemented by DDC for the Preferred Alternative to minimize the air quality effects of construction activities on the surrounding community. These requirements would include dust suppression measures, use of ULSD fuel, idling restrictions, and best available technologies. With these measures in place, construction associated with the Preferred Alternative would not result in any significant adverse air quality impacts. Construction contractors will be required to implement these best practice measures recommended in Chapter 6.11, "Construction—Greenhouse Gas Emissions," to the greatest extent practicable and feasible and will be included in the construction contract documents and bidding process.

Comment 75: The project team must develop a hazardous material mitigation plan that goes beyond typical mitigation efforts to ensure the safety and health of all New Yorkers, including updates to residents and community leaders on air quality levels, similar to what was done with the L train tunnel repairs. (Rivera_27)

Response: Construction will be performed in accordance with a project RAP, CHASP, and in areas with MGP wastes, a MWP. DDC will work with the elected officials on establishing appropriate protocols for sharing results of soil and air monitoring and reports on a regular basis with key stakeholders. In addition, subsequent to the release of the FEIS, the City has established a CAG composed of local stakeholders who will provide community input on the Preferred Alternative throughout the final design process and during construction.

Comment 76: Agencies admit there will be profound noise and air quality pollution—this is not acceptable. (Weiss_26)

Response: FEIS Chapter 6.10, "Construction—Air Quality," presents an analysis of air quality during construction, including a quantitative analysis of both on-site and on-road sources of air emissions. Pollutant concentrations of nitrogen dioxide (NO₂), particulate matter (PM₁₀ and PM_{2.5}), and carbon monoxide (CO) from construction sources were estimated in accordance with guidance in the *CEQR*

Technical Manual regarding methodology. An emissions reduction program would be implemented for the Preferred Alternative to minimize the air quality effects of construction activities on the surrounding community. These requirements would include dust suppression measures, use of ULSD fuel, idling restrictions, and best available technologies. With these emission reduction measures in place, the analysis of construction emissions determined that PM_{2.5}, PM₁₀, NO₂, and CO concentrations would be below their corresponding *de minimis* thresholds or the NAAQS (which have been established to protect human health, including vulnerable populations), respectively, and no significant adverse air quality effects from construction would occur with the Preferred Alternative.

The potential for adverse effects due to construction noise was evaluated in the FEIS. Based on the predicted intensity and duration of noise, significant adverse impacts were identified at certain receptors in the study area. Therefore, to avoid these impacts, measures would be implemented to mitigate noise effects during construction in accordance with all applicable laws, regulations, and building codes. Furthermore, as detailed in FEIS Chapter 6.12, “Construction—Noise and Vibration,” the City has identified additional measures beyond code requirements to minimize the effects of construction noise, including the use of quieter equipment models and limiting pile installation activities to daytime hours where feasible and practicable.

6.12 CONSTRUCTION—NOISE AND VIBRATION

Comment 77: Chapter 6.12, “Construction—Noise and Vibration,” principal conclusion of report claims “...construction of the proposed project would not result in a significant adverse public health effect.” Section B. I completely disagree. Sandwiched between the two new overpasses, residents of Corlears Hook would be subjected to sound from pile drivers and jackhammers etc. for the duration of the project. You cannot just use decibel level as criteria—just because New Yorkers are used to tolerating the sound sirens from firetruck passing for 30 seconds doesn’t mean that steady pile drivers and jackhammers 24/7 can compare in experience even if the decibel level is the same. Read the chapter and you will see that decibels frequently go over CEQR recommendations, even at night and for periods of more than 19 months! This is unacceptable and instead of counting on people having double paned windows which I can tell you does very little to mitigate noise, and expecting people to run their air conditioners in the winter and probably ruin them, they must adhere to the CEQR guidelines and doesn’t matter how much it costs, they need to include in any contracts with construction companies specific language to guarantee this and make them use the pile drivers that make the least amount of noise—exact equipment must be specified! City should give the East River housing fair compensation! Squeezed between the two overpasses we will endure gigantic amounts of noise. Anyone responsible for approving and supervising construction on this project should have speakers that

transmit the construction noise in real time to their personal apartments and workplaces and their wireless earbuds for the duration of the project—then maybe they will make the effort to do it right! (Weiss_26)

Pile installation activities, where feasible and practicable, would be limited to between the hours of 7 AM and 6 PM. This excludes any activities that need to occur adjacent to the FDR Drive where work would need to be conducted during night time as per NYCDOT’s OCMC requirements.” What does this mean—the construction of the overpasses? You will have to make an exception to NYCDOT’s OCMC requirements—you are constructing next to a NORC residential community. By the way—are you going to pay for all our air conditioners that will be ruined by the pollution from the construction? (Weiss_26)

Response:

Consistent with *CEQR Technical Manual* guidance, the predicted intensity and duration of construction noise was examined along with the expected hours of construction activity and the increased sensitivity to noise during night-time hours. Based on the predicted intensity and duration of noise, significant adverse impacts were identified at certain receptors in the study area. Therefore, to avoid these impacts, measures would be implemented to mitigate noise effects during construction in accordance with all applicable laws, regulations, and building codes. Furthermore, as detailed in FEIS Chapter 6.12, “Construction—Noise and Vibration,” additional noise control measures have been proposed to specifically address pile driving noise, including a noise level limit for pile driving during night-time hours. Activities that would need to occur adjacent to the FDR Drive include floodwalls installation in the southern end of East River Park and near the Con Edison complex, reconstruction of pedestrian bridges, installation of closures structures, and work near the FDR Drive on-ramps and off-ramps.

Subsequent to the FEIS, the City has developed and committed to a revised construction phasing plan that would that will keep nearly half of East River Park open throughout the construction period, thus ensuring that local residents will have access to portions of East River Park during construction. As presented in Tech Memo 001 (see **Appendix C**), the revised construction phasing plan would not have the potential to result in additional noise effects beyond those identified in the FEIS, nor would it have the potential to result in effects of a greater intensity or duration than those identified in the FEIS.

The evaluation of potential public health effects resulting from construction noise as presented in the FEIS is based on the conservative estimates of intensity and duration of construction noise. The construction noise analysis acknowledges that noise would be intrusive at times during the construction period; however, based on the total maximum predicted noise levels and the fluctuating and temporary nature of these higher noise levels, this would not be a significant adverse public health impact according to *CEQR Technical Manual* guidance.

Comment 78: It must be guaranteed that prior to the start of work, all equipment with noise mitigation would be available for the duration of the construction period and that these models be a condition of any bids or RFPs for project construction. This includes the use of a hydraulic press in pile installation; hanging noise barriers or curtains made from mass-loaded vinyl around the pile driving to reduce noise impacts; enclosing the concrete pump and mixer trucks (whenever the mixer barrels are spinning) in a roofed shed or tunnel facing away from residential areas; and using barging instead of trucks for deliveries of construction materials, whenever feasible. According to the Applicants, night work and weekend construction is potentially expected to take place and that night work within 50 feet of a residence must not exceed 80 dBA, with pile installation activities that are within 50 feet of residences are also to produce no more than 80 dBA maximum noise level. The Applicants must do better regarding the quieting of noise equipment and little to no construction during the weekends and at nighttime. 80 dBA is equivalent to the sound of a garbage disposal, blender, or street level noise in an urban setting. To hear continuous construction noise at 80 dBA in the privacy of one’s home or at schools (with a recommended maximum threshold level of 45 dBA recommended for classroom use according to the *CEQR Technical Manual*) is jarring and must not become the norm for residents and schools. Pile driving is limited to regular work hours only and that all work must use construction machinery with noise mitigations. The Applicants must inform the affected communities and CBs well in advance of the dates of all night work, and must obtain the proper after-hour work variances from the New York City Department of Buildings (DOB). All construction-related and scaffolding-related permits must be obtained from the DOB and the CBs notified in a timely manner. (Brewer_23)

Response: As presented in Chapter 6.12, “Construction Noise and Vibration,” the City has identified measures to minimize the effects of construction noise that will be implemented through the construction specifications. During the construction phase, DDC will also have a robust community outreach plan in place, including dedicated onsite CCLs for the Preferred Alternative. The CCLs will act as representatives on behalf of DDC and an extension of the DDC Office of Community Outreach and Notification and will be tasked with keeping stakeholders informed by identifying, documenting, and resolving issues, as well as providing regular updates and advisories. In addition, subsequent to the release of the FEIS, the City has established a CAG composed of local stakeholders who will provide community input on the Preferred Alternative throughout the final design process and during construction.

6.13 CONSTRUCTION—PUBLIC HEALTH

Comment 79: The analyses presented in Chapter 6.13, “Construction—Public Health,” concludes that the proposed project would not result in unmitigated significant

adverse effects in air quality, water quality, or hazardous materials. The analysis presented in Chapter 6.12, “Construction—Noise and Vibration,” determined that construction activities could potentially result in unmitigated significant adverse construction-period noise effects at receptors in the vicinity of the proposed project’s construction work areas. However, construction of the proposed project would not result in chronic exposure to high levels of noise, prolonged exposure to noise levels above 85 dBA, or episodic and unpredictable exposure to short-term effects of noise at high decibel levels, as per the *CEQR Technical Manual*. Consequently, construction of the proposed project would not result in a significant adverse public health effect.” This is wishful thinking, not the reality. Exposure to loud disruptive continuous noise 24/7 will have a deleterious effect on all neighbors of this project causing loss of sleep, cardio vascular dysfunction, mental health problems, and problems with children’s cognition. (Weiss_26)

Response: The evaluation of potential public health effects resulting from construction noise as presented in the FEIS is based on the conservative estimates of intensity and duration of construction noise. The analysis acknowledges the potential for noise to be intrusive at times during the construction period; however, based on the total maximum predicted noise levels and the fluctuating and temporary nature of construction noise, the predicted noise levels do not rise to the level of a public health impact according to *CEQR Technical Manual* guidance. Subsequent to the FEIS, the City has developed and committed to a revised construction phasing plan that will keep nearly half of East River Park open throughout the construction period, thus ensuring that local residents will have access to portions of East River Park during construction. As presented in Tech Memo 001 (see **Appendix C**), the revised construction phasing plan would not have the potential to result in additional noise effects beyond those identified in the FEIS, nor would it have the potential to result in effects of a greater intensity or duration than those identified in the FEIS. Therefore, as with the construction plan presented in the FEIS, construction of the Preferred Alternative would not result in a significant adverse public health effect.

Comment 80: Detailed monitoring of adverse impacts: Monitoring of environmental effects during construction will help reduce uncertainty and confusion about adverse impacts. It is therefore recommended the project include a monitoring program and monitoring of air quality, soil quality, dust, noise and vibration during construction. This would require clear and transparent thresholds for these categories and online access to regular monitoring reports. An often-cited positive monitoring example is the reconstruction of the L train tunnel. The Metropolitan Transportation Authority adopted standards for releasing information on public exposure to dust and silica, a part of dust generated by the demolition of concrete which may potentially cause cancer. The Metropolitan Transportation Authority provides online monthly reports on the monitoring of the silica dust. Community

representatives stated that they are appreciative of this proactive release of information. (Deltares_31)

Response: The Preferred Alternative will have a monitoring plan during construction. DDC will work with the elected officials on establishing appropriate protocols for sharing results of air, soil, and noise monitoring and reports on a regular basis with key stakeholders. In addition, subsequent to the release of the FEIS, the City has established a CAG composed of local stakeholders who will provide community input on the Preferred Alternative throughout the final design process and during construction. Additionally, during the construction phase, DDC will have a robust community outreach plan in place, including dedicated onsite CCLs for the Preferred Alternative. The CCLs will act as representatives on behalf of DDC and an extension of the DDC Office of Community Outreach and Notification and will be tasked with keeping stakeholders informed by identifying, documenting, and resolving issues, as well as providing regular updates and advisories.

7.0 INDIRECT AND CUMULATIVE EFFECTS

Comment 81: While additional information was included in Chapter 7.0, “Indirect and Cumulative Effects,” the section does not include the level of detail, nor does it evaluate potential mitigation options for cumulative effects that may be experienced during both the construction maintenance phases of the project. Table 7.0-1 states that cumulative effects may occur with various other projects but does not address the specifics of the effects including the scope and scale of the effects, or possible mitigation of the effects. The table also does not address potential cumulative effects during construction phases of surrounding projects. We believe that consideration of cumulative effects is important for community groups and other stakeholders as the project moves forward. (EPA_07)

Response: The cumulative analysis presented in Chapter 7.0, “Indirect and Cumulative Effects,” relies on the technical analyses of the FEIS and summarizes the proposed project’s potential effects in combination with expected conditions in the future without the proposed project, including a description of the potential cumulative effects from the proposed project and nearby projects planned to be completed within the 2025 analysis year. Between the DEIS and FEIS, the assessment of the cumulative effects of No Action projects near the study area and the proposed project presented in Chapter 7.0, “Indirect and Cumulative Effects,” was expanded based on EPA’s feedback. Table 7.0-1 of the FEIS provides an overview of the relevant past, current, and future projects associated with the anticipated conditions in the future without the proposed project that could have a cumulative effect when considered in combination with proposed project alternatives, along with a description of reasonably foreseeable potential effects associated with each project, while Table 7.0-2 of the FEIS provides a summary of potential cumulative impacts of the proposed project in combination

with other past, present, and reasonably foreseeable future actions. The specifics of the cumulative effects by individual technical areas including the scope and scale of the effects, or potential mitigation of the effects, are discussed in the subsections following Tables 7.0-1 and 7.0-2.

Comment 82: We remain steadfast in our previous comments that ESCR and the Lower Manhattan Coastal Resiliency Project should be evaluated together. This effort should address connectivity of the waterfront esplanade, infrastructural tie-in points, cumulative impacts, comparative levels of flood protection and permitting. We expect these issues to be included and evaluated in the revised FEIS. (Albonesi_20)

Response: Although the LMCR–Two Bridges project, which has been renamed to the Brooklyn-Bridge Montgomery Coastal Resiliency (BMCR) project, is subject to its own separate environmental review, FEIS Chapter 7.0, “Indirect and Cumulative Effects,” provided an updated assessment of cumulative effects of that project and the proposed project. The assessment is based on currently available information for the LMCR–Two Bridges project.

GENERAL COMMENTS

Comment 83: My first comment on the FEIS is that my full comments were not included in Appendix M, Comments Received on the DEIS. Is there a reason that only some of the over 200 responses weren’t fully included? (Lake_16)

Appendix M does not include my comments—why not? I am really disappointed in the disrespectful responses made in Chapter 10, especially the NYS Attorney General. (Brawer_17)

Response: As noted in FEIS Chapter 10, “Response to comments on the EIS,” summary of comments on the DEIS and a response to each were included. These summaries convey the substance of the comments made, but do not necessarily quote the comments verbatim. Where more than one commenter expressed similar views, those comments were grouped and addressed together. All written comments from elected officials and organizations/agencies were included in Appendix M, “Written Comments Received on the DEIS.”

Comment 84: In the words of NYS Attorney General in their comments on the DEIS “not consistent with the requirements of NEPA, SEQRA, and CEQR and are arbitrary and capricious.” And the FEIS is not altered significantly to fix these issues. (Tainow_28)

Response: As stated in FEIS Chapter 10, “Response to Comments on the EIS,” the projected tree removals in the project area and the corresponding determination of restoration and restitution as discussed Chapter 5.6, “Natural Resources,” were

considered and based on discussions with expert technical agencies and staff; NYC Parks, the Lead Agency, manages and maintains trees in the Park and is responsible for determining adverse effects related to the removal of affected trees under its jurisdiction in accordance with Local Law 3 of 2010 and Chapter 5 of Title 56 of the Rules of New York (NYC Department of Parks and Recreation Rules), which were appropriately applied here. There are no specified tree cover or replacement methodology calculations for NYC Parks managed trees specified by NEPA, SEQRA, or CEQR. NYC Parks applied its methodology for tree appraisal established by the International Society of Arboriculture (ISA) to assess trees and establish required replacement value. This method is internationally recognized by the professional arboricultural community and takes into account many factors of each tree inspected, including a full condition assessment, species rating, and location rating.

As discussed in FEIS Chapter 6.10, “Construction—Air Quality,” regional (mesoscale) and local (microscale) air quality analyses of the Preferred Alternative were performed pursuant to the requirements of NEPA, SEQRA and the guidance within the *CEQR Technical Manual* as well as federal, state and City laws and standards to determine the potential for significant adverse effects to air quality as a result of the proposed project. The Preferred Alternative is subject to general conformity requirements of the Clean Air Act and its implementing regulations. This requires that a general conformity determination be made for each criteria pollutant or precursor in non-attainment or maintenance areas where the action’s direct and indirect emissions have the potential to exceed the prescribed *de minimis* rates for each pollutant. The analyses provided in the DEIS and this FEIS have found that the Preferred Alternative would not result in annual emissions exceeding the *de minimis* rates; is in conformance with the New York State Implementation Plan; and does not require a full general conformity determination.⁸ Consistent with SEQRA and *CEQR Technical Manual* guidance, a microscale air quality analysis was performed using refined dispersion modeling. Predicted concentrations of modeled parameters were then compared to federal and state guidance impact criteria (the National Ambient Air Quality Standards [NAAQS]) representing concentration levels requisite to protect the public health and welfare (allowing an adequate margin of safety). Additionally, the air quality analysis considered New York City impact criteria for carbon monoxide and fine particulate matter (PM_{2.5}) defined to maintain concentrations that have recently fallen below the NAAQS in attainment areas, or to ensure that concentrations will not be significantly increased in non-attainment areas. As discussed in the FEIS Chapter 6.10, “Air Quality,” maximum predicted

⁸ Since publication of the DEIS, the Environmental Protection Agency has redesignated the five New York City counties (NY portion of the New York–Northern New Jersey–Long Island, NY-NJ-CT, NAA) as a “severe” non-attainment area. As a result of this action, the prescribed annual rate for NO_x has been revised to 50 tons of NO_x. The maximum annual NO_x emissions would remain well below the *de minimis* criteria.

concentrations would not exceed any of the applicable NAAQS thresholds or CEQR *de minimis* criteria, and the Preferred Alternative would not result in a significant adverse effects to air quality and no mitigation measures are required. Finally, as described in the FEIS, the Preferred Alternative will also include a number of measures to reduce air emissions during construction.

Please also see FEIS Chapter 10, “Response to Comments on the EIS,” and response to Comment 49 above on the environmental justice analysis conducted in the EIS as well as response to Comment 62 on the multiple mitigation measures the City has committed to implementing to address the significant adverse effects on open space to the greatest extent practicable.

It should be noted that in a follow-up letter dated November 8, 2019 (see Appendix B), Letitia James, Attorney General for the State of New York, stated that individuals from the Attorney General office had the opportunity to communicate with multiple City agencies and that they “appreciate the City’s willingness to address the issues raised in our comments by modifying the Project and providing further explanation in the FEIS regarding the other that we raised in our comments.”

Comment 85: Deltares, the Netherlands-based environmental consulting group published recommendations for the proposed project. We urge the Mayor’s Office to review the report. (Rivera_27) (Brewer_23)

Response: The City has reviewed the Deltares report and has included its recommendations in this “Response to Comments on the FEIS” document wherever “(Deltares_31)” is referenced.

Comment 86: The community voiced a desire for a strategic study on long-term future transportation scenarios of the FDR Drive, including options for placing green decking of FDR Drive, which would allow for extension of the East River Park. (Deltares_31)

The City must also commit to a study for the greening of FDR Drive, which has for too long been an environmental injustice for East Side communities and must be rectified as part of our collective vision for a cleaner city. Alternative transportation plans should be developed for nearby streets, buses, and ferry stops that will be impacted by construction and related traffic. (Rivera_27)

Response: A study will be conducted for the greening of the FDR Drive. Once a consultant is selected, this study is estimated to take approximately 6 months to complete and will be separate from the ESCR project and subject to its own reviews and approval.

Access and egress to the East River ferry landings in the project area would be maintained with the Preferred Alternative. NYCDOT understands the significance of the planned partial closure of the East River Greenway during

construction of the Preferred Alternative and is committed to providing safe alternative routes for pedestrians and bicyclists. As presented in Chapter 6.9, “Construction Transportation,” construction of the Preferred Alternative would not result in significant adverse transit effects.

Comment 87: The Action Plan Amendment does not take into consideration the environmental, mental and physical costs of ongoing construction. While it markets the plan as leading to health benefits for residents, and knowingly correlates air quality and noise pollution with negative health impacts (in the context of emergency services)—also relating vegetation and trees with better air quality, water quality, energy savings, climate regulation, etc.—it does not take into account the physical and mental toll to residents and the environment in the case of destroying the entire park and implementing continuous construction over the course of 3+ years without considering the sustainable, more cost-effective, and less destructive plans of options 2 or 3. Is there an assessment of those costs (i.e., physical and mental costs of residents during the construction period) and an evaluation of how those costs would be mitigated available and already included in the plan? The community that uses the East River Park suffers from some of the highest asthma rates in the country, and consideration should be made into how much the existing air quality will be further affected by increased construction particles in the air should all the trees and vegetation be destroyed. The amendment estimates the cost of treatment for a month-long period related to mental stress and anxiety costs as \$2,891 per person, would those same costs apply to the mental stress and anxiety costs if the entire park is under construction for at least three years with all current vegetation and trees eradicated? I’ve personally seen and experienced the negative health effects of poor air quality and noise pollution from continuous construction (for the past two years). I can’t imagine what such an expansive, destructive project will do to our air quality over three or more years without the support of the trees and vegetation from the park. (Chu_08)

Reference to the “willingness to pay (WTP)” values associated with amenities for both recreational benefit and aesthetic values. I would like to know what the pay for recreation entails: is this based on future rental/real estate costs, or literal costs to access amenities—the way that residents have to pay to access tennis courts? Besides the city having a moral impetus in creating a healthier environment for constituents (by yes, providing flood protection, but also doing so in a manner that considers the health and well-being of the already existing environment and its residents), there should also be a financial impetus in preventative healthcare costs by providing the East River Park as a free and accessible recreational environment. I would like to know how quickly the environmental benefits of trees and vegetation planned in the amendment will be reached following construction and how the amount, condition, and sourcing of trees and vegetation

were reached in relation to how quickly they will integrate and mature enough in the new ecosystem to produce and aid that ecosystem—including air quality and water quality. I would also like to know steps that the city will take towards community outreach related towards the plans involving East River Park in the future; the only reason that I know anything about the plans for the East River Park and its details are thanks to the East River Park Action group. No governmental organizations did significant outreach with regards to the current plans and the formulation of option 4. The plan states that the city is investing approximately \$1.43 billion for this project, and the net present value of the project is approximately \$676 million. Where are the/any remaining funds being allocated? Related to the overall plan: rather than spending the huge sums estimated and required for “preferred option;” that entails bulldozing and raising the park 8–10 feet, the savings from implementing Options 2 or 3 could go towards constructing decking over the section of FDR Drive adjoining East River Park. (I hope for and expect from the city something more inventive and proactive in addressing future climate disasters and in creating a future sustainable green environment for residents than “preferred option 4;” options 2 and 3 focus on both of these elements far more than option 4. In addressing the issue of emissions released by the 100,000+ cars traveling FDR Drive each day, the emissions and congestion evaluated by the city should also include any future additional estimates related to congestion pricing which will be fully implemented in 2021. Congestion pricing which will further incentivize motorists who are passing through the city to travel on the FDR Drive or West Side Highway. Any savings from selecting options 2 or 3 (both of which prioritize flood protection as well as the creation of sustainable green spaces) over option 4 could be directed towards a plan that will serve the needs of the community first (in terms of health and long-term investments in creating a sustainable NYC ecosystem that does not need to be razed and rebuilt every thirty years and will counter any additional emissions from the FDR) rather than serving the needs of traffic on FDR Drive. Additionally, it seems that the main reason that the city replaced options 2 and 3 with their “preferred option 4;” was the potential temporary closing of one lane of the FDR (as mentioned in RBD’s plans to construct the berm along the FDR). If this is in fact true, sacrificing the health of residents for one lane of the FDR, which would only be a temporary closure, instead of looking for another solution that would allow for a less destructive, more sustainable path that considers the voices of the community, is unacceptable, irresponsible, and immoral. If this is not the case, and there are other reasons for option 4 being the best choice, the community would benefit from knowing exactly what those reasons are. (Chu_08)⁹

⁹ This comment letter was submitted in response to the SAPA. However, since the comments are more relevant to the FEIS, they are addressed within this document.

Response: As a requirement of the HUD funding the City has accepted for the proposed project, the City must publish a Substantial Amendment to the City's Action Plan, which describes how the City will spend CDBG-DR grant funds received from HUD to assist in disaster recovery and rebuilding efforts resulting from Hurricane Sandy. Substantial Action Plan Amendment 13 was published for the proposed project in 2017 based on the Preferred Alternative identified for the proposed project at that time. As indicated in Proposed Amendment 20, since the publication of the Action Plan incorporating Amendments 1-19, a material change (as defined by requirements described in 79 FR 62189; VI.6.b.) to the ESCR has been proposed. Subsequent to publication of Substantial Action Plan Amendment 13 in 2017, an additional alternative was identified as the new Preferred Alternative for the proposed project. Therefore, the City published Proposed Amendment 20 to provide updated information to reflect the proposed material change to the project design.

The process of publishing a proposed Substantial Amendment to the City's Action Plan is a HUD requirement to describe how the City will spend federal CDBG-DR grant funds on eligible Hurricane Sandy disaster recovery and rebuilding activities. Separately, the City process for approving land use changes, ULURP, is required to secure City approvals that allow the project to move forward.

The Action Plan Amendment must include a benefit cost analysis (BCA), which assesses social, environmental, and economic benefits that will result from the implementation of the proposed project. In accordance with HUD guidance, the BCA was developed using federally accepted methodologies sourced from agencies that include the Federal Emergency Management Administration (FEMA), the United States Army Corps of Engineers (USACE), the Federal Aviation Administration (FAA) and the EPA. The BCA considers numerous specific benefit categories in order to serve as a planning tool to compare a project's costs to a project's benefits and help inform decision making related to a major public infrastructure investment. Broader evaluations of socioeconomic and environmental impacts associated with the proposed project, including construction-related impacts and mitigation measures for open space and public health, are included in the FEIS. As noted above, the City has identified an approach that will allow for phased construction, including safely keeping parts of East River Park open and reopening parts of East River Park, as well as developing a robust neighborhood park improvements program that provides active and passive recreational areas for the community throughout the construction period.

The scope of the mental and physical expected losses avoided included in the analysis was limited to the potential impacts from flooding that will be mitigated by the project consistent with FEMA-approved methodology. The number of trees assessed as part of environmental benefits calculated is the net increase in

the number of trees, considering tree removal required by project construction. The mental stress and anxiety costs included in the evaluation are derived from FEMA-approved methodology and standard values based on the understanding of the psychological effects of natural disasters. The ESCR BCA report uses two different methodologies to develop a high and low scenario of the environmental benefits of the net increase in tree and new and improved vegetation the project will provide. These are averaged to provide a medium scenario. Ecosystem benefits extend beyond the useful life of the project level of protection. Based on FEMA methodology, it is common to assign a 100-year useful life to environmental benefits; therefore, the annual benefit is discounted over a 100-year useful life to obtain the present value.

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Appendix B
Comments Received on the Final Environmental Impact Statement¹

¹ Appendix B includes a copy of comments received from City, State, and Federal agencies and from organization representing key stakeholders, and the final report by independent consultant Deltares. Other public comments were also received. All comments have been addressed in Appendix A to the Joint Record of Decision and Findings Statement.



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Gale A. Brewer, Borough President

Olga Abinader, Acting Director
Environmental Assessment and Review Division
Department of City Planning
120 Broadway, 31st Floor
New York, New York 10271

October 14, 2019

Re: Comments on the Final Environmental Impact Statement for the East Side Coastal Resiliency Project, CEQR No. 15DPR013M, ULURP Applications C190357PQM and N190356ZRM

To Director Abinader,

I am pleased to submit these comments for the Final Environmental Impact Statement (FEIS) of the East Side Coastal Resiliency Project. The New York City Departments of Transportation (DOT), Citywide Administrative Services (DCAS), Environmental Protection (DEP), and Small Business Services (SBS) (collectively the “Applicants” or the “City”) are seeking two ULURP approvals for (1) acquisitions of non-City owned property and (2) text amendments to the New York City Zoning Resolution (“ZR”) §62-50 “General Requirements for Visual Corridors and Waterfront Public Access Areas” and § 62-60 “Design Requirements for Waterfront Public Access Areas” to facilitate the East Side Coastal Resiliency (ESCR) Project (the “Proposed Project”). The Proposed Project aims to address coastal flooding vulnerability in lower Manhattan by implementing a system that includes floodwalls, underground sewer upgrades, and the raising of the John V. Lindsay East River Park (East River Park) out of the 100-year floodplain. These FEIS comments relate to the project plan for Design Alternative 4 (the “Preferred Alternative.”)

Open Space, Access and Phased Construction

The latest FEIS released on September 13, 2019 does not include the City’s announcement on October 2, 2019 that the Proposed Project will be phased through 5 years of construction, with the Proposed Project’s flood protection to be completed in mid-2023 and the entire Project completed by the end of 2025. While I appreciate that the City has taken into consideration the agreement to not fully close East River Park during the duration of construction, the news came too late for robust community review and input. In fact, the news to agree to project phasing came only one day before the application’s New York City Council Subcommittee on Landmarks, Public Sitings and Dispositions public hearing held on October 3, 2019. The late reveal of the Project’s new phasing schedule does not instill community trust in the City whose choice of the “preferred alternative” came after little or no engagement with the community after 3 years of input about the previous design.

In order to complete construction by the end of 2025 I urge the city to take into account all conditions that could hinder the Project's timely completion, such as weather and storm related delays. This includes the need to install Interim Flood Protection Measures (IFPM) to both protect the community from flooding during construction as well as the construction site and equipment.

Interim Flood Protection Measures (IFPM)

In a letter to my office dated August 5, 2019, the City responded that products employed for IFPM, such as HESCO barriers and Tiger Dams, "are designed for more frequent, but less severe storms, and cannot provide sufficient protection against Sandy-level storm surges.... In addition, deploying IFPMs would also complicate and slow construction of ESCR and its critical neighborhood protections."

If the City intends to maintain its timeline for Project completion, it must (1) consider the employment of IFPM products to protect the construction site and community in the event of a storm surge. (2) The city must provide the community with its rationale for leaving the shoreline completely unprotected during construction. While the City has mentioned that the installation of HESCO barriers and Tiger Dams would complicate and slow construction of ESCR, there are other alternative IFPM products that could be installed.

For example, in a Community Board 1(CB1) meeting with members of the Mayor's Office of Resiliency and the Office of Emergency Management, it was reported that the use of "AquaFences" was planned as part of the South Battery Park City Resiliency Project. A product like AquaFence could provide sufficient protection against Sandy-level storm surges, as evidenced by their planned deployment in front of major corporate headquarters that are close to the waterfront, such as at One World Trade Center and 180 Maiden Lane. In addition, the deployment of AquaFences by local labor wouldn't occur until 3-4 days ahead of a severe weather warning and do not require fill materials, thereby neither complicating nor appreciably slowing down construction of ESCR. AquaFences are available in 4, 5, 6, and 8 feet high by 3 feet wide panels. The City has already invested and planned for the storage of the AquaFences at warehouses in Long Island City, Brooklyn, and New Jersey. In addition, AquaFences will soon be replacing HESCO barriers borough wide

It would be wise for the City to invest in IFPMs that best suit ESCR's needs and alternative products aside from HESCO barriers and Tiger Dams should be investigated. A product such as the AquaFence with its flexible installation could be well suited for the Project's siting and construction timeline. The City cannot predict that a Hurricane-Sandy scale storm and flooding would not occur during the 5 years of ESCR's construction. As such, ignoring the value of IFPMs to ensure that the construction timeline does not stretch even further out due to storm impacts is a dangerous and financially costly decision for the City.

Process, Coordination and Public Participation

As I noted above, the agree not to phase construction came only one day before the application's New York City Council Subcommittee public hearing held on October 3, 2019. I strongly urge that the Applicants henceforth inform and engage the community well in advance of changes in plan. Since the submission of my comments on the Project's Draft Environmental Impact Statement (DEIS) nearly three months ago on July 30, 2019, the City still has taken no action to create the Community Advisory Group that would consist of appointees from the Community Boards, City Council Members, and the Borough President's office. This forum is intended to provide input and advise the community through all phases of the project.

According to the Applicants, the agencies representing ESCR have reached out to the public and stakeholders through 45 community engagement meetings since 2015. They have used flyers, e-communications, open houses, and websites. The applicants also opened a 52-day comment period in

2015 to receive oral and written testimony that was then posted on the project website. In Addition details were made available in 4 languages, and representatives of New York City Department of Parks & Recreation (NYC Parks) and the New York City Department of Design and Construction (NYC DDC) attended various CB3 and CB6 meetings to present changes to the project.

After the Design Alternative 3 was rejected by CB3 and CB6 in 2018, the Applicants and the City went ahead to make major design changes without any community input. The resolutions so called Preferred Alternative or Design Alternative 4. In response CB3 wrote, “For many in the community, the ESCR process since fall 2018 has frayed trust in government and public agencies because of the drastic change in plan design done without community consultation, despite the needs of the community who look to their government to supply desperately needed protection of their lives and homes, (and often both).”

Residents and community members must be fully informed and active participants in oversight of the project. It is imperative that as this project moves forward, the ESCR team regularly consults with the Community Advisory Group, including CB3 and CB6. In addition to coordination with the Community Advisory Board the Applicants must be transparent in their decision making and communicate about design and timeline progress using social media, community meetings, open houses and information sessions in several languages including Spanish, Mandarin, and Cantonese. These steps are basic to building trust in the ESCR process.

There must also be a strong emphasis on outreach to residents of the NYCHA campuses. There are approximately 28,000 NYCHA residents living in the area adjacent to the proposed project, of an estimated total population of 198,549. The goal of the ESCR resiliency project is to benefit and protect all members of the community. The project scope declares that no communities of color or low-income communities would be disproportionately affected. However, families living adjacent to the project site are worried that children will play there. The applicants must ensure that the construction areas are secure and that neighbors are given adequate notice about road and area closures.

The application does not mention specific negotiations with any property owners who would be affected by the proposed acquisitions of easements. It is imperative that the Applicants conduct outreach to all property owners with detailed information concerning the proposed easements and respond in a timely manner to the questions, concerns, and rights of these owners. Furthermore, any and all businesses and non-profits within the East River Park that are directly impacted or displaced by the construction of the ESCR project must be offered relocation assistance by the Applicants.

Independent Environmental Review

In August 2019, I along with Council Member Carlina Rivera hired an independent non-New York based environmental consultant to review the ESCR project and its environmental impacts. The review was led by Dr. Hans Gehrels of Deltares, a Netherlands-based environmental consulting group. He visited New York City during the week of September 9th, 2019 to gather facts and conduct his review.

During his stay, Dr. Gehrels met with a number of community stakeholders including but not limited to members of the Lower East Side Ecology Center, NYCHA tenant associations, non-profits, and sports teams, as well as elected officials, CB 3 and CB6 representatives, members of the Mayor’s Community Affairs Unit, Office of Recovery and Resiliency, and Intergovernmental Affairs, the Department of Design and Construction, the department of Parks and Recreation, and other third party entities.

Dr. Gehrels’ report summarizes the following main points that I urge the City to take into consideration:

- Transparency of the City decision-making process and release of documentation that was used in the decision-making process, such as technical studies, hydraulic and geotechnical field surveys and/or modelling, and detailed mitigation plans for the construction period;
- The establishment of a community advisory group;
- Monitoring of air quality, soil quality, dust, noise, and vibration during construction; monitoring reports should be made available online for public review;
- Installation of IFPMs during construction;
- Conducting a hydraulic study in the areas north of the Project that do not have a connecting flood protection system to gauge whether additional measures are needed in that area;
- Phased construction of the park and to ensure sufficient alternative active and passive open-space recreational resources;
- Adding two feet of fill in the current project, rather than leaving it as a future option;
- Conducting a study on the long-term future transportation scenarios of the FDR Drive including green decking the FDR Drive;
- Conducting a study on urban flooding from as part of the City's green infrastructure program; and
- Conducting a geohydrological and geotechnical study on shallow groundwater dynamics in the part of the project area around the East Village that is susceptible to basement flooding and basement leakage.

Alternative Locations for Active and Passive Uses

My office met with a number of local youth leagues that utilize East River Park's sports facilities. Even with the new project phasing, removing these facilities from public use would create a financial and physical hardship for sports teams that will have to commute to sports fields outside of their neighborhood during the 5 years of due to closures. The Applicants must work with all local youth sports leagues to identify alternative facilities and identify transportation to these sites. At the completion of the project, the Applicants are to guarantee field priority for local youth leagues.

The FEIS states that "NYC Parks is exploring providing alternative recreational opportunities throughout the Lower East Side neighborhood through programs like Shape-Up classes, walking clubs, Arts, greening programs, etc." (8.0-4). It is vital that the location and funding for these programs are disclosed and discussed with the CBs and the Community Advisory Group to ensure financial feasibility and value to residents. Suggestions for alternative recreational space includes Basketball City; expanding the NYC Summer Streets program; activating the underutilized spaces of Waterside Pier; use of a temporary space on the top level of the Skyport Marina parking garage; the use of temporary barges anchored off of the existing park; and potentially "green decking" underused spaces such as the Allen Street Malls, the vacant Allen Street building, and beneath the Williamsburg Bridge.

I support further research into options for "green decking," the installation of temporary, synthetic turf, and further research for renovations proposed by the Applicants at a number of alternative sites, such as installing new sports coating at Tanahey; Sara D. Roosevelt; Al Smith Recreational Center and Playground; St. Vartans; Columbus Park; and Coleman Playground; converting the Baruch Bathhouse to a community space; and painting playgrounds and park equipment at approximately 16 sites by Spring 2020. However, it is imperative that the installation of turf and other renovations be brought to their respective CBs for community input and approval. Recently, the replacement of an asphalt lot with synthetic turf in Tompkins Square Park's northwest corner ignited a dispute between NYC Parks and the skateboarders that regularly use that patch of asphalt. I ask that 1) the Applicants conduct robust community outreach to mitigate such disputes before finalizing design decisions for temporary, alternative spaces, and 2) that a finalized proposal, map, and timeline for the closure and opening of all proposed, alternative spaces be published for public comment well in advance of implementation.

Before the first summer season of the East River Park's closure, temporary water parks or water play features must be made available. Cooling centers and comfort stations in the project area- specifically, at Murphy Brother's Playground- must be included in the final design and the decision to include them not deferred to a later time.

Urban Design and Visual Resources

NYC Parks manages an "Art in the Parks" program that collaborates with a diverse group of arts organizations and artists to bring temporary installations to many park locations, including the East River Park. While I am confident that NYC Parks will maintain the completion, some art works not included in the "Art in the Parks" program will be demolished, and others not returned to the completed park. The City has promised to preserve and relocate the 27 animal sculptures at the John V. Lindsay Playground. The sculptures were commissioned in 2002 and include 18 larger-than-life size seals and 9 turtles and crabs that have brought enjoyment to visitors for over 17 years. Up until June 20, 2019, the sculptor was left unaware and was not notified by the Applicants that his sculptures were excluded from the new design of East River Park and would therefore be demolished.

While the artist's work will be saved and relocated, I urge that NYC Parks, the NYC DDC, and the Applicants conduct a public study of all existing art pieces in the project area that would be affected by ESCR's construction and immediately contact all artists about the future of their work. NYC Parks, NYC DDC, and the Applicants must strive to include these permanent installations as part of ESCR's new landscaping and design. Should an artists' work be excluded from the ESCR design, each artist should either be commissioned for new work and/or generously compensated for the removal of their valued pieces. No pre-existing artworks are to be demolished during construction; instead they must be moved off-site through consultation with the artist.

While Design Alternative 3 and the Preferred Alternative both meet the minimum levels of protection for 2050 sea level rise, I urge the Applicants to consider the future of both designs beyond 2050 with regards to sea level rise and the East River Park's relationship to the FDR. I recommend that the Applicants conduct a study of the benefits and scenarios of green decking or burying the FDR below ground, the adding of 1-2 feet of additional height of the present Preferred Alternative design so as to not remove trees again in the future, or adding height to the floodwall in the Alternative 3 design.

Historic and Cultural Resources

On April 3rd, 2019, I sent a letter to NYC Parks and NYC DDC regarding East River Park's Fireboat House, which serves as the headquarters for the LES Ecology Center. The LES Ecology Center has played an invaluable social and educational role in East River Park, the surrounding neighborhoods, and the Borough of Manhattan as a whole. Since 1998, when their headquarters moved to the Fireboat House, they have acted as key stewards for the park. Since our letter and the submission of my comments on the DEIS on July 30, 2019, there have been no commitments on the part of the City to reconstruct and raise the Fireboat House out of the 2050 floodplain. The City has cited that the age of the building's pilings prevent re-construction above the floodplain. However, there has been no detailed rationale to the public for how the project team came to that conclusion.

By comparison, the Solar One Center is being completely rebuilt above the 2050 floodplain. I believe that the same could be done for the Fireboat House. The scale of construction for the rebuilding of East River Park must not exclude the opportunity to preserve the Fireboat House and the LES Ecology Center while providing new spaces for programming and sorely needed public restrooms. This new construction would also provide the opportunity to expand the existing NYC Parks' storage space. NYC Parks and the NYC DDC must make commitments to provide displacement and relocation support to the LES Ecology Center prior to and during the closure of East River Park.

Natural Resources

The Preferred Alternative has the potential to result in adverse impacts the New York State Department of Environmental Conservation tidal wetlands due to the installation of support shafts and footings. In-water work and construction delivery barges would affect surface water resources as well as several aquatic species including winter herring and striped bass, as well as the two identified endangered species, the Shortnose sturgeon and the Atlantic sturgeon. The removal of as many as 991 trees (819 of which are located within East River Park) during construction represents a loss of habitat for insects and migratory birds. It is estimated that 775,000 cubic yards of fill will be required for the construction. All fill used in the construction of this project must be clean fill that has met the criteria for the Soil and Groundwater Management Plan (SGMP) and approved by the Department of Environmental (DEP) protection. The collection and conveyance of storm water should furthermore not result in the erosion, instability, or compositional changes to geology or soils.

A more in-depth review should be conducted of the ESCR project's impact upon wildlife and plant species, as well as bird and insect migration during and after construction; we cannot rely on the notion that species will naturally return to East River Park when the project is completed. The Applicants must work with park stewards such as those from the LES Ecology Center and the Solar One Center to identify and protect biodiversity during and after construction.

NYC Parks "is exploring a Lower East Side Greening program with the opportunity to plant up to 1,000 trees in parks and streets, and create up to 40 bioswales" starting in fall of 2019. Through this program, NYC Parks must work with local community organizations, CB3 and CB6 to conduct tree planting and tree guard installation operations, including the creation of concrete plans for the care of the trees. In February 2019, CB3 passed a resolution to support the proposal of a LES Community Tree Canopy Initiative that would communicate with NYC Parks when and where the proposed trees will be installed and how they will be maintained. The Applicants must immediately create these additional bioswales, tree canopy plantings, and permeable pavers as temporary mitigations against dust, local flooding, and adverse weather conditions during construction. While 991 trees will be removed during construction, 1,815 new trees will be added into the new landscaped park. The use of a variety of topsoil and salt resistant indigenous plants in the re-establishment of passive areas in the park must be included in the project's mitigation efforts.

Construction

The FEIS mentions that construction workers will be on site from 7:00am to 6:00pm on weekdays with the possibility of expanded hours to meet deadlines. Nevertheless, the City should not depend on after hour's construction as a regular occurrence, and all permit applications for afterhours construction must be shared with the Community Advisory Group and go through Community Board review.

The Applicants must apply and qualify for an Envision Certification from the Institute of Sustainable Infrastructure to ensure sustainable construction standards, in addition to the following suggested mitigations:

- Hazardous Materials

The FEIS confirms that subsurface contamination and sources of petroleum waste consistent with historical Manufactured Gas Plants (MGPs) were found in the soil and the groundwater in the project area. Other hazardous materials found include asbestos and lead-based paint, byproducts of gas production (i.e. coal tar, fuel, and gasoline, Volatile Organic Compounds (VOCs), pesticides, herbicides, and rodenticides, and metals) from the auto repair shops, gas stations, and the Con Ed Station located in and near the project area. Flood protection must be provided for these existing facilities in and near the project area that may be impacted by storms.

In an effort to reduce the potential of MGP-related contamination, a series of MGP-related recovery wells are to be installed prior to the project's construction. Structural construction of the Pier 42 project, the flood protection system on the west and east side of the FDR Drive, and the reconstruction of the Solar One Center would involve demolition and excavation activities that have the potential to disturb the subsurface containing hazardous materials.

All VOCs, petroleum storage tanks, and other hazardous materials must be removed from affected sites in accordance with federal, state and local regulations prior to project construction. Further investigations in the form of an asbestos survey, Site Management Plans, a Mitigation Work Plan, a Remedial Action Plan and a Construction Health and Safety Plan shall be included in the FEIS. The subsurface investigation shall be conducted in conjunction with the DEP and any construction and occupancy permits would only be issued once DEP receives and approves a Remedial Closure Report that is certified by a New York licensed professional engineer and approved through DEP reviews.

- Energy

The Preferred Alternative will conduct excavation, pile driving, and other disruptive construction activities in and around existing energy transmission and generation infrastructural sites, such as the Con Ed Station. To avoid significant damages and service disruptions, construction plans must fully protect the existing water, electrical and high voltage electrical transmission lines that extend beneath the entire length of East River Park. Construction must aim to minimize vibration and control excavation measures including the placement of fill and soil in order to not disrupt any vital infrastructure that serves the surrounding community.

- Air Quality

The FEIS states that for Design Alternative 4, a total of 10,594 total transportation emissions (metric tons CO₂e) from passenger vehicles, trucks, and tug boats (delivery by barges). Total on-site emissions are 16,657 metric tons Co₂e for non-road and on-site truck idling.

Construction equipment must use building materials with low carbon intensity and ultra-low-sulfur diesel or biodiesel blends of 20 percent (B20) exclusively for all diesel engines. In addition, a dust control plan (including a watering program) must be ensured. Restrictions must be placed upon trucks' idling time to 3 minutes except for those vehicles not using their engines to load, unload, or process materials, and electrical equipment must be used in place of diesel equipment whenever possible. These regulations for the reduction of emissions from engines and idling vehicle use, as well the required use of recycled steel, aluminum, and efforts toward construction waste reduction, and heightened care during material extraction and production must be written into all agreements with contractors, bids, and RFPs.

- Noise

It must be guaranteed that prior to the start of work, all equipment with noise mitigation would be available for the duration of the construction period and that these models be a condition of any bids or RFPs for project construction. This includes the use of a hydraulic press in pile installation; hanging noise barriers or curtains made from mass-loaded vinyl around the pile driving to reduce noise impacts; enclosing the concrete pump and mixer trucks [whenever the mixer barrels are spinning] in a roofed shed or tunnel facing away from residential areas; and using barging instead of trucks for deliveries of construction materials, whenever feasible.

According to the Applicants, night work and weekend construction is potentially expected to take place and that night work within 50 feet of a residence must not exceed 80 dBA of noise level, with pile installation activities that are within 50 feet of residences are also to produce no more than 80 dBA maximum noise level. The Applicants must do better regarding the quieting of noise equipment and little to no construction during the weekends and at nighttime. 80 dBA is equivalent to the sound of a garbage disposal, blender, or street level noise in an urban setting. To hear continuous construction noise at 80 dBA in the privacy of one's home or at schools (with a recommended maximum threshold level of 45 dBA recommended for classroom use according to the CEQR Technical Manual) is jarring and must not become the norm for residents and schools. Pile driving is limited to regular work hours only and that all work must use construction machinery with noise mitigations.

The Applicants must inform the affected communities and CBs well in advance of the dates of all night work, and must obtain the proper after-hour work variances from the New York City Department of Buildings (DOB). All construction-related and scaffolding-related permits must be obtained from the DOB and the CBs notified in a timely manner.

- Water and Sewage Infrastructure

All water and sewer infrastructure construction is to comply with federal, state and city regulations such as the Clean Water Act and combined sewer overflow regulations. While the FEIS states that, "if a storm is forecast, the sewer system would be inspected and cleaned as needed," it is imperative that there be routine checks on these systems, not only when the risk of flooding is imminent.

While the new parallel conveyance system is intended to limit flooding from storm surges within the study area, the design does not address the risk of increased flooding outside of the protected area ("bath tubs"), for example at East 25th north of the end of the proposed flood barrier. This includes the area of Asser Levy Park, where NYC DDC plans to build a flood-control wall and a sliding gate that would protect the landmarked Asser Levy Recreation Center. However, this proposal would leave the playing fields unprotected, and East 25th Street susceptible to tidal surge and flooding. Due to these design considerations, it is imperative that the Applicants agree to renovate and rehabilitate the unprotected playing fields at Asser Levy Park in the event of a disaster, since they have been excluded from protection of the ESCR project.

Transportation

During the construction phase, the East River Greenway would be closed from East 23rd Street to Montgomery Street. Bicyclists will be re-routed to the on-street bike network, primarily the protected bicycle lanes along First and Second Avenues as well as those on Allen Street/Pike Street and Clinton Street. The project will require rerouting of the bikeway/ walkway to inland routes, resulting in significant adverse effects for bikers and pedestrians. According to the DOT, the East River bikeway/walkway "carried 2,077 cyclists on weekdays and 1,974 cyclists on weekends during daylight hours in 2018, numbers that were expected to rise by 5% annually."¹ DOT and the Applicants must ensure that the closed bikeway will be replaced by equally safe, protected routes at avenues A, B, C, or D.

The Preferred Alternative would generate significant local increases in traffic: 251 passenger car equivalents (PCEs) during the 6 to 7AM peak hour, and 131 PCEs during the 3 to 4PM peak. These exceed the CEQR Technical Manual analysis threshold of 50 vehicle trips. In particular, the intersections of East 23rd Street at First Avenue and at Avenue C would be severely impacted during AM peak hours.

¹ <http://www.nyc.gov/html/dot/downloads/pdf/cycling-in-the-city.pdf>

Parking issues also pose a problem. A survey of the ¼-mile radius of the project area showed 70 on-street parking spaces and 60 off-street spaces available near Project Area One and 30 on-street parking spaces and 800 off-street parking spaces available near Project Area Two. Construction under the Preferred Alternative is anticipated to generate a maximum parking demand of 92 spaces for Project Area One and 52 spaces for Project Area Two. Fifty off-street parking spaces could be temporarily displaced during construction at the East River Housing Corporation parking surface parking lot. Project Area One may have a parking shortfall of up to approximately 35 spaces and would require on-street parking or off-street parking beyond the ¼-mile radius of the study.

I make the following recommendations:

(1) Signal timing changes should be implemented at the intersections of East 23rd Street/First Avenue and East 23rd Street/Second Avenue to mitigate adverse traffic effects; (2) DOT plan addressing the narrow lanes of traffic on East 20th Street during the construction of the interceptor gate house must be submitted for CB6 approval; (3) a new crosswalk must be added at the intersection of Avenue C and the north side of the FDR Drive's Exit 7 to create a more direct, pedestrian access pathway across Avenue C to the waterfront and Stuyvesant Cove Ferry Landing; (4) the exit ramp from the FDR must be modified to provide a legal left turn onto Avenue C at the East 8th street traffic signal, with appropriate signage for improved pedestrian safety.

Based on the latest available U.S. Census data (2000) for workers in the construction and excavation industries, it can be expected that 48% of construction workers will commute to the project site by private vehicles at an average occupancy of approximately 1.30 persons per vehicle. The FEIS estimates the presence of a maximum of 250 average daily construction workers for Project Area One and a maximum of 140 average daily construction workers in Project Area Two. Parking for construction workers must not further impact reduced street parking for residents. Parking space must be provided within unused areas of the construction site or at other off-street parking sites. Similarly, the 2000 Census states that approximately 46% of construction workers commute to work via mass transit. As the project area is well served by mass transit, including 6 subway lines (No. 6, and F, J, M, Z, and L) and numerous local and express bus routes, the Applicants can further reduce parking by workers by offering them a reduced transit fare on work days.

NYC DDC's have stated that pedestrian access to Corlears Hook Ferry Station in CB3 and the Stuyvesant Cove Ferry Station in CB6 will be maintained during the period of construction. According to the NYC Ferry Quarterly Update (2019) for the first quarter, average weekday ridership for the Lower East Side route which stops at both the Corlears Hook and Stuyvesant Cove Ferry Stations include 748 persons and 326 persons on weekends.² NYC DDC and related agencies must verify that safe and convenient pedestrian access to both ferry stations is maintained during construction. If disruptions prove unavoidable, the CBs and ferry users must be notified well in advance.

A study of traffic volumes and patterns prior to a storm major event should be undertaken approved by the CBs. This study must include information on potential road closures or blockage, the availability of public transit, parking restrictions, and evacuation scenarios for residents and businesses in the vicinity.

Public Health and Safety

The Community Construction Liaisons managed and staffed by a Borough Outreach Coordinator from pre-construction through the project's completion are intended to serve as direct community contacts. They must be available 24/7 through a dedicated hotline and email to report unsafe conditions and log complaints and concerns. The information for this hotline and email must be posted prominently on the

² <https://www.ferry.nyc/wp-content/uploads/2019/05/NYC-Ferry-2019-Q1-Quarterly-Update.pdf>

construction sites, on social media, the CBs, local elected officials, and on the websites of all involved agencies.

All workers who maintain and repair the floodwall infrastructure and parallel conveyance system must receive thorough training and be provided with a safety manual. As flood gates will be closed manually before storm events, I urge the Applicants to conduct a study on ways to ensure the proper training and safety of all workers involved in storm preparation and the operation of the flood control systems.

Inquiries about these comments on the FEIS should be addressed to Stephanie Chan, Urban Planner at schan@manhattanbp.nyc.gov or at 212-669-8168. Thank you.

A handwritten signature in black ink that reads "gale A. Brewer". The signature is written in a cursive style with a large, stylized "g" and "B".

Gale A. Brewer
Manhattan Borough President

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CARLINA RIVERA
COUNCIL MEMBER, 2nd DISTRICT
CITY OF NEW YORK

October 15, 2019

Olga Abinader, Acting Director
Environmental Assessment and Review Division
Department of City Planning
120 Broadway, 31st Floor
New York, New York 10271

To Director Abinader,

I am pleased to submit these comments on the Final Environmental Impact Statement (FEIS) for East Side Coastal Resiliency Project (ESCR), CEQR No. 15DPR013M and ULURP Applications C190357PQM and N190356ZRM, and the project plan for Design Alternative 4.

Since the release of the Draft Environmental Impact Statement (DEIS), a number of important developments have occurred surrounding ESCR. Most recently, Deltares, the Netherlands-based environmental consulting group hired by Manhattan Borough President Gale Brewer and I to review the project's design, released their completed report. The review was conducted by a team led by Dr. Hans Gehrels, who spoke with numerous community and government stakeholders in addition to reviewing public documents surrounding the project. In his review, Dr. Gehrels' published recommendations, which include, but are not limited to:

- Increasing City transparency surrounding the project, including the release of related data and documents regarding planning and construction work
- Establishing a community advisory group
- Monitoring of hazardous materials, including publicly available data
- Installation of IFPMs during construction
- Phased construction of the park and alternative active and passive open-space areas
- Including the additional two feet of fill in the present project description, outlined in the plan currently as a future possibility should sea level conditions require it
- Conducting a study on the long-term future transportation scenarios of the FDR Drive including "green decking"
- Conducting further studies in both parks and low-lying areas, including basements and ground floor apartments, that may be susceptible to additional flooding, beyond that which is accounted for by the parallel conveyance system

My office continues to review the report and urges the Mayor's Office to do the same.

Beyond the report, we were pleased to see is the newly proposed plan by the Mayor's Office to construct the East Side Coastal Resiliency Project in phases. This new plan as announced will allow for nearly half the park to remain open as the project is fully completed over five years, with the portion of the project dealing with flood protection in place by 2023.

We have also received updates on a number of other demands from city agencies. The Parks Department recently shared a proposed schedule for local youth sports teams that will allow them to continue playing at local ballfields throughout the project timeline. While we are still negotiating this schedule, many of the coaches and I are encouraged by the progress we have made.

Beginning this fall, Parks will also be planting 1,000 trees throughout the project area, creating 40 bioswales to reduce street ponding, installing new lighting at six neighborhood sport fields, making improvements to turf fields at six sites, applying new sports coatings and painting at various parks and playgrounds, enhancing family barbecue areas, converting the LaGuardia Bathhouse demolition area to a turf field, "sprucing-up" 16 NYCHA park and play sites, hiring nine new Parks staff for the neighborhood, and committing to keep all East River Park staff on the East Side of Manhattan, below 34th Street.

We will also be meeting with DOT and other elected officials in the coming week to determine a sufficient detour in Alphabet City for bicyclists who rely on the East River Greenway – as 1st and 2nd Avenues and a partially open Greenway will not suffice.

However, the Mayor's Office has yet to provide further updates to us on a number of issues that have not been addressed sufficiently.

This includes interim flood protection measures (IFPM) during construction of ESCR. In a letter to our offices, DDC Commissioner Lorraine Grillo wrote that an "analysis of existing conditions" did not find IFPM to be an effective solution for the ESCR area. While certain IFPMs may not be designed to protect neighborhoods from Sandy-level events, they can ensure critical infrastructure remains operational during more frequent, less severe storms and we want more details as to the analysis that led to your findings. In addition to explaining in detail the difficulties in implementing IFPMs such as HESCO barriers and Tiger Dams, the City should also consider other alternative IFPM products that defend against various flood-level scenarios. These products, which the city has said will soon replace HESCO barriers borough-wide, can provide protection while only needing to be installed days before a storm arrives. If the city maintains these barriers are not applicable to this project area, even partially, then it is incumbent upon the city to demonstrate how they would not help residents of the catchment area.

The City must also commit to a study for the greening of FDR Drive, which has for too long been an environmental injustice for East Side communities and must be rectified as part of our collective vision for a cleaner city. Alternative transportation plans should be developed for nearby streets, buses, and ferry stops that will be impacted by construction and related traffic.

Once construction begins, a number of measures must be taken regarding transparency. There needs to be momentum to create the Community Advisory Group that would consist of appointees from the Community Boards, City Council Members, and the Borough President's office that would be able to provide input and advise the community through all phases of the project. And the project team must develop a hazardous material mitigation plan that goes beyond typical mitigation efforts to ensure the safety and health of all New Yorkers, including updates to residents and community leaders on air quality levels, similar to what was done with the L train tunnel repairs. The City must include as part of this

effort an Envision Certification from the Institute of Sustainable Infrastructure to ensure sustainable construction standards are being followed – agency officials have committed to seek this certification to my office, but this must be memorialized in any final letters of purpose and project descriptions. Additionally, construction should be limited to normal hours except in extreme circumstances, and all permit applications for after-hours construction must be provided to local constituents in advance of their issuance.

While we do need to construct storm protections, we must make every effort to preserve important historic and cultural resources in the park, including all art related to the “Arts in the Park” program at John V. Lindsay Playground. A commitment must be also made in close consultation with the LES Ecology Center for a temporary relocation nearby during construction and plans for a resilient long-term home in East River Park for the organization, inclusive of additional and new facility options.

I’m relieved the City came forward with improved modifications to their plan, but they must address these outstanding concerns. I want to reiterate what I have been saying from the beginning - ESCR will set the tone for all future coastal resiliency projects. We must get this plan to a level that is worthy of our community for generations to come.

Thank you.

A handwritten signature in cursive script that reads "Carlina Rivera".

Carlina Rivera
New York City Councilwoman, District 2



STATE OF NEW YORK
OFFICE OF THE ATTORNEY GENERAL

LETITIA JAMES
Attorney General

DIVISION OF SOCIAL JUSTICE
Environmental Protection Bureau

November 8, 2019

By E-Mail

New York City Office of Management and Budget
255 Greenwich Street
New York, NY 10007
Attn: Calvin Johnson, Assistant Director CDBG-DR
CDBGDR-Enviro@omb.nyc.gov

New York City Department of Parks and Recreation
The Arsenal, Central Park
830 Fifth Avenue, Room 401
New York, NY 10065
Attn: Colleen Alderson, Chief, Parklands and Real Estate
escr@parks.nyc.gov

Re: *East Side Coastal Resiliency Project, CEQR No. 15DPR013M*

Dear Mr. Johnson and Ms. Alderson:

On behalf of New York State Attorney General Letitia James, our office writes to follow up on our August 29, 2019 comment letter regarding the draft environmental impact statement for the East Side Coastal Resiliency Project.

Since submitting our comments, the City has released the final environmental impact statement (FEIS) for the project. We have reviewed it and the responses to our comments included in it. In addition, as you know, individuals from our office have had the opportunity to speak on the phone and meet with individuals from the City's Office of Management and Budget, its Department of Parks and Recreation, and the Law Department regarding the Project.

Our office thanks you for the additional information the City has provided in those contexts. We appreciate the City's willingness to address the issues raised in our comments by modifying the Project and providing further explanation in the FEIS regarding the other issues that we raised in our comments.

If the Project moves forward, we look forward to the full implementation of all Project mitigation measures.

November 8, 2019

Page 2 of 2

Sincerely,

LETITIA JAMES
ATTORNEY GENERAL OF THE STATE
OF NEW YORK

By: 

Lemuel M. Srolovic

Bureau Chief

Andrew Frank

Assistant Attorney General

Environmental Protection Bureau

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

SEP 26 2019

Eram Qadri, AICP
New York City Office of Management and Budget
255 Greenwich Street, 8th Floor
New York, NY 10007

Dear Mr. Qadri:

In accordance with the National Environmental Policy Act (NEPA), Section 309 of the Clean Air Act, and the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508), the U.S. Environmental Protection Agency (EPA) has reviewed the Final Environmental Impact Statement (FEIS) for the Rebuild by Design East Side Coastal Resiliency Project (ESCRP) (CEQ No. 20190224). The document was prepared by the City of New York, Office of Management and Budget (OMB) and the New York City Department of Parks and Recreation (NYC Parks) as the U.S. Department of Housing and Urban Development (HUD) responsible entities for the project. EPA is serving as a cooperating agency for the project.

The proposed project entails construction of a coastal flood protection system along a portion of the east side of Manhattan and related improvements to City infrastructure. The project area begins at Montgomery Street to the south and extends north along the waterfront to East 25th Street. The project was developed as a concept through the Rebuild by Design competition in response to Hurricane Sandy's devastation. The goal of the project is to address coastal flooding vulnerabilities in a manner that reduces the flooding risk while enhancing waterfront open spaces and access to the waterfront.

As a cooperating agency for this project, EPA has attended scoping meetings, interagency meetings, and has provided comments on preliminary draft chapters and on the Draft EIS (DEIS). EPA appreciates and acknowledges the numerous changes that have been made to the FEIS based on comments received.

EPA's comment letter on the DEIS pointed out the potential impact of demolition and construction (C&D) debris that will be generated during the construction phase of the project. Although it would have been useful to see a Construction Waste Management Plan as part of the FEIS, EPA acknowledges the text added to Chapter 6.11: Construction-Greenhouse Gas that addresses C&D debris, and specifically the diversion target of a minimum of 75 percent C&D debris to be diverted from landfills to be either reused or recycled. However, in response to our comment addressing the fate of removed trees, the FEIS states that "Consistent with NYC Parks specifications, all remains from tree clearing will be removed from the site or otherwise disposed of to the satisfaction of the project engineer." This response provides no further information on whether or not removed trees will be mulched or composted. Given the magnitude of the number of trees to be removed, EPA encourages OMB and NYC Parks to include this information in the Record of Decision.

EPA acknowledges the improvements made to Chapter 6.13: Construction – Public Health of the FEIS to better address the potential impacts of the project on children's health. EPA specifically recognizes

the inclusion of additional details relating to mitigation of effects of the temporary closure of open space during construction.

According to the FEIS, the overall purpose to the filling of the embayments is recreational and compensatory mitigation will be offered. In our comments on the DEIS, EPA commented that this is not a purpose consistent with the concept of environmental minimization of impacts or of 404(b) Guidelines. Therefore, EPA is concerned that the project may not receive the permit necessary to complete the discharge of fill into tidal wetlands. EPA encourages GOSR to continue working with federal partners to address this issue.

While additional information was included in Chapter 7.0: Indirect and Cumulative Effects, the section does not include the level of detail, nor does it evaluate potential mitigation options for cumulative effects that may be experienced during both the construction and maintenance phases of the project. Table 7.0-1 states that cumulative effects may occur with various other projects, but does not address the specifics of the effects including the scope and scale of the effects, or possible mitigation of the effects. The table also does not address potential cumulative effects during construction phases of surrounding projects. We believe that consideration of cumulative effects is important for community groups and other stakeholders as the project moves forward.

Thank you for the opportunity to review the FEIS for the Rebuild by Design East Side Coastal Resiliency Project. Should you have any questions regarding the comments and concerns detailed in this letter, please feel free to contact Stephanie Lamster of my staff at 212-637-3465.

Sincerely,

A handwritten signature in black ink that reads "David W. Kluesner". The signature is written in a cursive, flowing style.

David Kluesner, Acting Director
Strategic Programs Office



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK NEW YORK 10278-0090

OCT 11 2019

Regulatory Branch

SUBJECT: Department of the Army File No. NAN-2019-00596-EME Final Environmental Impact Statement Review and Comments for the Proposed East Side Coastal Resiliency Project at the East River from Montgomery Street to East 23rd Street in the Borough of Manhattan, City of New York, New York County, New York.

New York Mayor's Office of Management and Budget
Attn: Eram Qadri
Unit Head - Environmental Review, CDBG Disaster Recovery
New York City Mayor's Office of Management & Budget
255 Greenwich Street, 5th Floor
New York, NY 10007

Dear Ms. Qadri,

This letter is in response to your September 9, 2019 request for the New York District of the U.S. Army Corps of Engineers (Corps) to review and provide comments on the East Side Coastal Resiliency Project Final Environmental Impact Statement (FEIS) dated September 13, 2019.

This office does not have comments on those components of the project within the scope of the Corp's purview for your consideration in the FEIS.

Please note that the information required for a complete Department of the Army permit application has not yet been provided to this office.

If any questions should arise concerning this matter, please contact Ms. Lisa Grudzinski, of my staff, at (917) 790-8468 or lisa.a.grudzinski@usace.army.mil.

Sincerely,

A handwritten signature in black ink, appearing to read "Ronald R. Pinzon".

Ronald R. Pinzon
Chief, Eastern Section



October 11, 2019

MAS Comments on the East Side Coastal Resiliency Project Final Environmental Impact Statement, CEQR No. 15DPR013M, ULURP Applications C190357PQM & N190356ZRM

The Municipal Art Society (MAS) maintains that the East Side Coastal Resiliency Project (ESCR) should set a standard for how large-scale resiliency projects are planned, coordinated, and implemented in New York City and elsewhere. While we recognize the challenges of coordinating a project of this magnitude, protecting the East River community requires more thorough and engaged planning than has occurred thus far.

We were pleased with the announcement that project construction will be phased, as this was one of our chief concerns. We expect that the Final EIS (FEIS) will be revised comprehensively to address the effect construction phasing will have on project impacts, mitigation, scheduling, and timelines.

We remain steadfast in our previous comments that ESCR and the Lower Manhattan Coastal Resiliency Project should be evaluated together. This effort should address connectivity of the waterfront esplanade, infrastructural tie-in points, cumulative impacts, comparative levels of flood protection and permitting. We expect these issues to be included and evaluated in the revised FEIS.

Finally, as we have maintained throughout the process, the success of ESCR will depend on how well the City engages with the community and responds to its needs. MAS agrees with the recommendations from the Manhattan Borough President that a task force be formed to coordinate the effort. We also expect the highly anticipated results of the third party project evaluation to be considered.

We look forward to our concerns being addressed and the submission of a revised FEIS.



Victor J. Gallo
Associate Counsel
Law Department

October 15, 2019

VIA EMAIL

Calvin Johnson, Assistant Director CDBG-DR
New York City Office of Management and Budget
255 Greenwich Street, 8th Floor
New York, NY 10007
Email: CDBGDR-Enviro@omb.nyc.gov

**Re: Con Edison Comments on East Side Coastal Resiliency Project
Final Environmental Impact Statement**

Dear Mr. Johnson:

Consolidated Edison Company of New York, Inc. (“Con Edison”) supports the overall purpose of and need for the East Side Coastal Resiliency (“ESCR”) Project.

As you know, the City plans to use Con Edison’s property as part of the ESCR Project’s floodwall; conduct heavy construction over and near critical utility infrastructure; and access Con Edison’s property to construct, maintain and inspect the Project. We are disappointed that the final environmental impact statement (“EIS”) does not yet provide the requested information necessary to ensure that the project is constructed and maintained in a manner that does not interfere with Con Edison’s ability to provide safe reliable utility service, maintain the security of its property, and respond promptly to customer emergencies.

Over the past two years, Con Edison has repeatedly asked the City to provide information regarding its plans to use Con Edison’s property and the specific property interests the City is proposing to acquire from Con Edison for the ESCR Project. We have also repeatedly advised the City that it cannot acquire easements from Con Edison for the Project without the consent and approval of the New York State Public Service Commission (“PSC”) after a statutory review process that can take more than a year with no assurance that the PSC will approve the acquisitions the City will propose. The need for details on the City’s access, construction, operation, maintenance and inspection were recently laid out again on pages 2 to 7 of our August 30 comment letter on the draft EIS.

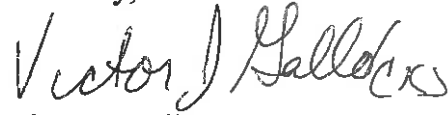
Consolidated Edison Company of New York, Inc.

4 Irving Place – 14th Floor New York, NY 10003 Phone: (212) 460-1143 Fax: (212) 677-5850 gallov@coned.com

Calvin Johnson
Assistant Director CDBG-DR
Page 2

We ask the lead agencies to note these unresolved risks to utility service and to the ESCR Project's construction schedule in their Record of Decision and Statement of Findings. Con Edison stands ready to work cooperatively with the City to achieve the Project's purposes while avoiding utility impacts.

Sincerely,

A handwritten signature in black ink that reads "Victor J. Gallo". The signature is written in a cursive style with a large, stylized "V" and "G".

Victor J. Gallo

From: Laura Sewell <laurasewell88@gmail.com>
Sent: Tuesday, October 15, 2019 4:16 PM
To: CDBGDR-Enviro (OMB)
Cc: Richard Moses
Subject: Lower East Side Preservation Initiative (LESPI) Section 106 Review Consulting Party for the East Side Coastal Resiliency Project Comments on the Final EIS

Lower East Side Preservation Initiative (LESPI)

Section 106 Review Consulting Party for the East Side Coastal Resiliency Project

Comments on the Final EIS

The Lower East Side Preservation Initiative (LESPI) would first like to call attention to an erroneous footnote on pg. 5.4-7 which states: “In addition, the Historic Districts Council, *Lower East Side Preservation Initiative* (emphasis added) . . . did not respond to invitations to be consulting parties.” LESPI in fact accepted this invitation from the NYC Office of Management and Budget, and invested considerable effort in composing comments on the Draft EIS, which are included in Appendix M.

First opened in 1937, the East River Park has three historic structures which date from its early years: **The Marine Engine Co. 66 Fireboat House**, currently home of the Lower East Side Ecology Center, and **two Art Deco- style Comfort Stations**. All three of these buildings would be seriously impacted or destroyed by the Preferred Alternative (Alternative 4) Resiliency Plan.

The NY State Historic Preservation Office (SHPO) has determined the Marine Engine Co. 66 Fireboat House to be eligible for the State and National Register. LESPI agrees with the SHPO that this building has architectural and historic value that warrants preservation.

LESPI also believes that, because the Fireboat House has historically had a strong tie to the waterfront, it should be preserved in place. This scheme presents challenges, primarily that any plan to raise the height of the Park will have a significant effect on the public’s ability to view and appreciate this building; and that the building could potentially be damaged when flood waters surge and back-flow between the building and the new 9-foot wall behind it.

We believe that these challenges can be met, and encourage the City to take the opportunity provided by the new construction timeline to conduct a structural engineering study to explore options to better incorporate the building into the Park design.

LESPI seeks a commitment from the City to ensure the viability of the Fireboat House, a humble but historically significant structure which now serves as the home of the Lower East Side Ecology Center, and a commitment that the final design will not only allow, but enhance the building’s ability to serve its valuable purpose and continue the organization’s programs, which are of great value to the community. In addition to their renowned electronics recycling and composting activities, LESEC personnel serve as environmental educators and volunteer stewards of East River Park, responsible for many of the Park’s plantings and wildlife habitats as well as efforts to revitalize the estuary.

LESPI believes that the two Art Deco Comfort Stations, located at the Brian Watkins Tennis Center (Broome Street) and the East River Park Track (near East 6th Street) should be identified as architectural and historic resources. Because of the rarity of Art Deco buildings on the Lower East Side, LESPI recommends their preservation and reuse or repurposing. Decorated with charming terra cotta river motif details, metal ornamentation and intact slate roofs, these Comfort Stations evoke the early phases of East River Park's history, and demonstrate the high level of craftsmanship employed in creating even the most utilitarian WPA structures.

Protecting and preserving these architectural resources was dismissed in the Final EIS because the LPC and SHPO had not identified them as such, but to the best of LESPI's knowledge the LPC has not had the opportunity to study them. LESPI believes it is well worth the effort to preserve these reminders of an important era of Lower East Side history.

East Side Coastal Resiliency Project Review




Johannes C. Gehrels

Title
East Side Coastal Resiliency Project Review

Project
1953a

Reference

Pages
71

Version	Date	Author	Initials	Review	Initials	Approval	Initials
1.0	Oct. 2019	Dr. J.C. Gehrels		Ir. Herman van der Most		Dr.ir. L.L.F. Janssen	
Dr. Kathryn Roscoe							

State
Final



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East Side Coastal Resiliency Project Review

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Summary

This report

The East Side Coastal Resiliency (ESCR) Project is a coastal protection initiative aimed at reducing flood risk due to coastal storms and sea level rise on Manhattan's East Side from East 25th Street to Montgomery Street.

This report provides a review of the concerns surrounding the ESCR project based on the public documentation of the Final Environmental Impact Statement (FEIS), interviews with stakeholders of the ESCR project, and a meeting with the City agencies involved in the ESCR project. In this review no additional or new investigations were carried out.

Interviews with stakeholders

Interviews were held with representatives of residents, interest groups, community boards, and government officials from the City, State and Federal level. The interviews with stakeholders made clear there is a general concern that since mid-2018 the process of stakeholder engagement has neglected community perspectives. This has resulted in a lack of ownership of the Preferred Alternative and a lack of understanding of how the Preferred Alternative is a logical further development of the original plan that was developed in the Rebuild by Design / Big U process ('RBD plan'). In general, stakeholders expressed skepticism about the Preferred Alternative and a lack of trust in the successful execution of a project of this magnitude.

Technical issues discussed with the interviewees related to flood protection, design, natural resources and biodiversity, execution time and project phasing, air quality and dust, noise and vibration, hazardous waste materials, and soil settlement and fill compaction.

Meeting with the City

A meeting was held with representatives from the Mayor's Office, the NYC Department of Design and Construction, NYC Parks, Manhattan Borough President's Office, and several third-party entities. The purpose of the meeting was to hear the City's perspective on the proposed project, to share the views and concerns of the interviewees with the City, and to discuss the differences in perspective and potential ways forward.

According to the City, under the Preferred Alternative, there is significant risk reduction in East River Park from flooding and inundation due to sea level rise while also providing substantial enhancements to recreational resources, in contrast to other alternatives, notably Alternative 3, where the flood protection system is aligned along the west side of the park. Additionally, the City believes the Preferred Alternative allows for a shorter construction duration, earlier deployment of flood protection and reduces construction disruption along FDR Drive. The City states increasing sea level will put East River Park more at risk under alternatives other than the Preferred Alternative

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East Side Coastal Resiliency Project Review

Project	Pages
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It is recommended to consider including the additional two feet of fill in the current project, rather than leaving it as a future option.

A strategic study on long-term future transportation scenarios of the FDR Drive would help to elucidate the options for placing green decking of FDR Drive.

It is recommended to conduct a study on urban flooding from rainfall to identify the extent in the neighborhood. This study could be connected to the City's green infrastructure program.

It is recommended to conduct a geohydrological study on shallow groundwater dynamics in the part of the project area around East Village that is susceptible to basement flooding, perhaps in combination with a geotechnical study on basement leakage.

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1 Introduction

The City of New York is currently conducting the Uniform Land Use Review Procedure (ULURP) public review process for a section of the “Big U” project, titled “East Side Coastal Resiliency” (ESCR) and extending from Montgomery Street to East 25th Street in Manhattan. The proposed project addresses coastal flooding vulnerability on the East Side of lower Manhattan by implementing a system of floodwalls, upgrading the underground sewers, and raising the John V. Lindsay East River Park (East River Park) above the 100-year floodplain.

As part of the review process, the City drafted an Environmental Impact Statement (EIS), in which environmental impacts of the proposed project alternatives were investigated and compared. The Draft EIS (DEIS) was released on April 5, 2019. The DEIS led to ample discussion among the general public, the communities that are directly involved in the project area, various stakeholder and environmental groups, the government of the borough, as well as the state and the federal governments. The Final EIS (FEIS) was released on September 13, 2019, with a 30-day public comment period that ends on October 15, 2019.

The borough of Manhattan has requested the consultation of Deltares on the environmental effects of this project and its perceived efficacy in defending communities against coastal flooding.

The objective of this report is to provide a review of the concerns surrounding the ESCR project based on the public documentation of the Final Environmental Impact Statement (FEIS), interviews with stakeholders of the ESCR project, and a meeting with the City agencies involved in the ESCR project.

No additional or new investigations were carried out for this report. This report synthesizes collected information regarding effects the Preferred Alternative may have upon the community in the project area during and after its construction and how the Preferred Alternative compares to other design alternatives.

The findings and opinions collected in this document will be delivered to the Manhattan Borough President’s Office

2 Environmental Review Process and Design Alternatives

2.1 Introduction

This chapter summarizes the environmental review process and the design alternatives for the ESCR project.

On October 29, 2012, Hurricane Sandy devastated New York City. Forty-three city residents lost their lives, 1.1 million children were unable to attend school for a week, nearly two million people lost power, and 6,500 patients were evacuated from hospitals and nursing homes in the flood zone. Economic losses totaled \$19 billion with Lower Manhattan severely impacted by flooding. Critical infrastructure was stalled disrupting the lives of City residents and the smooth functioning of City businesses. Several hospitals were affected, including the Bellevue Hospital, the only State-designated regional trauma center in lower Manhattan, the Veterans Affairs New York Harbor Hospital, and the Downtown Hospital.

The impacts of Hurricane Sandy spurred initiatives for installing or improving storm protection infrastructure for future storm events. The U.S. Department of Housing and Urban Development (HUD) launched the Rebuild by Design Hurricane Sandy Design Competition, and subsequently awarded \$338 million of Community Development Block Grant-Disaster Recovery (CDBG-DR) funds from HUD for the implementation of the winning proposal for Lower Manhattan titled “The BIG U.” The East Side Coastal Resiliency (ESCR) Project is the first of three phases in The BIG U design. The ESCR project will build coastal protection along the east side of Manhattan, stretching from Montgomery Street to East 25th Street. The ESCR Project proposed cost is \$1.45 billion. The \$338 million of CDBG-DR funds from HUD are to be directed to the ESCR project and will be distributed through the New York City Office of Management and Budget (NYC OMB).

According to the Federal Emergency Management Agency (FEMA) Digital Flood Insurance Rate Map (DFIRM) ID 360497, the proposed ESCR project is located within the 100-year floodplain, designated as Zone AE, as well as the 500-year floodplain, designated as Zone X. The Base Flood Elevation (BFE) is 10 feet (NGVD 1929). The proposed project area includes approximately 78 acres of the 100-year floodplain. Figure 1 depicts the 100-year floodplain for 2050.

The proposed ESCR project is a FEMA-accredited flood protection system. It includes installing floodwalls and closure structures, adding parallel conveyance pipes for drainage management, and raising certain portions of East River Park by 8 or 9 feet. In addition, the ESCR Project proposes to improve open spaces and enhance public access to the waterfront.

The ESCR Project’s FEIS states four principal objectives for the design, formulated in the FEIS Executive Summary as¹:

- “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;

¹ <https://www1.nyc.gov/assets/escr/downloads/pdf/FEIS/ESCR-EIS-Chapter-0.0-Executive-Summary.pdf>

- Respond quickly to the urgent need for increased flood protection and resiliency, particularly for the 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 conditions attached to funding allocations as established by HUD, including scheduling milestones.”

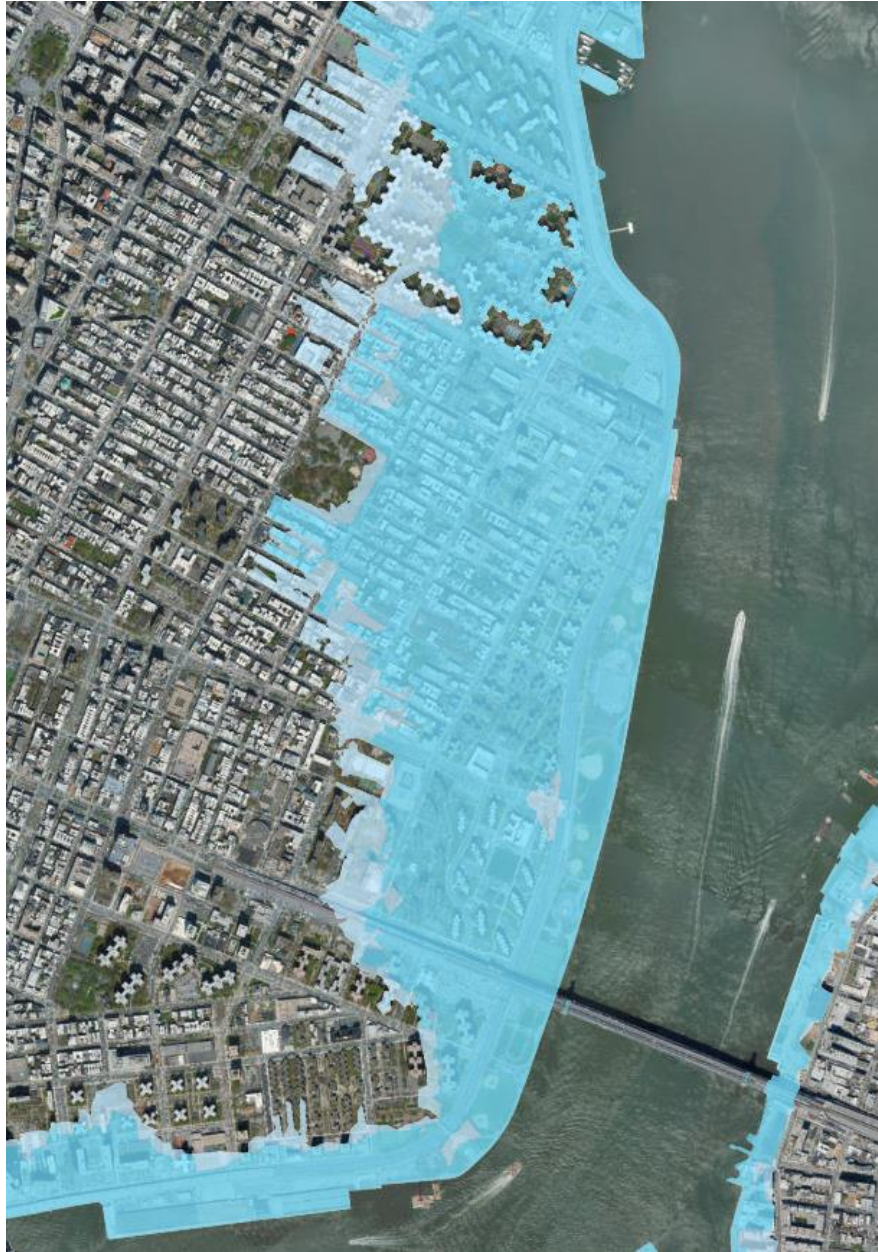


Figure 1: Future (2050) 1% annual exceedance probability floodplain. Source: NYC Flood Hazard Mapper.
<http://dcp.maps.arcgis.com/apps/webappviewer/index.html?id=1c37d271fba14163bbb520517153d6d5>

2.2 Environmental Review Process and Framework

Under the National Environmental Policy Act (NEPA), the NYC OMB is the entity responsible for the grant funds and is the lead agency overseeing the environmental review for the ESCR Project. In addition, the NYC Department of Parks & Recreation (NYC Parks) is the lead agency for the environmental review under the New York State Environmental Quality Review Act (SEQRA) and the NYC Environmental Quality Review (CEQR). Through the combined NEPA, SEQRA, and CEQR processes, the lead agencies of NYC OMB and NYC Parks determined the proposed project has the potential to result in significant adverse environmental effects, thus determining the need for an EIS.

The DEIS was released on April 5, 2019. The publication of the DEIS was followed by a public hearing on July 31, 2019 and a public comment period that was extended to August 30, 2019. After the public comment period closed, the FEIS was prepared which addressed substantive comments and concerns resulting from the DEIS. The FEIS was released on September 13, 2019 with a 30-day public comment period ending on October 15, 2019. The FEIS includes information on both short-term (construction) and long-term impacts of each of the five design alternatives for the ESCR Project, including Design Alternative 1, the no-action alternative.

After 45 days from the release of the FEIS, the NYC OMB will prepare a Record of Decision that will describe the proposed project's design, its environmental impacts and mitigation of those impacts. NYC Parks will prepare a Statement of Findings to communicate their review of the impacts, mitigation measures, and design alternatives in the FEIS. After the closure of the environmental review process, the NYC OMB may proceed with the release of the federal CDBG-DR federal grant funds from HUD.

2.3 Project Areas

The ESCR Project focuses on district parcels that lie within the FEMA 100-year special flood hazard area (SFHA), as well as those projected to be within the 100-year SFHA in 2050, with the 90th percentile projection for sea level rise. The future 100-year SFHA includes portions of the Lower East Side and East Village neighborhoods, Stuyvesant Town, Peter Cooper Village, John V. Lindsay East River Park (East River Park) and Stuyvesant Cove Park. The FEIS describes the design alternatives for the ESCR Project in two project areas within Community Boards 3 and 6 (CB3 and CB6):

- Project Area One: bounded to the south by Montgomery Street and bounded to the north by the north end of East River Park at about East 13th Street. The area consists primarily of East River Park, the Franklin Delano Roosevelt East River Drive (FDR Drive) right-of-way, a portion of Pier 42, Corlears Hook Park, the East Houston Street overpass, and 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
- Project Area Two: bounded to the south by East 13th Street and bounded to the north by East 25th Street. The project area includes the FDR Drive right-of-way, the Con Edison Complex, Captain Patrick J. Brown Walk Murphy Brothers Playground, Stuyvesant Cove Park, Asser Levy Recreation Center and Playground, the Veterans Affairs (VA) Medical Center, in-street

segments along East 20th Street, East 25th Street, and segments along and under the FDR Drive.



Figure 2: Project areas. Project Area One indicated in blue and Project Area Two indicated in brown. Source: FEIS.

2.4 Summary of the Design Alternatives

The City has considered the design alternatives and mitigation measures to be taken to minimize adverse effects on the floodplain and wetlands and to restore and preserve the natural, beneficial values they offer, as described in the FEIS Notice of Completion² and summarized in Appendix A.

Alternatives are compared with a no-action alternative which assumes that no new comprehensive coastal protection system is installed in the proposed project area. Under the no-action alternative, the neighborhoods within the project area would remain at risk to coastal flooding during design storm events.

This section provides a description of Alternatives 3 and 4 only. Alternative 4 is the “Preferred Alternative” as proposed by the City. The Preferred Alternative best resembles (but is different from) the original plan that was developed in the Rebuild by Design / Big U process. Table 1 lists the major differences between Alternatives 3 and 4.

Design Alternative 4 (Preferred Alternative) – Flood Protection System with a Raised East River Park

Design alternative 4 proposes moving the line of flood protection further into East River Park, thereby protecting both the community and the park from design storm events and increased tidal inundation resulting from sea level rise. Figure 3 gives an overview of design alternative 4; Figure 4 illustrates in a cross section how the park would be raised. Design alternative 4 would raise the majority of East River Park. This plan would reduce the length of wall between the community and the waterfront to provide for enhanced neighborhood connectivity and integration. Between the park amphitheater and East 13th Street, the park would be raised by approximately eight feet, with

² <https://www1.nyc.gov/assets/escr/downloads/pdf/Notice-of-Completion-Signed-09-12-2019.pdf>

the floodwall installed below grade. The park's underground water and drainage infrastructure, bulkhead and esplanade, and existing park structures and recreational features, including the amphitheater, track facility and tennis house, would be reconstructed 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 direct connection to the water from the park. This alternative would include drainage components to reduce the risk of interior flooding and construction of the foundations for the shared-use flyover bridge 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. It would also include reconstruction of 10 outfalls located along the park shoreline that discharge to the East River, as well as wastewater and water supply piping and associated features such as manholes and regulators.

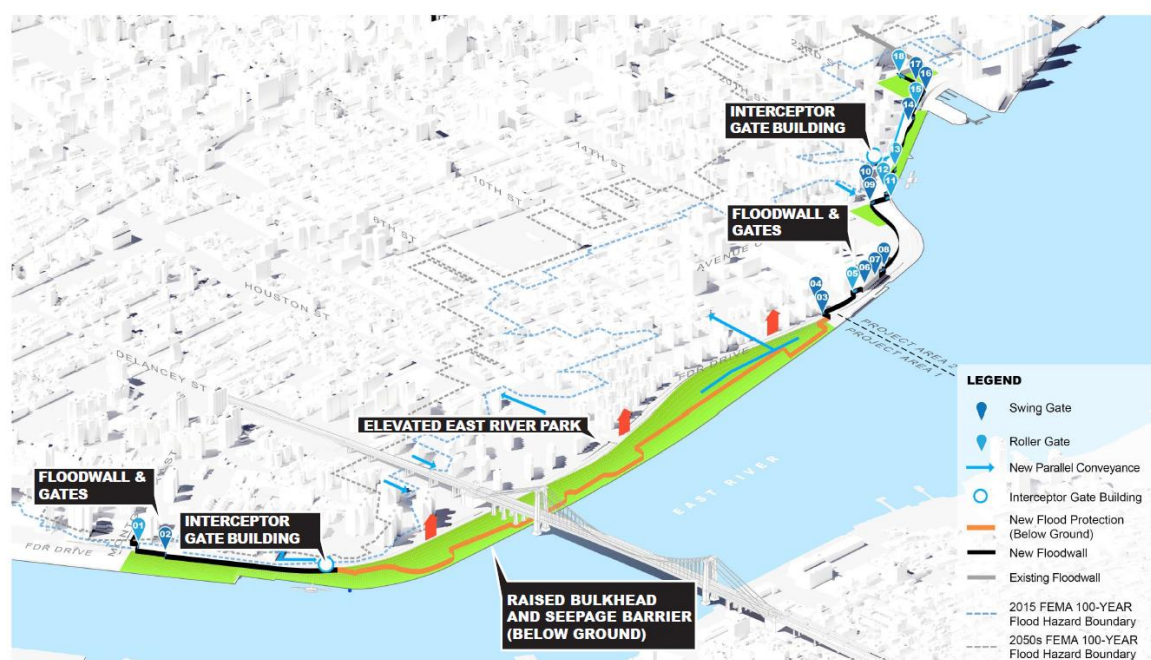


Figure 3: Design alternative 4: Integrated flood protection and interior drainage system. Source: East Side Coastal Resiliency Project Briefing with Deltares. Manhattan Borough President's Office, September 13, 2019.

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

Design alternative 3 provides flood protection using a combination of floodwalls, levees, and closure structures. The line of protection would generally be located on the western side of East River Park in a portion of the project area, and the neighborhoods to the west of this line would be protected from the design storm event. Under this alternative, there would be extensive use of berms and other earthwork 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 experiences. Figure 4 illustrates in a cross section how the berms and earthwork would be developed. 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, including landscapes, recreational fields, playgrounds, and amenities. Even with these East River Park enhancements, the park itself would not be protected from the design storm event. 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.

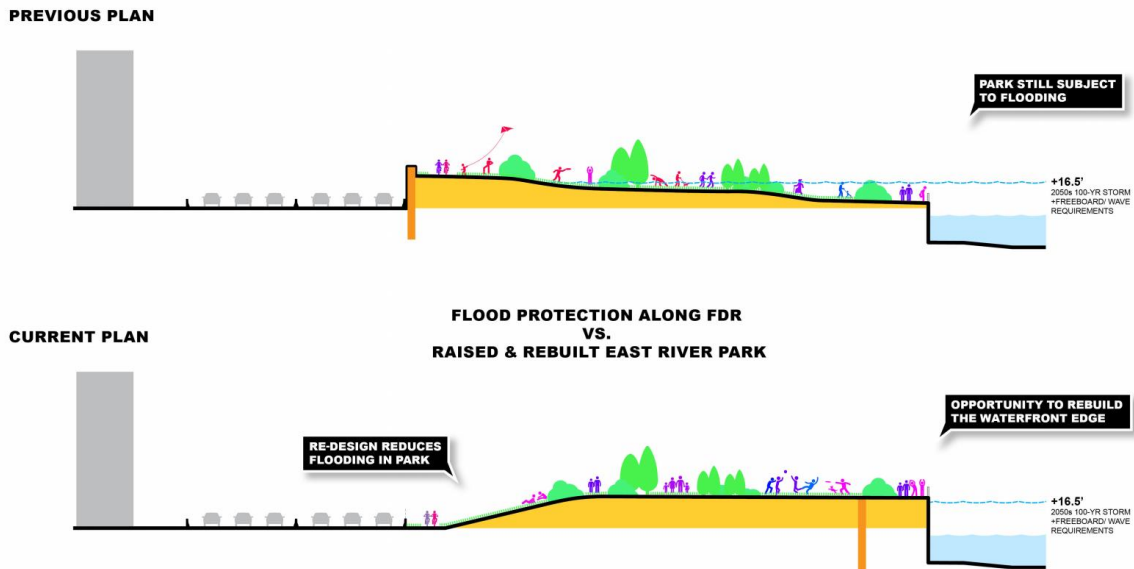


Figure 4: Schematic cross section illustrating the difference between Alternative 3 (“Previous Plan”) and Alternative 4 (“Current Plan”). Source: Interactive Community Engagement Meeting, Monday, December 10, 2018, Gouverneur Health Auditorium.

Table 1: Schematic overview of design components for Alternatives 3 and 4

	Design Alternative 3	Design Alternative 4
Construction Duration	5 years.	3.5 years. Storm protection in place by hurricane season 2023.
Duration of East River Park Closure	Park closure for 5 years.	Park closure for 3.5 years, including esplanade due to reconstruction.
Construction Risk	<ul style="list-style-type: none"> - Proximity to FDR Drive requires working within roadway closure hours impacting worker productivity rate, increasing construction timeline. - Construction adjacent to Con Edison live transmission lines. 	<ul style="list-style-type: none"> - Construction timeline risks mitigated with ability to stage and execute within the park. - Reduces construction adjacent to Con Edison live transmission lines.
Construction Methods	<ul style="list-style-type: none"> - Pile driving and floodwall construction along FDR Drive near residential buildings, including NYCHA, requiring long durations of overnight work and lane closures. 	<ul style="list-style-type: none"> - Water-side construction of esplanade and waterfront structures. - Pile driving of flood protection within the park, away from residential units.

	Design Alternative 3	Design Alternative 4
	<ul style="list-style-type: none"> - Truck delivery of equipment, landscape and park building materials. - Pedestrian bridge construction requires short-term FDR Drive closures. - Interior drainage construction in roadways and right-of-way. 	<ul style="list-style-type: none"> - Pile driving and floodwall construction south and north of East River Park remain. - Barge delivery reduces truck delivery of equipment and materials. - Pedestrian bridge construction requires short-term FDR Drive closures. - Interior drainage construction in roadways and right-of-way.
Cost	\$1.2B HUD: \$338M	\$1.45B HUD: \$338M
Park Resiliency	<ul style="list-style-type: none"> - Portions of the park remain in the current and future 100-year floodplain, with remaining trees within floodplain at risk due to threat of saltwater inundation. - Esplanade exposed to daily tidal flooding risk due to sea level rise by end of century. Bulkhead would need to be fixed within next decade requiring future park closures. 	<ul style="list-style-type: none"> - Park raised above the current and future 100-year floodplain, including sports fields, playgrounds, and comfort stations. - Bulkhead is reconstructed and elevated, avoiding future park closures; esplanade and park ecology not at risk of daily tidal flooding due to sea level rise.
Level of Protection	<ul style="list-style-type: none"> - Neighborhood: 100-year coastal storm surge + 30" SLR (2050s) + wave action and freeboard (16.5 ft NAVD88). - East River Park: remains largely in floodplain. 	<ul style="list-style-type: none"> - Neighborhood & East River Park: 100-year coastal storm surge + 30" SLR (2050s)+ wave action and freeboard (16.5 ft NAVD88)
Improved Park Access	<ul style="list-style-type: none"> - Bridge reconstruction: <ul style="list-style-type: none"> o Delancey Street Bridge o East 10th Street Bridge - Access Improvements: <ul style="list-style-type: none"> o East Houston Street overpass landing on park side 	<ul style="list-style-type: none"> - Bridge reconstruction: <ul style="list-style-type: none"> o Delancey Street Bridge o East 10th Street Bridge o Corlears Hook Bridge - Access Improvements: <ul style="list-style-type: none"> o East Houston Street overpass landing on park side
Impact to Trees Across Entire Project Area	776 trees removed 1,180 trees planted Remaining trees stay in floodplain; at risk to future saltwater inundation.	981 trees removed 1,815 trees planted All trees will be out of the floodplain; not subject to saltwater inundation.
East River Park Drainage	Partial reconstruction of drainage system within the park.	Full reconstruction of drainage system and reconstruction of sewer outfalls within the park.
Flyover Bridge	Fully funded, with key structural elements constructed in ESCR program.	Fully funded, with key structural elements constructed in ESCR program.

	Design Alternative 3	Design Alternative 4
Direct Waterfront Access (East River)	Existing esplanade remains as is, needs future repairs.	Reconstruction of esplanade, including relocation of embayments with direct waterfront access.
Passive Recreation	Reimagined passive spaces.	Reimagined with additional passive spaces along the waterfront.

2.5 FEIS: Environmental Impacts of Design Alternatives

The FEIS³ describes the environmental impacts of all alternatives. These include short-term and long-term effects on open space, urban design and visual resources, natural resources, hazardous materials, water and sewer infrastructure, and additionally short-term impacts due to construction on transportation, air quality, noise and vibration, and public health. Appendix A provides a summarizing description of the environmental impacts for Design Alternatives 3 and 4. Table 2 compares Alternative 4 and Alternative 3.

Table 2: Environmental impacts compared for Alternative 4 (Preferred Alternative) and Design Alternative 3. Source: FEIS.

	Design Alternative 3 Environmental Impacts	Design Alternative 4 Environmental Impacts
Open Space	No significant adverse effects.	No significant adverse effects.
Urban Design and Visual Resources	Significant adverse effects of views of the East River to be potentially be blocked Grand Street, Cherry Street, East 6th Street, on East 10th Street, and from within Bernard Baruch, Lillian Wald, and Jacob Riis Houses, and portions of the FDR Drive.	Significant adverse effects of views of the East River to be potentially be blocked on Grand Street, East 6th Street, on East 10th Street, and from within Bernard Baruch, Lillian Wald, and Jacob Riis Houses.
Natural Resources	<ul style="list-style-type: none"> - Removal of 776 trees and planting of new trees, with a net increase of 325 trees over the existing conditions, and with 563 to remain in FEMA flood zone. - Possible adverse effects to unvegetated littoral zone tidal wetlands that are foraging habitats for fish. 	<ul style="list-style-type: none"> - Removal of 981 trees and planting of new trees, with a net increase of 745 trees over the existing conditions, and with 348 to remain in FEMA flood zone. - Possible adverse effects to unvegetated littoral zone tidal wetlands that are foraging habitats for fish.
Hazardous Materials	No significant adverse effects with proper mitigation. Has the potential for disturbing hazardous materials in existing structures	No significant adverse effects with proper mitigation. Has the potential to disturb hazardous materials in existing structures

³ see <https://www1.nyc.gov/site/escr/progress/environmental-review.page> for all public documents

	and subsurface during demolition and excavation.	and subsurface during demolition and excavation.
Water and Sewer Infrastructure	No significant adverse effects, however would require more floodproofing of existing infrastructure as the sewer system within East River Park will not be reconstructed.	No significant adverse effects.
Construction – Open Space	Temporary adverse effects with the displacement of recreational facilities and open space amenities during 5-year construction period.	Temporary adverse effects with the displacement of recreational facilities and open space amenities during the 3.5-year construction period.
Construction – Urban Design and Visual Resources	Temporary adverse visual effects upon the pedestrian experience due to construction barriers and fences over the 5-year period.	Temporary adverse visual effects upon the pedestrian experience due to construction barriers and fences over the 3.5-year period.
Construction – Natural Resources	No significant adverse impacts as there is less in-water work and removal of trees compared to Alternative 4.	<ul style="list-style-type: none"> - Potential adverse impacts upon two identified endangered species, the shortnose sturgeon and Atlantic sturgeon. - Construction would temporarily affect littoral zone tidal wetlands and terrestrial resources due to the removal of trees.
Construction – Hazardous Materials	Potential to disturb subsurface hazardous materials in existing structures and the subsurface during demolition and excavation activities but could be avoided with proper mitigation. Adverse effects would be less than Alternative 4.	Potential to disturb subsurface hazardous materials in existing structures and the subsurface during demolition and excavation activities but could be avoided with proper mitigation.
Construction – Water and Sewer Infrastructure	No significant adverse effects.	No significant adverse effects.
Construction – Transportation	<ul style="list-style-type: none"> - Adverse impacts upon traffic, exceeding the <i>CEQR Technical Manual</i> threshold of 50 vehicle trips with a potential to generate 153 Passenger Car Equivalents (PCEs) during the 6 to 7 a.m. peak hour and 85 PCEs during the 3 to 4 p.m. peak hour; - Rerouting of the East River bikeway/walkway would create temporary significant adverse effects 	<ul style="list-style-type: none"> - Adverse impacts upon traffic, exceeding the <i>CEQR Technical Manual</i> threshold of 50 vehicle trips with a potential to generate 251 Passenger Car Equivalents (PCEs) during the 6 to 7 a.m. peak hour and 131 PCEs during the 3 to 4 p.m. peak hour; - Potential impact of a parking shortfall of 35 spaces and the displacement of 50 off-street parking spaces in the

	that would necessitate a rerouting plan during the 5-year period of construction.	East River Housing Corporation parking lot; - Rerouting of the East River bikeway/walkway would create temporary significant adverse effects that would necessitate a rerouting plan during the 3.5-year period of construction.
Construction – Air Quality	No significant adverse effects.	No significant adverse effects.
Construction – Noise and Vibration	<ul style="list-style-type: none"> - Significant adverse noise effects are predicted to affect multiple addresses near the flood protection alignment and the reconstructed pedestrian bridges. - Vibration would not result in exceedances of the acceptable limit, including for historic structures. 	<ul style="list-style-type: none"> - Significant adverse noise effects are predicted to affect multiple addresses near the flood protection alignment and the reconstructed pedestrian bridges. - Maximum noise levels at residences to nearest floodwall construction within the park would be slightly lower than Alternative 3, because pile driving would occur further from the residences. - Vibration would not result in exceedances of the acceptable limit, including for historic structures.
Construction – Public Health	Potential for significant adverse impacts during construction on noise pollution, but overall no significant adverse effects on public health.	Potential for significant adverse impacts during construction on noise pollution, but overall no significant adverse effects on public health.

2.6 Uniform Land Use Review Procedure (ULURP) Process

NYC Parks and OMB, along with the NYC Department of Design and Construction (DDC), collectively developed conceptual designs aimed at fulfilling the principal objectives listed for this project and which included the public feedback collected during the scoping process. The chosen conceptual design carried forth through the ULURP application process was Design Alternative 4, or the Preferred Alternative.

To facilitate the ESCR Project, the NYC Department of Transportation (DOT), the NYC Department of Citywide Administrative Services (DCAS), the NYC Department of Environmental Protection (DEP), and the NYC Department of Small Business Services (SBS) collectively sought two approvals through the Uniform Land Use Review Procedure (ULURP) for the acquisition of eight easements on non-City owned property and a text amendment to the NYC Zoning Resolution (ZR) § 62-50 (“General Requirements for Visual Corridors and Waterfront Public Access Areas”) and § 62-60 (“Design Requirements for Waterfront Public Access Areas”). The two ULURP Applications (C190357PQM and N190356ZRM) were submitted to the offices listed in

Table 3 for approval.

Table 3: ULURP Application Process Results for C190357PQM and N190356ZRM

Office	Vote Date	Result of Vote
CB 3	March 27, 2018	Not to support
CB 6	April 11, 2018	Not to support
CB 3	June 28, 2019	Approval with conditions
CB 6	June 12, 2019	Approval with conditions
Manhattan Borough Board	June 23, 2019	Approval with conditions
Manhattan Borough President	July 30, 2019	Approval with conditions
City Planning Commission	September 23, 2019	Approval
City Council	To be decided	

Manhattan Community Boards 3 and 6, and the Manhattan Borough Board approved the ULURP applications with conditions, each describing the required mitigations. The mitigations to be added to the ESCR Project are described in Appendix A.

3 Stakeholder Interviews

3.1 Introduction

Representatives of residents, interest groups, community boards, and government officials from the City, State and Federal levels were interviewed in September 2019. Appendix B provides a complete list of interviewees. The interviews were open conversations in which these representatives brought forward their views on all aspects they deemed relevant to the project and the project development. Representatives were interviewed from:

- Community Boards 3 and 6;
- City Council;
- State Senate and State Assembly;
- Congressional Representatives' Offices;
- Co-op Housing Boards and City Housing Authority Tenant Association Presidents;
- Local neighborhoods and businesses;
- Interest Groups;
- Action Groups; and
- Sports Groups.

This chapter reports the views and concerns of interviewed stakeholders.

A general concern is that since mid-2018 the process of stakeholder engagement has neglected community perspectives. This has resulted in a lack of ownership of the preferred alternative and a lack of understanding of how the preferred alternative is a logical further development of the original plan that was developed previously in the Rebuild by Design / Big U process. In general, there is skepticism regarding the preferred alternative and a lack of trust in the successful execution of a project of this magnitude.

Technical issues discussed with the interviewees related to flood protection, design, natural resources and biodiversity, execution time and project phasing, air quality and dust, noise and vibration, hazardous waste materials, and soil settlement and fill compaction. The next sections form a compilation of the concerns that were raised around these technical aspects of the project.

3.2 Project History and Community Engagement

All the interviewees agreed flood protection is needed. Flooding leads to damage of property and loss of services. The vast majority of the people interviewed were very much in favor of the City's initiative for flood reduction.

However, nearly all interviewees expressed a lack of trust in the City because of the way the Preferred Alternative was brought forward. Several interviewees indicated they are upset about the original plan (i.e. the Rebuild by Design / Big U plan) being changed. Many interviewees expressed concern about the way the plan was communicated indicating there had been years of engagement

with the City on this topic, yet the City released a different plan than had been discussed. As Council Member Margaret Chin's office explained, "They never made the case. The choice was made for us."

Another often-expressed issue was the community had not been adequately consulted since the announcement of the Preferred Alternative in 2018. State Senator Brad Hoylman commented, "Big projects require buy-in from the public, and confidence."

3.3 Reliable Coastal Flood Protection

Interviewees expressed concerns about the risk of flooding once the project has been executed and the new flood protection is in place. For example, there is concern the East River Park and the flood wall will only be built to 2050 standards.

Several stakeholders raised the point that it is not only about flooding from sea level rise and storm surges, but also from heavy rainfall storms. They questioned whether the new urban drainage would be sufficient to prevent urban flooding.

Several stakeholders also raised concerns about the risk of water overtopping or overflowing the raised park and causing flooding in the "bathtubs" behind the park in the adjacent residential areas. In addition, at the northern project boundary people are concerned whether flooding will take place north of East 25th Street, where the proposed barrier ends, thus also creating "bathtubs" of flood water. One interviewee asked whether one plan will reduce risk more than the other.

Another question asked whether the flood wall plus the rolling gate at the corner of Montgomery St. at the southern boundary of the project is the best technology currently available for flood protection. In addition, there was a lack of clarity how the flood wall and rolling gate would connect to the anticipated Two Bridges Project south of ESCR.

Groundwater and Basement Flooding – Several people from the project area reported flooded basements after mild rainfall. Some voiced concern that the raised park and the flood wall will exacerbate the effect.

East Village Community Coalition (EVCC) reported that after rainfall, their sewers are blocked, which causes their basements to flood. The raised park should therefore come with additional drainage. The group also presented a map from 1864 that displays the neighborhood of East Village, which is located in a former low-lying marshland area with streams running down to East River (see Figure 5).

One of these former streams is located at East 8th and East 9th Streets where there are sewers that back up with heavy rainfall. Another former stream ran through the current Tompkins Square Park and Saint Brigid's school out to the East River. The group stated that as little as an inch of rain can flood basements on East 9th Street. Not only was the area previously a wetland, but the East River would cross Avenue A at high tide before peat, clay, and fill was used to extend land eastward.

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According to EVCC, almost every building east of Tompkins Square Park has a sump pump. The group is concerned that those critical aspects of geology were not included in the plan and that the envisioned parallel conveyances will be inadequate to solve the problem of flooding.

Even though the primary goal of the ESCR Project is to create flood protection from catastrophic events like Hurricane Sandy, EVCC is concerned that the floodwall proposed in Alternative 4 may exacerbate basement flooding by blocking rainfall from dispersing toward the East River.

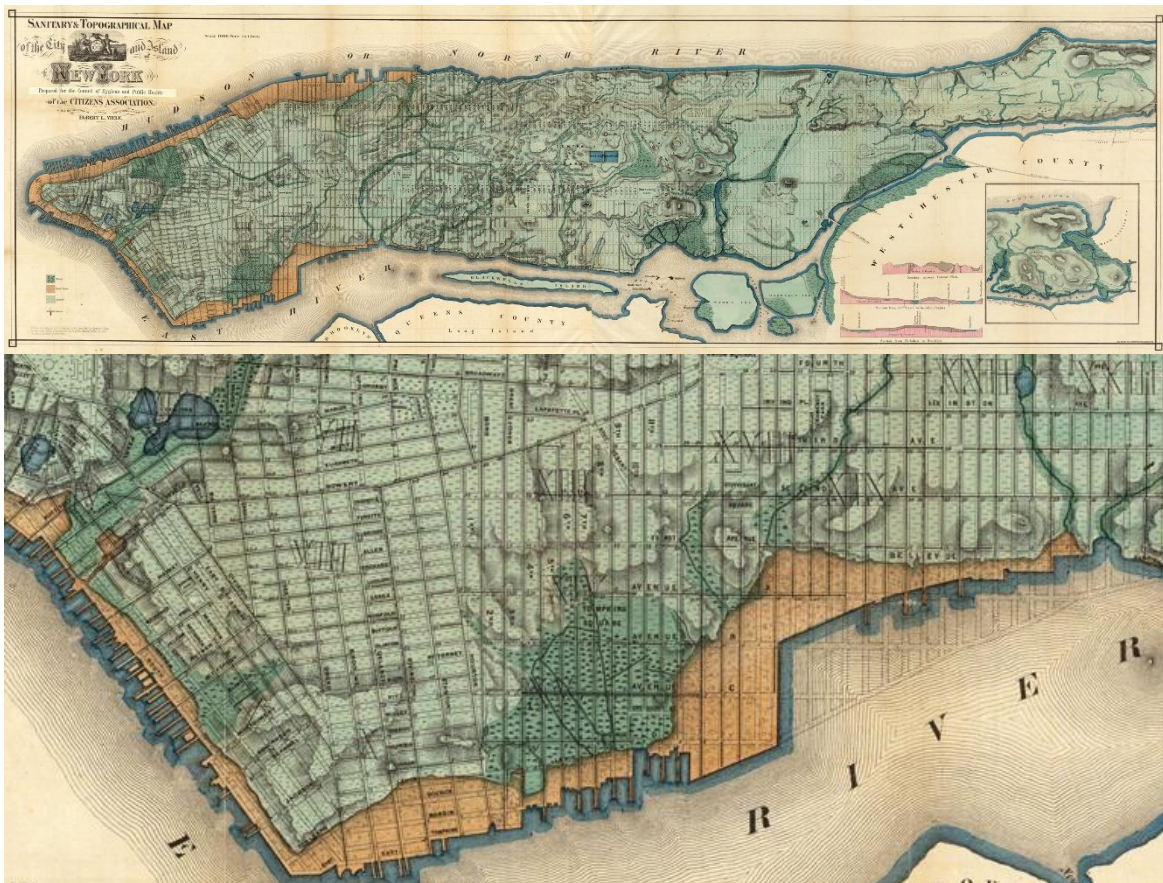


Figure 5: Historical map of the Lower East Side, showing the low-lying marshland area with small streams. From: Egbert L. Viele, "Sanitary & Topographical Map of the City and Island of New York", 1865. David Rumsey Map Collection. Source: Jared Farmer. *New York City in 10½ Maps*. <https://jaredfarmer.net>

3.4 Improved Access and Enhanced Open Space Resources

Design – Congresswoman Maloney’s office believes both Alternative 3 and Alternative 4 have their benefits. The congresswoman is supportive of elements of Alternative 3 but prefers the plan that best protects the community. However, Council Member Margaret Chin’s office stated that “there is very little understanding about why Alternative 4 is the best alternative. There is no rationale for why this is the best option and how they compare.”

According to Council Member Keith Powers there is little discussion about the different alternatives in the district from 14th Street north. Council Member Keith Powers stated: “At the end of the day Alternative 4 seems to be the long-term better option making the park part of the solution rather than encasing it in a wall,” because in the case of Alternative 3 a new flood event would make the park inoperable for a period of time.

Powers also stated: “A positive aspect of the design of Alternative 4 over Alternative 3 may be that the Alternative 4 sloping berm may absorb noise from FDR Drive whereas the Alternative 3 wall may reflect the noise into the community.”

The interviewed sports teams (NY Giants Youth Baseball and NYC Lions) indicated they expect the plan for the new fields will result in better drainage than the current state. Currently they have to pump the rain water from the fields. Alternative 3 includes partial reconstruction of drainage system within the park. Alternative 4 includes full reconstruction of drainage system and reconstruction of sewer outfalls within the park.

Residents from StuyCove Park indicated they oppose the original berm (i.e. currently in Alternative 3) because of the loss of waterfront views. They indicated the alternative that will eventually be chosen would preferably be adaptable to the future of the FDR Drive and should allow for traffic changes in the future (e.g. in a tunnel).

Transportation Alternatives (TA) thinks that the FDR Drive should not maintain the same use function. Because the FDR is 90 years old, it should be reconsidered during the construction of the park. According to TA, ‘Greendecking’ (i.e. decking and greening the cover) of FDR Drive in the original (i.e. RbD / Big U) plan was opposed by the NYC Housing Authority (NYCHA) residents because it would block sightlines from the NYCHA buildings. Ideally, the TA suggest the FDR Drive should be lowered into a tunnel after which the park could be extended into the neighborhood.

East River Park Action believes the park should not shut down, elements of the park should be preserved, and the park should be extended over the FDR Drive.

Several interviewees stated the previous (i.e. the RbD / Big U) plan was more “adaptive” in the sense that it would allow the park to be flooded and its design would work like a sponge to absorb stormwater.

Many stakeholders indicated the LES Ecology Center has been a great partner for the community and should receive more attention in the plans. A new park could potentially lead to higher visitation numbers, negatively impacting the current space that is not large enough for its current programming. East River Park has about 1.5 million visitors a year. The LES Ecology Center has over 1,000 volunteers and many visitors for its education program.

During Hurricane Sandy, the Ecology Center building was not severely damaged. However, concern was expressed that with a new raised park around it, the flow pattern and resulting damage could be significantly different. LES Ecology Center representatives explained that due to the age of the pilings, the Fire Boat House cannot be raised. During a storm it would have to be protected with sand bags.

The LES Ecology Center representatives indicated they would not be opposed to demolishing and construction a new building. They emphasized that the new building will have to be close to the water as the education programs have a close relationship with wetlands, composting, and water education. LES Ecology representatives argue the Center should become an integrated part of the design of the Park, either by reconstructing and enlarging the current facility or by building a new facility along the water in the park, possibly with elements of the old historic building.

Natural Resources and Biodiversity – One of the larger concerns for many stakeholder groups and community representatives is the destruction of the park, including the elimination of biodiversity and the removal of all trees.

It is clear that while many trees succumbed to salt damage after Hurricane Sandy, many others managed to survive. Many people therefore believe the current parkland can continue to exist and it is outrageous to destroy existing mature trees.

The expressed concern is that it would take decades before new trees could create a canopy cover and before the park's biodiversity to return. The stakeholders asked "How do we mitigate the loss of biodiversity or prepare for species to return after the park's reconstruction?" They stated that there is little information available on these issues from the publicly-available FEIS documents. In addition, little is known about the soil types. Stakeholders expressed doubt that the soil used to raise the park in the Preferred Alternative plan would be suitable for growing the planned 1,400 3-inch saplings. Similarly, residents were concerned there was no method to put in place the possible additional two feet of fill for increased flood proofing in the future without having to demolish all the vegetation in the park.

3.5 Environmental Effects During Construction

Numerous groups expressed concerns about the way the project will impact people's lives. People raised questions about the proposed mitigation of the adverse effects of noise, dust, soil contamination, and transportation, questioning whether or not the mitigations will be sufficient. For example, even if FDR Drive will remain open (as is proposed in Alternative 4), the residents expressed fear that there will still be an increase in local traffic issues due to the hundreds of construction workers who will drive into the project area. People fear the noise and debris will affect their lives, they will experience sleep disturbance and respiratory issues. People expressed fear that their health is at stake and the health impacts will only become apparent after the damage is done. As one resident said: "We will suffer from the construction: noise, no waterfront, traffic, the area is going to be dug up again."

Many interviewees are skeptical about the project because they think it is too ambitious to execute in 3.5 years. People expressed concern the project will not be finished before the next storm. Many indicated they are concerned the project will take much more time to execute than planned. Council Member Margaret Chin's office noted that, "There is broken trust about the construction time." Many community members requested the project be done in stages.

Air Quality, Dust and Hazardous Waste Materials – Air quality will be affected in all alternatives: (1) by truck traffic; (2) by construction works along FDR Drive (Alternative 3); (3) by dust from the demolition of the park; (4) by dust from raising the park with fill; and (5) transportation of fill by

barges (Alternative 4). The differences between Alternative 3 and Alternative 4 are the larger volume of fill in Alternative 4 over Alternative 3; construction along FDR Drive only in Alternative 3; and transporting the by barges in Alternative 4 and by truck in Alternative 3.

For the asthmatic population in the project area the primary issue is the air quality during the construction of the project.

Several individuals and stakeholder groups have raised concerns regarding the threshold for air quality control regulations that do not apply to vulnerable groups (e.g. elderly and young children). Another expressed concern is the fill will exacerbate the current air quality issues with additional dust. Even though regulations exist for the origin and the quality of the fill material, people are concerned the Alternative 4 design will not be safe because improper fill material will be used.

Residents indicated the barges to be used in Alternative 4 are an improvement compared to the use of trucks in Alternative 3. The large number of trucks to be stationed at the intersection of Montgomery Street was specifically mentioned as a concern, with residents stressing the importance of optimizing the logistics of trucks and barges.

Gases being released from (potentially contaminated) soils because of construction is another concern raised by the stakeholders. For example, interviewees stated that construction of the Brooklyn Bridge Park (a former brownfield) had released fumes that made people nauseous. The FEIS indicates the Con Edison sites contain contaminated soils and hazardous materials, including older, underground sewage infrastructure.

Several representatives requested monitoring of construction be carried out as an important means to be better informed and gain trust in adequate execution. Several interviewees mentioned the example of the online and real time air quality monitoring that was carried out as part of the L Train project.

Noise and Vibration – Several interviewees have expressed their concerns about the potential noise during construction, as it is expected that night-time and weekend construction works will be necessary to complete the project within 3.5 years.

When asked for their preference of either having construction works continuously (24/7) to minimize project execution time or having construction only during office hours with proportionally longer execution time, the answer was to have something in between, i.e., a balance between fast working and having a rest during part of the weekend.

3.6 Constructability and Scheduling

Construction Time – The experience from many stakeholders is projects in New York City take longer than planned, for example, because of contracting, or perhaps another storm event may delay the execution. This experience feeds suspicion and skepticism about the projected 3.5 years of construction time for Alternative 4, which several stakeholders considered unrealistic. The City's rationale for picking this plan is that the timeline is shorter, but stakeholders think the timeline is aggressive and does not seem possible.

Most of the stakeholders that were interviewed argue that the project construction should be phased. For some residents this is crucial, with them reporting “a complete shutdown of the park is unacceptable.”

Construction Phasing – Interviewees understood phasing will make project execution organizationally more complex requiring staging areas and spaces for equipment and would complicate the implementation of storm drainage and sewerage. However, they considered this option as very important in terms of the project’s execution.

Interviewees reported without phasing, 200 sports teams will need to find alternate venues. For example, the NY Giants Youth Baseball and NYC Lions stated they need phasing to bridge the long construction period, otherwise they would have to commute to Randall’s Island.

For the constituents in Project Area 2, phasing of construction in Project Area 1 would be better as well because they are also Park users, unless this would also increase the construction time in Project Area 2 (because storm drainage and sewage systems are connected).

CB3 is generally in favor of phasing the project but points out that the City should show what that would entail. Phasing at the cost of a slightly longer construction time is favorable but phasing at the cost of doubling construction time is a different matter.

All Congressional representatives, Council Members and State Senators who were interviewed, have declared themselves to be in favor of phasing of the project.

The NYCHA Tenant Association President, however, has one clear message: the project should be executed without phasing (1) to arrive at flood protection as soon as possible and (2) to minimize the exposure to air pollution within the shortest period.

Settlement of Parkland Fill – A final, urgent community concern is how long it would take for the fill to settle. Community members indicated little is known from the FEIS about the way the raised parkland will be constructed. They indicated that because the height of the fill is considerable the underlying soft soils are in some parts likely very compressible.

Flood Risk During Construction – A main concern is that the construction site will be left without flood protection for the duration of the project. It is stated that the Park absorbed a large part of the wave energy of Hurricane Sandy. Residents wondered what would happen if the Park was not there? Several stakeholders therefore stated that Interim Flood Protection Measures (IFPM) are needed during construction by way of deployable barriers or sand bags. The residents pointed out that the city has plans for deployable barriers south of the project area – and then asked why not here as well?

4 Perspective from the City

4.1 Introduction

A meeting was held with representatives from the Mayor's Office, the NYC Department of Design and Construction (DDC), NYC Parks, Manhattan Borough President's Office (MBPO), and several third-party entities. Appendix C contains the list of attendees to this meeting. The purpose of the meeting was to hear the City's perspective on the proposed project, to share the views and concerns of the interviewees with the City, and to discuss the differences in perspective and potential ways forward.

This chapter reports the City's perspective on several aspects of the project design.

According to the City, under the Preferred Alternative, there is significant risk reduction in East River Park from flooding and inundation due to sea level rise, in contrast to Alternatives 2 and 3 where the flood protection system is aligned along the West Side of the park, and at the same time providing substantial enhancements to recreational resources. Additionally, the City believes the Preferred Alternative allows for a shorter construction duration and earlier deployment of flood protection (with completion in mid-2023) and reduces construction disruptions along FDR Drive. Increasing sea level will put East River Park at greater risk under Alternatives 2 and 3 due to more frequent flooding from common storms or high tides. Regular flooding would be avoided under Alternative 4 because the park would be elevated. The next sections elaborate on these topics based on the discussion with the City.

4.2 Reliable Coastal Flood Protection

The City states that there is no difference between Alternative 3 and Alternative 4 with respect to flood protection levels for the neighborhood. Both Alternative 3 and Alternative 4 provide flood/storm surge protection up to 16.5 ft above current sea level, which is equivalent to protecting against a 1-in-100 year storm in 2050 under a mid-level sea-level-rise projection. The City's selection of one alternative over another is therefore based on the level of environmental and community impact.

Flood Protection of the Park – one essential difference between the alternatives is Alternative 4 protects the park, while Alternative 3 allows the park to flood (see Figure 6). Installing a floodwall and elevating most of the park would protect park facilities and recreational spaces from future design storm events and sea level rise inundation.



Figure 6: Inundated area for example storm conditions, Alternative 3 (left) and Alternative 4 (right). Source: Interactive Community Engagement Meeting, Monday, December 10, 2018, Gouverneur Health Auditorium.

Reduced Overtopping – The City asserts that with Alternative 3 there would be overtopping of the berm during a 1-in-100 year storm, flooding FDR Drive and areas further inland. The City finds Alternative 4 preferable in this regard because it believes the flood barrier along the East River would reduce overtopping, and any overtopped water would flow into the East River Park rather than the FDR Drive or residences. The City indicated the effect of the design on overtopping had not yet been modelled. The City indicated not clearly communicating this potential advantage may have been an error, and generally indicated they have not communicated well with regard to their selection of Alternative 4.

Adaptability to Higher Sea Level Scenarios – The City indicated Alternative 4 allows for the addition of up to two feet of fill at some time in the future without needing to make changes to the flood barrier. With this additional two feet of fill, the project would protect against a 1-in-100 year flood event through 2100 under mid-range sea level rise projections. The City noted this possibility was an advantage of Alternative 4 over Alternative 3, because Alternative 3 cannot be easily ‘upgraded’ to 2100 levels. The City indicated that while adding fill would require future destruction of parts of the park the heavy use of the Park would require replacement of passive/active fields within the lifespan of the project anyway.

Rebuilding the Bulkhead – From the Parks Department’s point of view on the infrastructure, rebuilding the bulkhead is important. Rebuilding the entirety of the bulkhead is accounted for in Alternative 4, but not in Alternative 3 consequently the Parks Department expressed a clear preference for Alternative 4

Sewer Improvements – City representatives preferred Alternative 4 because it will allow the City to reconstruct and upgrade the sewer lines within East River Park, including the outfalls and associated pipes that cross the park to the East River bulkhead. See the illustration in Figure 7. The City indicated they consider the current sewer infrastructure inadequate and reaching the end of its serviceable life. The “parallel conveyance” system proposed with Alternative 4 would increase the capacity of the existing combined urban drainage and sewer system, discharging rainfall and waste water from the upstream neighborhoods through the park. The sewer system inland in the neighborhood will not be reconstructed, but the section under the park will be built for current city needs.

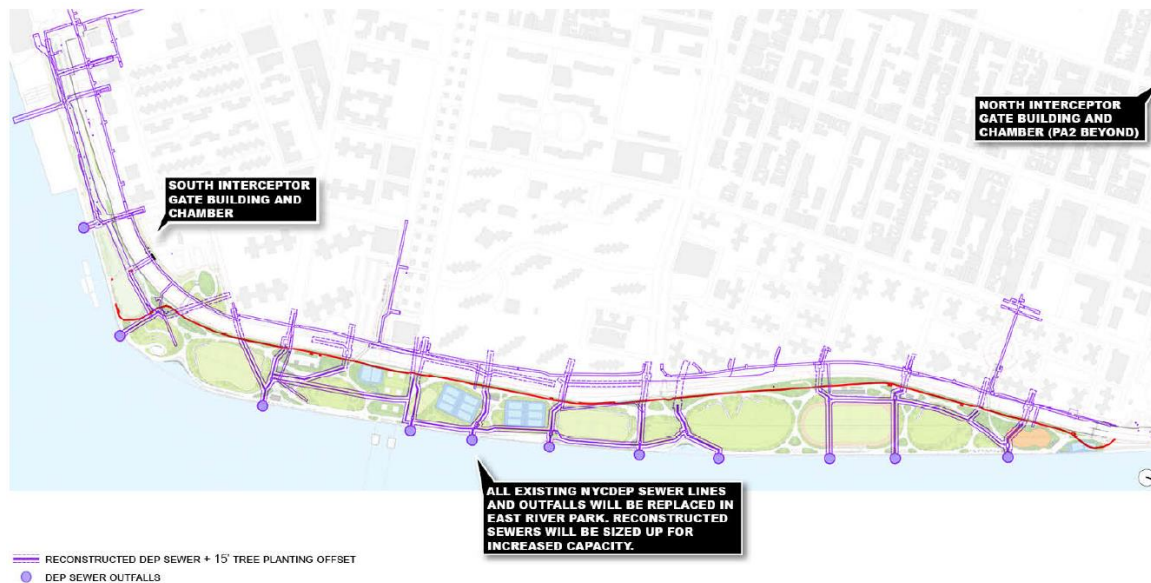


Figure 7: Sewer reconstruction works to improve drainage in East River Park. Source: East Side Coastal Resiliency Project Briefing with City Agencies, MBPO and Deltares. Manhattan Borough President's Office, Sep 13, 2019.

Urban Flooding from Rainfall – The City representatives suggested Alternative 4 would help mitigate flooding in adjacent neighborhoods and thus they preferred Alternative 4. They explained that the parallel conveyance system would increase capacity through the park thus enabling the upstream network to work more efficiently. They also indicated urban flooding at some distance from the new infrastructure will not be mitigated. At the same time, the City confirmed the ESCR Project scope is limited to preventing surge flooding, not rainfall flooding though there may be ancillary benefits. The City explained that it has its own green infrastructure program that may connect to the ESCR project thus making the possibility of this ancillary benefit more likely.

Tiebacks at the Project Boundaries – Tiebacks are flood protection structures extending inland at the project boundaries. As indicated in the FEIS, the ESCR project provides for inland flood protection for water levels up to 16.5 feet of surge above current sea level, so the tiebacks extend inland until the land reaches that elevation. The City representatives explained the ESCR design contains interceptor gates and flood walls north and south of East River Park, where the small project area does not support raising land. At Montgomery St, the ESCR flood protection “ties back” onto Montgomery Street until the land reaches 16.5 ft elevation. Across Montgomery Street, on the south side, the “Two Bridges” Coastal Resiliency Project, which is in an earlier stage of development, would continue flood protection to the Brooklyn Bridge. Though the timing of the two projects differs, the City staff indicated once both are completed flood protection would be secured with the integration of these two flood protection lines. North of the project area, the City staff explained Bellevue Hospital, a city-owned parcel of land, has its own FEMA-funded coastal resiliency project.

4.3 Improved Access and Enhanced Open Space Resources

Design – According to the City, the Preferred Alternative best achieves the important project goals of improving access and enhancing open space resources. As indicated by the City, Alternative 4 provides more usable open space than Alternative 3. Alternative 4 would also reconstruct three bridges, making them universally accessible for all park users. The City believes that accessibility to the waterfront is a paramount community concern.

According to the City, the design of Alternative 4 has been extensively improved compared to the previous design iteration (the RBD proposal), both in Project Area 1 and 2, with a multitude of new or restructured elements.

Waterfront Access – The City representatives indicated Alternative 4 improves waterfront access addressing what the City understands is a key community concern. The City representatives pointed to the embayments planned for the Park, purposely near the entrances to the Park so that visitors entering the park can step down towards the water immediately. The City explained one of the important things the community has conveyed to the them is the importance of their relationship to the water and the importance of passive space for multigenerational use. According to the City, the design of Alternative 4 ensures the park is universally accessible with no slope greater than 5% grade. For the City, it has been important to make the embayments as close as possible to the landings and bridges so that the elderly and families could access the waterfront more easily. Both the Houston and Corlears landings and bridges have been redesigned to meet this goal.



Figure 8: Waterfront open spaces and access: improving pedestrian bridge connections. Source: Interactive Community Engagement Meeting, Monday, December 10, 2018, Gouverneur Health Auditorium.

Natural Resources and Biodiversity – According to the City, the Preferred Alternative’s landscaping plan provides greater park resiliency through a design that can withstand a changing climate and consideration of species diversity, habitat, salt spray, wind, maintenance, and care. The City prefers Alternative 4 because they consider elevating the majority of the park will result in the park being more resistant to salt spray exposure and improve resiliency and post-storm functionality over the long term.

The City voiced that they know residents are attached to the existing trees, however a number of the original trees (planted in 1939 when the park was built) are at the end of their lifespans. Also,

they indicated the tree species that were chosen when the park was built are not species which can tolerate consistent salt water inundation. Figure 9 shows a map of East River Park in 2012 before Sandy and then three years later. The City found the impact of salt water inundation caused the loss of 260 trees in East River Park. The City's analysis shows a correlation between the elevation of the trees and the damage the trees sustained. Consequently, the City prefers Alternative 4 which raises the height of the park and thus protects the trees in the long term.



Figure 9: Post-Sandy Canopy change. Source: East Side Coastal Resiliency Project Briefing with City Agencies, MBPO and Deltares. Manhattan Borough President's Office, Sep 13, 2019.

Similarly, the City representatives pointed out that the London Plane trees in the park were declining and referenced a previous study which said that London Plane trees cannot handle salt water inundation. A substantial percentage of the trees in the current park are London Plane trees. The City believes that those trees will continue to decline as climate changes, and the City therefore intends to replace these trees. In the current design of Alternative 4, many trees will be removed, but they will be replaced with tree species that are able to withstand the effects of climate change. In Alternative 3, many Plane trees will be left in place, but they may need to be replaced due to natural decline and salt water intrusion.

The size of the trees is also an important issue, as many stakeholders point out that replacing large old trees with tiny saplings is very unattractive. The City indicated three-inch caliper trees will be planted. The City prefers to put in smaller trees and have them adapt and grow quickly. The City has prepared a diverse species list, including species that can handle salt inundation and more extreme weather conditions resulting from climate change (wind, heat, harsh winters). These trees will be used for all replacement trees whether in Alternative 3 or 4.

Stakeholders prefer bigger trees (like in Hudson River Park) and the City is prepared to discuss this with the Parks Department. However, City staff explained when you transplant a big tree, it stunts its growth. The City indicated Brooklyn Bridge Park and Governor's Island are good examples of how small trees can be successful. In those locations, one-inch trees were planted

that have grown very quickly. For any alternative, the ESCR project plans to plant some faster-growing trees and some trees that grow more slowly.

In order to encourage natural habitat for diverse species, the City looks at group plantings and intends to create groves, which will create a woodland effect. The East River Park community is very interested in ecology and the City indicated they would be happy to discuss trees and pollinators with the community. For any project, the City agencies involved in the project work closely with the Parks Department, both the forestry division and capital to select trees that are adaptable to climate change.

With both Alternatives 3 and 4, the City indicated the project plan intends to create different layers of landscape with different plantings including trees, understory trees, and shrubs. The plan also intends to create thresholds with flowering trees as you enter the park. The FEIS states that for Alternative 4 approximately 981 trees are proposed to be removed and more trees planted, resulting in a net increase of 745 trees over the existing conditions, and with 348 trees remaining in the floodplain at risk of future saltwater inundation. For Alternative 3 approximately 776 trees are proposed to be removed and more trees planted, resulting in a net increase of 325 trees over the existing conditions, and with 563 trees remaining in the floodplain at risk of future saltwater inundation.

LES Ecology Center – In an effort to address concerns expressed to the City regarding the LES Ecology center resulting from the implementation of Alternative 4, the City stated it is conducting an engineering study to investigate the possible change in flooding to the LES and other issues concerning the LES Fire Boat House. The City indicated they would also consider constructing a new headquarters for LES Ecology Center or constructing a new headquarters and maintaining the Fire Boat House for use by LES Ecology Center.

4.4 Environmental Impact During Construction

Air Quality, Dust and Hazardous Waste Materials – The City understands many stakeholders are concerned about air quality irrespective of the design which is chosen. The City representatives indicated their construction plans include air quality protection and they intend to determine the best way to communicate those protections with the community and have transparent air quality monitoring.

Noise and Vibration – In comparing the noise impacts between Alternative 3 and 4, the City representatives indicated noise impacts in Alternative 4 are limited to the areas north and south of East River Park, while Alternative 3 has noise impacts along the length of the project area.

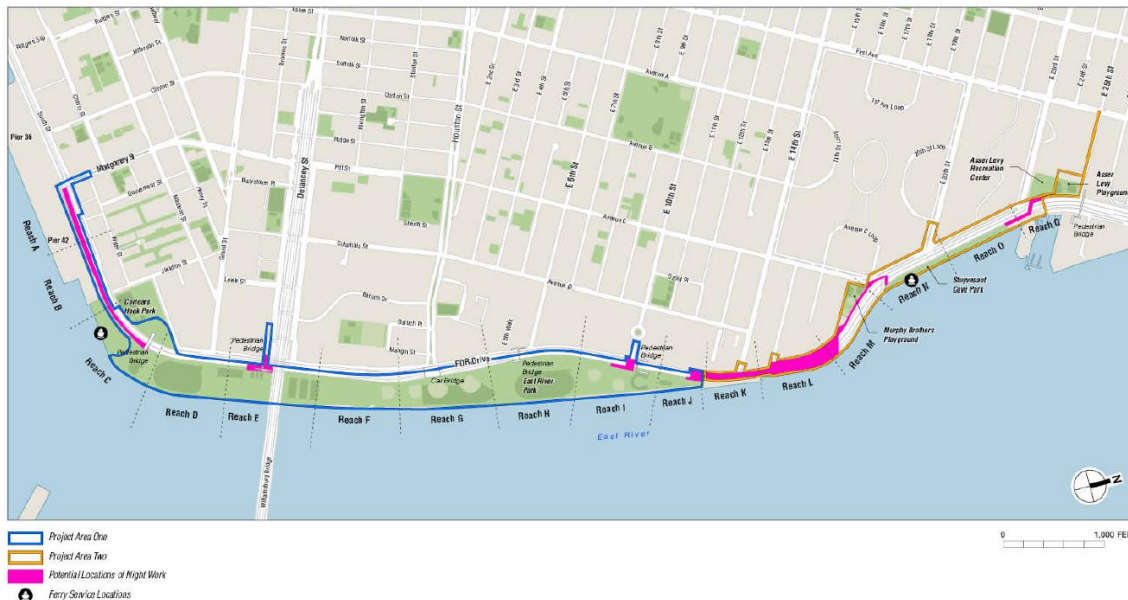


Figure 10: Neighborhood noise impacts. Source: East Side Coastal Resiliency Project Briefing with City Agencies, MBPO and Deltares. Manhattan Borough President’s Office, Sep 13, 2019.

4.5 Constructability and Scheduling

Constructability – According to the City, constructability is an issue that has determined the course of the project. The City indicated the original plan developed under RBD was a broad consideration of the project goals, including interventions well outside the park. When the City analyzed the RBD plan in greater detail, several constructability issues arose. Even though several stakeholders regard Alternative 4 as a new plan, the City considers Alternative 4 to be a development of the previous (RBD) plan, resulting from new insights gained during the development of Alternative 3. While the City considers that it did a poor job communicating the development from Alternative 3 to Alternative 4, the insights gained during the development of Alternative 3 necessitated the design of Alternative 4.

The City states that according to the ‘value engineering report’ (an internal report produced by the City) construction of Alternative 3 would be very difficult. Constructability issues come up regarding staging on the FDR in Alternative 3. Overnight construction would be necessary, which would mean that valuable time would be lost setting-up/demobilizing nightly. Noise issues to the surrounding community would be more acute. In addition, an issue with Alternative 3 is that Consolidated Edison (ConEd) has not yet developed a full plan for what would have to happen to the ConEd lines under the proposed berm. However, ConEd believed that Alternative 3 would have required serious reconstruction of the ConEd line along the length of the Project area.

In terms of constructability, the City prefers Alternative 4 as it minimizes disruption to FDR drive. The ‘value engineering report’ leads to the conclusion that Alternative 4 can be completed faster and with a greater degree of certainty. (This value engineering report is not publicly available.)

Construction Time – The City prefers Alternative 4, because under Alternative 4 East River Park would be constructed in 3.5 years and completed in 2023, one year ahead of the scheduled delivery date for Alternative 3.

Construction Phasing – According to the City, the sewer line and fill are the critical issues that complicate phasing of the project. As First Deputy Commissioner Jamie Torres Springer stated, “There is a compelling need to mobilize and build the project in order to use federal dollars and to complete the project as early as possible to address climate risk. If we were not to close East River Park, we would not be able to maintain the safety of those using the park due to the amount of truck activity and the amount of work that has to be done. There are two drivers that require us to do the work all at once. One driver is that the sewer system is immensely time consuming to build so it is difficult to work on separate portions and get them all completed. The second driver is the fill and the need to get the fill in. We are working to see how quickly we can get portions finished and re-opened and if we can keep some portions open for the first year of the project and still meet our construction goals. We will have answers before the approval of the project, but we are still working on it.”

For Alternative 3 the Park would also have to be closed. The City only understood late in the development of Alternative 3 that it would require the closure of the entirety of East River Park. The City indicated this information was not properly communicated.

Interim recreation – The City has committed a series of resources across the Lower East Side and in Community Board 6 to improve access to open space for the duration of construction.

Deputy Commissioner Alyssa Cobb Konon mentioned that, “We looked at a suite of upgrades to existing open spaces, creating new open spaces, doing additional tree planting in the community, and creating rain gardens or bioswales. We have also been looking at the assets across our portfolio within the Lower East Side and Community Board 6. We are buying solar lights to expand playing time at playing fields. We have met with all of the leagues and talked with them about their needs. Some of them are willing to travel and some want to stay local. We are looking to honor all of those requests at this point. Some of our users are regional. Not all are local. We are creating new open space at La Guardia Bath Houses. All of these interim spaces are all nearby. So not everyone has to go to Randall’s Island. Randall’s Island is 400 acres with a lot of baseball fields, but it is quite a distance. Some people are willing to travel. Some are not.”

Settlement of parkland fill –The City stated that all settlement issues related to the fill for Alternative 4 are included in the project’s timeframe. The City has determined the poorest soil areas are in the northern section of the park and would require deep soil mixing. Further south, the City has determined, the soil quality improves and therefore settling becomes less of an issue. The City proposes wick draining as the main means of expediting settling. According to the City, the poorest-quality soil area (northern section of ERP) should take 3-9 months to achieve 95% of the final settlement. In the poor soil sections, up to 25 inches (63 cm) of settling is expected. The City reported that for most of the park, the fill will be granular sand topped by horticultural-grade fill. For high-load areas of the park, gravel will be utilized. The City guarantees the quality of the fill materials because the sources of clean soils or fill materials to be used anywhere on the project site would be determined by the construction contractors with review and approval by NY State Department of Environmental Conservation.

5 Synthesis

5.1 Introduction

This review is based on interviews with a wide variety of stakeholders, ranging from community boards, local elected officials, and interest groups, as well as an in-depth discussion with City agencies working on the project. This synthesis integrates the information provided by the stakeholders and the City comparing the concerns and perceptions of each group for the significant topics discussed during the interviews. Where appropriate, Design Alternative 4 is compared with Alternative 3 and the previous RBD/BIG U proposal. This section is structured around the principal objectives stated for the ESCR Project's design (see Chapter 2), here summarized as:

- Reliable coastal flood protection;
- Improved access to and enhanced open space resources; and
- Constructability and scheduling.

Starting with the RBD competition after Hurricane Sandy and the subsequent development of the selected Big U concept, the ESCR Project has been under development for many years. With the involvement of many stakeholders since the beginning of the competition. The RBD/Big U program resulted in a project design with the involvement of many stakeholders by the beginning of 2018. In mid-2018 the City adjusted the project design in order to overcome issues of constructability and feasibility.

According to many stakeholders, the redesign process has been largely internal, with little involvement of stakeholders and communities. After a redesign was completed, the City presented the newly developed Preferred Alternative, for which the stakeholders felt no ownership of what they regarded as a new design that replaced what they refer to as the original plan (i.e. the RBD/Big U plan). It has since been very difficult for both sides to bridge the gap in perspectives and arrive at a consensus about the best solution for coastal resiliency.

What changed is that the more holistic goals of the RBD designs have become more focused on flood protection in the Preferred Alternative. In addition, the City appears to have changed its perspective about protecting the parkland. In the RBD design, the East River Park was deliberately considered a floodable park, with the line of flood defense at the inland side of the East River Park. In the Preferred Alternative however, protecting the parkland is brought forward as one of the main advantages of Design Alternative 4 over Design Alternative 3.

The FEIS focuses on adverse impacts, which is understandable given the formal requirements pertaining to an impact statement. The assessment shows that not all but many of the adverse impacts are similar or identical for the various alternatives (cf. Table S-1 in the FEIS Executive Summary). Comparing adverse impact is therefore only of limited help to distinguish between alternatives. The choice for an alternative should instead be more holistic based on criteria from sources that supported the FEIS, such as design reports explaining the rationale of a proposal, technical reports explaining the degree to which project goals are met, explanations of how construction can or cannot be carried out and how adverse effects are mitigated.

5.2 Reliable Coastal Flood Protection

Hydraulic Modelling and Risk Assessment – The primary goal of the ESCR Project is flood protection against sea level rise and coastal storm surge. The City has indicated the two Alternatives will provide the same level of protection to match FEMA requirements⁴. This assertion is based upon work done during the conceptual design when supporting hydrology and hydrodynamic modeling analyses were undertaken. These hydrologic and hydraulic analyses were undertaken in 2015 with the focus of understanding the effects of the proposed coastal flood protection system on flood elevations at adjacent properties, and the effects of waves against the proposed flood protection system and wave deflection to adjacent properties. The FEIS refers to this report as the: “East Side Coastal Resiliency Project, Coastal Hydraulics Report, Arcadis, 2015.” This report is not publicly available and therefore it is not possible to assess the methods used to extrapolate from the 2015 analysis to the 2018 proposed Alternatives. Without an understanding of the extrapolation process it is not possible to validate the assertion in the FEIS that all Alternatives provide similar protections.

Flood protection is generally not a binary scenario (i.e. ‘flooding’ or ‘no flooding’). The degree of mitigation depends on the form of the interventions. It may well be that the flood wall perfectly prevents flooding from storm surges up to FEMA requirements along the largest part of the project area, but flooding would still occur at the boundaries of the flood wall. It may also be possible that urban flooding from an extreme rainfall storm is greatly mitigated but that pockets of flooding would still persist in the most flood prone spots within the project area. The damage (to infrastructure, buildings, housing, cars, etc.) is then consequently reduced (by interventions) to a fraction of the maximum damage (without protection) – but not to zero. In the case that the flood protection is perfect up to the FEMA requirement minimum, then it is still relevant to analyze which alternative offers best protection for the future knowing that in time (beyond 2050 or earlier when sea level rises faster than predicted) further protection may be required.

The lines of flood defense in Alternative 3 and Alternative 4 are very different. It is therefore possible there will be differences in flood protection in both alternatives. In other words, the flood depth and flood extent for various storm scenarios may be different, resulting in different damage and risk maps. The effect of these differences cascades through the analysis of the alternatives because differences in the hazards will lead to differences in the Benefit-Cost Analysis (BCA).

When asked, the City indicated additional modeling and analysis is currently underway and will be included in the Conditional Letter of Map Revision submission to FEMA later this year. This information has therefore not been part of the decision making in choosing the Preferred Alternative.

Tiebacks at the Project Boundaries – For all alternatives, the flood protection is interrupted at the north and south boundaries of the project area. At the south side the ESCR Project will be flanked by the Two Bridges Project. Seamless connection between the designs of two projects is important here. The north side, however, is in fact the northern edge of the Big U, without a comparably envisioned integrated flood protection system. Although this makes sense given that

⁴ The primary goal of the ESCR Project is flood protection against sea level rise and coastal storm surge. All Alternatives provide flood protection up to 2050 SLR plus FEMA 1/100y.

the impact of flooding gradually becomes less heading north (see Figure 1) and even though localized flood-proofing actions at the Bellevue Hospital are planned, securing the area needs to be taken into consideration in the final detailed designs of any of the alternatives.

More specifically, the area needs to be secured so that no floodwater can enter the city north of 25th Street to flow inside the project area. Figure 11 shows the Future 2050s Floodplain as published at the NYC Flood Mapper zoomed in for the northern part of the ESCR Project. The map shows flooding north of ESCR Project. As integrated flood protection is not planned here, additional studies would need to show whether the ESCR Project area should be extended or whether another project should focus on a more integrated flood protection for this area.



Figure 11: Future Floodplain 2050s – 1% Annual Chance Floodplain. Source: NYC Flood Hazard Mapper.

<http://dcp.maps.arcgis.com/apps/webappviewer/index.html?id=1c37d271fba14163bbb520517153d6d5>

Urban Flooding from Rainfall – Prevention of urban flooding from rainfall is not an element of the primary project goals. Although the restructured and extended stormwater and sewer drainage may mitigate part of potential urban flooding as well, there is no guarantee (or proof) that it will be largely mitigated. None of the alternatives propose blue and green infrastructure to support the urban drainage system through the storage and retention of excess rainfall and could also alleviate heat stress during hot days. All alternatives would therefore benefit from the City's green infrastructure program that may connect to the ESCR project.

Shallow groundwater and basement flooding – None of the alternatives account for groundwater flooding in the project area. Despite that drainage improvements in both plans, the plans are comparable and focus on improving storm drainage after heavy rainfall. While these actions do improve the larger scale discharge of storm drainage, it does not solve the issue of basement flooding as a result of quickly rising groundwater tables in areas with basements below shallow groundwater tables.

As indicated in the map in Figure 5, this part of the district (around East Village) has been built on former marshlands with low-lying peaty and clayey soft soils and shallow groundwater tables that respond quickly to rainfall. The map in Figure 7 illustrates that no new drainage infrastructure is installed in the neighborhoods where basement flooding is reported.

Even though basement flooding occurs in the project area, it could be regarded as a different problem altogether and not part of the project scope. However, many residents do not make that strict distinction and regard this as a flood problem that needs to be solved in this flood protection project.

5.3 Improved Access and Enhanced Open Space Resources

Accessibility and FDR Drive – Access to the Park is greatly hampered by the FDR Drive. For many, ideally the FDR would be lowered below grade and ‘buried’ in a tunnel that would extend the East River Park from the bulkhead all the way to the NYCHA housing (Figure 12).

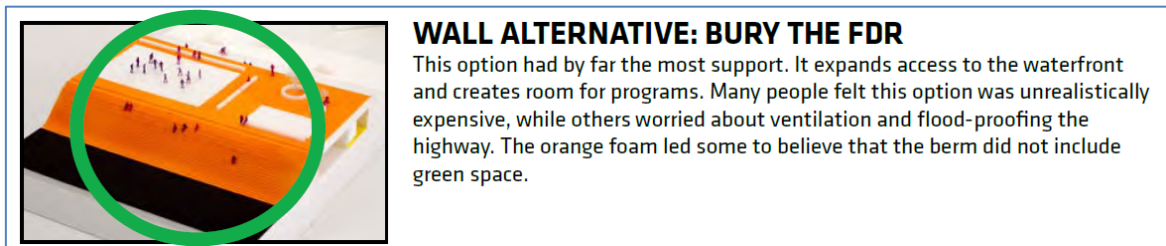


Figure 12: Burying of the FDR Drive illustrated. Green decking of FDR would create a substantial extension of the Park, connecting it to the NYCHA Housing. Source: *Rebuild by Design*, 2014⁵.

However, even the original RBD proposal did not include covering FDR Drive, because it was not seen as feasible as is noted in the description of this RBD proposed design (Figure 13).

⁵ BIG Consortium, 2014. *THE BIG "U". Rebuild by Design. Promoting Resilience Post-Sandy Through Innovative Planning, Design & Programming.* 276 pp.

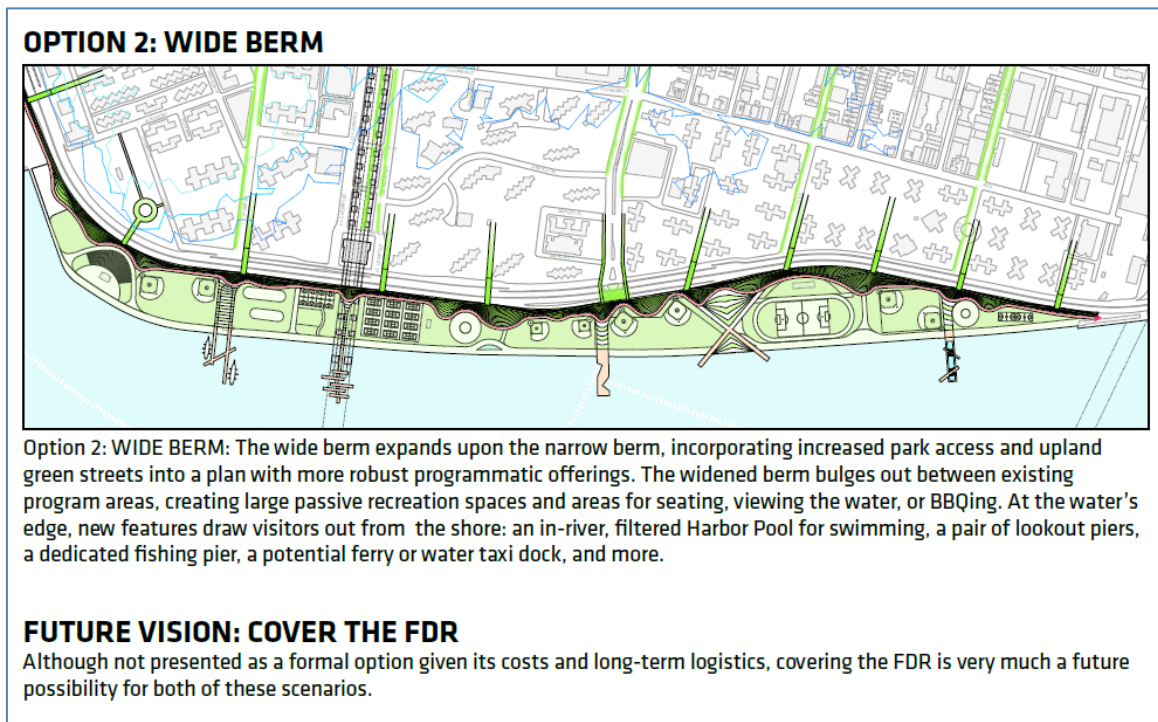


Figure 13: Green decking of the FDR is explained as future vision. Source: Rebuild by Design, 2014.

Crossing FDR Drive will then necessarily require bridges. As noted in Figure 8 and in Table 1, Design Alternative 4 includes reconstruction of Corlears Hook Bridge, which is not included in Alternative 3. Alternative 4 therefore has more options for park access than Alternative 3.

In addition, Design Alternative 4 largely leaves the FDR drive untouched, leaving the area open to future infrastructural reconstruction. For Design Alternative 3, construction would need to consider the future development of the FDR (green decking or otherwise). This may result in a lock-in scenario, because it is unknown what future options may be with respect to green decking or tunneling, perhaps because of different transportation concepts or new technology and engineering.

Raised Park or Flood Wall – Some interviewees see the raised park concept as a very radical way of protecting against floods. However, examples of similar projects exist. One example is in the Netherlands, along the coastline of the city of the Hague, where a boulevard was raised, with a floodwall or ‘dike’ structure underneath the boulevard that provides increased protection levels and promenade spaces at the same time (see Figure 14).

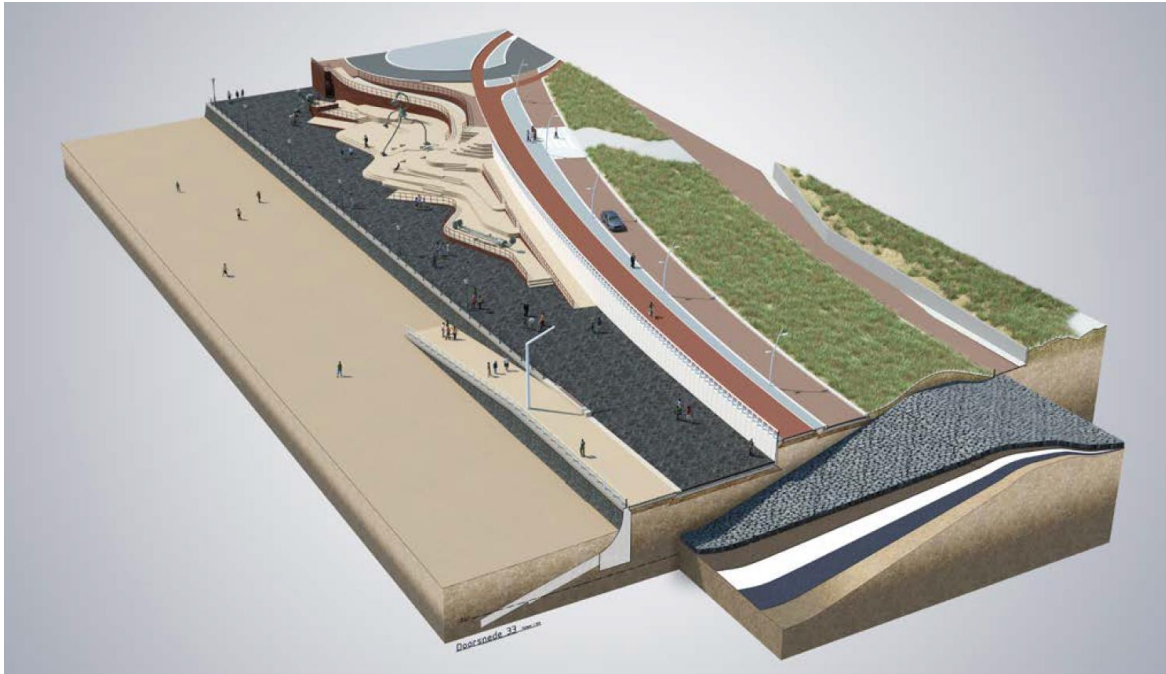


Figure 14: Dike-underneath-Boulevard concept in The Hague, the Netherlands. Source: City of the Hague.

Another example is from the German city of Hamburg, where the Niederhafen River bulkhead was reconstructed as a promenade that also provides flood protection (see Figure 15).



Figure 15: Niederhafen flood protection barrier in Hamburg, Germany, re-connects its river promenade with the surrounding urban fabric of the city; serving as a popular riverside walkway while also creating links with adjacent neighborhoods. Source: <https://inhabitat.com/zaha-hadid-architects-undulating-riverside-promenade-doubles-as-a-flood-barrier-in-hamburg/photographs-by-piet-niemann-image-given-to-zaha-hadid-architects-ask-piet-niemann-for-permission-before-use-unallowed-usage-will-be-prosecuted-without-warning-11/>

Adaptability to sea level rise – Both Alternatives 3 and 4 are designed to sea level rise conditions up to the 2050 level. The FEIS states that once sea level rise predictions further require an additional increasing of flood mitigation measures, this is done more easily by raising the park than by increasing the height of the flood wall alongside FDR Drive. This would make Alternative 4 a more adaptable design to future sea level rise than Alternative 3. While it is understood that it would

probably be very difficult to increase the height of the floodwall alongside FDR, raising the park by with two feet of fill is not without challenges either. Even assuming that the sports facilities have a lifetime of 30 years and would need to be replaced again around the 2050s (as the City argues), the vegetation will also have to be replanted. Elevating the park with an additional two feet in 2050 would require the removal of all biodiversity and fully-grown trees.

From a technical perspective, the issue of replanting in 30 years would be an argument to raise the park an additional two feet in the current project, instead of postponing it to the future. Another argument would be the potential that sea levels are rising faster than previously predicted (as reported in the September 2019 IPCC report⁶). If the park were raised with the additional 2 feet in the current project, this would make Design Alternative 4 a longer-term solution than Design Alternative 3.

The concept of Design Alternative 3 is that the park area is not protected against flood conditions. Currently East River Park is not designed as a floodable park with vegetation types that allow for regular flooding, and its vegetation and sports fields need maintenance and replacement once flooded. The tree stock has shown (after Hurricane Sandy) to be vulnerable to flooding and salt water intrusion. In Design Alternative 3 this could be changed. The Park could be redesigned into a floodable park. Examples of floodable parks exist, such as the Brooklyn Bridge Park (partially floodable) and similar parks in Rotterdam, the Netherlands, which are designed with floodable and salt-resistant vegetation types. However, this would require the vegetation to be changed in a similar fashion as is proposed in Alternative 4. In addition, the bulkhead and the sports fields will have to be repaired and maintained in time. Figure 16 shows that the current level of the bulkhead would flood under no-storm conditions with high tides at the 2050 sea level.



Figure 16: High Tide 2050s - High Estimate (30 inches SLR) Flooding is indicated in purple. Source: NYC Flood Hazard Mapper. <http://dcp.maps.arcgis.com/apps/webappviewer/index.html?id=1c37d271fba14163bbb520517153d6d5>

⁶ IPCC, 2019. *Special Report on The Ocean and Cryosphere in a Changing Climate. Summary for Policymakers.* 34 pp. https://report.ipcc.ch/srocc/pdf/SROCC_FinalDraft_FullReport.pdf

5.4 Constructability and Scheduling

Constructability and feasibility – If the construction of a design is not possible or comes with very serious disadvantages, then most people will understand the decision to discard the alternative. The FEIS extensively describes the disadvantages of constructing the flood wall alongside FDR Drive in Alternative 3 and the advantages of constructing the raised park in Alternative 4. The City states that according to their value engineering report, construction of Alternative 3 would be very difficult. The report concludes that Design Alternative 4 can be completed faster and with a greater degree of certainty. However, this value engineering report is not publicly available to demonstrate these conclusions.

Settlement of parkland fill comes with a degree of uncertainty and stakeholders raised settlement of fill as a risk to the project construction timeline. City representatives stated all settlement issues have been included in the project's timeframe, however no detailed analysis of the settling process and times was available.

Phasing – Everybody interviewed for this review was convinced of the need for flood protection in the project area and understood that construction works for a project of this size will take many years. Most of the interviewees strongly advocate for construction phasing of the project.

Mayor de Blasio has since announced this project will be conducted in two phases, so this issue is no longer relevant.

Flood Risk During Construction – During construction, when parts of the park are closed and the trees are removed, a severe storm would not only damage the exposed park (equipment, hazardous materials, Con Edison lines, etc.) but may also propagate into the neighborhood more easily without being dampened by the 'roughness' of the park. This is an argument to investigate the effectiveness of installing Interim Flood Protection Measures (IFPM) during construction by way of deployable barriers or sand bags, either at the waterfront or alongside the FDR Drive.

6 Recommendations

6.1 Transparency

Transparency of the decision-making process by City agencies may help rebuild trust and gain support of the community. This would include making available the documentation that was used in the decision-making process, such as the technical studies, hydraulic and geotechnical field surveys and/or modelling, that form the technical basis of the project design, and a clear explanation how the City chose the Preferred Alternative. The reasoning on which the decision was based, if explained well and supported by background documentation, may help build consensus among the public for the preferred alternative.

It would be beneficial to communicate clearly the limitations of the project scope to manage community expectations. For example, that the project does not include burying or placing green decking over FDR Drive, installing blue-green infrastructure, or mitigating groundwater and basement flooding. A clear understanding of the features that are not included in the project would allow for the community to address these separately and discuss additional initiatives, projects or programs, with or without the City.

It would create more trust and relieve community concerns if the City were to provide more detailed mitigation plans for construction dust and particulates, hazardous materials, noise and vibration in addition to the conclusions of the FEIS.

6.2 Communication and Stakeholder Involvement

Though difficult to evaluate in technical terms, one theme which appeared often in the comments of the interviewed stakeholders and in the conversation with the City was communication. The stakeholders considered the communication from the City to have been insufficient while City staff were under the impression considerable information had been made public via the FEIS and community presentations.

Discussions with stakeholders indicated that tensions between the City and the community could be partially alleviated by establishing a community advisory group (CAG). CAGs exist for other projects in New York City, and can result in more community involvement and support of the project. In addition, establishing a commission of environmental experts that advise on execution of the project can help alleviate some of the community's concerns. Community representatives find it imperative to be involved in the late, detailed stages of project design. The interviewees voiced the need for regular social media updates.

6.3 Detailed Monitoring of Adverse Impacts

Monitoring of environmental effects during construction will help reduce uncertainty and confusion about adverse impacts. It is therefore recommended the project include a monitoring program and monitoring of air quality, soil quality, dust, noise and vibration during construction. This would

require clear and transparent thresholds for these categories and online access to regular monitoring reports.

An often-cited positive monitoring example is the reconstruction of the L train tunnel. The Metropolitan Transportation Authority adopted standards for releasing information on public exposure to dust and silica, a part of dust generated by the demolition of concrete which may potentially cause cancer. The Metropolitan Transportation Authority provides online monthly reports on the monitoring of the silica dust⁷. Community representatives stated that they are appreciative of this proactive release of information.

6.4 Interim Flood Protection Measures

Community concerns about flood risk during construction would be greatly alleviated by a plan for interim flood protection measures (IFPMs) to reduce risk for the next 3.5 years during construction.

Flood risk may be higher during construction as a result of clearing the park area of vegetation and deconstruction of the bulkhead. While it is understood that installing IFPMs could slow down the construction process and that sandbags or deployable barriers along the waterfront would offer limited protection, Design Alternative 4 may be specifically suitable for placing sandbags or deployable barriers along the FDR, as little construction work is planned there.

6.5 Flood Protection North of the Project Area

The north side of the project area is the northern edge of the Big U and therefore has no connecting flood protection system. Securing the area needs to be taken into consideration in the final detailed designs of any of the alternatives.

It is recommended a hydraulic study be conducted to investigate whether floodwater can enter the city north of 25th Street. Such a study would help to show whether or not additional measures are needed by extending the ESCR Project area or by another flood protection project for this area.

6.6 Urban Flooding from Rainfall

Community reports indicate that urban flooding occurs in the project area that may not or may only be partly mitigated with the proposed stormwater and sewer drainage system. It is therefore recommended a study be conducted on urban flooding to identify the extent of the issue. This study could be connected to the City's green infrastructure program.

6.7 Phased Construction and Open Space Mitigation

The East River Park is of vital importance to many in the community. Much of the resistance to the project could be alleviated by agreeing to a phased construction within the park so that portions remain open to the public. In addition, it is important to ensure sufficient alternative active and passive open-space recreational resources.

6.8 Additional Park Fill for Increased Flood Protection

Based on the community's resistance to the removing of trees and vegetation, it is recommended including the additional two feet of fill be considered in the current project, rather than leaving it as a future option. Including it in the current project would avoid having to remove the mature vegetation around the 2050s, when sea level will likely reach a level that the two additional feet will be needed.

6.9 Connection of the Park to FDR Drive

The community voiced a desire for a strategic study on long-term future transportation scenarios of the FDR Drive, including options for placing green decking of FDR Drive, which would allow for extension of the East River Park.

6.10 Groundwater and Basement Flooding

To help alleviate concerns about groundwater and basement flooding, it is recommended a geohydrological study on shallow groundwater dynamics in the part of the project area be conducted around the East Village area that is susceptible to basement flooding, perhaps in combination with a geotechnical study on basement leakage. Such a study could include a monitoring program to identify and assess the extent of the problem. This would help formulate initiatives to mitigate basement flooding in addition to the mitigations proposed by the ESCR project.

Appendix A | Design Alternatives and Environmental Impacts

Appendix A starts with summarizing the proposed alternatives. Next, the environmental impacts are described for Alternatives 3 and 4. Finally, the ULURP Approval Resolutions from Community Boards 3 and 6, and the Manhattan Borough Board are summarized.

A.1 Proposed Action Alternatives:

The City has considered five alternatives and mitigation measures to minimize adverse effects on the floodplain and/or wetlands and to restore and preserve the natural and beneficial values they offer, as described in the Final Notice and Public Explanation of a Proposed Activity in a 100-Year Floodplain or Wetland.

No Action Alternative: The project purpose and need would not be met with the No Action alternative. The No Action alternative assumes that no new comprehensive coastal protection system is installed in the proposed project area. In the absence of this system, the existing neighborhoods within the protected area would remain at risk to coastal flooding during design storm events.

The flood protection design alternative with a raised East River Park (**Alternative 4**, Preferred Alternative) raises the level of the park so that both the community and the park are protected from design storm events and sea level rise. The Preferred Alternative would raise the majority of East River Park. This plan would reduce the length of wall between the community and the waterfront to provide for enhanced neighborhood connectivity and integration. Between the park amphitheater and East 13th Street, the park would be raised by approximately eight feet to meet the design flood elevation criteria, with the floodwall installed below-grade. The park's underground water and drainage infrastructure, bulkhead and esplanade, and existing park structures and recreational features, including the amphitheater, track facility and tennis house, would be reconstructed 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 direct connection to the water and allow for siting of active recreation fields within the park. This alternative would include drainage components to reduce the risk of interior flooding and construction of the foundations for the shared-use flyover bridge 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. The Preferred Alternative would also include reconstruction of 10 outfalls located along the park shoreline that discharge to the East River, as well as wastewater and water supply piping and associated features such as manholes and regulators.

The flood protection alternative on the west side of East River Park (**Alternative 2**, Baseline Alternative) would provide flood protection using a combination of floodwalls, levees, and closure structures (e.g. deployable gates) from Montgomery Street to East 25th Street. As the line of protection would generally be located on the western side of East River Park in a portion of the project area, the park would not be protected from the design storm event under this alternative. The neighborhoods to the west of the line of protection would be protected from the design storm event under this alternative. This alternative also includes modifications of the existing sewer

system. A shared-used flyover bridge would be built cantilevered over the northbound FDR Drive to address the Con Edison pinch point.

The flood protection alternative on the west side of East River Park (**Alternative 3**, Enhanced Park & Access Alternative) provides flood protection using a combination of floodwalls, levees, and closure structures. As with Alternative 2, the line of protection would generally be located on the western side of East River Park in a portion of the project area, and the neighborhoods to the west of this line would be protected from the design storm event under this alternative. However, under this alternative, there would be more extensive use of berms and other earthwork 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 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, including landscapes, recreational fields, playgrounds, and amenities. Even with these East River Park enhancements, the park itself would not be protected from the design storm event under this alternative. As proposed in Alternative 2, 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.

The flood protection alternative East of FDR Drive (**Alternative 5**) proposes a flood protection alignment similar to the Preferred Alternative, except for the approach 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. This alternative would include drainage components to reduce the risk of interior flooding and the construction of the shared-use flyover bridge to address the Con Edison pinch point.

NYC Parks and OMB, along with the NYC Department of Design and Construction (DDC) developed conceptual designs that aimed to fulfil the principal objectives listed for this project and which included public feedback collected during the scoping process. The chosen conceptual design carried forth through the ULURP application process was Design Alternative 4, or the Preferred Alternative. Table 4 lists the main attributes of the five design alternatives.

Table 4: Design scope and main attributes of the five design alternatives.

<p>Design Alternative 1 (No Action Alternative)</p>	<p><u>No Action Alternative</u>: “Assumes that no new comprehensive coastal protection system is installed in the proposed project area.... [and] assumes that projects planned or currently under construction in the project area are completed by 2025 (see list of projects in <i>ESCR Project EIS Appendix A1</i>).”</p>
<p>Design Alternative 2</p>	<p><u>“Flood Protection System on the West Side of East River Park – Baseline”</u>:</p> <ul style="list-style-type: none"> • Combination of floodwalls, levees, and closure structures running along the west side of East River Park for the length of the entire Park; • Concrete floodwall begins at Montgomery Street within the sidewalk adjacent to the Gouverneur Gardens Cooperative Village; • Floodwall would cross under FDR Drive with closure structures on the FDR Drive’s South Street off- and on-ramps; • Park-side landings of Delancey Street and East 10th Street Bridges would be re-built;

	<ul style="list-style-type: none"> • Construction of a shared-use flyover bridge to address the pinch point near the Con Edison East River Dock between East 13th Street and East 15th Street (similar to the Preferred Alternative); • Portions of Murphy Brothers and Asser Levy Playgrounds would be replaced in kind instead of reconstructed and improved; • Modifies the existing sewer system (similar to the Preferred Alternative); • Majority of construction would be performed during night-time single-lane closures of the FDR drive; and • Due to proximity to sensitive Con Edison transmission lines, Design Alternative 2 is projected to be constructed in 5 years and completed in 2025.
<p>Design Alternative 3</p>	<p><u>“Flood Protection System on the West Side of East River Park – Enhanced Park and Access.”</u></p> <ul style="list-style-type: none"> • Combination of floodwalls, levees, and closure structures running along the west side of East River Park for the length of the entire Park; • More extensive use of levees and earthwork for integrated access, softened visual effects of the floodwall, and introduce new types of park experiences; • Landscape would gradually slope down from high points along the FDR Drive towards the existing at-grade esplanade at the water’s edge; • Would include extensive programming such as landscapes, recreational fields, playgrounds, and amenities; • Delancey and East 10th Street bridges would be reconstructed; • A new raised landscaped park-side plaza landing would be created at the East Houston Street overpass; • Flood protection in Project Area 2 would be similar to that proposed in the Preferred Alternative and would include the reconstruction and improvements to Murphy Brothers and Asser Levy Playgrounds; • Modifies the existing sewer system (similar to the Preferred Alternative); • Construction of a shared-use flyover bridge to address the pinch point near the Con Edison East River Dock between East 13th Street and East 15th Street (similar to the Preferred Alternative); and • Due to proximity to sensitive Con Edison transmission lines, Design Alternative 3 is projected to be constructed in 5 years and completed in 2025.
<p>Design Alternative 4 (Preferred Alternative)</p>	<p><u>“Flood Protection System with a Raised East River Park.”</u></p> <ul style="list-style-type: none"> • Combination of floodwalls, levees, and 18 closure structures and infrastructure improvements (installation of a below-grade flood protection structure); • Raising the East River Park 8-9 feet above the floodplain; • Reconstructing the Tennis House, Track and Field House, and the East 10th Street comfort station; • Reconstructing most of the East River Esplanade within East River Park; • Construction of a shared-use flyover bridge to address the pinch point near the Con Edison East River Dock between East 13th Street and East 15th Street; • Reconstructing Corlears Hook Bridge over the FDR Drive, and replacing the Delancey and East 10th Street bridges; • Construction of a new park-side East Houston Street landing; • Relocating the 2 existing embayments for recreational programming; • Reconstruction of the amphitheater; • Reconstruction of all water and sewer infrastructure in the park to include drainage isolation and management;

	<ul style="list-style-type: none"> Proposed landscape design includes over 50 different species of trees that are more resistant to salt spray exposure; Construction of new ballfields, active recreational space, grading, and landscaping at Murphy Brothers Playground; Time for construction is 3.5 years to be completed in 2023. The pre-fabricated bridge span would be installed and completed in 2025; Approximately 775,000 cubic yards of fill is estimated to be required for the construction at an average of 3 barge trips per day throughout the 3.5 year construction period; 1,815 trees are proposed to be planted (a net increase of 745 trees); and Requires ULURP applications for land acquisitions and a zoning text amendment.
<p>Design Alternative 5</p>	<p><u>“Flood Protection System East of FDR Drive”:</u></p> <ul style="list-style-type: none"> Flood protection alignment is similar to the Preferred Alternative, except in Project Area Two between East 13th Street and Avenue C; Raise the northbound lanes of the FDR Drive by approximately six feet to meet the design flood elevation and connect to closure structures at the south end of Stuyvesant Cove Park; Flood protection along the FDR Drive would focus on tree planting and urban forest enhancements, including the Lower East Side greening program which would plant up to 1,000 trees in parks and streets and create up to 40 bioswales beginning in fall 2019; and Would require ULURP applications for land acquisitions and a zoning text amendment similar to the Preferred Alternative.

A.2 FEIS: Environmental Impacts of Alternative 4 Project Design

The environmental impacts of the Preferred Alternative and Alternative 3 summarized below are provided by the ESCR FEIS. These include the long-term and short-term (due to construction) environmental impacts on: open space, urban design and visual resources, natural resources, hazardous materials, water and sewer infrastructure. They also include environmental impacts caused by the construction of the project on: transportation, air quality, noise and vibration, and public health.

Open Space: According to the FEIS, the Preferred Alternative would not result in significant adverse effects to existing or planned open spaces within the study area. The design would not alter the amount of open space or introduce new worker and residential populations to the study area. The Preferred Alternative would alleviate shared-use path congestion at the Con Edison East River Dock pinch point. A total of 991 trees would be removed but new trees would be planted.

Urban Design and Visual Resources: It is not expected that the floodwalls and closure structures installed under the Preferred Alternative would have adverse urban design effects because the structures would be installed in locations where there are existing fences and walls. While a majority of the East River Park will be raised and reconstructed, the park will be landscaped. There will be temporary adverse effects with the removal of 991 existing trees in the park; however, new trees will be planted. Similarly, 48 trees will be removed from Stuyvesant Cove Park, but new trees will be planted. The shared-use flyover bridge at the Con Edison East River Dock pinch point would

elevate pedestrians and bicyclists, making foot and bicycle transportation safer and more convenient. The raising of the East River Park could potentially block existing views of the East River on Grand Street, East 6th Street, East 10th Street, and from within Bernard Baruch, Lillian Wald, and Jacob Riis Houses. The new flyover bridge would not block any views to the waterfront from the study area as no view corridors to the waterfront exist between East 13th and East 18th Streets.

Natural Resources: A total of 991 trees would be temporarily removed, of which 819 are located within East River Park. There would be a net increase of 745 total trees within the project area. These trees would mature over time. The installation of structural supports for the flyover bridge and relocation of the embayments would result in adverse effects to 29,825 square feet of New York State Department of Environmental Conservation (NYSDEC) unvegetated littoral zone tidal wetlands and U.S. Army Corps of Engineers (USACE) Waters of the United States within the east River. These adverse effects include the potential to affect essential fish habitat (EFH) and organisms that may provide a foraging habitat for certain fish protected under the Fish and Wildlife Coordination Act (FWCA). However, for species that are not considered rare, the EFH constitutes a very small portion of available EFH within the New York harbor estuary waters (<0.1%). The design intends to incorporate new elements for the embayments or create additional habitat through the purchase of wetland mitigation credits or off-site tidal wetland habitat that could introduce shellfish and other aquatic life along East River Park.

Hazardous Materials: The Preferred Alternative would have the potential to disturb hazardous materials in existing structures and in the subsurface during demolition and excavation activities. The plan would require the implementation of site management plans (SMPs) that address long-term management of residual hazardous materials and reduce pathways for exposure. With mitigation measures, this design would not cause significant adverse effects related to hazardous materials. Additional soil and groundwater testing must be implemented for review and approval.

Water and Sewer Infrastructure: Design Alternative 4 would be modified to isolate the drainage protected area from the larger sewershed during design storm events, increase its capacity to convey wet-weather flows, and reconstruct and reconfigure the park's underground sewer and water infrastructure. There would be no significant adverse effects to sewer infrastructure in this design iteration.

Construction – Open Space: There is a potential for temporary adverse effects under the Preferred Alternative as a result of the displacement of recreational facilities and open-space amenities in the East River Park for the 3.5-year construction period. The proposed design would reduce open-space ratios by a minimum of 46% in 2023 and a maximum of 51% percent in 2020. The total open-space ratios during construction would be under the City's planning goal of 2.5 acres of combined active and passive open-space ratio per 1,000 residents and would also be lower under the citywide median of 1.5 acres per 1,000 residents.

Construction – Urban Design and Visual Resources: The closed and fenced East River Park would have temporary adverse visual effects for pedestrians during the 3.5 years of construction. Views of the East River would also be temporary blocked.

Construction – Natural Resources: Construction of the Preferred Alternative includes the following in-water elements: the use of construction barges, the installation of shafts to support the shared-use flyover bridge, the reconstruction of the underground sewer system, demolition of the existing bulkhead, demolition of existing embayments, piles, and formwork. Construction has the potential to temporarily effect littoral zone tidal wetlands and USACE Waters of the United States, surface water resources, benthic resources, fish habitats, and threatened and endangered species. NOAA NMFS identified two endangered species, the shortnose sturgeon and Atlantic sturgeon. In addition, there may be temporary adverse effects to terrestrial resources due to the removal of trees. Within a half-mile radius of the project area, there are a total of 183 acres of tree canopy cover, of which 5.6 acres is made up of community gardens that can host diverse plant life and be a suitable habitat for insects. Therefore, no significant adverse effects to terrestrial resources are anticipated.

Construction – Hazardous Materials: The Preferred Alternative has the potential to disturb subsurface hazardous materials in existing structures and the subsurface during demolition and excavation activities. However, with proper mitigation, the potential for significant adverse effects related to hazardous materials would be avoided.

Construction – Water and Sewer Infrastructure: No disruption to existing water or sewer services are anticipated; no adverse impacts to water or sewer infrastructure would occur. Work would be performed according to DEP- and DDC-approved methods and standards.

Construction – Transportation:

Traffic

Construction of the Preferred Alternative would generate 251 passenger-car equivalents (PCEs) during the 6:00 to 7:00 a.m. peak hour and 131 PCEs during the 3:00 to 4:00 p.m. peak hour, exceeding the *CEQR Technical Manual* analysis threshold of 50 vehicle trips. The barging of materials would reduce the volume of truck trips.

Parking

A survey of the ¼-mile radius of the project area showed 70 on-street parking spaces and 60 off-street spaces available near Project Area One and 30 on-street parking spaces and 800 off-street parking spaces available near Project Area Two. Construction under the Preferred Alternative is anticipated to generate a maximum parking demand of 92 spaces for Project Area One and 52 spaces for Project Area Two. Fifty off-street parking spaces could be temporarily displaced during construction at the East River Housing Corporation surface parking lot. Project Area One may have a parking shortfall of up to approximately 35 spaces and would require on-street parking or off-street parking beyond the ¼-mile radius of the study. However, due to the availability of alternative modes of transportation, construction of the Preferred Alternative would not result in any significant adverse parking effects.

Transit

Construction of the Preferred Alternative would generate 144 transit trips during the peak hour of the construction period, below the *CEQR Technical Manual* analysis threshold of 200 transit trips. Therefore, there would be no significant adverse transit effects.

Pedestrians

Construction of the Preferred Alternative would generate 200 pedestrian trips for Project Area One and 112 pedestrian trips for Project Area Two. This design would require the rerouting of the bikeway/walkway along the proposed project area to inland routes which would result in temporary significant adverse effects for users of the East River bikeway/walkway and would require the development and implementation of a rerouting plan.

Construction – Air Quality: With implementation of emission-reduction measures, including dust suppression, idling restriction, and the use of ultra-low sulfur diesel fuel and tailpipe reduction technologies, the Preferred Alternative would not result in any predicted concentrations above the national ambient air quality standards for nitrogen dioxide, carbon monoxide, and particulate matter from non-road and on-road sources.

Construction – Noise and Vibration: Construction of the Preferred Alternative is predicted to result in significant adverse noise effects at 29 addresses listed in the FEIS. Construction noise effects would be up to the mid-80s dBA during daytime and up to the mid-70s dBA during night-time construction. Buildings or units listed in the FEIS that do not have an alternate means of closed-window ventilation (e.g. air conditioning) may experience interior values up to the high-60s dBA, which is approximately 23 dBA higher than the 45 dBA threshold recommend for residential use according to CEQR noise exposure guidelines.

The construction of the Preferred Alternative would occur over a shorter duration (3.5 years) than the other design alternatives and would have lower maximum construction noise levels as pile driving would occur further from the residences.

Pile drivers have the potential to produce vibration levels that exceed the 65 VdB limit, occurring for limited periods of time. Vibration monitoring would be required for all historic structures within 90 feet of the project work area according to the project's construction protection plan (CPP).

Construction – Public Health: The Preferred Alternative would not result in unmitigated significant adverse effects in air quality, water quality, or hazardous materials, but could potentially result in significant adverse effects in construction-period noise effects. However, the construction of the Preferred Alternative would not result in significant adverse public health effects and would not have temporary significant adverse effects that would disproportionately affect children.

A.3 FEIS: Environmental Impacts of Alternative 3 Project Design

Open Space: According to the FEIS, there would be no significant adverse effects on existing or planned open spaces within the study area. Each alternative would slightly alter the ratio of active to passive recreation space.

Urban Design and Visual Resources: It is not expected that new infrastructure would have a significant adverse urban design effect to the project area. Under this alternative, there will be a temporary removal of 590 trees. There would be reduced visual connectivity between the waterfront and adjacent, upland neighborhoods, with potentially significant adverse effects from blocked views of the East River on Cherry and Grand Streets, East 6th, East 10th Street view

corridors, Bernard Baruch, Lillian Wald, and Jacob Riis Houses, and blocked waterfront views from portions of the FDR Drive.

Natural Resources: Alternative 3 would require the temporary removal of trees but would result in a net increase of 325 trees; however, it would leave 563 trees susceptible to future storm events. Similar to the Preferred Alternative, the footings for the flyover bridge have the potential to disturb unvegetated littoral zone tidal wetlands that are foraging habitat for fish.

Hazardous Materials: Similar to the Preferred Alternative, there is the potential to disturb hazardous materials in existing structures and subsurface during demolition and excavation activities. However, with mitigation measures, this design would not trigger significant adverse effects related to hazardous materials; additional soil and groundwater testing must be implemented for review and approval.

Water and Sewer Infrastructure: Design Alternative 3 would include the same modifications to the sewer system that would isolate the drainage-protected area as in Alternative 4. However, there would be no reconstruction of the drainage infrastructure within East River Park and would therefore require more floodproofing of existing sewer infrastructure. There would be no adverse effects to sewer infrastructure.

Construction – Open Space: Similar to the Preferred Alternative, there would be reduction of open space during construction. However, the longer construction period of 5 years leads to the conclusion that the significant adverse direct and indirect open-space effects under Design Alternative 3 would be greater than the Preferred Alternative (with a duration of 3.5 years). The open-space ratios would be reduced by a minimum of 46% in 2025 and a maximum of 50% in 2022.

Construction – Urban Design and Visual Resources: The closed and fenced East River Park during the 5 years of construction would have temporary adverse visual effects on the pedestrian experience over a longer timeframe than the Preferred Alternative. Views of the East River would also be temporarily blocked.

Construction – Natural Resources: Design Alternative 3 does not propose the reconstruction of sewage infrastructure or the removal of the existing bulkhead, and tree removals would be reduced compared to the Preferred Alternative. Therefore, no significant adverse effects to natural resources are anticipated.

Construction – Hazardous Materials: Design Alternative 3 has the potential to disturb subsurface hazardous materials in existing structures and the subsurface during demolition and excavation activities. However, with proper mitigation, the potential for significant adverse effects related to hazardous materials would be avoided. Potential effects would be less than the Preferred Alternative.

Construction – Water and Sewer Infrastructure: No disruption to existing water or sewer services are anticipated; no adverse impacts to water or sewer infrastructure would occur.

Construction – Transportation:

Traffic

Construction of Design Alternative 3 would generate 153 PCEs during the 6:00 to 7:00 a.m. peak hour and 85 PCEs during the 3:00 to 4:00 p.m. peak hour, exceeding the *CEQR Technical Manual* analysis threshold of 50 vehicle trips.

Parking

A survey of the ¼-mile radius of the project area showed 70 on-street parking spaces and 60 off-street spaces available near Project Area One and 30 on-street parking spaces and 800 off-street parking spaces available near Project Two. Construction under Alternative 3 is anticipated to generate a maximum parking demand of 55 spaces for Project Area One and 31 spaces for Project Area Two. Alternative 3 would therefore not result in any significant adverse parking effects.

Transit

Construction of Alternative 3 would generate 86 transit trips during the peak hour of the construction period, below the *CEQR Technical Manual* analysis threshold of 200 transit trips. Therefore, there would be no significant adverse transit effects.

Pedestrians

Construction of Alternative 3 would generate 188 pedestrian trips for Project Area One and 112 pedestrian trips for Project Area Two. This design would require the rerouting of the bikeway/walkway along the proposed project area to inland routes which would result in temporary significant adverse effects for users of the East River bikeway/walkway and would require the development and implementation of a rerouting plan for the full 5 years of construction.

Construction – Air Quality: Alternative 3 would have similar air quality effects as identified under the Preferred Alternative. With implementation of emission-reduction measures, including dust suppression, idling restriction, and the use of ultra-low sulfur diesel fuel and tailpipe reduction technologies, the Preferred Alternative would not result in any predicted concentrations above the national ambient air quality standards for nitrogen dioxide, carbon monoxide, and particulate matter from non-road and on-road sources.

Construction – Noise and Vibration: Construction of Alternative 3 is predicted to result in significant adverse noise effects at 20 addresses listed in the FEIS. Construction noise effects would be up to the mid-80s dBA during daytime and up to the mid-70s dBA during night-time construction. The buildings listed in the FEIS already have insulated glass windows and an alternative means of ventilation, and would experience values less than 45 dBA during much of the construction period, which would be considered acceptable under CEQR criteria.

Pile drivers have the potential to produce vibration levels that exceed the 65 VdB limit, occurring for limited periods of time. Vibration monitoring would be required for all historic structures within 90 feet of the project work area according to the project's construction protection plan.

Construction – Public Health: Alternative 3 would not result in unmitigated significant adverse effects in air quality, water quality, or hazardous materials, but could potentially result in significant adverse effects in construction-period noise effects. However, the construction of Alternative 3

would not result in significant adverse public health effects and would not have temporary significant adverse effects that would disproportionately affect children.

A.4 ULURP Approval Resolutions from Manhattan CB3, CB6 and Borough

Manhattan Community Board 3 – Manhattan Community Board 3 voted to approve the ULURP applications for the ESCR project with modifications. The community board voted to approve although they acknowledged that the October 2018 redesigned Preferred Alternative generated profound mistrust within the community due to the perceived lack of community input. The Community Board further cites many aspects of the DEIS that raise concerns, or which are not adequately addressed. The source of the Community Board’s approval is derived from two main sources: an understanding that the ESCR project will provide “desperately needed protection of...lives and homes, (and often both)”, and multiple new design elements that will require stronger regulatory oversight.

The Community Board addressed at length several of the main reasons why many in the community oppose or do not trust the Preferred Alternative. From 2015 until October 2018, the City “regularly engaged the Community Board on design proposals for the ESCR” and during this time the City sought significant community input, resulting in a preference within many in the community for “the previous design iteration because it utilized a method of resiliency well-established in modern environmental thinking”. According to the Community Board, the “process since Fall 2018 has frayed trust in government and public agencies because of the drastic change in plan design done without community consultation”.

Additionally, the Community Board resolution often refers to inadequately addressed concerns raised by the Preferred Alternative. The resolution cites the lack of a “study by outside experts of the feasibility of all approaches that have been discussed”, the lack of “consensus among the NYC Administration, City Council and State Legislature on whether the Preferred Alternative triggers...alienation”, and additionally “has not had outside review by scientists, a blue-ribbon-type panel nor an assessment process envision”. Furthermore, the Community Board notes that the Preferred Alternative has “the potential for significant adverse impacts in the immediate area and on the residents of the surrounding neighborhood as well as on the environment”, may “generate significant pollutants as the park is raised, rebuilt and filled with imported soil” and may “require moving...habitats that are able to be ‘moved’ in certain seasons”. The resolution continues, noting that “[Department of Parks and Recreation] has also promised a number of improvement to local parks...which...do not provide full compensation for the tremendous loss of open space”, and notes with concern that additional parkland mitigation is “described [in the DEIS] as being ‘explored,’ ‘investigated,’ or ‘assessed,’ [making it] clear that concrete plans for many of these impacts have not been fully identified and committed to.”

The Community Board is aware of instances where the Preferred Alternative may have less of a negative impact on the community than Alternative 3. The Preferred Alternative aims to have “pile driving related to floodwall construction...further away from residential units” and limits “construction traffic on the residential side of the park and minimizing the drainage repair work that would have to be done on active roadways”. Additionally, the “water-based construction” of the

Preferred Alternative “greatly increases the degree of scrutiny the project will be subject to” from three different government bodies.

The Community Board listed mitigations enumerated by the City that require additional clarification and explanation and listed additional mitigations the City must include in the ESCR project. The mitigations requiring clarification include: alternative passive and active open-space resources, phased reopening of sections of East River Park, potential work delays following on recommendations resulting from a yet-to-be-completed NOAA Essential Fish Habitat assessment, the locations and funding for proposed alternative recreational opportunities, specifications for proposed bicycle infrastructure upgrades, updates to the proposed planting of 1,000 street trees and installation of up to 40 bioswales, disclosure of all parks and fields where lighting improvements are planned, identification of all parks and playgrounds under consideration for improvement, guarantees on usage of quieter construction methods and equipment, and requirements on the use of biodiesel fuel, volume of recycled steel and aluminum generated onsite, and construction waste diversion by contractors.

Additional mitigations the Community Board required of the City include:

- explore temporary and immediate mitigation measures for destructive storms that occur during the ESCR project;
- add protection for surge and sea level rise for 2100;
- provide a more comprehensive and robust explanation of the schedule advantages of the Preferred Alternative over Alternative 3;
- establish a 3-5 member independent environmental analysis panel to review the DEIS;
- identify reasonable interim measures to mitigate impacts upon the community during construction;
- give a commitment to seek Envision certification;
- develop temporary measures for immediate storm protection;
- include social resiliency and community preparedness in its planning and funding;
- agree to hold regular updates with affected Community Boards and the community at large;
- establish a Community Advisory Group;
- provide alternative safe routes for pedestrian and cyclist use;
- minimize construction dust;
- consider topsoil and salt-resistant indigenous plants in the re-established natural passive areas of the ESCR project;
- provide a finalized design and timeline for completion of the flyover bridge;
- ADA compliant access into and within the East River Park;
- prioritize permits for local youth groups during and after construction;
- consider sports facilities as an alternative recreation site;
- consider yet-unidentified open spaces within CD3 for alternative park space;
- identify and protect biodiversity;
- immediately create bioswales, tree canopy plantings, and permeable pavers;
- use mature trees for replacements;
- provide temporary space for the LES Ecology Center;
- provide temporary water parks;
- continue to work with the Amphitheater Task Force;
- continue discussions with Gouverneur Gardens in good faith;
- commit to giving regular updates to the Community Board;

- commit definitively to phased construction and reopening;
- assist local residents in accessing alternative parkland; and
- establish a protocol allowing City agencies oversight regarding contractors.

With these mitigations enumerated, Community Board 3 approved of the ULURP applications.

Manhattan Community Board 6 – At the June 12, 2019 full board meeting of Manhattan Community Board 6, the board adopted a resolution that recognized the impact of Superstorm Sandy, which “caused widespread damage...disrupting service to critical transportation, power, communications and medical infrastructure” and noted that “the City of New York” had been “awarded \$335 million to evaluate and develop an integrated coastal protection for the 2.2 mile stretch from Montgomery Street to East 25th Street along the East River, which correspond to the 100 year floodplain boundaries through the East Side Coastal Resiliency Project (ESCR). Although CB6 “commend[ed] the Department of Design and Construction (DDC) for developing flood-mitigation designs that seem largely capable of addressing the problem,” it also noted that CB6 “has the lowest amount of open space per capita of any community district in the City of New York, and of that open space a large portion – including Stuyvesant Cove Park, Murphy’s Brother Playground, and Asser Levy Park – will be affected and closed by construction lasting between two and five years.”

In laying out the positive and negative anticipated impacts of the project, CB 6 stated that “DDC improvements slated for the Greenway...now include a flyover bridge to address the perennially dangerous conditions at the Consolidated Edison (ConED) plant’s waterfront ‘pinch point’ between East 15th and East 13th Streets,” while expressing that “the reluctance of DDC to close any portion of the FDR Drive for any significant length of time” required the “preliminary construction staging plans” to include “total closure to Stuyvesant Cove Park during construction of the surge barriers and the flyover bridge.” CB 6 was also concerned by “DDC plans to bisect Asser Levy Park with a flood-control wall and sliding gate, protecting the landmarked bath house, but leaving the playing fields unprotected and East 25th Street susceptible to tidal surging and flooding.” In short, CB 6 found the ESCR to be necessary, but inadequate with respect to both construction staging and its delivery of flood protection.

CB 6 laid out several additional “serious concerns...that should be fully addressed during the ongoing Uniform Land Use Review Procedure process.” These concerns included a request for “a detailed plan for noise and dust mitigation all along the construction area,” a “presentation of an operational plan for ambulance access to the First Avenue ‘hospital row’ corridor when barriers are deployed and water runs around the protected Asser Levy Bathhouse and west along East 25th Street and floods First Avenue as it did in 2012; A DOT plan addressing the recently narrowed lanes of traffic on East 20th Street that allows for passage along East 20th Street during the construction of the interceptor gate house;” and “a comprehensive plan on emergent and non-emergent access to Waterside Plaza and adjacent schools when ESCR barriers are fully deployed.” To address access issues regarding open space and the waterfront, CB 6 called for “a phased construction timeline for the good of all waterfront users” and “additional mitigation strategies” such as “providing...amenities at existing locations,” including “Waterside Pier...the parking area under the FDR from East 18th Street to East 23rd Street,” and “possible use of temporary barges.” CB 6 also urged “that a feasibility study” regarding “‘decking’ portions of the FDR” to create new open space “be included in the design review to better inform possible future

projects,” that Captain Patrick J. Brown walk be widened “for expanded capacity,” that a comfort station be built at Murphy’s Brothers’ Playground, that the flyover bridge be constructed during the ESCR project, that a crosswalk be added to the “intersection of Avenue C and the north side of FDR Drive Exit 7...and that the exit ramp be modified to provide a legal left turn onto Avenue C at the East 18th Street traffic signal.” CB 6 requested “that the ESCR Project team...provide supporting data on the cost-benefit analysis...for the proposed Project Area 2 construction plan,” that the East River Park Fire Boat House be preserved, that funding...be put aside to rebuild Stuyvesant Cove Park,” and that the “East 20th Street bike lane” be reconfigured “to facilitate faster construction of the interceptor gate house.”

At the April 11, 2018 Full Board meeting of Manhattan Community Board 6, the Board adopted a resolution opposing “the northern tie-back” of the flood wall at “the de-mapped East 24th Street” and proposing “the tie-back’s placement along East 25th Street, which would allow for the Asser Levy Playground and the Asser Levy Recreation Center to be protected by the same flood wall.” CB 6 noted that “the East 25th Street position would...enhance overall safety by improving visibility into the playground, allow for the rarely used sidewalk that abuts the playground to be removed and repurposed as additional park space,” and eliminate “the danger of vehicles that are exiting the FDR Highway at high speed from possibly striking pedestrians.” CB 6 stated that “the ESCR design team indicated that such a modification may result in additional complexity and cost to the project but was unable to tangibly indicate the impact in a way that could be duly considered against the safety and quality of life concerns raised.” Consequently, CB 6 “oppose[d] the...East Side Coastal Resiliency proposal for Project Area 2...unless modifications” were “made such that the entire Asser Levy envelope” was “one contiguous space.”

Manhattan Borough Board – On July 23, 2019, the Manhattan Borough Board voted to adopt a resolution regarding “ULURP applications #C190357PQM and N190356ZRM,” which had been “referred to the Manhattan Borough Board for review” on June 26, 2019. The “two ULURP approvals” that “The New York City Departments of Transportation (DOT), Citywide Administrative Services (DCAS), Environmental Protection (DEP), and Small Business Services (SBS) are seeking” include “(1) the acquisition of real property and (2) a text amendment to the New York City Zoning Resolution (“ZR”) § 62-50 ‘General Requirements for Visual Corridors and Waterfront Public Access Areas’ and § 62-60 ‘Design Requirements for Waterfront Public Access Areas’ to facilitate the East Side Coastal Resiliency (ESCR) Project (the ‘Proposed Project’).”

The resolution noted that “since January 5, 2015, the City has regularly engaged CB3 and CB6 on design proposals for the ESCR project,” but that both “CB3’s Full Board voted to not support the ESCR project design that emerged from this process without revisions” and “CB6’s Full Board voted to not support the ESCR project design that emerged from this process without revisions” on March 27, 2018, and April 11, 2018, respectively. The resolution then states that “in October 2018, the City unveiled a significantly redesigned proposal for the ESCR project, identified in the DEIS as ‘Alternative 4’ or the ‘Preferred Alternative’” and that “according to the City, a major reason for abandoning the original plan was that the Preferred Alternative 4’s construction would not have to be staged, thus reducing the construction schedule from five to three and a half years.” This “Preferred Alternative” is comprised of several new components that were not in the “previous design iteration.” First, “the majority of East River Park” would be elevated “8-9 feet above its current elevation” and the “flood protection systems” would be installed “below grade.” Second, the

“overpass bridge at Corlears Hook Park” would be rebuilt and “a flyover bridge” would be built “at the Consolidated Edison (ConEd) plant’s waterfront ‘pinch point’ between East 15th and East 13th Streets.” Third, the East River Esplanade, the bulkhead, and the comfort stations would be recreated. Fourth, the 10th Street Playground would be reconstructed and enlarged and the East River Park amphitheater would be rebuilt. Fourth, “the basketball courts...that were lost in the previous design” were re-added, a “nature play area” would be constructed in the vicinity of Delancey Street, and new barbecue pits would be installed “at the south end of East River Park.” Fifth, “1,442 new trees” would be planted to more than offset the “981 trees” that would be eliminated in construction.

Sixth, in Project Area 1, located between Montgomery and 14th Streets, the floodwall would be constructed within East River Park, in closer proximity to the East River with pile driving taking place “further away from residential units than in the previous design iteration.” Likewise, “the line of flood protection” would be relocated “from the west side of East River Park, abutting the FDR Drive, further east toward the East River, located wholly within East River Park, in order to adhere to the City’s primary objective to protect...the residential neighborhood, people, and the park itself to avoid having to repair the new park after flooding and storm events, as well as to account for the likelihood of increased tidal inundation from anticipated sea level rise.” Seventh, since the Preferred alternative would make use of “water-side construction” and barges for delivery of construction materials, “construction traffic on the residential side of the park” would be substantially reduced. Moreover, because “drainage and sewer construction” would “occur largely within East River Park...drainage repair work that would have to be done on active roadways” would be reduced.

After highlighting these major differences between the alternatives, the resolution emphasizes that “many members of the community stated a preference for the previous design iteration with additional revisions, because it utilized a system of floodwalls and berms (where feasible) as defenses to protect neighborhoods.” The resolution then references that “for many in the community, the ESCR process since Fall 2018 has frayed trust in government and public agencies because of the drastic change in plan design done without community consultation.” The resolution further states that “many members of the community have also requested a study by outside, independent experts of the feasibility of all the alternatives that have been proposed, including the ‘preferred alternative’ as well as recommendations to ensure that construction does not negatively impact the residents of NYCHA and the environment while meeting the federal spending deadline.” Furthermore, the resolution notes that “there has not been consensus among the City, City Council, and State Legislature on whether the Preferred Alternative triggers the necessity of the public trust doctrine on dedicated parkland approval via alienation for this preferred park plan...” and that “habitats for wildlife will be lost during the duration of the closure and may now have to be moved in certain seasons, thereby affecting the homes and migration patterns for wildlife.”

The resolution continues with a litany of items, including “concerns around preliminary construction staging plans,” how construction of the “Preferred Alternative” will exacerbate the lack of open space, how Asser Levy Park will be “susceptible to tidal surging and flooding,” how “existing waterfront views from certain upland locations would be blocked,” how “contaminants could be disturbed during excavation,” how “noise and air pollutant emissions by the construction site could affect open space and public health, and how “CB 3 and CB 6 residents...youth sports groups, and all other sports groups” will be adversely affected. In light of these concerns, the resolution calls upon the City to “work with concerned community organizations to identify a mutually agreed upon

independent non-City based environmental consultant to expeditiously review and evaluate the alternatives in the DEIS and describe reasonable interim measures that could be taken to minimize any adverse impacts on the community until the project is implemented.” The resolution also urges “the City to make a definitive commitment to a phased timetable of construction within the East River Park, as well as completion of Asser Levy Playground, the Murphy Brothers Playground, and Stuyvesant Cove Park, in a manner that does not impact the overall timeline for project completion with necessary permit applications.” In addition, the resolution states that “this phased timetable shall be disclosed and the final plan decided on through engagement consultation with the community, CB3 and CB6.”

The Board then resolves that the City must commit to the following: work with the community to secure an independent non-City based environmental consultant to evaluate the alternatives in the DEIS, make a definitive commitment to a phased timetable of construction for East River Park and to complete the other park sections in a way that does not impact the project timeline, commit to and release a bike and pedestrian re-routing for East 20th St, First and Second Avenue, and provide temporary space for the LES Ecology Center and a sustainable, resilient building in East River Park (6-7).

The Board then lists the following additional mitigations that must be included in ESCR: identify recreational resources for the community during construction, inform and consult the community about likely effects of season work restrictions and approval timeline of permits, release further impact construction studies upon marine ecology and wildlife, disclose and discuss location and funding for alternative recreational opportunities, identify which parks and playground improvements are new and not already in the capital projects pipeline, improve activation of Waterside Pier and explore the creation of temporary spaces, provided local residents with access to other open areas, commit to prioritizing permits for local youth groups during and after construction, work with local community organizations to spearhead a Lower East Side Greening program and planting program, evaluate the impact of new lighting at neighborhood parks, explore beginning the flyover bridge construction contemporaneously, guarantee that quieter construction methods and equipment be made available for the construction period, require in bids and/or RPFs the use of biodiesel fuel, require targets be met for volume of recycled steel and aluminum, meet Envision sustainability requirements, and commit contractors to divert construction waste, present comprehensive plan on access to Waterside Plaza when ESCR barriers are closed, conduct additional traffic studies regarding expansion of NYC Summer Streets, specify where bicycling infrastructure upgrades will be located and consider additional solutions, develop alternative routes deemed safe for all, comprehensively redesign the East 20th St bike lane, provide a legal left turn onto Avenue C at the East 8th St traffic signal, develop a plan addressing recently narrowed traffic lanes on East 20th St, design the East 20th St interceptor gate with contextually appropriate materials, install a comfort station at Murphy Brothers’ Playground, ensure that all art pieces in the project area will not be demolished and will be included as permanent installations in ESCR’s new landscaping, incorporate public art installations and signage with multiple language translations, provide a comprehensive and robust explanation of the schedule advantages of the Preferred Alternative, minimize dust and noise during construction, consider topsoil and salt resistant indigenous plants, ensure ADA compliant access to and within the park, identify and protect biodiversity, make available temporary water parks, continue to work with the Amphitheater Task Force, provide timely updates to CB3 and continue discussions with Gouverneur Gardens, inform individual residents whose views to the waterfront would be blocked, include social resiliency and

community preparedness programming and funding, create a construction hotline and operate 24/7, agree to issue social media updates and regular updates with CB3 and CB6, establish a Community Advisory Group, establish a protocol before work begins to allow City agency oversight over decision making for contractors (7-11).

The Borough Board concluded with an approval with conditions of the ULURP applications.

Appendix B | List of Interviewees

Stakeholders

- East River Alliance - Amy Berkov, April Merlin, Dianne Lake, Fannie Ip, Harriet Hirshorn, Jasmin Sanchez, Naomi Schiller
- East Village Community Coalition (EVCC), LESPI and Olympia Kazi
- East River Park Action - Pat Arnow, Tommy Loeb
- GOLES, Inc. - Damaris Reyes, Executive Director
- Grand Street Guild - Mark Benoit
- Gouverneur Gardens Co-Op Board - Samuel Moskowitz and Rockwell Chan
- LES Ready! - Ayo Harrington
- Lower East Side Ecology Center - Christine Datz-Romero, Renee Crowley, Dani Simons
- NYCHA – CB3 - Felicia Cruickshank/LaGuardia, Dereese Huff/Campos Plaza I, Mercedes Harell/Riis I & Riis II, Camille Napoleon/Baruch Houses
- NYCHA Vladeck Houses Tenant Association - Nancy Ortiz
- NY Giants Youth Baseball - Oscar Fernandez and Danny Ramirez
- Rebuild by Design - Amy Chester
- Smith Houses Tenant Association - Aixa Torres
- Strauss Houses and 344 East 28th Street - Maria Trinidad, Daliah Farrar, Elsie Otero, and Miriam Martinez
- Stuytown Peter Cooper Village Tenant Association - Susan Steinberg
- Sports Teams - Mike Barbieri and Tim Cavanagh
- Transportation Alternatives (TA) - Ellen McDermott
- Village East - Daniel Meyers (Vice President of the Village East Housing Board); Joan Reinuth (resident Stuyvesant Cove Park); Ms Judith (JK) Canipa

Elected Officials and Community Board Representatives

- Council Member Carlina Rivera
- Council Member Keith Powers
- Council Member Margaret Chin's office: Gigi Li (Chief of Staff) and Anthony Drummond (Director of land use)
- Community Board 3 - Michael Marino, Trever Holland, Yaron Altman, Nancy Ortiz
- Community Board 6
- Congresswoman Nydia Velazquez's Office: Dan Wiley, District director Southwest Brooklyn
- Congresswoman Carolyn Maloney's Office: Mr Shelby Garner
- State Senator Brian Kavanagh
- State Senator Brad Hoylman
- State Assembly Member Harvey Epstein

Appendix C | City representatives attending ESCR Meeting

RE: Hans Gehrels Meeting with City Agencies

Location:

Office of Manhattan Borough President Gale A. Brewer
1 Centre Street, 19th Floor South
New York, NY 10007

Date of Event: 9/13/2019 @ 1200 hrs

In Attendance:

MBPO:

- Borough President Gale Brewer
- Director of Community Affairs Rosie Mendez
- Deputy Borough President Matthew Washington
- Urban Planner Stephanie Chan
- Urban Planner Tara Duvivier
- Community Liaison Brian Lafferty
- Community Liaison Brian Lewis

Mayor's Office

- Community Affairs Unit – Gabrielle Dann-Allel
- Intergovernmental Affairs – Joe Taranto
- Office of Recovery and Resiliency – Carrie Grassi
- Office of the Deputy Mayor for Operations – Minelly De Coo

Department of Design and Construction

- 1st Deputy Commissioner Jamie Torres-Springer
- How Sheen Pau
- Eric Ilijevich
- Andrew Hollweck

Department of Parks and Recreation

- Deputy Commissioner Alyssa Cobb Konon
- Alda Chan

Third Party Entities

- AKRF – Wendy Ho
- AKRF – Robert White
- One Architecture – Matthijs Bouw
- Mathews Nielsen Landscape Architects – Molly Bourne
- Jacobs – Doug Friend
- Deltares – Hans Gehrels

Appendix C
Technical Memorandum 001
East Side Coastal Resiliency
CEQR No. 15DPR013M
ULURP Nos. N190356ZRM and 190357PQM

**TECHNICAL MEMORANDUM 001
EAST SIDE COASTAL RESILIENCY
CEQR No. 15DPR013M
ULURP Nos. N190356ZRM and 190357PQM
November 12, 2019**

A. INTRODUCTION

The City of New York is proposing the East Side Coastal Resiliency Project (the proposed project), which involves the construction of a coastal flood protection system along a portion of the east side of Manhattan and related improvements to City infrastructure, to reduce coastal flooding vulnerability and risk while enhancing waterfront open spaces and access to the waterfront. On September 13, 2019, New York City Department of Parks and Recreation (NYC Parks), as Lead Agency under the State Environmental Quality Review Act (SEQRA) and City Environmental Quality Review (CEQR), together with New York City Office of Management and Budget (OMB), as Lead Agency under the National Environmental Policy Act (NEPA), issued a Final Environmental Impact Statement (FEIS) for the proposed project. In accordance with the City's Uniform Land Use Review Procedures (ULURP), the City Planning Commission (CPC) approved the proposal on September 23, 2019 and then referred the application to the City Council.

Pursuant to 24 CFR Part 58 (Environmental Review Procedures for Entities assuming the U.S. Department of Housing and Urban Development [HUD] Environmental Responsibilities), and as the recipient of Community Development Block Grant-Disaster Recovery (CDBG-DR) funds for the design and construction of the proposed project, OMB has assumed the 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. 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. The City evaluated and reviewed the proposed alternatives' conceptual design against the purpose and need and principal objectives for the project, including providing a reliable flood protection system for the protected area, improving access to and enhancing open space resources along the waterfront, and meeting HUD funding deadlines for federal spending, along with the goal to minimize potential adverse environmental effects and disruptions to the community. The Flood Protection System with a Raised East River Park Alternative best meets the principal objectives for the project and therefore was selected as the Preferred Alternative. The proposed project is subject to two land use ULURP actions, for the acquisition of real property by the City in the form of easements, and a zoning text amendment related to the City's waterfront zoning regulations. A future City map change action is also needed for the reconstruction of the two pedestrian bridges and will be prepared once final design and implementation are completed to record grade and treatment line adjustments, if needed.

A number of minor enhancements have been proposed in the design of the Preferred Alternative. This Technical Memorandum examines whether these modifications would result in any new or different significant adverse environmental impacts not already identified in the FEIS. As described in greater detail below, this Technical Memorandum concludes that the modified

Preferred Alternative would not result in any new significant adverse effects not already identified in the FEIS.

PROPOSED PROJECT AREA

As presented in the FEIS, the proposed project area is comprised of two sub areas:

- Project Area One extends from Montgomery Street on the south to the north end of East River Park at about East 13th Street. Project Area One and consists primarily of East River Park, the Franklin Delano Roosevelt East River Drive (FDR Drive) right-of-way, and a portion of Pier 42 and Corlears Hook 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 (the Corlears Hook, Delancey Street, East 6th Street, and East 10th Street Bridges) and the East Houston Street overpass.
- Project Area Two 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 Complex, Captain Patrick J. Brown Walk, Murphy Brothers Playground, Stuyvesant Cove Park, Asser Levy Recreation Center and Playground, the Veterans Affairs (VA) Medical Center, and in-street segments along East 20th Street, East 25th Street, and along and under the FDR Drive.

B. DESCRIPTION OF THE PREFERRED ALTERNATIVE MODIFICATIONS

INTRODUCTION

The modified Preferred Alternative includes a revised construction phasing plan, the reconfiguration of the Stuyvesant Cove parking lot under the elevated FDR Drive, conservative operational procedures for closure of the drainage isolation gates (i.e., the interceptor gates and regulator M-39 gate), and a number of project enhancements including flood proofing the Fireboat House and reconstructing the bulkhead and support structures beneath this section of the waterfront esplanade, reconstructing a canopy structure at the proposed East River Park amphitheater, adding a comfort station at the redesigned Murphy Brothers Playground, elevating the area south of the amphitheater, and revising the esplanade structural support design at the existing and proposed embayments.¹ These project modifications are described in further detail below in Sections D through G of this Technical Memorandum. Separate from the Preferred Alternative modifications, the Pier 42 deck is anticipated to be repaired to provide new interim recreational space (i.e., a synthetic turf field and potentially other sports fields and seating). The Pier 42 deck repair and improvements project is being led by the New York City Economic Development Corporation (EDC), is subject to its own separate review and approval process.

The modified Preferred Alternative will also include a revised zoning text amendment to modify NYC Zoning Resolution Section 62-59, “Special Regulations for Zoning Lots That Include Parks” (see **Attachment A**), consisting of minor revisions that do not change the requirements of the

¹ Since the release of the FEIS, the 2015 East Side Coastal Resiliency Project Coastal Hydraulics Report, which was referenced in the FEIS, was updated to reflect the revised alignment of the tidal flood protection system during the progression from conceptual to final design (completed October 2019). This update did not affect the analyses presented in the FEIS.

zoning text. The zoning text amendment would apply to the Stuyvesant Cove Park segment of the project area.

REVISED CONSTRUCTION PHASING PLAN

A preliminary construction schedule was developed for the EIS to determine the potential construction phasing and timing for project components under each of the project alternatives. These construction schedules served as the basis of the technical analyses presented in the EIS to identify the range of potential environmental effects anticipated during construction of the proposed project. As presented in the FEIS, construction under the Preferred Alternative would take place over a 3.5-year construction period with completion of the flood protection system and open space improvements in 2023 with the completion of the flyover bridge in 2025.

Subsequent to the FEIS, the City identified a phased construction approach in Project Area One for the Preferred Alternative where portions of East River Park would be kept open throughout the construction period to partially mitigate significant adverse construction effects on open space resources. As with the construction schedule presented in the FEIS, activities under the revised construction phasing plan would commence in March 2020 and the flood protection system would be in place by the hurricane season of 2023. Although access and open space improvements for the entire project area would not be completed until 2025 under the revised construction phasing plan, unlike the previous construction plan, a substantial part of East River Park would always be available for public use during the construction period. **Figures 1 through 6** illustrate how construction activities within East River Park would be phased over the 5-year construction period and identify the resources within East River Park that would be available to the public during that time.

Under the revised construction phasing plan, early construction package activities would be initiated with tree transplanting and creating interim recreation space in the southern section of East River Park during the spring and summer of 2020. During this period, the majority of East River Park, including all existing open space facilities, would remain open. Construction in the park would then commence in the fall of 2020 continuing through spring 2023 in approximately half of East River Park (see **Figures 1 and 2**), with closures to Ballfields No. 1 and 2, water play area, track and field complex, track house, Ballfields No. 5 and 6, and Ballfields No. 7 and 8. Access to the open portions of the park during this time would be maintained via Montgomery Street under the East River Drive (after construction activities for the Pier 42 upland project are completed in 2022), Corlears Hook Bridge², Delancey Street Bridge, East 10th Street, and the north end of East River Park. Resources within East River Park that would be closed from summer of 2023 to the fall/winter of 2025 (see **Figures 3, 4, and 5**) would include the amphitheater, multi-use turf, passive lawn and basketball/volleyball courts south of the Williamsburg Bridge, tennis courts, tennis house, dance circle, Ballfields No. 3 and 4, East 10th Street playground, East 10th Street comfort station, and the barbeque area and basketball courts in the northern end of East River Park. Access to the open portions of the park during this time would be maintained via Montgomery Street, Corlears Hook Bridge, Houston Street overpass, and East 6th Street Bridge. **Table 1**

² Corlears Hook Bridge would be temporarily closed for a portion of this construction phase for reconstruction. During this time, an interim bridge may be used to provide access to East River Park at this location.

summarizes the availability of resources within East River Park and their anticipated closures during the 5-year construction period under the revised construction phasing plan.

Unlike the previous construction plan where the entire esplanade closed for the 3.5-year construction duration, only the portions of the esplanade that are closest to the work activities would be closed during the construction period under the revised construction phasing plan (see **Figures 1 through 5**). As with the previous construction plan, direct north-south routes (i.e., East River Greenway or the esplanade) along the entirety of East River Park during construction cannot be maintained under the revised construction phasing plan. However, there would be limited pedestrian and bicyclist circulation at the portions of the park that would be open during construction. As described by the FEIS, Corlears Hook ferry service will remain in operation throughout the construction period under the revised construction phasing plan and access will continue to be maintained via Corlears Hook Bridge and/or Montgomery Street.

Subsequent to the FEIS, the City has also identified a phased construction approach in Project Area Two for the Preferred Alternative with less overlapping of activities among open space resources: construction activities at open space resources in Project Area Two would occur over an approximately 4-year period under the revised construction phasing plan compared to the approximately 3-year period identified in the previous construction plan presented in the FEIS. However, the flood protection system would still be in place by the hurricane season of 2023 under the revised construction phasing plan. **Table 2** summarizes the anticipated construction schedules for Asser Levy Playground, Stuyvesant Cove Park, and Murphy Brothers Playground presented in the FEIS and under the revised construction phasing plan. As with the FEIS, Stuyvesant Cove ferry service will be in operation throughout the construction period under the revised construction phasing plan and access will continue to be maintained.

Table 1
Availability of East River Park Resources during Construction

East River Park Resource ¹	Anticipated Start of Construction	Anticipated Re-Opening	Duration of Closure
Ballfield No. 1	Fall 2020	Summer 2023	27–30 months
Ballfield No. 2	Fall 2020	Summer 2023	27–30 months
Water Play [Existing] / Nature Exploration and Water Play [Planned]	Fall 2020	Summer 2023	27–30 months
Multi-Use Turf	Fall 2020	Summer 2023	27–30 months
Ballfield No. 5	Fall 2020	Summer 2023	27–30 months
Ballfield No. 6	Fall 2020	Summer 2023	27–30 months
Track and Field Complex	Fall 2020	Summer 2023	27–30 months
Track House	Fall 2020	Summer 2023	27–30 months
Ballfield No. 7	Fall 2020	Summer 2023	27–30 months
Ballfield No. 8 [Combined with Ballfield No.7 in future condition]	Fall 2020	Summer 2023	27–30 months
Amphitheater	Summer 2023	Fall/Winter 2025	27–30 months
Passive Lawn [Existing – south of Williamsburg Bridge] / Passive Lawn [Planned – north of Williamsburg Bridge]	Summer 2023	Fall/Winter 2025	27–30 months
Basketball/Volleyball Courts [Existing] / Basketball Courts [Planned]	Summer 2023	Fall/Winter 2025	27–30 months
Tennis Courts	Summer 2023	Fall/Winter 2025	27–30 months
Tennis House	Summer 2023	Fall/Winter 2025	27–30 months
Dance Circle [Existing; located west of Fields No. 3 and 4] / Passive Lawn [Planned; located east of Fields No. 3 and 4]	Summer 2023	Fall/Winter 2025	27–30 months
Ballfield No. 3	Summer 2023	Fall/Winter 2025	27–30 months
Ballfield No. 4	Summer 2023	Fall/Winter 2025	27–30 months
10th Street Playground	Summer 2023	Fall/Winter 2025	27–30 months
10th Street Comfort Station	Summer 2023	Fall/Winter 2025	27–30 months
Barbeque Area (North)	Summer 2023	Fall/Winter 2025	27–30 months
Basketball Courts (North)	Summer 2023	Fall/Winter 2025	27–30 months
Barbeque Area (South) [New]	NA	-	-

Note:
¹ Unlike the previous construction plan where the esplanade and the East River Greenway would be closed for the entire 3.5-year duration, the closures of the esplanade and East River Greenway would be phased under the revised construction phasing plan; for a majority of the 5-year construction period, only the portion that is closest to the active work areas would be closed to facilitate construction. (see **Figures 1 through 5**).

Table 2
Preliminary Construction Schedules
Project Area Two

Open Space Resource	Anticipated Construction Start	Anticipated Construction End	Duration of Closure
Previous Construction Plan			
Asser Levy Playground	Summer 2021	Spring 2023	18–21 months
Stuyvesant Cove Park	Summer 2020	Spring 2022	23 months
Murphy Brothers Playground	Fall 2021	Winter (4th quarter) 2022	18 months
Revised Construction Phasing Plan			
Asser Levy Playground	Summer 2020	Fall 2021	18–21 months
Stuyvesant Cove Park	Fall 2021	Summer 2023 ¹	23 months
Murphy Brothers Playground	Fall 2022	Winter (1st quarter) 2024 ¹	18 months

Note:
¹ The flood protection system would be in place by the hurricane season of 2023.

CONSTRUCTION TECHNIQUES AND PRACTICES

The construction methods under the revised construction phasing plan would be similar to those discussed in the FEIS. For example, construction activities would involve earthwork (excavation and grading); drilling shafts; installation of piles, foundations, and piers; installation, replacement, and relocation of water and sewer infrastructure; paving and pouring of concrete; fabrication and installation of steel gates; flood-proofing; and installation of park facilities. Upon completion of construction activities, site restoration and decommissioning activities would commence, including final grading, installation of erosion control or slope stabilization measures, as needed, removing barriers, seeding and planting, and replacement or reinstallation of fences and other temporarily removed obstructions. All work would be performed in accordance with applicable methods and standards approved by NYC Parks for parks in its jurisdiction and construction near street trees. Any required temporary lane and road closures would be coordinated with the New York City Department of Transportation (NYCDOT) to ensure compliance with applicable restrictions and employment of proper methods. Temporary construction access agreements at a number of properties would also be required to allow site access during construction.

As with the previous construction plan presented in the FEIS, construction activities under the revised construction phasing plan would involve the use of numerous types of equipment and vehicles. As applicable to each phase of construction, earthwork would necessitate the use of excavators, loaders, dump trucks, bulldozers, graders, and vacuum trucks. Cranes, vibratory or impact pile drivers, hydraulic press-in hammers, concrete mixers, and concrete pumps would support installation of project components. Delivery trucks would be utilized throughout the construction period to support a variety of construction activities. Barges are also expected to be used for delivery and removal of materials, and flaggers would assist with traffic control at entry and exit points and as necessary, the loading and unloading of barges. The sources of clean soil or fill materials to be used anywhere on the project site would be determined by the construction contractors, with review and approval by New York City Department of Environmental Protection (DEP) and/or New York State Department of Environmental Conservation (NYSDEC), and are dictated by a number of factors that include composition, certification of suitability of intended use, quality, availability, cost, and the proximity of the soil/clean fill provider's loading site to the project area.

New York City laws and regulations allow construction activities between 7:00 AM and 6:00 PM on weekdays. As with the previous construction plan, to account for potential weather delays and/or other possible construction delays and to meet the project construction schedule as determined by the City it is assumed that additional evening, overnight and Saturday construction would be required for project implementation under the revised construction phasing plan. All necessary work permits would be obtained for work outside of the permissible construction hours.

There is one existing vehicular access/egress location to East River Park at Montgomery Street and the FDR on-ramp. This location would serve as the access/egress point to East River Park for construction vehicles as well as emergency and NYC Parks maintenance vehicles during construction in Project Area One. As with the previous construction plan, a potential temporary construction truck access/egress point via the northbound FDR Drive off-ramp/on-ramp near East Houston Street may also be established.

All safety requirements would be followed, and construction activities under the revised construction phasing plan would be conducted with care to minimize the disruption to the community. In addition, the New York City Department of Design and Construction (DDC) is committed to safe construction sites. The contractor would be required to develop a Construction Health and Safety Plan (CHASP) prior to initiating construction. This plan would guide all

contractor activities to ensure emergency plans are in place in the event of emergency conditions, including a storm event. In the event of a storm, the contractor would be required to safely secure all construction equipment and contain any fill that is stockpiled on site using applicable Best Management Practices (BMPs), including impervious surface covers or temporary seeding for any fill that would be held on site for extended periods of time. These measures would reduce erosion or runoff potential to the community or East River in the event of a storm and would provide dust control in dry weather. Furthermore, since a portion of East River Park would always be accessible under the revised construction phasing plan, additional measures (e.g., fencing, safety signs, flaggers, etc.) would be implemented to ensure the safety of the users of East River Park during construction.

As with the FEIS, the modified Preferred Alternative would have a robust community outreach plan. A team of Community Construction Liaisons (CCLs) would be available from pre-construction through the completion of the modified Preferred Alternative to serve as contacts for the community and local leaders, and would be available to address concerns or problems that may arise during construction. The CCLs would maintain direct communication with the construction project managers and would be able to quickly troubleshoot and respond to construction-related inquiries. The CCLs would keep the communities informed during the entire construction period and send out email advisories and notifications, weekly construction bulletins, newsletters, and other forms of information through the Neighborhood Network Notification (NNN) list. The CCLs would also attend meetings held by District Service Cabinet, Community Boards, Elected Officials and other types of community meetings as necessary. Furthermore, subsequent to the release of the FEIS, the City has established a Community Advisory Group (CAG) composed of local stakeholders who will provide community input on the proposed project throughout the final design process and during construction.

RECONFIGURATION OF THE STUYVESANT COVE PARKING LOT

The Stuyvesant Cove parking lot under the elevated FDR Drive between approximately East 18th and East 23rd Streets is City owned and operated by the New York City Economic Development Corporation (EDC). This parking lot is anticipated to be used as a staging area to facilitate construction activities at the adjacent Stuyvesant Cove Park. Once construction is complete, the parking lot is proposed to be reconfigured to enhance pedestrian access to the waterfront and to accommodate the flood protection system alignment near East 23rd Street.

The parking lot reconfiguration, which is anticipated to be implemented after the reconstruction of Stuyvesant Cove Park is complete in 2023, is expected to be complete by 2025. The proposed improvements include: realigning the crosswalk at Avenue C and Avenue C Loop; relocating the south lot entrance at East 20th Street to midblock between East 18th Street and East 20th Street for the monthly parking area; creating a new pedestrian plaza at East 20th Street; and reconfiguring the north lot entrance/exit just south of East 23rd Street to accommodate expanded daily parking as well as realigning the East River Greenway to minimize traffic conflicts at this location (see **Figures 7 and 8**).

The proposed pedestrian plaza at East 20th Street would allow for improved waterfront access from East 20th Street while preserving the view corridor and improved internal vehicle circulation.

For the area south of the intersection of East 23rd Street and Avenue C, south of the BP Gas Station, the reconfiguration of the north lot entrance/exit would eliminate the potential conflict between bicyclists and pedestrians. Currently, the egress from the BP Gas Station runs parallel to Stuyvesant Cove Park for approximately 100 feet before turning underneath the elevated FDR

Drive. The proposed reconfiguration at this location would reroute the egress from the gas station to a portion underneath the elevated FDR Drive where there is currently no parking. Access would be maintained to the BP gas station during construction.

DEPLOYMENT PROCEDURES FOR DRAINAGE COMPONENTS

As stated in the FEIS, the interceptor gates and regulator M-39 isolation gate would be designed to allow for operational flexibility during design storm events to control flow from the upstream areas into the drainage protected area, from the Water and Sewer Infrastructure study area as defined in the FEIS, according to a protocol established by a pre-approved operations and maintenance plan. Subsequent to the FEIS, operational procedures for closure of the drainage isolation gates on a more conservative timeline have been discussed as an option to ensure protection of the drainage protected area from storm surge inundation through the sewer system. These timelines consider closures in advance of rainfall and/or storm surge arrival, as determined necessary by DEP and per the operations and maintenance manual.

PROJECT ENHANCEMENTS

Since the release of the FEIS, additional elements have been incorporated into the proposed project based on input from the community, elected officials, and permitting agencies. These enhancements include:

- **Flood proofing the Fireboat House and Reconstructing the Esplanade.** This includes provisions to flood proof the Fireboat House, harden key elements on the ground floor, relocate the mechanical, electrical, and plumbing (MEP) systems in the building, and reconstruct the esplanade deck, bulkhead, and support structures. Additionally, repairs to the Fireboat House to address water penetration in the hose tower would be completed as well as repainting work and leak repairs on all facades. In keeping with proposed project's goals as a model of long-term resiliency and climate-change adaptation, all improvements and systems upgrades of the Fireboat House would comply with the City's sustainable Local Laws (LL06, LL31, and LL32) as applicable to the Fireboat House component of the project. The flood proofing of the Fireboat House would be completed by the Preferred Alternative's build year of 2025.
- **Reconstructing a canopy structure at the proposed East River amphitheater.** As with the existing amphitheater, which has a canopy structure over the stage, a canopy structure would be built over the stage of the proposed East River amphitheater for the Preferred Alternative under the modified project. The reconstruction of the amphitheater would be completed by the Preferred Alternative's build year of 2025.
- **Adding a comfort station at the redesigned Murphy Brothers Playground.** A comfort station would be added at the redesigned Murphy Brothers Playground for the Preferred Alternative under the modified project. The construction of the comfort station would be completed within the construction timeline of the Murphy Brothers Playground, which is anticipated to be completed by 2024 under the revised construction phasing plan.
- **Elevating the area south of the amphitheater.** The area south of the amphitheater would be elevated for the Preferred Alternative under the modified project to make this area more resilient. This work would be completed within the construction timeline for East River Park, which is anticipated to be completed by the Preferred Alternative's build year of 2025.

- **Revising the esplanade structural support design at the existing and proposed embayments.** Subsequent to the FEIS, a new design that lessens effects on jurisdictional waters was identified for the esplanade structural supports at the existing embayments, as well as at the north and south edges of the proposed embayments that uses a pile-supported structure instead of the use of bulk fill material. This work would be completed within the construction timeline for East River Park, which is anticipated to be completed by the Preferred Alternative’s build year of 2025.

C. NEW YORK CITY’S WATERFRONT REVITALIZATION PROGRAM (WRP)

The potential effects of the revised construction phasing plan, the reconfiguration of the Stuyvesant Cove parking lot, and the deployment procedures for drainage components under the modified Preferred Alternative are discussed in Sections D through F of this Technical Memorandum, respectively. The section examines whether the modified Preferred Alternative would affect the conclusions identified in the FEIS for the applicable WRP policies.

LAND USE, ZONING, AND PUBLIC POLICY

The proposed project is located in the Coastal Zone as designated by New York State and New York City, and is therefore subject to City and State coastal management policies aimed at protecting resources in the coastal zone. As such, an analysis of the proposed project’s compliance with New York City’s Waterfront Revitalization Program (WRP) was completed on March 27, 2019 date (WRP #15-067), which concluded that the proposed project would not substantially hinder the achievement of any WRP policy. The modified Preferred Alternative as described above would not affect this conclusion and would likewise be consistent with applicable WRP policies.

D. ENVIRONMENTAL EFFECTS OF REVISED CONSTRUCTION PHASING PLAN FOR THE MODIFIED PREFERRED ALTERNATIVE

This section examines whether the revised construction phasing plan would result in any new or different significant adverse environmental impacts not already identified in the FEIS.

Since the revised construction phasing plan for the Preferred Alternative would not affect operational condition, the conclusions of the FEIS with respect to the technical areas under the operational condition would not be affected. An assessment of the technical areas under the construction condition that could be affected by the modified Preferred Alternative—socioeconomic conditions, open space, historic and cultural resources, urban design, natural resources, hazardous materials, water and sewer infrastructure, energy, transportation, air quality, greenhouse gas, noise and vibration, and public health—is provided below.

Overall, while the revised construction phasing plan for the Preferred Alternative would result in different overlapping of construction activities (completion of the flood protection system in 2023 with the completion of open space improvements and the flyover bridge in 2025) as compared to the previous construction plan presented in the FEIS (completion of the flood protection system and open space improvements in 2023 with the completion of the flyover bridge in 2025), each individual construction task under the revised construction phasing plan would be comparable to that for the Preferred Alternative. The revised construction phasing plan would have less overlap between construction activities and fewer simultaneous construction work areas, and would allow

for significant portions of the park to remain available to the public during that time. Therefore, as presented below, the temporary disruption to the surrounding community would generally be less under the revised construction phasing plan as compared to the previous construction plan presented in the FEIS.

SOCIOECONOMICS

Neither the previous construction plan presented in the FEIS nor the revised construction phasing plan would result in significant adverse effects on socioeconomics during construction. Since East River Park would not be entirely closed under the revised construction phasing plan, the operators of two pushcarts within East River Park may be accommodated within East River Park during project construction. NYC Parks will work with the tennis pro concessionaire regarding accommodation options during the time period in which the tennis courts will be under construction. The economic benefits—including construction-related jobs, wages and salaries, and the total economic output of construction—under the revised construction phasing plan would be similar to those estimated in the FEIS, although the total project cost could increase incrementally for additional temporary measures that may be required for the phased construction approach.

OPEN SPACE

This section assesses the potential for temporary significant adverse effects on publicly accessible open space resources under the revised construction phasing plan. The analysis considers the direct and indirect effects of construction using the same methodology as those used in the FEIS, taking into account the revised construction phasing plan. As discussed above, since a portion of East River Park would always be accessible under the revised construction phasing plan, additional measures (e.g., fencing, safety signs, flaggers, etc.) would be implemented to ensure the safety of the users of East River Park during construction.

METHODOLOGY

Direct Effects

The analysis within the FEIS disclosed the availability of other open space resources within close proximity to the unavailable resources that would provide similar recreational opportunities to the public. As described in the FEIS, there are comparable resources of similar type and quality available for public use within the ½-mile study area with the exception of shared-use pathways or grilling areas outside of East River Park. This affects the 20–64 age range user group and families and users of all ages. The revised construction phasing schedule for the modified Preferred Alternative lessens this direct effect of the Preferred Alternative by reducing the duration of displacement of these park facilities.

Indirect Effects

The potential direct and indirect effects under the revised construction phasing plan are assessed for each analysis year (2020–2025) of the proposed five-year construction period. As analyzed in the FEIS, the open space study area is based on a ½-mile distance from the boundaries of Project Areas One and Two. A detailed description of open space resources in the study area is provided in Chapter 5.3, “Open Space,” of the FEIS. As described in Chapter 5.3, “Open Space,” of the FEIS, the existing total open space acreage within the ½-mile study area is 86.65 acres, of which 54.46 acres are active and 32.19 acres are passive (see Table 5.3-2), equating to an overall open space ratio of approximately 0.55 acres per 1,000 residents (0.20 passive and 0.35 passive). This

is lower than the City’s planning goal of 2.5 acres of combined active and passive open space ratio per 1,000 residents and is lower than the citywide median of 1.5 acres per 1,000 residents.

The open spaces temporarily displaced for construction are described in detail within FEIS Chapter 6.2, “Construction—Open Space.” That section of the FEIS includes a description of open space facilities within East River Park, Murphy Brothers Playground and Captain Patrick J. Brown Walk, Stuyvesant Cove Park, and Asser Levy Playground and the comparable nearby open space resource(s) with similar facilities that would be available to the public during the temporary displacement of those resources. The construction phasing during which the recreational facilities within East River Park, Murphy Brothers Playground and Captain Patrick J. Brown Walk, Stuyvesant Cove Park, and Asser Levy Playground would be available and unavailable to the public under the revised construction phasing plan is described below.

ENVIRONMENTAL EFFECTS

No Action Alternative

Direct Effects

The approved NYC Parks Pier 42 project³, which is separate from the proposed Pier 42 deck repair and improvements project, is anticipated to be complete by 2022 (this project was assumed to be complete by 2021 in the FEIS) and will introduce approximately 2.93 acres of new passive open space.

As stated in the FEIS, EDC’s East River Waterfront Esplanade–Phase IV project will introduce 1.23 acres of recreational open space, of which 0.61 is active and 0.62 is passive, by 2025.

With the construction of these projects, open space within the ½-mile study area is expected to increase from 86.65 acres under existing conditions to approximately 89.58 acres by the 2022 analysis year and 90.81 acres by the 2025 analysis year. Of the 90.81 acres, 55.07 will be active and 35.74 acres will be passive (see Table 5.3-4 of the FEIS and **Table 3**, below).

Table 3
No Action Alternative: Open Space in ½-Mile Study Area (Acres)
No Action Alternative

Analysis Year	Open Space in the ½-Mile Study Area (Acres)	Active (Acres)	Passive (Acres)
2020	86.65	54.46	32.19
2021	86.65	54.46	32.19
2022	89.58	54.46	35.12
2023	89.58	54.46	35.12
2024	89.58	54.46	35.12
2025	90.81	55.07	35.74
Note: Pier 42 will introduce 2.93 acres of passive open space by the 2022 analysis year; EDC’s East River Esplanade-Phase IV project will introduce 1.23 acres, of which 0.61 acres will be active and 0.62 acres will be passive.			

³ As described in the FEIS, NYC Parks is separately constructing Pier 42 as a public waterfront open space, increasing the accessible open space within the study area. Phase 1A of the Pier 42 Project included the demolition of the pier shed. Phase 1B of the Pier 42 Project would include the redevelopment of the upland park with amenities such as an entry garden, a playground, a comfort station, a grassy knoll rising approximately seven feet above grade, solar powered safety lighting throughout the park, and access from the shared-use path along the FDR Drive service road or Montgomery Street.

Indirect Effects

The open space ratios for the No Action Alternative were calculated for each analysis year, accounting for the planned open spaces and new residents from planned projects. The open space ratios in **Table 4** were calculated by dividing the existing and projected open space acreages within the ½-mile study area from **Table 3** by the combined residential population and projected residential population anticipated to be generated from projected developments in the study area. The open space ratios under existing conditions and the No Action Alternative are used as the baseline condition for the indirect effects analysis for the modified Preferred Alternative.

As shown in **Table 4**, during each analysis year total open space ratios will continue to be below the Citywide Community District median ratio of 1.5 acres per 1,000 residents.

Table 4
Open Space Ratios for ½-Mile Study Area with Future Residential Population
No Action Alternative

Analysis Year	Open Space Ratios Acres per 1,000 Residents		
	Total	Active	Passive
2020	0.54	0.34	0.20
2021	0.52	0.33	0.19
2022	0.53	0.33	0.21
2023	0.55	0.34	0.22
2024	0.53	0.32	0.21
2025	0.52	0.32	0.20

Modified Preferred Alternative

Direct Effect Analysis

With the modified Preferred Alternative, the revised construction phasing plan would allow for a reduction in the amount and duration of displaced open spaces. Therefore, there would not be new temporary significant adverse effects on open space during construction as analyzed in the FEIS.

The construction schedule for the Preferred Alternative was revised to allow for parts of East River Park to remain open throughout the construction period. **Table 1** summarizes the availability of resources within East River Park and their anticipated closures during the 5-year construction period under the revised construction phasing plan. Activities within the open space resources (East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, Asser Levy Playground, and Captain Patrick J. Brown Walk) are anticipated to range in duration from approximately 1 to 2.5 years with periods of overlapping activities when work on multiple open space resources would occur concurrently during a particular year.

For the purposes of the construction open space analysis, the information provided in **Table 5** was developed based on the revised construction phasing schedule and information on existing open spaces as detailed in the FEIS in order to evaluate the temporary displacement of open space resources for each analysis year over the 5-year construction period.

Table 5
Construction Open Space Direct Effects Analysis
The Preferred Alternative: Summary Table

Analysis Year (Summer of)	Unavailable Open Space Resource/Amenity^{1,2}	Approximate Displaced Open Space (Acres)
2020	Asser Levy Playground	0.77
2021	Asser Levy Playground and East River Park (Field No. 1 and 2; Existing Water Play Area; Existing Passive Lawn south of the Williamsburg Bridge; Field No. 5 and 6; Track and Field Complex; Track House; Field No. 7 and 8; and the North Basketball Courts)	24
2022	Stuyvesant Cove Park and East River Park (Field No. 1 and 2; Existing Water Play Area; Existing Passive Lawn south of the Williamsburg Bridge; Field No. 5 and 6; Track and Field Complex; Track House; Field No. 7 and 8; and the North Basketball Courts)	25
2023	Murphy Brothers Playground, Stuyvesant Cove Park, and East River Park (Amphitheater; Basketball/Volleyball Courts; Tennis Courts; Tennis House; Field No. 3 and 4; 10th Street Playground; 10th Street Comfort Station; and the North BBQ Area)	21
2024	Murphy Brothers Playground and East River Park (Amphitheater; Multi-use turf; Basketball/Volleyball Courts; Tennis Courts; Tennis House; Field No. 3 and 4; 10th Street Playground; 10th Street Comfort Station; and the North BBQ Area)	19
2025	East River Park (Amphitheater; Multi-use turf; Basketball/Volleyball Courts; Tennis Courts; Tennis House; Field No. 3 and 4; 10th Street Playground; 10th Street Comfort Station; and the North BBQ Area)	18
Notes:		
¹ The open space resources or facilities within the Project Areas that are engaged in construction activities and therefore temporarily unavailable to the public (see Figures 1 through 6).		
² As a conservative estimate, if a resource or amenity is unavailable for all or a portion of the summer, it has been included in the displaced open space acreage.		

A description of the open space resources that would be available to the public prior to the start of construction and newly reconstructed open space resources that would be available to the public once construction is complete, are described below and for Project Area One are illustrated in **Figures 1 through 6**. A description of unavailable and available open space resources is also captured in the indirect effects analysis below.

Summer of 2020

The FEIS indicated that nearly half of the open space resource acreage in the study area, including almost all of East River Park would be unavailable during construction. However, for the modified Preferred Alternative. With the exception of Asser Levy Playground (approximately 0.77 acres) which would be closed for construction during summer 2020, it is anticipated that East River Park, Murphy Brothers Playground, Captain Patrick J. Brown Walk, and Stuyvesant Cove Park would remain open to the public as construction work at these locations would not start until after the summer of 2020. As with the construction plan presented in the FEIS, it is anticipated that construction activities around the Asser Levy outdoor pool would take place during the off-season of the pools (mid-September to early June) and not affect the operational season of the pools. The displacement of approximately 0.77 acres is not anticipated to result in temporary significant adverse direct effects during the summer of 2020.

Summer of 2021

It is anticipated that Asser Levy Playground would remain unavailable to the public (approximately 0.77 acres) during the summer of 2021. However, as with the construction plan presented in the FEIS, it is anticipated that construction activities around the Asser Levy outdoor pool would take place during the off-season of the pools (mid-September to early June) and not

affect the operational season of the pools. Within East River Park, the following facilities would be unavailable to the public: Field No. 1 and 2; Existing Water Play Area; Existing Passive Lawn south of the Williamsburg Bridge; Field No. 5 and 6; Track and Field Complex; Track House; Field No. 7 and 8; and the North Basketball Courts. Due to the temporary displacement of approximately 24 acres (inclusive of 0.77 acres of Asser Levy Playground), there is the potential for temporary significant adverse direct effects during the summer of 2021.

Summer of 2022

It is anticipated that Stuyvesant Cove Park (approximately 1.90 acres) would be unavailable to the public in the summer of 2022. Within East River Park, the following facilities would be unavailable to the public: Field No. 1 and 2; Existing Water Play Area; Existing Passive Lawn south of the Williamsburg Bridge; Field No. 5 and 6; Track and Field Complex; Track House; Field No. 7 and 8; and the North Basketball Courts. By the summer of 2022, the Pier 42 project will introduce approximately 2.93 acres of passive space to the study area. Asser Levy Playground is anticipated to be reopened by the summer of 2022 and would introduce 0.77 acre of reconstructed open space resources to the public. The temporary displacement of approximately 25 acres, would result in the potential for temporary significant adverse direct effects to open space during the summer of 2022.

As with the FEIS, construction on the flyover bridge is assumed to commence during this analysis year under the revised construction phasing plan. Therefore, temporary displacement of Captain Patrick J. Brown Walk would occur. However, this displacement (approximately 1 acre) is minimal compared to the overall temporary displacement of open space resources during this analysis year.

Summer of 2023

Construction activities would result in Murphy Brothers Playground (approximately 1.27 acres) and Stuyvesant Cove Park (approximately 1.90 acres) being closed to the public during the summer of 2023. Within East River Park, the following facilities would be unavailable to the public: Amphitheater; Multi-Use Turf; Basketball/Volleyball Courts; Tennis Courts; Tennis House; Field No. 3 and 4; East 10th Street Playground; East 10th Street Comfort Station; and the North BBQ Area. The following facilities within East River Park are anticipated to be reopened and would introduce reconstructed open space resources to the public: Field No. 1 and 2; Nature Exploration and Water Play Area; Passive Lawn north of Williamsburg Bridge; Field No. 5 and 6; Track and Field Complex; Track House; and Field No. 7. The temporary displacement of approximately 21 acres, would result in the potential for temporary significant adverse direct effects to open space during the summer of 2023.

Summer of 2024

Construction activities would result in Murphy Brothers Playground (approximately 1.27 acres) being closed to the public during the summer of 2024. Within East River Park, the following facilities would be unavailable to the public: Amphitheater; Multi-Use Turf; Basketball/Volleyball Courts; Tennis Courts; Tennis House; Field No. 3 and 4; East 10th Street Playground; East 10th Street Comfort Station; and the North BBQ Area. The waterfront esplanade from East Houston Street to Field No. 7 and Stuyvesant Cove Park are anticipated to be reopened and would introduce reconstructed open space resources to the public. The temporary displacement of approximately 19 acres would result in the potential for temporary significant adverse effects to open space during the summer of 2024.

Summer of 2025

Construction activities would result in the following facilities in East River Park unavailable to the public: Amphitheater; Multi-Use Turf; Basketball/Volleyball Courts; Tennis Courts; Tennis House; Field No. 3 and 4; East 10th Street Playground; East 10th Street Comfort Station; and the North BBQ Area. The waterfront esplanade from the Amphitheater to the Passive Lawn south of the Williamsburg Bridge and Murphy Brothers Playground are anticipated to be reopened and would introduce reconstructed open space resources to the public. The temporary displacement of approximately 18 acres would result in the potential for temporary significant adverse effects to open space during the summer of 2025.

By the fall/winter of 2025, construction would be complete. East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, and Asser Levy Playground would be reopened and would introduce reconstructed open space resources to the public. The displaced open space areas would be restored and reopened to the public with new and enhanced park features.

The modified Preferred Alternative would result in temporary significant adverse direct effects on open space from the fall of 2020 to the winter of 2025 during the construction period. However, these effects have been substantially reduced from the Preferred Alternative analyzed in the FEIS as nearly half of East River Park would remain open from fall of 2020 through winter of 2025. Although the modified Preferred Alternative extends the temporary significant adverse effects on the availability of open space identified in the FEIS to 2024 and 2025, a majority of construction activities under the modified project would start in the fall of 2020 instead of the spring of 2020, such that these temporary significant adverse open space effects would be extended for approximately 1.5 years in portions of the park. Under the modified Preferred Alternative, the significant effects would also be lessened because approximately 19 to 25 acres of open space in East River Park between the fall of 2020 and winter of 2025 would remain available for public use while under the Preferred Alternative presented in the FEIS, the entire park would be closed while construction was ongoing. Therefore, over the course of construction, there will be greater availability of active and passive open space available to the public under the modified project. The on- and off-site measures proposed in the FEIS to mitigate the effect to the greatest extent practicable would still be implemented by the City.

Although there is the potential for temporary significant adverse effects on open space during construction for the 2021 to 2025 analysis years under the revised construction phasing plan, once completed, the modified Preferred Alternative would have a positive direct effect on East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, and Asser Levy Playground as it would provide the public with refurbished and improved open spaces. The modified Preferred Alternative would result in reconstructed open space resources with upgraded facilities and improved connectivity that would ultimately enhance the user experience of these open space resources.

Construction Air Quality and Noise and Vibration

The potential air quality and noise effects on open spaces that would remain accessible during construction are described in detail in the Air Quality and Noise and Vibration sections below.

Indirect Effects Analysis

The indirect effects analysis considers how the temporary closures of open space during construction would affect the utilization of remaining study area open spaces, which due to the closures, are expected to experience greater demand. The analysis focuses on the quantification of displaced open space discussed in the direct effects analysis above. As a result of the extended open space closures due to construction, the total open space ratios within the study area would

decrease in the modified Preferred Alternative from the No Action Alternative. The indirect effects analysis is summarized in **Table 6**.

Table 6
Construction Open Space Indirect Effects Analysis
The Preferred Alternative: Summary Table

Analysis Year (Summer of)	No Action Open Space Ratio (Acres/1,000)	Construction Open Space Ratio (Acres/1,000)	Percent Change	Significant Adverse Effect
Alternative 4				
2020	0.54	0.54	-0.89%	No
2021	0.52	0.38	-27.88%	Yes
2022	0.53	0.38	-28.23%	Yes
2023	0.55	0.42	-23.11%	Yes
2024	0.53	0.42	-20.99%	Yes
2025	0.52	0.42	-19.30%	Yes
Note: The revised construction phasing plan improves the availability of open spaces substantially compared to the previous construction schedule presented in the FEIS as the modified Preferred Alternative eliminates the temporary significant adverse direct and indirect effects during the spring and summer of 2020. The modified Preferred Alternative also reduces the temporary significant adverse direct and indirect effects construction has on open space availability by nearly half from fall of 2020 through 2023.				

The FEIS indicated a significant adverse indirect effect for the 2020 to 2023 analysis years since the park was to be fully closed. However, as shown in **Table 6**, with the proposed modifications, there are no significant adverse indirect effects for the summer of 2020 (or the spring of 2020 during early construction package activities). As the revised construction phasing plan would also reduce open space ratios over 5 percent from the fall of 2020 (when activities at East River Park is anticipated to begin) to 2025, with a maximum of 28.23 percent in 2022, the modified Preferred Alternative, like the previous construction plan presented in the FEIS, would result in potential temporary significant adverse indirect effects on open space resources within the study area. However, the Modified Preferred Alternative with the revised construction phasing plan substantially improves the availability of open spaces as compared to the construction schedule presented in the FEIS as the modified Preferred Alternative eliminates the temporary significant adverse direct and indirect effects during the spring and summer of 2020. The modified Preferred Alternative also reduces the temporary significant adverse direct and indirect effects construction has on open space availability by nearly half from fall of 2020 through 2023. The modified Preferred Alternative extends the temporary significant adverse effects on the availability of open space identified in the FEIS to 2024 and 2025. However, with the majority of construction beginning in the fall of 2020 under the modified project instead of the spring of 2020, temporary significant adverse open space effects for a portion of the park would be extended for approximately 18 months.

The open space resources that are most at risk to experience the effects of increased demand are those that offer similar facilities to the resources in East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, Asser Levy Playground, and Captain Patrick J. Brown Walk, that would be temporarily displaced by the construction of the modified Preferred Alternative. The revised construction phasing plan reduces the effects of the Preferred Alternative for the 15 to 19, 20 to 64, and 65 and over user groups that would be the most affected by the displacement of open space resources during construction of the modified Preferred Alternative.

MITIGATION OF EFFECTS

Subsequent to the FEIS, the City has identified a phased construction approach where portions of East River Park would be kept open throughout the construction period to partially mitigate significant adverse construction effects on open space resources. In addition, since the release of the FEIS, the City has also committed to the following:

- Installing amenities to activate the open space area in Waterside Pier, which may include synthetic turf, additional seating, and programming;
- Opening various Lower East Side (and broader Manhattan) New York City Department of Education (DOE) schoolyards and athletic fields to the public; and
- Reusing the recently installed turf at the Track and Field Complex in East River Park providing that the quality of the turf is in good condition when it is time for reconstruction.⁴

In addition, the mitigation measures outlined in the FEIS would remain commitments for the modified project. These commitments include the following:

- NYC Parks will accommodate youth permit users within existing facilities under NYC Parks jurisdiction. Due to the high volume of permitted use across all NYC Parks, permittees may have to limit playing time to be accommodated;
- The City is working with other entities with open space resources, such as DOE and the New York City Housing Authority (NYCHA), to identify recreational resources that may be opened to the community during construction;
- NYC Parks is implementing a Lower East Side greening program and planting up to 1,000 trees in parks and streets, and up to 40 bioswales;
- NYC Parks is purchasing solar lighting to be used at six Lower East Side parks to extend playing time at fields for permitted use during construction of the Preferred Alternative;
 - Park sites may include Coleman Playground, Columbus Park, Corlears Hook Park, Sara D. Roosevelt Park, Baruch Playground, and Chelsea Park
- NYC Parks will improve the synthetic turf at seven park locations; these sites may include the following:
 - New synthetic turf installation at five sites: sites include La Guardia Bathhouse/Little Flower Playground, St. Vartan Park, Tanahey Playground, and Robert Moses Playground
 - Turf improvements at two sites: Columbus Park and Baruch Playground
- NYC Parks will install new sports coating at seven sites; these sites may include the following:
 - Tanahey Playground, Sara D. Roosevelt Park, Al Smith Recreation Center, St. Vartan Park, Columbus Park, Coleman Playground, and Al Smith Playground
- NYC Parks will paint playgrounds and park equipment at up to 16 locations in Lower East Side Parks;
- NYC Parks will enhance existing Parks barbeque areas;

⁴ Although not considered a mitigation measure for the proposed project, the Pier 42 deck is anticipated to be repaired with the creation of new interim recreational space in this area (i.e., a synthetic turf field and potentially other sports fields and seating). The Pier 42 deck repair and improvements project is subject to its own separate review and approval process.

East Side Coastal Resiliency

- Install new picnic tables at Coleman Playground and replace existing barbeques at Al Smith Recreation Center
- NYC Parks is identifying alternative tennis locations;
 - John Jay Park courts will be re-striped to formalize tennis area
 - Queensboro Oval (in Manhattan) will be opened to NYC Parks tennis permit holders as of the summer of 2019, and for even more time (increasing from 12 weeks to 22 weeks) per summer
 - Randall’s Island tennis facility is expanding with additional courts, which will be opened to NYC Parks tennis permit holders
- NYC Parks is increasing staffing for recreation, as well as operations and maintenance (O&M) in Lower East Side Parks;
 - New Playground associates (nine new staff lines) will provide new programming and help organize events and activities for park users
 - All existing O&M staff for East River Park will remain on the east side of Manhattan, below 34th Street
- The City will utilize quieter construction methods (i.e., press in pile), to partially mitigate noise effects that would be experienced at the Asser Levy Recreation Center.

In addition, as with the FEIS, the following measures would be implemented to accommodate pedestrians and bicyclists at this area during construction under the revised construction phasing plan:

- During construction, the East River Greenway would be closed from East 23rd Street to Montgomery Street. NYCDOT would re-route bicyclists to the on-street bike network, primarily the protected bicycle lanes along First and Second Avenues, as well as those on Allen Street/Pike Street and Clinton Street. These protected bicycle lanes would provide a reasonable alternative for many of those bicyclists who use the Greenway as a transportation route, as they are proximate to numerous destinations in the neighborhoods that run alongside the Greenway, and may actually provide a more direct route for many trips. NYCDOT is currently upgrading a number of intersections along these corridors with offset crossings to provide a more comfortable riding experience on these routes.
- NYCDOT is committed to expanding the City’s bicycle network, including adding more protected bicycle lanes. In July 2019, Mayor de Blasio unveiled the Green Wave Bicycle Plan, which, amongst other improvements, increases the number of planned protected bicycle lane miles to be installed each year to 30 miles city-wide. As part of these ongoing efforts to expand the bicycle lane network, NYCDOT is currently evaluating the feasibility of installing new north–south protected bicycling lanes in the East Village that would provide additional options for bicyclists during the Greenway closure and beyond.
- Access to the ferry landings at Stuyvesant Cove Park from First and Second Avenues would be maintained via the two-way protected bicycle lane along East 20th Street.

The measures proposed above would mitigate, to the extent practicable, the construction effects on open space resources and are considered partial mitigation. There are other open space resources immediately adjacent to the open space study area that offer comparable resources of similar type and quality (e.g., Tompkins Square, Madison Square, Union Square, Sara D. Roosevelt Park, Hester Street Playground, Coleman Playground, etc.). Although farther away, these open space resources would be available to the public during the construction period. Furthermore, as with the FEIS, the modified Preferred Alternative would substantially improve

existing open space resources. All temporary displacement would be met with the refurbishment and re-construction of the displaced open space facilities. After construction, Murphy Brothers Playground, Stuyvesant Cove Park, and Asser Levy Playground would be redesigned and reconstructed and East River Park would be reconstructed as a newly landscaped and raised open space with pathways, which would enhance the user experience of the park. Upon completion of construction, the upland open space resources in the ½-mile study area would be protected against future storm events, thus increasing the utility and safety of those resources. Furthermore, as with the FEIS, the modified Preferred Alternative would be beneficial for the open space resources in East River Park, as park features would be enhanced to be fully resilient in future design storm events. The flood protection measures proposed to be integrated into park features aim to reduce the effects from future design storm events on the community.

Improvement of Existing Parks

Consistent with the guidance in the 2014 *CEQR Technical Manual*, improving existing open spaces in the study area to increase their utility, safety, and capacity to meet identified needs in the study area is considered a mitigation measure. Although construction would temporarily displace open space resources in East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, Asser Levy Playground, and Captain Patrick J. Brown Walk, the result of implementing the Preferred Alternative would be refurbished open space resources. After construction, East River Park would be a newly landscaped and raised park with pathways, which would enhance the user experience of the park. In addition, the upland open space resources in the ½-mile study area would be protected against future storm events, thus increasing the utility and safety of those resources. The modified Preferred Alternative would be beneficial for the open space resources in East River Park, as it includes a full reconstruction of the park, raising it by approximately eight feet to meet the design flood protection criteria. These enhancements would ensure that East River Park would be more resilient in future storm events, as well as sea level rise. The flood protection measures proposed to be integrated into park features aim to reduce the effects from future storm events on the community. The modified Preferred Alternative proposes the replacement of pedestrian crossings at the Delancey Street, East 10th Street, and Corlears Hook Bridges. The enhancement of pedestrian bridges to East River Park would improve the east–west connectivity for residents in the ½-mile study area to East River Park upon project completion. The improvements to these open space resources under the Preferred Alternative would be considered partial mitigation. By remedying a long-standing restriction/obstacle at the “pinch-point,” the modified Preferred Alternative would significantly improve the usability and access to the greenway with the construction of the shared-use flyover bridge.

Improvement of Non-Motorized Access to Parks

As with the FEIS, the modified Preferred Alternative would include the replacement of the Delancey Street, East 10th Street, and the Corlears Hook Bridges. The enhancement of these bridges to East River Park would improve the east–west connectivity for residents in the ½-mile study area to East River Park upon project completion.

As with the FEIS, the modified Preferred Alternative would also include a shared-use flyover bridge in the East River Bikeway along the East River Dock between East 13th Street and East 15th Streets. This would allow pedestrians and cyclists to travel between Stuyvesant Cove Park and the East River Esplanade/East River Bikeway without conflict with visitors travelling in the opposite directions or requiring cyclist dismounts. Consistent with guidance in the *CEQR Technical Manual*, the implementation of missing segments of the City’s greenway network

would be considered a mitigation measure. By remedying a long-standing restriction/obstacle, the usability and access to the greenway would be substantially improved.

HISTORIC AND CULTURAL RESOURCES

ARCHAEOLOGICAL RESOURCES

The revised construction phasing plan for the Preferred Alternative would not affect the conclusions of the FEIS regarding archaeological resources. In accordance with the FEIS commitments, additional archaeological investigation will be performed in accordance with Section 106 regulations, based on a scope of work reviewed and approved by the New York City Landmarks Preservation Commission (LPC) and the New York State Historic Preservation Office (SHPO); this archaeological investigation would include pre-construction testing and/or monitoring during project construction performed in accordance with the *Secretary of the Interior's Standards and Guidelines for Archaeology*, the Advisory Council on Historic Preservation's (ACHP) *Section 106 Archaeological Guidance*, and the New York Archaeological Council's *Standards for Cultural Resource Investigations and Curation of Archaeological Collections*. The scope of work for additional archaeology would include the following: a sampling strategy that will select specific areas of the Area of Potential Effect (APE) to be further investigated; identification of those areas that are believed to be most sensitive for recovering landfill retaining structures across the overall APE; a description of the basis for the proposed sampling design, including a tabulation of the various archaeological contexts within the APE and a quantification of the sample fraction for each context; and an unanticipated discoveries protocol. If significant archaeological resources are identified during testing and/or monitoring, further archaeology and/or mitigation would be completed in accordance with Section 106 regulations and consistent with the guidelines in the *CEQR Technical Manual*. In written communications dated April and May 2016, representatives of the Delaware Nation, Delaware Tribe of Indians, and Stockbridge-Munsee Community Band of Mohicans requested, in the case of an unanticipated discovery of an archaeological site or artifacts, that work be halted until the tribe is notified and the artifact can be evaluated by an archaeologist. The additional archaeological investigation is stipulated in a Programmatic Agreement (PA) that is being prepared; a draft PA was included in Appendix E of the FEIS. The PA will be executed among OMB, SHPO, and ACHP, and also signed by five consulting parties: NYC Parks, LPC, the Municipal Art Society, the Lower East Side Preservation Initiative (LESPI), and the New York Landmarks Conservancy.

ARCHITECTURAL RESOURCES

The revised construction phasing plan for the Preferred Alternative would not affect the conclusions of the FEIS regarding architectural resources and the addition of the flood proofing measures to the Fireboat House will be integrated to the Programmatic Agreement being prepared for the Preferred Alternative (see below). As described in the FEIS and as stipulated in the PA, construction affecting the FDR Drive would be coordinated with NYCDOT to ensure that it is protected during construction of the Preferred Alternative.

As described in the FEIS, construction of the Preferred Alternative and/or the drainage management components would occur within 90 feet of the following architectural resources: the FDR Drive (#1, S/NR-eligible); Williamsburg Bridge (#2, S/NR-eligible); East River Bulkhead (#3, S/NR-eligible); Engine Co. 66 Fireboat House (#4, S/NR-eligible); Gouverneur Hospital (#5, S/NR); Gouverneur Hospital Dispensary (#6, S/NR-eligible); a portion of the Vladeck Houses within the Lower East Side Historic District (#7, S/NR); a portion of the Baruch Houses (#9,

S/NR-eligible); Asser Levy Public Baths (#12, S/NR, NYCL); a portion of the East River Housing Cooperative (#13, S/NR-eligible); a portion of the Jacob Riis Houses (#15, S/NR-eligible); a portion of Stuyvesant Town (#16, S/NR-eligible); and a portion of Peter Cooper Village (#17, S/NR-eligible). Therefore, as stipulated in the PA, the City, in consultation with LPC and SHPO, would develop and implement Construction Protection Plans (CPPs) for these architectural resources to avoid inadvertent construction-period damage from ground-borne vibrations, falling debris, collapse, dewatering, subsidence, or construction equipment. The CPPs would also be developed in consultation with NYC Parks, the Municipal Art Society, LESPI, and the New York Landmarks Conservancy.

URBAN DESIGN AND VISUAL RESOURCES

Neither the previous construction plan presented in the FEIS nor the revised construction phasing plan would result in significant adverse effects on urban design and visual resources during construction. Construction areas would be fenced off to keep the public out of the working areas. These closed and fenced construction areas would obstruct views from the FDR Drive and upland neighborhood towards the East River. Therefore, construction of the Preferred Alternative under either construction phasing plan could detract from the experience of pedestrians in the vicinity and would have temporary adverse visual effects. In addition, under the revised construction phasing plan, the public would have access to open spaces resources within East River Park during construction and their experience of the park would also be temporarily affected during construction.

NATURAL RESOURCES

The modified Preferred Alternative would result in similar effects to natural resources during construction as compared to those presented in the FEIS. As described in the FEIS, construction of the Preferred Alternative would be performed in accordance with all applicable rules and regulations from Federal, State, and City agencies.

As described above in the project modifications, the previous construction plan proposed that the esplanade would be closed for the entire 3.5-year duration. The modified Preferred Alternative proposes that the esplanade would only be fully closed for one year, from the fall of 2022 to the summer of 2023, under the revised construction phasing. At other times during the construction period, the portion of the esplanade that is closest to the work activities would be closed to facilitate construction. Barging activities would continue throughout the duration of the project construction, extending from 3.5 years to 5 years. However, the total volume of fill and other materials anticipated to be barged to the site is not anticipated to change, resulting in the same approximate total number of barges. The potential for temporary adverse effects to NYSDEC unvegetated littoral zone tidal wetlands and United States Army Corps of Engineers (USACE) Waters of the United States, surface water resources, benthic resources, essential fish habitat (EFH), and threatened and endangered species remains the same. Turbidity curtains, water-tight cofferdams, and debris nets would be used as applicable to minimize the potential for these effects and would be mitigated for in accordance with NYSDEC and USACE permit conditions. Cofferdams would not be installed in areas shallower than six meters between January 15 and May 31 to avoid adversely affecting winter flounder early life stage EFH in compliance with consultations completed with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA NMFS). The number of tree removals proposed in the FEIS would remain the same under the modified Preferred Alternative and restitution would be provided in compliance with Chapter 5 of Title 56 of the Rules of New York (NYC Department of Parks and Recreation Rules) and Local Law 3 of 2010.

HAZARDOUS MATERIALS

As with the previous construction plan presented in the FEIS, activities under the revised construction phasing plan would have the potential to disturb subsurface hazardous materials in existing structures and the subsurface, as it would involve demolition and excavation activities. However, with the implementation of appropriate measures governing the construction (such as air monitoring, proper storage and handling of materials, and, if required, odor suppression), the potential for significant adverse effects related to hazardous materials would be avoided. As presented in the FEIS, the measures to be included as part of the construction specifications would include a Materials Handling Plan, a Community Air Monitoring Plan (CAMP), a Mitigation Work Plan (MWP), a Remedial Action Plan (RAP), a CHASP, and Site Management Plans (SMPs).

WATER AND SEWER INFRASTRUCTURE

The modification to the construction phasing plan for the Preferred Alternative is not anticipated to affect the conclusions of water and sewer infrastructure analysis in the FEIS. As described in the FEIS, construction of water and sewer infrastructure associated with the Preferred Alternative would be performed in accordance with all methods and standards approved by NYSDEC, DEP, DDC, and other appropriate regulatory agencies and procedures. Prior to excavation, interferences with existing water and sewer infrastructure would be identified. Existing water and sewer infrastructure would be protected, supported, and maintained in place throughout the duration of work. Water mains and sewers will be replaced, where required, per DEP and DDC standards. All construction activity associated with drainage isolation, drainage management, infrastructure reconstruction, or relocation/replacement of existing water and sewer infrastructure would be undertaken without affecting the conveyance of flow through the water or combined sewer system. Therefore, no disruption to existing water or sewer services is anticipated, and no adverse impacts to water or sewer infrastructure would occur.

ENERGY

Both the construction plan presented in the FEIS and the revised construction phasing plan would involve excavation, pile driving, and other potentially disruptive construction activities in proximity to existing energy transmission and generation infrastructure. In order to avoid damage to or disruption of the transmission lines during the construction, measures would be taken to minimize vibration, to carefully control excavation around existing infrastructure, and to manage the placement of fill and soil stockpiles. With the implementation of these measures, consistent with the conclusion presented in the FEIS, there would not be the potential to result in significant adverse energy effects under the revised construction phasing plan.

TRANSPORTATION

The FEIS concluded that the Preferred Alternative would have the potential to result in significant adverse traffic effects at the intersections of East 23rd Street and First Avenue and East 23rd Street and Avenue C during the 6:00 to 7:00 AM construction analysis peak traffic hour, which could be fully mitigated with the implementation of standard traffic mitigation measures (e.g., signal timing changes). The FEIS also concluded that the Preferred Alternative could result in temporary significant adverse effects for users of the East River bikeway/walkway and that construction under the Preferred Alternative would not result in any significant adverse transit and parking effects.

As presented in the FEIS, construction of the Preferred Alternative was projected to be completed in 2023, with a 3.5-year construction schedule. As part of the Preferred Alternative, a full closure

of East River Park would take place for the entire 3.5-year construction schedule. With the revised construction phasing plan, the construction period would be extended from 3.5 years to 5 years in order to avoid a full closure of East River Park at any time throughout the entire construction period. This extended construction schedule would reduce the daily magnitude of construction workers and trucks during the peak quarter of construction, as compared to those presented in the FEIS. Based on the revised construction schedule and the levels of service (LOS) presented in the FEIS for the Preferred Alternative, an assessment was prepared below to show that the modified Preferred Alternative would not alter the findings presented in the FEIS. The extended construction schedule would not alter the conclusions presented in the FEIS for transit, pedestrian, and parking conditions, and therefore, additional assessments for these components are not warranted. From fall of 2020 to summer of 2023, access to East River Park would be maintained at Montgomery Street (after construction activities for the Pier 42 upland project are completed in 2022), the Corlears Hook Bridge (except when this bridge is being reconstructed during this phase of construction), the Delancey Street Bridge, the East 10th Street Bridge, and via the esplanade at the north end of East River Park, but closed at Montgomery Street, the East Houston Street overpass, and East 6th Street Bridge. From fall of 2023 through the fall/winter of 2025, access to the park would be maintained at Montgomery Street, the Corlears Hook Bridge, the East Houston Street overpass, and East 6th Street Bridge, but closed at Delancey Street Bridge, the East 10th Street Bridge, and via the esplanade the north end of East River Park. Although certain access points would be temporarily closed for a portion of the 5-year construction duration, access to East River Park would be maintained with at least three different locations at all times during the construction period. Closure of certain portions of the park during the various phases of construction is also anticipated to result in reduced park usage such that the temporary rerouting of pedestrian traffic is expected to be adequately dispersed to available access points and would not result in significant adverse pedestrian effects during construction.

TRAFFIC

As presented in the FEIS, the Preferred Alternative would generate approximately 250 workers per day and 147 trucks per day within Project Area One and 140 workers per day and 44 trucks per day within Project Area Two during the peak quarter of construction. Based on the revised construction phasing plan, it is expected that the Preferred Alternative would generate approximately 140 workers per day and 112 trucks per day within Project Area One and approximate 120 workers per day and 40 trucks per day within Project Area Two during the peak quarter of construction. Therefore, the Preferred Alternative under the revised construction phasing plan would generate approximately 110 fewer workers per day and 35 fewer trucks per day within Project Area One and 20 fewer workers per day and 4 fewer trucks per day within Project Area Two during the peak construction period compared to the Preferred Alternative.

In the FEIS, quantified traffic analyses were prepared at six intersections for the 6:00 to 7:00 AM peak hour and at one intersection for the 3:00 to 4:00 PM peak hour. Details on LOS, v/c ratios, and average delays from the FEIS are presented in **Table 7** as reference. As shown in the table and discussed above, significant adverse traffic effects were identified at the intersections of East 23rd Street and First Avenue and East 23rd Street and Avenue C during the weekday AM peak hour. As shown in **Table 8** which summarizes the LOS, v/c ratios, and average delays for the No Action, the Preferred Alternative, and Mitigation from the FEIS, these effects could be mitigated with the implementation of standard traffic mitigation measures (e.g., signal timing changes).

Table 7

FEIS No Action and the Preferred Alternative's Level of Service Analysis

Intersection	AM Peak Hour (6:00 AM to 7:00 AM)								PM Peak Hour (3:00 PM to 4:00 PM)										
	No Action				Preferred Alternative				No Action				Preferred Alternative						
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS			
East 23rd Street and Second Avenue																			
EB	TR	0.66	32.3	C	TR	0.68	33.2	C	Analysis not warranted during PM peak hour.										
WB	LT	0.72	36.3	D	LT	0.83	44.2	D											
SB	L	0.75	47.5	D	L	0.75	47.9	D											
	TR	0.60	12.6	B	TR	0.60	12.7	B											
Intersection		22.0		C	Intersection		23.6										C		
East 23rd Street and First Avenue																			
EB	L	0.64	55.8	E	L	0.64	55.8	E	Analysis not warranted during PM peak hour.										
WB	T	0.36	16.2	B	T	0.36	16.2	B											
	T	0.34	26.4	C	T	0.37	26.9	C											
NB	R	0.93	90.8	F	R	0.95	97.2	F+											
	L	0.80	71.4	E	L	0.82	74.9	E											
	TR	0.70	28.0	C	TR	0.70	28.2	C											
Intersection		33.3		C	Intersection		33.8		C										
East 23rd Street and Avenue C																			
EB (Mainline)	LTR	0.88	47.1	D	LTR	0.89	49.1	D	Analysis not warranted during PM peak hour.										
WB	LTR	0.08	14.1	B	LTR	0.10	14.2	B											
NB	LTR	0.43	18.9	B	LTR	0.43	18.9	B											
SB	LTR	1.02	77.5	E	LTR	1.05	86.0	F+											
EB (Service Road)	R	0.23	38.0	D	R	0.23	38.0	D											
Intersection		47.8		D	Intersection		51.3		D										
East Broadway and Allen Street/Pike Street																			
EB	LT	0.54	29.7	C	LT	0.55	29.9	C	Analysis not warranted during PM peak hour.										
WB	R	0.11	21.5	C	R	0.11	21.5	C											
	LTR	0.50	28.7	C	LTR	0.53	29.7	C											
NB	L	0.42	46.3	D	L	0.42	46.3	D											
	TR	0.26	18.2	B	TR	0.27	18.3	B											
SB	L	0.19	41.9	D	L	0.19	41.9	D											
	T	0.29	19.7	B	T	0.30	19.9	B											
Intersection		25.0		C	Intersection		25.2		C										
South Street and Allen Street/Pike Street																			
EB	L	0.32	11.1	B	L	0.32	11.2	B	Analysis not warranted during PM peak hour.										
WB	T	0.37	21.3	C	T	0.38	21.4	C											
	TR	0.57	25.8	C	TR	0.59	26.4	C											
SB	L	0.33	32.9	C	L	0.38	34.0	C											
	R	0.33	33.0	C	R	0.33	33.0	C											
Intersection		23.6		C	Intersection		24.2		C										
South Street and Montgomery Street																			
EB	LTR	0.19	10.9	B	LTR	0.22	11.1	B	LTR	0.27	11.6	B	LTR	0.28	11.6	B			
WB	LTR	0.35	12.4	B	LTR	0.35	12.4	B	LTR	0.89	28.9	C	LTR	0.94	35.4	D			
NB	LTR	0.06	20.0	B	LTR	0.10	20.6	C	LTR	0.04	19.8	B	LTR	0.05	19.8	B			
SB	LTR	0.31	23.4	C	LTR	0.35	23.9	C	LTR	0.37	24.5	C	LTR	0.40	25.2	C			
Intersection		14.8		B	Intersection		15.5		B	Intersection		24.6		C	Intersection		29.3		C
Notes: L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection + Denotes a significant adverse traffic effect.																			

Table 8
Level of Service Analysis
FEIS Weekday AM Peak Hour – Preferred Alternative

Intersection	Weekday 6:00 AM to 7:00 AM											
	No Action Alternative				Preferred Alternative				Mitigation			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
East 23rd Street and First Avenue												
EB	L	0.64	55.8	E	L	0.64	55.8	E	L	0.64	55.8	E
	T	0.36	16.2	B	T	0.36	16.2	B	T	0.35	15.5	B
WB	T	0.34	26.4	C	T	0.37	26.9	C	T	0.36	26.0	C
	R	0.93	90.8	F	R	0.95	97.2	F+	R	0.89	81.5	F
NB	L	0.80	71.4	E	L	0.82	74.9	E	L	0.82	74.9	E
	TR	0.70	28.0	C	TR	0.70	28.2	C	TR	0.73	29.5	C
	Intersection			C	Intersection			C	Intersection			C
East 23rd Street and Avenue C												
EB (Mainline)	LTR	0.88	47.1	D	LTR	0.89	49.1	D	LTR	0.89	49.1	D
WB	LTR	0.08	14.1	B	LTR	0.10	14.2	B	LTR	0.10	14.8	B
NB	LTR	0.43	18.9	B	LTR	0.43	18.9	B	LTR	0.42	18.2	B
SB	LTR	1.02	77.5	E	LTR	1.05	86.0	F+	LTR	0.99	70.0	E
EB (Service Road)	R	0.23	38.0	D	R	0.23	38.0	D	R	0.25	39.7	D
	Intersection			D	Intersection			D	Intersection			D
Notes: L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, Int. = Intersection + Denotes a significant adverse traffic effect.												

Based on the FEIS Preferred Alternative analysis results presented above and the expected decrease in the daily magnitude of workers and trucks during the peak quarter of construction of approximately 110 fewer workers per day and 35 fewer trucks per day within Project Area One and 20 fewer workers per day and 4 fewer trucks per day within Project Area Two, it can be concluded that the Preferred Alternative under the revised construction phasing plan would result in equal or lesser delay and significant adverse traffic effects as compared to the FEIS. Therefore, the revised construction phasing plan under the modified Preferred Alternative would not alter the findings related to transportation during construction that were presented in the FEIS.

AIR QUALITY

The FEIS assessed the potential for significant air quality effects during construction from the proposed project, including the Preferred Alternative. The analyses included assessment of local pollutant concentrations for comparison to ambient air quality standards (microscale analysis) and an assessment of annual regional emissions for comparison to federal *de minimis* criteria defined in the general conformity regulations. The FEIS concluded that construction of the either alternative would not result in any predicted concentrations above the applicable National Ambient Air Quality Standards (NAAQS) or *de minimis* thresholds. Annual emissions from nonroad and on-road sources would also not exceed any of the *de minimis* criteria. Therefore, no significant adverse air quality impacts were predicted, and the Preferred Alternative would conform to the relevant State Implementation Plan (SIP).

While the revised construction phasing plan for the Preferred Alternative would result in different overlapping of construction activities (completion of the flood protection system in 2023 with the completion of open space improvements and the flyover bridge in 2025) as compared to the previous construction plan presented in the FEIS (completion of the flood protection system and open space improvements in 2023 with the completion of the flyover bridge in 2025), each

individual construction task under the revised construction phasing plan would be comparable to that for the Preferred Alternative. The revised construction phasing plan would result in less overlap between construction activities and fewer simultaneous construction work areas and may result in construction occurring in a different sequence than that assumed in the Preferred Alternative. Therefore, in any given short-term or annual periods, the reduced overlap of activities would result in peak emission intensities similar to or less than that assumed in the Preferred Alternative. Consequently, short-term and long-term concentrations at nearby receptors are not anticipated to exceed those concentrations predicted under the Preferred Alternative presented in the FEIS.

Under the revised construction plan, open spaces within East River Park would remain open during construction and would have the potential to experience elevated levels of air pollutant concentrations during construction. The construction air quality analysis for the Preferred Alternative presented in the FEIS assumed such spaces would not be open, and therefore did not consider these open spaces as potential receptors. However, the air quality analysis presented in the FEIS predicted potential concentrations for receptors at Corlears Hook Park and the ferry landing approach at Stuyvesant Cove Park, which were assumed to remain open and are immediately adjacent to construction work areas. Therefore, concentrations at open space receptors within East River Park under the revised construction phasing plan are anticipated to be similar to the concentrations for receptors at Corlears Hook Park and the ferry landing approach at Stuyvesant Cove Park from the quantitative analysis conducted for the FEIS (see **Table 9**), which were predicted to be well below the applicable thresholds.

Table 9
Pollutant Concentrations from Construction Site Sources ($\mu\text{g}/\text{m}^3$)
Preferred Alternative

Pollutant	Averaging Period	Maximum Predicted Increment	Background Concentration	Maximum Predicted Total Concentration	De Minimis Criteria ¹	NAAQS
<i>Corlears Hook Park Receptors</i>						
PM _{2.5}	24-hour	1.20	20.7	-	7.2	35
	Annual	0.16	-	-	0.3	15
PM ₁₀	24-hour	4.13	44	48.1	-	150
NO ₂	Annual	6.2	38.9	45.1	-	100
CO	1-hour	0.4	2.3	2.7	-	35 ppm
	8-hour	0.1	1.5	1.6	-	9 ppm
<i>Stuyvesant Park Cove Receptors</i>						
PM _{2.5}	24-hour	2.9	20.7	-	7.2	35
	Annual	0.29	-	-	0.3	15
PM ₁₀	24-hour	8.0	44	52.0	-	150
NO ₂	Annual	15.0	38.9	53.9	-	100
CO	1-hour	1.4	2.3	3.7	-	35 ppm
	8-hour	0.2	1.5	1.7	-	9 ppm
Notes:						
PM _{2.5} concentration increments are compared to the <i>de minimis</i> criteria. Increments of all other pollutants are compared with the NAAQS to evaluate the magnitude of the increments. Comparison to the NAAQS is based on total concentrations.						
¹ PM _{2.5} <i>de minimis</i> criteria is defined as 24-hour average not to exceed more than half the difference between the background concentration and the 24-hour NAAQS; annual average not to exceed more than 0.3 $\mu\text{g}/\text{m}^3$ at discrete receptor locations.						

Consequently, since short-term and long-term construction intensities are anticipated to decrease due to less overlap of activities, pollutant concentrations at nearby receptors, including locations within East River Park, are anticipated to be similar to or less than those predicted in the FEIS. Therefore, no significant adverse air quality effects are predicted under the revised construction phasing plan, and the Preferred Alternative would remain in conforming to the relevant SIP.

GREENHOUSE GAS

While the revised construction phasing plan for the Preferred Alternative would result in different overlapping of construction activities (completion of the flood protection system in 2023 with the completion of open space improvements and the flyover bridge in 2025) as compared to the previous construction plan presented in the FEIS (completion of the flood protection system and open space improvements in 2023 with the completion of the flyover bridge in 2025), each individual construction task under the revised construction phasing plan would be comparable to that for the Preferred Alternative. The revised construction phasing plan would result in less overlap between construction activities and fewer simultaneous construction work areas. However, since the duration and emissions intensity of each individual construction task under the revised construction plan would be comparable to that under the construction schedule assumed in the FEIS, the total greenhouse gas emissions are anticipated to be similar to those predicted in the FEIS. Accordingly, as with the FEIS, the revised construction plan would not result in significant adverse effects to greenhouse gases during construction.

NOISE AND VIBRATION

The construction noise analysis presented in the FEIS found that the Preferred Alternative under the previous construction plan would result in significant adverse noise effects at 621 Water Street, 605 Water Street, 309 Avenue C Loop, 315-321 Avenue C, 620 East 20th Street, 601 East 20th Street, 8 Peter Cooper Road, 7 Peter Cooper Road, 530 East 23rd Street, 765 Franklin Delano Roosevelt East River Drive (FDR Drive), 819 FDR Drive, 911 FDR Drive, 1023 FDR Drive, 1115 FDR Drive, 1141 FDR Drive, 1223 FDR Drive, 570 Grand Street, 455 FDR Drive, 71 Jackson Street, 367 FDR Drive, 645 Water Street, 322 FDR Drive, 525 FDR Drive, 555 FDR Drive, 60 Baruch Drive, 132 Avenue D, 465 East 10th Street, 520 East 23rd Street, 123 Mangin Street, and the Asser Levy Recreation Center. The predicted significant adverse construction noise effects would be of limited duration and would be up to the mid-80s dBA during daytime construction and up to the mid-70s dBA during nighttime construction.

The predicted noise impacts at each receptor resulted primarily from construction adjacent to the receptor. The revised construction phasing plan would result in less overlap between construction activities and fewer simultaneous construction work areas as compared to that assumed in the FEIS for the Preferred Alternative and may therefore result in construction occurring in a different sequence than that assumed in the FEIS. However, the duration of each individual construction task would be similar under the phased construction schedule as compared to that under the schedule assumed in the FEIS. Consequently, the revised construction phasing plan would not result in a longer duration of construction at any individual receptor. The revised construction phasing plan would also not result in a greater intensity of construction than that assumed in the FEIS. Therefore, for the receptors considered in the FEIS construction noise analysis for the Preferred Alternative, the revised construction phasing plan would not have the potential to result in additional effects beyond those identified in the FEIS, nor would it have the potential to result in effects of a greater intensity or duration than those identified in the FEIS.

Under the revised construction phasing plan, open spaces that would remain open during construction (see **Table 1**) would have the potential to experience elevated levels of noise during construction. Construction noise was not considered at these open spaces in the FEIS construction noise analysis, which assumed such spaces would not be open to the public. Construction noise at these spaces would be similar to what was predicted in the FEIS for Corlears Hook Park. Consequently, it is expected that at the open spaces that remain accessible, construction under the revised construction phasing plan would produce noise levels at these receptors in the mid-60s to mid-80s dBA, resulting in noise level increases of up to approximately 10 dBA when construction is underway at the nearest distance. The predicted noise level increases at these open space locations would be noticeable and would exceed CEQR construction noise screening thresholds, and the total noise levels would exceed the levels recommended by CEQR for passive open spaces (55 dBA L₁₀). However, noise levels in these areas also exceed CEQR recommended values for existing and No Action conditions. At these receptors noise level increases exceeding the CEQR construction noise screening thresholds are predicted to affect recreational open spaces during construction work hours for up to two years of construction. At each receptor location in the park, the construction activity that would produce the highest noise levels would be pile installation and grading, which are proposed in phases throughout the duration of construction. These activities are the dominant source of construction noise such that other construction activities do not contribute substantially to the maximum noise levels, and the proposed change in construction phasing would not result in different maximum noise levels, or extended periods of occurrence for the maximum levels resulting from the cumulative noise of multiple construction activities. Therefore, the maximum noise levels predicted by the construction noise analysis would not persist at a single receptor location throughout the entire construction period. Activities other than pile installation and grading work would result in lower construction noise levels but may still result in exceedances of CEQR construction noise screening thresholds at some times. However, these activities would generate noise levels that are substantially lower than the maximum levels during pile installation. While the noise from construction would be noticeable, the duration of construction noise at any given area of open space would fluctuate. The most intensive noise levels would be greatest at open space facilities that remain open and accessible closest to the construction activity. At other open space facilities farther from construction work areas, noise levels would be lower. Because the recommended threshold for open space is already exceeded in the existing condition, the temporary nature of the construction activities and the relocation of the most intense noise sources throughout the construction period and the expected levels of construction noise at open space would not occur continuously at a single receptor location; construction noise under the revised construction phasing plan at these receptors would not result in a significant adverse effect.

Since the revised construction phasing plan would not affect the amount or intensity of vibration-producing construction activities, vibration resulting from construction would be the same as that predicted in the FEIS for the Preferred Alternative.

ENVIRONMENTAL JUSTICE

As with the unphased construction plan presented in the FEIS, the phased construction plan under the modified Preferred Alternative would not result in any disproportionately high and adverse effects on minority or low-income communities for any of the analyzed alternatives. As described earlier in this technical memorandum, the modified Preferred Alternative would allow a substantial portion of East River Park to remain open and available to the community throughout project construction. A majority of construction activities under the modified project would start in

the fall of 2020 instead of the spring of 2020, such that construction activities would be extended for approximately 1.5 years in portions of the park. However, under the modified Preferred Alternative, the effects to East River Park would be lessened because approximately half the open space in East River Park between the fall of 2020 and winter of 2025 would remain available for public use while under the Preferred Alternative, the entire park would be closed while construction was ongoing. In addition, as described above, NYC Parks is implementing an extensive mitigation plan to enhance availability and usability of multiple open space resources in the community that currently uses the park resources within the project area. Moreover, as with the previous construction plan, the end result of the modified Preferred Alternative would be reconstructed open space resources with upgraded facilities and improved connectivity that would ultimately enhance the user experience of these open space resources. Residents in the project area, including minority and low-income populations, would benefit from the proposed coastal flood protection. Therefore, as with the FEIS, the modified Preferred Alternative would not result in adverse effects with respect to environmental justice.

PUBLIC HEALTH

As with the construction plan presented in the FEIS, the Preferred Alternative under the revised construction phasing plan would not result in unmitigated significant adverse effects in air quality, water quality, or hazardous materials, but could potentially result in unmitigated significant adverse construction-period noise effects at receptors in the vicinity of the construction work areas. As discussed above under Noise and Vibration, the revised construction phasing plan would not have the potential to result in additional effects beyond those identified in the FEIS, nor would it have the potential to result in effects of a greater intensity or duration than those identified in the FEIS. Therefore, as with the construction plan presented in the FEIS, construction of the Preferred Alternative would not result in a significant adverse public health effect.

E. ENVIRONMENTAL EFFECTS OF STUYVESANT COVE PARKING LOT RECONFIGURATION FOR THE MODIFIED PREFERRED ALTERNATIVE

An assessment of the technical areas—urban design and visual resources and transportation under the operational conditions—that could be affected by the reconfiguration of Stuyvesant Cove parking lot under the modified Preferred Alternative is provided below.

URBAN DESIGN AND VISUAL RESOURCES (OPERATIONAL)

Under the FDR Drive between East 18th and East 20th Streets, the modified Preferred Alternative would create a pedestrian plaza and optimized parking lot. Improving the existing parking lot in this location adjacent to Stuyvesant Cove Park would improve the pedestrian experience, resulting in a beneficial urban design effect. Further, the reconstructed canopy, comfort station, and pedestrian plaza would not alter waterfront views or result in adverse visual effects.

TRANSPORTATION (OPERATIONAL)

As discussed in the FEIS, there is an existing Stuyvesant Cove parking lot underneath the FDR Drive (from East 18th Street to East 23rd Street) owned by the City and operated by EDC, with access/egress at the intersection of East 20th Street and Avenue C. Currently, access/egress is permitted from all directions, with no turn restrictions into or out of the parking lot. As part of the

modified Preferred Alternative, this parking lot would be reconfigured and the entrance/exit would be moved to the north, approximately 150 feet south of East 23rd Street. As part of the relocation, access/egress to the parking lot would be limited to/from Avenue C in the northbound direction, and vehicles currently entering/exiting from East 20th Street and Avenue C in the southbound direction would be diverted to surrounding corridors. The existing hourly traffic volumes into and out of the parking lot at the intersection of East 20th Street and Avenue C are low, with fewer than 15 cumulative vehicles per hour. Since the number of diverted vehicles in a peak hour are below 50 vehicle trips, which is the *CEQR Technical Manual* minimum threshold warranting further traffic analysis, it is anticipated that the relocation of the entrance/exit would not result in any significant adverse traffic effects.

The parking lot reconfiguration would remove approximately 40 existing parking spaces within the Stuyvesant Cove parking lot. The FEIS concluded that the Preferred Alternative would not result in a parking shortfall or significant adverse parking effects within Project Area Two since there are 3,652 off-street parking spaces within ¼-mile of that Project Area with a daytime occupancy of 75 percent, leaving 915 spaces available. This available parking would easily accommodate the maximum construction worker parking demand of 52 spaces for Project Area Two, leaving 863 spaces available. The revised construction phasing plan would generate approximately 100 fewer workers per day, further lowering the maximum construction worker parking demand assessed in the FEIS. The loss of 40 off-street parking spaces within the Stuyvesant Cove parking lot would not result in a parking shortfall or significant adverse parking effects within Project Area Two, which was the same conclusion in the FEIS, since there would be 915 spaces available within ¼-mile of that Project Area. The loss of 40 off-street parking spaces would lower the available parking within ¼-mile of Project Area Two to 875 spaces.

F. ENVIRONMENTAL EFFECTS OF EMERGENCY RESPONSE PLAN PROCEDURES FOR DRAINAGE COMPONENTS

An assessment of the technical area—water and sewer infrastructure under the operational conditions—that could be affected by the conservative timeline for deployments as described in the modified Preferred Alternative is provided below.

WATER AND SEWER INFRASTRUCTURE (OPERATIONAL)

Before the arrival of the design storm and in accordance with a pre-approved operations and maintenance protocol, the interceptor gates and regulator M-39 isolation gate would be closed to isolate the drainage protected area from the Water and Sewer Infrastructure study area as defined in the FEIS. The interceptor gates would allow operational flexibility to manage the level of sewer service provided by the Manhattan Pump Station for areas upstream of the interceptor gates (i.e., outside of the protected area) via the smaller, secondary interceptor gates. Depending on the storm conditions and levels in the interceptor, the City may elect to close the secondary interceptor gates in advance of a storm surge to protect the drainage protected area from storm surge inundation through the sewer system.

Under this deployed condition, the hydraulic grade line (HGL) within the main interceptor to the north and the south of the drainage protected area would increase as the combined flow would no longer be conveyed to the Manhattan Pump Station. Since the main interceptor is fed by appurtenant branch interceptor pipes, the increased HGL within the main interceptor has the potential to result in increases in HGL within these branch interceptors and their upstream regulators, resulting in overflows through the combined sewer outfalls. If this occurs in advance

of rainfall, the overflows would be reported to DEC in accordance with the requirements of the Newtown Creek State Pollutant Discharge Elimination System (SPDES) permit.

G. ENVIRONMENTAL EFFECTS OF PROJECT ENHANCEMENTS

The proposed project enhancements (e.g., flood proofing the Fireboat House and replacing the esplanade and bulkhead, reconstructing a canopy structure at the East River Park amphitheater, adding a comfort station at the redesigned Murphy Brothers Playground, elevating the area south of the amphitheater within East River Park, revising the esplanade structural support design at the existing and proposed embayments) would be constructed within the proposed construction timelines for East River Park or Murphy Brothers Playground under the revised construction phasing plan and would involve minimal incremental construction activities beyond those identified for the flood protection system and open space improvements. Accordingly, the assessment below focuses on the technical areas—historic and cultural resources and urban design and visual resources under the operational conditions and natural resources under the construction and operational conditions—that could be affected by these proposed project enhancements in the modified Preferred Alternative.

HISTORIC AND CULTURAL RESOURCES

As described above, the City is proposing to protect the Engine Co. 66 Fireboat House (S/NR-eligible) against flooding. As part of the design analysis, four potential flood resilience measures alternatives were evaluated: wet flood proofing, dry flood proofing, wet flood proofing with the construction of an additional floor, and elevating the fireboat house. Elevating the building is not recommended because it would: likely result in a significant adverse effect (context) to the historic resource; present access challenges; risk damage to the masonry construction; and is not cost effective. Similarly, adding an additional floor to the fireboat house is not preferred, because it would result in a substantial alteration to the appearance of the historic resource and the requirements of the Americans with Disabilities Act (ADA) code compliance would could involve the need to construct an elevator, Dry flood proofing the fireboat house is also not a preferred option because it would involve constructing flood walls around the perimeter of the building, installing flood barriers at the building's doors and windows, sealing all infrastructure penetrations, reconstructing the ground and first floor slabs, and hardening of pipes. Compared to wet flood proofing, dry flood proofing would require a substantial effort in maintenance and operation with routine inspection of flood barriers and doors and the need to manually deploy the flood barriers prior to a flood. Dry flood proofing would also involve a substantial structural retrofit to the building. Therefore, the City's preferred flood resilience measure is wet flood proofing, which includes adding flood vents at the base of the building, hardening key elements on the ground floor, rehabilitating the deck and bulkhead to the front of the building, and relocating the MEP system. Wet flood proofing is the preferred option, because no flood door or flood barriers would be needed; it would have minimal structural retrofit and minimal deployment before flooding; it is the most cost effective of the options and would have the shortest design and construction duration; minimal routine maintenance would be needed; and there would be minimal exterior façade alterations to the historic resource compared to the other options. Wet flood proofing the fireboat house would involve physical interventions that could affect the appearance of the historic resource. Therefore, as stipulated in the Section 106 Programmatic Agreement, when the City identifies a feasible flood resilience measure, OMB, as the NEPA lead agency, will coordinate the design with SHPO and LPC so that it is compatible with the historic building, and the flood resilience measure will be undertaken in accordance with the Secretary of the Interior's

Standards for the Treatment of Historic Properties. OMB will submit the preliminary and pre-final design plans for the identified flood resilience measure to SHPO and LPC for review, as well as to the consulting parties.

URBAN DESIGN AND VISUAL RESOURCES

There are two elements of the modified Preferred Alternative that would affect the visual character of the Project Area and surrounding study area, but the effects would not be adverse, and the modified Preferred Alternative would not result in new adverse urban design effects. In addition, these new elements would not alter waterfront views or result in adverse visual effects.

The modified Preferred Alternative would reconstruct a canopy structure for the amphitheater stage as part of the proposed multi-use amphitheater lawn with stepped seating. It would be a low, arched structure composed of widely spaced ribs set directly in the ground surface, and it would have a roof covering. With its curved form, this canopy structure would reference the existing amphitheater bandshell and canopy, and it would be consistent with East River Park's character of a landscaped, recreational waterfront park with a performance venue. In addition, the reconstructed canopy would not block views of the river that are not currently blocked by the existing bandshell and canopy, and its open structural form and low profile would permit views through the structure from all angles.

In Project Area Two, the modified Preferred Alternative would include a comfort station as part of the redesigned Murphy Brothers Playground. The comfort station would be integrated into the redesign of the park and would be in keeping with public playgrounds throughout New York City, which generally have comfort stations.

NATURAL RESOURCES (OPERATION)

Two elements of the modified Preferred Alternative would affect wetland resources during the operational stage: (1) the rehabilitation required to the existing deck and platform near the Fireboat House; and (2) the revised esplanade support structure design for the existing and proposed embayments. Specifically, these elements would alter the permanent impacts to water resources as a result of placement of fill within NYSDEC Littoral Zone Wetlands and USACE Waters of the United States.

The Fireboat House foundation is currently pile supported, and inspection of the existing platform shows moderate to severe deterioration of the existing piles. To ensure the structural stability of the facility, rehabilitation of the supporting piles, deck, and bulkhead is proposed as follows:

- Removing and replacing select timber piles that exhibit advanced to severe deterioration from marine borer activity and rot and are nearing the end of their effective service lives.
- Encasing all timber elements in certain pile rows in concrete. Stay-in-place formwork would be placed between some adjacent pile rows and the area inshore of this formwork would be filled with lean concrete fill.
- Repairing non-bearing deck planks on certain pile rows as the timber deck planks exhibit advanced deterioration. This work would occur above tidal elevations and would not extend the deck seaward of the existing deck.

No effects to other natural resources beyond what was disclosed in the FEIS are anticipated.

The FEIS disclosed that operation of the Preferred Alternative would permanently affect 29,825 square feet (12,321 cubic yards) of wetlands. The final design completed after publication of the

FEIS uses a pile-supported structure instead of the use of bulk fill material for the proposed embayments, resulting in a significant reduction to area and fill impacts to jurisdictional waters. Therefore, although the rehabilitation of the deck and bulkhead work at the Fireboat House would result in an additional 291 cubic yards of permanent fill within tidal wetlands. However, the modified Preferred Alternative also includes these reductions in impact area and volume resulting in an overall reduction of permanent impact area and fill in jurisdictional waters from what was disclosed in the FEIS (see **Table 10**).

Table 10
Permanent Adverse Effects to Tidal Wetlands
under the Modified Preferred Alternative

Project Component	Adverse Effects (square feet)	Volume of Fill (cubic yards)
Flyover Bridge Shafts	260	1,008
Fill in Existing Northern Embayment	7,484	1,286
Fill in Existing Southern Embayment	5,042	960
Fill for New Pipe Piles at Existing Embayments	167	346
Fill for Riprap and EConcrete® Elements Seaward of Existing Bulkhead at Proposed Embayments	3,099	698
Fill for New Pipe Piles at Proposed Embayments	47	115
Fill for Fireboat House Deck and Bulkhead Rehabilitation	1,600	291
TOTAL	17,699	4,704

The modified Preferred Alternative reduces the area of effects to wetlands by 12,126 square feet and fill by 7,617 cubic yards, which would be addressed in accordance with all NYSDEC and USACE permit conditions and would conform with applicable regulations, including CWA, Section 10 of the Rivers and Harbors Act, ECL Article 25, NYCRR Part 661, and ECL Article 15, NYCRR Part 608. Mitigation would include in kind, on-site replacement of habitat as well as the purchase of credits from the Saw Mill Creek Wetland Mitigation Bank or the creation of new tidal wetland habitat off-site. EDC operates the Saw Mill Creek Wetland Mitigation Bank in Staten Island, NY, where credits may be purchased to mitigate adverse effects to tidal wetlands. As the proposed project is within the Primary Service Area for the mitigation bank, this option is being explored to fulfill the tidal wetland mitigation requirements. NYC Parks has also identified potential tidal wetland restoration sites. Selection and implementation of offsite tidal wetland mitigation will be coordinated with EDC, NYC Parks, and other involved agencies. It is anticipated that the design and construction of both the on-site and off-site tidal wetland mitigation would be completed by the proposed construction end date of 2025. As a result, no significant adverse impact to wetland resources is anticipated as a result of the modified Preferred Alternative.

NATURAL RESOURCES (CONSTRUCTION)

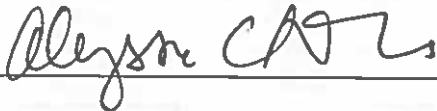
Construction to rehabilitate the decking and bulkhead near the Fireboat House would be similar to work that is anticipated along the bulkhead described in the FEIS. Although no pile driving is anticipated, the work associated with pile removal, replacement, and encasement below the Fireboat House deck has the potential to mobilize sediments and, as such, turbidity booms would be installed prior to commencing this work to minimize the potential for loosened sediments to disperse throughout the East River. These construction activities would increase the area that would be temporarily disturbed; however the use of engineering controls and BMPs such as turbidity booms will minimize the disturbance during construction and these areas would be anticipated to naturally restore to pre-construction conditions.

H. CUMULATIVE EFFECTS OF PROJECT MODIFICATIONS

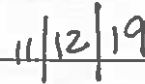
The cumulative effects of the project modifications described in Sections D through G of this Technical Memorandum would be minimal and would not have the potential to result in any adverse effects, either individually or cumulatively.

I. CONCLUSION

This Technical Memorandum concludes that the modified Preferred Alternative would not result in any new or different significant adverse effects not already identified in the FEIS.

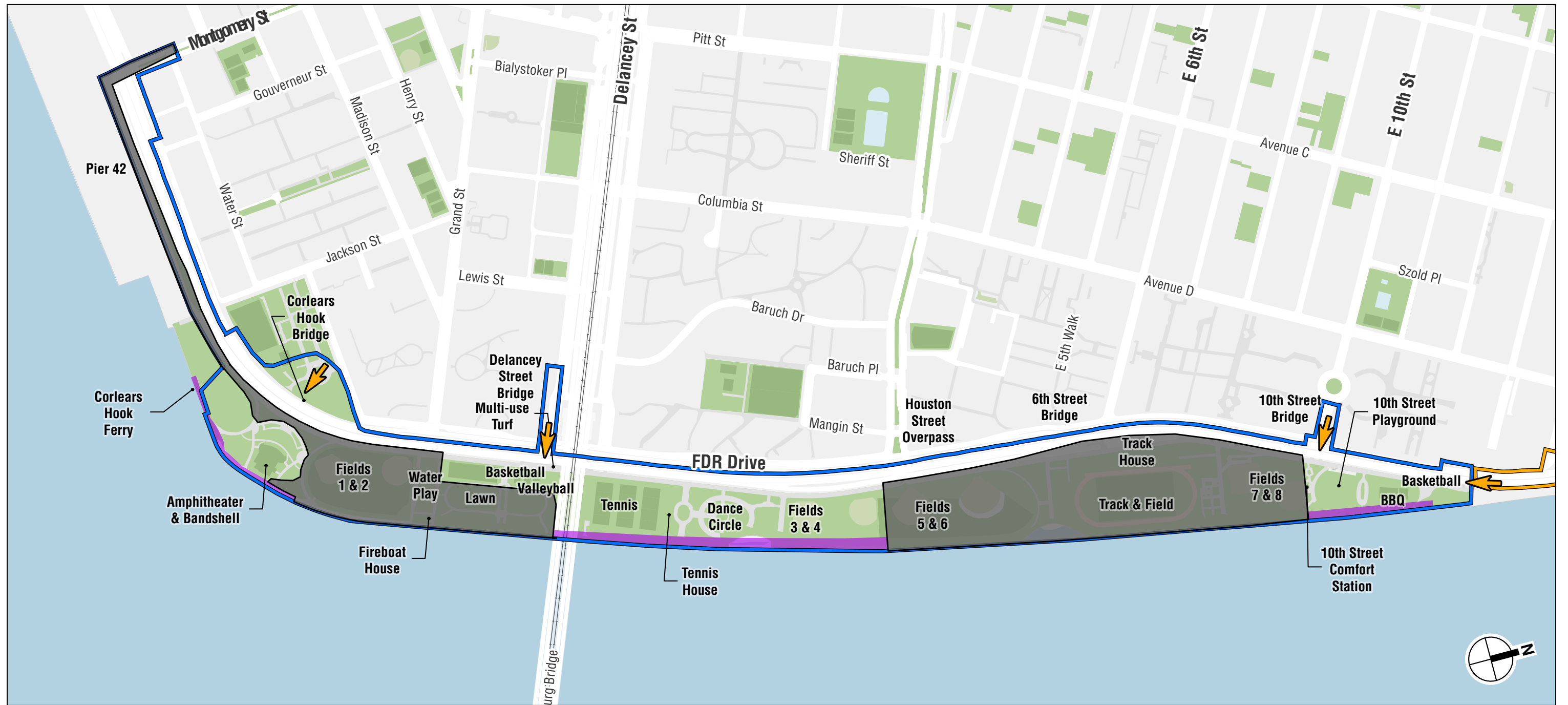


Alyssa Cobb Konon
Deputy Commissioner for Planning and Development
City of New York/NYC Parks



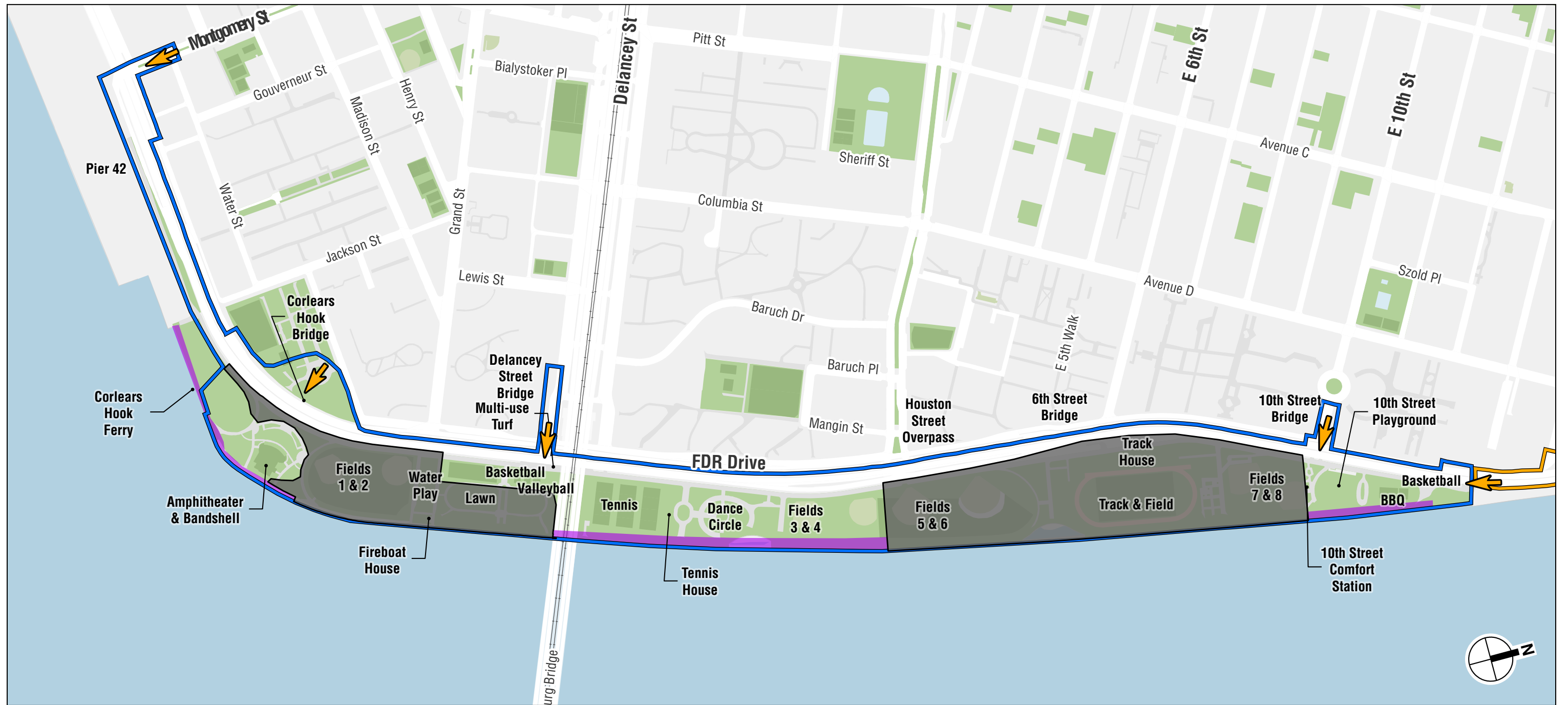
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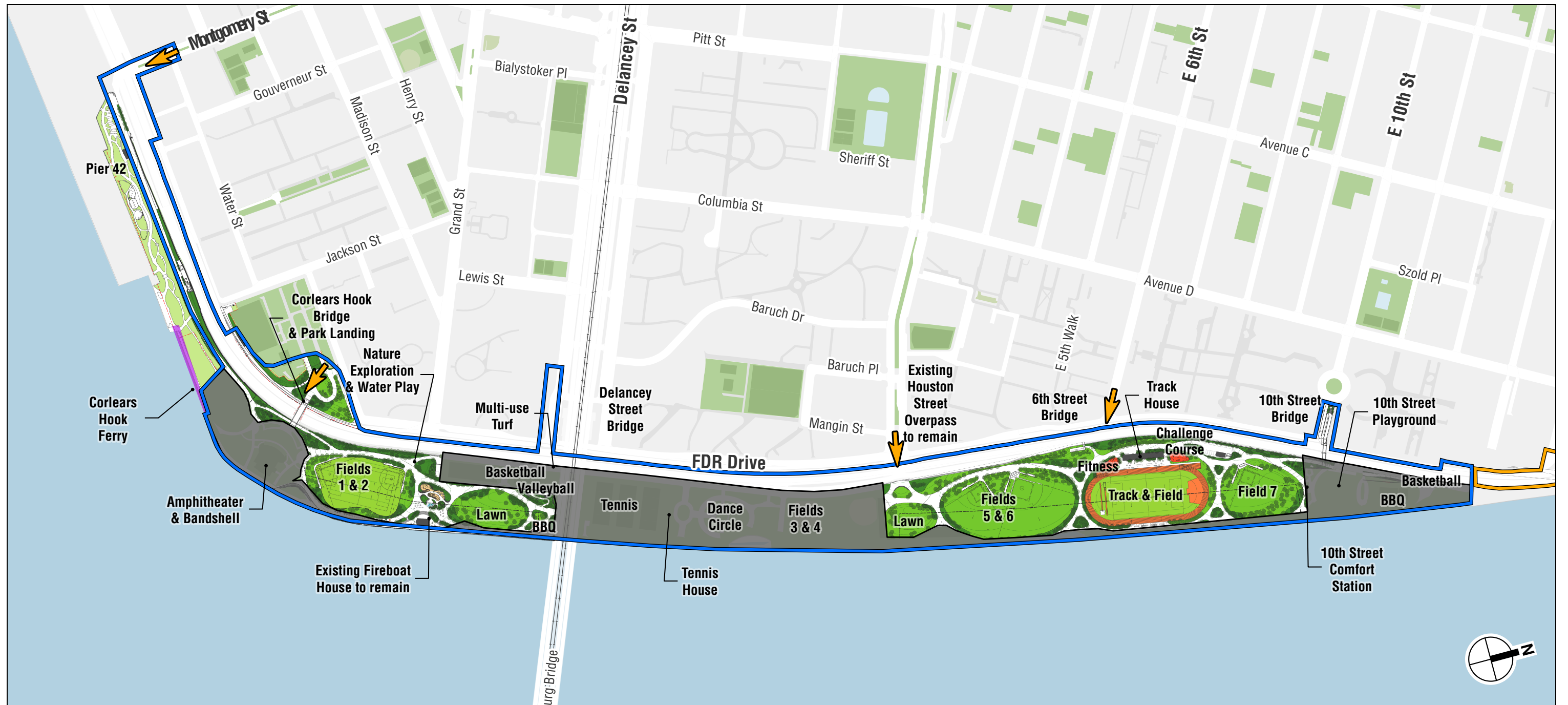
- Project Area One
- Esplanade Open to the Public
- Project Area Two
- ➔ Public Access to East River Park
- Closed Portions

Note: Corlears Hook Bridge would be temporarily closed for a portion of this construction phase for reconstruction. During this time, an interim bridge may be used to provide access to East River Park at this location.

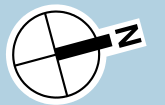
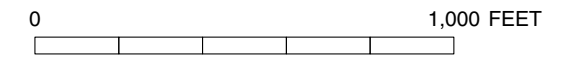


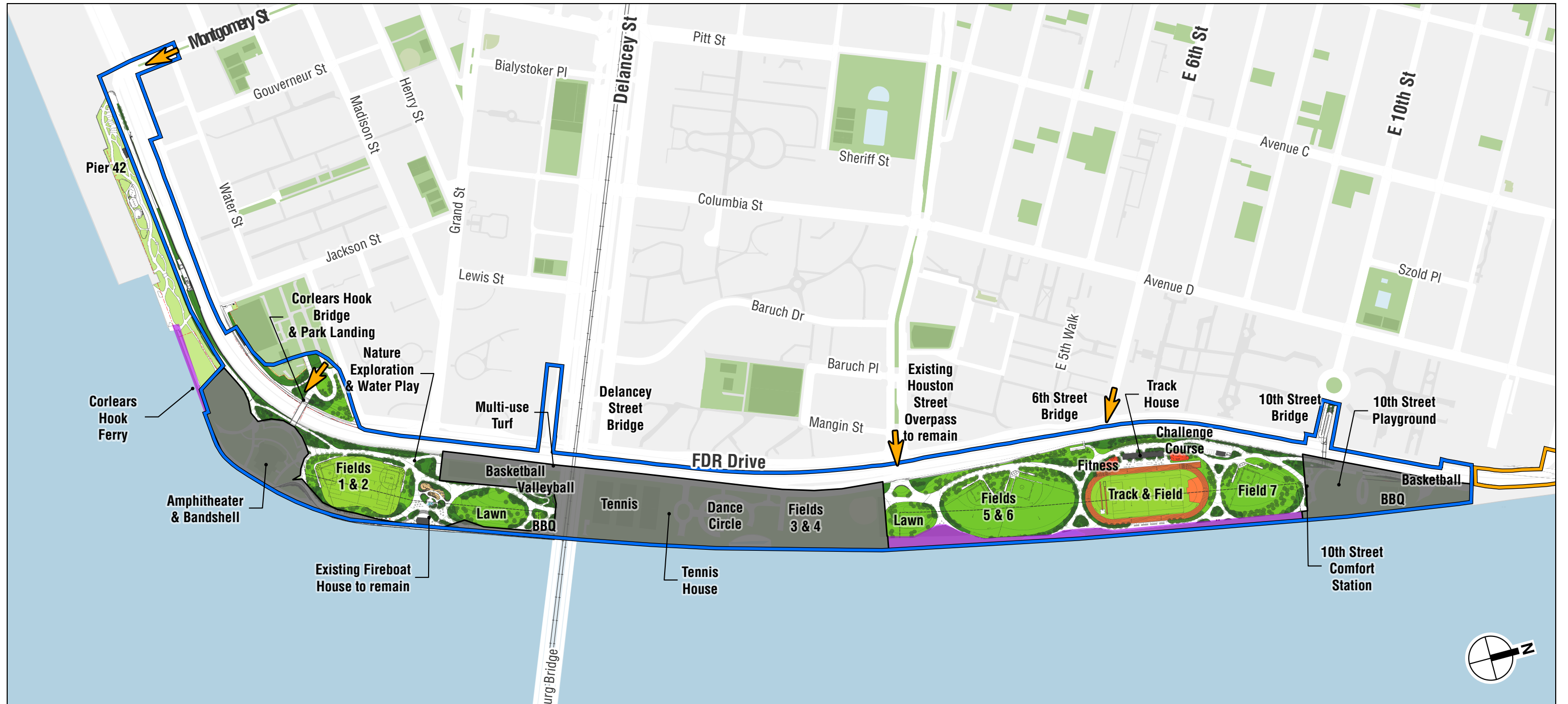
- Project Area One
- Esplanade Open to the Public
- Project Area Two
- ➔ Public Access to East River Park
- Closed Portions

Note: Corlears Hook Bridge would be temporarily closed for a portion of this construction phase for reconstruction. During this time, an interim bridge may be used to provide access to East River Park at this location.



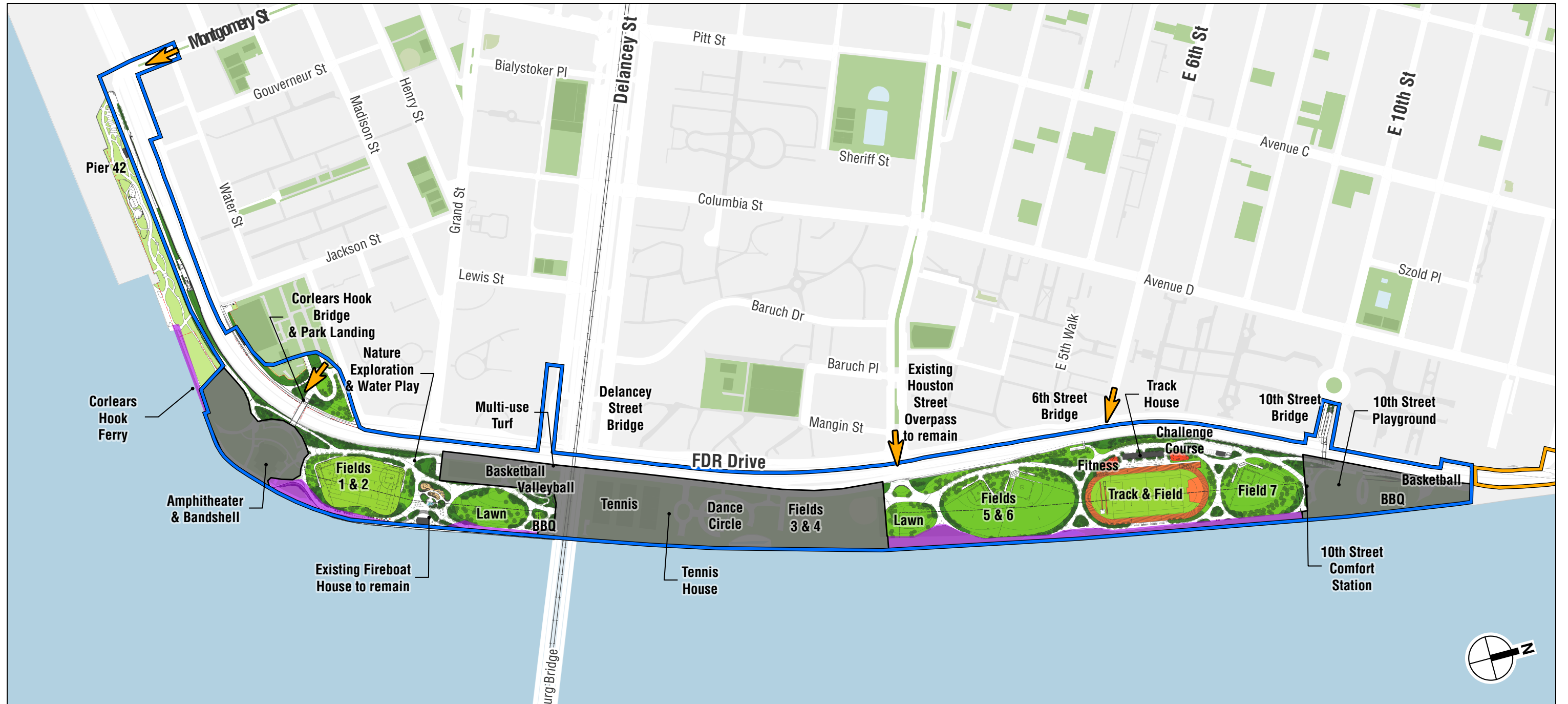
- Project Area One
- Project Area Two
- Closed Portions
- Esplanade Open to the Public
- ➔ Public Access to East River Park








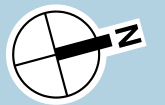
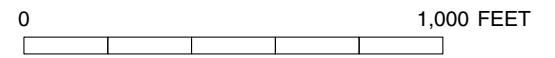


- Project Area One
- Project Area Two
- Closed Portions
- Esplanade Open to the Public
- ➔ Public Access to East River Park

0 1,000 FEET

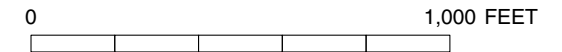


-  Project Area One
-  Project Area Two
-  Closed Portions
-  Esplanade Open to the Public
-  Public Access to East River Park

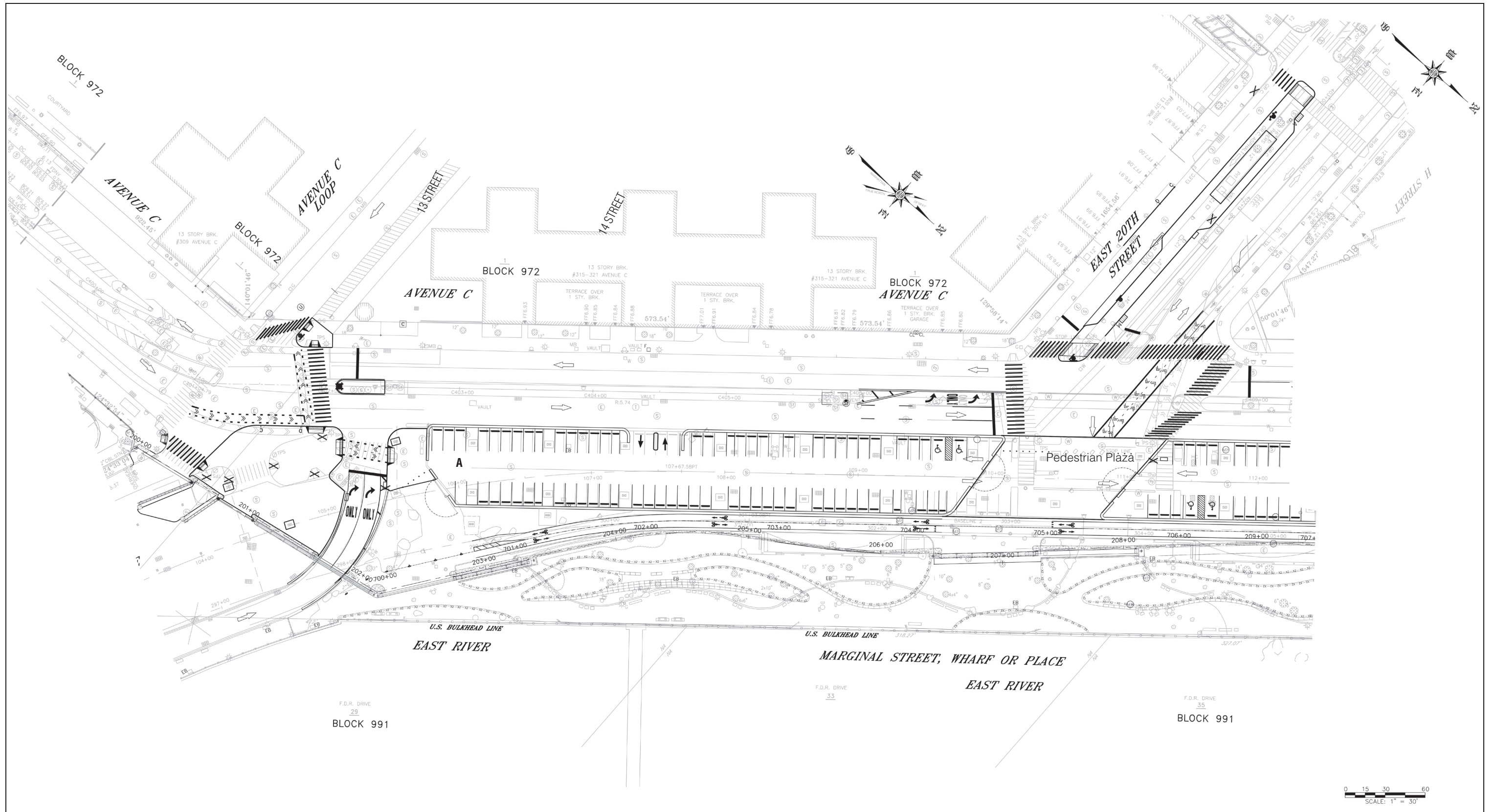


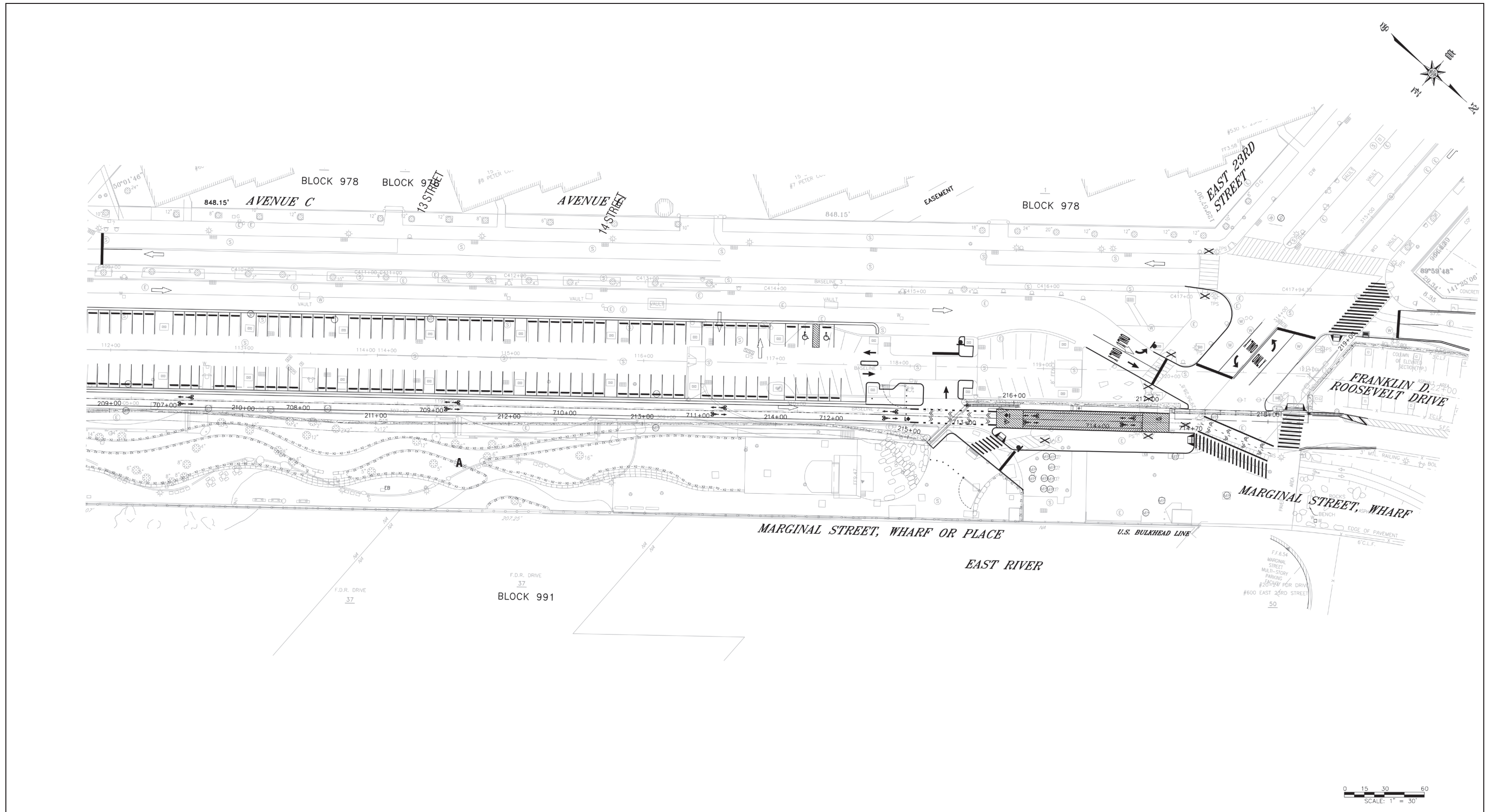


- Project Area One
- Project Area Two



*All of East River Park will be opened to the public.





ATTACHMENT A

EAST SIDE COASTAL RESILIENCY TEXT AMENDMENT

EAST SIDE COASTAL RESILIENCY TEXT AMENDMENT

CD 6

N 190356 ZRM

IN THE MATTER OF an application submitted by the New York City Department of Small Business Services, pursuant to Section 201 of the New York City Charter, for an amendment of Article VI, Chapter 2 (Special Regulations Applicable to Certain Areas) of the Zoning Resolution of the City of New York, modifying special regulations for zoning lots that include parks located in a marginal street, wharf or place in an M1-1 District in Manhattan Community District 6.

Matter in underline is new, to be added;

Matter in ~~strikeout~~ is to be deleted;

Matter with # # is defined in Section 12-10;

Matter ~~double struck out~~ is old, deleted by the City Council;

Matter double-underlined is new, added by the City Council

* * * indicates where unchanged text appears in the Zoning Resolution

Article VI

SPECIAL REGULATIONS APPLICABLE TO CERTAIN AREAS

Chapter 2

Special Regulations Applying in the Waterfront Area

* * *

62-59

Special Regulations for Zoning Lots that Include Parks

* * *

(c) In order to implement a portion of the East Side Coastal Resiliency Project described in the Final Environmental Impact Statement (FEIS) dated September 13, 2019, located in a marginal street, wharf or place used as a park, in an M1-1 District located in Manhattan Community District 6, for #zoning lots predominantly developed# as a park, the requirements of Section 62-50 (GENERAL REQUIREMENTS FOR VISUAL CORRIDORS AND WATERFRONT PUBLIC ACCESS AREAS), inclusive, and Section 62-60 (DESIGN REQUIREMENTS FOR WATERFRONT PUBLIC ACCESS AREAS), inclusive, shall be deemed satisfied, and the certification pursuant to Section 62-811 (Waterfront public access and visual corridors) shall not be required, provided that:

(1) the park will be open and accessible to the public at a minimum from dawn to dusk, except when hazardous conditions are present that would affect public safety; and

(2) a maintenance and operation agreement providing for the maintenance and operation of the park in good condition is entered into with the City of New York, except that no such maintenance and operation agreement shall be required for a park developed and maintained by the State or the City of New York, any subdivision or agency of the State or the City, or any public authority or other entity created pursuant to State or local statute for the purpose of operating such a park.

No excavation or building permit shall be issued within such #zoning lot predominantly developed# as a park, for the portion of the East Side Coastal Resiliency Project implemented pursuant to this paragraph (c), until all applicable Federal, State and local

permits and approvals have been received, including, without limitation, permits and approvals of the New York State Department of Environmental Conservation.

* * *

Appendix D
NOAA NMFS Justification and Response



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930-2276

SEP 9 - 2019

Eram Qadri
Unit Head - Environmental Review, CDBG Disaster Recovery
New York City Mayor's Office of Management & Budget
255 Greenwich Street, 5th Floor
New York, NY 10007

RE: Essential Fish Habitat Assessment – Revised Conservation Recommendations
East Side Coastal Resiliency Project; East River, New York, New York

Dear Ms. Qadri:

Thank you for your response to our August 15, 2019, letter in which we provided you with our Essential Fish Habitat (EFH) conservation recommendations for the East Side Coastal Resiliency project (ESCR), located along the East River in the Borough of Manhattan, New York, New York. The ESCR project is a coastal flood protection system designed to protect the east side of Manhattan from coastal storm events. In our letter, we provided the following EFH conservation recommendations pursuant to Section 305 (b) (4) (A) of the Magnuson Stevens Fishery Conservation and Management Act (MSA):

1. Avoid installing cofferdams within winter flounder early life stage EFH between January 15 and May 31 to minimize impacts to winter flounder eggs and larvae.
2. Avoid pile driving, sheetpile installation and other in-water construction activities occurring outside of the cofferdams from March 1 to June 30 to minimize adverse effects to migrating anadromous fishes.

According to your response, you have accepted EFH conservation recommendation 1 and will avoid installing the cofferdams in areas shallower than six meters between January 15 and May 31. Your letter also provides additional information on the noise and turbidity that may be generated by the construction activities. This supplemental information has allowed us to reconsider the need for seasonal work restrictions to protect anadromous fish species such as alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*), American shad (*Alosa sapidissima*) and striped bass.

The information provided in your letter demonstrates that a sufficient cross-section of the river will be unaffected by project-generated noise and turbidity to allow anadromous fish to migrate unimpeded to their upstream spawning grounds. As a result, the seasonal in-water work restriction recommended in EFH conservation recommendation 2 is not needed and is hereby withdrawn.

Please also note that a distinct and further EFH consultation must be reinitiated pursuant to 50 CFR 600.920(1) if new information becomes available or the project is revised in such a manner



that affects the basis for the above EFH conservation recommendations. This includes any remediation for contamination at the site, for which project-specific details are not yet available.

Conclusion

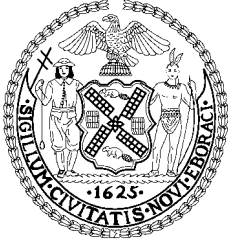
We look forward to our continued coordination with your office on this project as it moves forward. If you have any questions or need additional information, please do not hesitate to contact Karen Greene our Highlands, NJ field office at (732) 872-3023 or karen.greene@noaa.gov

Sincerely,



Louis A. Chiarella
Assistant Regional Administrator
for Habitat Conservation

cc: HUD: T. Fretwell, D. Mahon
NY OMB: J. Jacobs
NYD ACOE – S. Ryba
NMFS PRD – E. Carson-Supino
NMFS OPR – Younkin
NYDEC – D. McReynolds
EPA – S. Lamster



The City of New York
Office of Management and Budget
255 Greenwich Street, 8th Floor • New York, New York 10007

NOAA's National Marine Fisheries Service
James J. Howard Marine Sciences Laboratory
74 Magruder Road
Highlands, NJ 07732

Attn: Karen Greene

**Re: Response to NMFS Essential Fish Habitat Conservation Recommendations
letter dated August 15, 2019 for the
East Side Coastal Resiliency Project
New York, New York
New York City Department of Design and Construction Capital Contract: SANDRESM1**

Dear Ms. Greene,

In its letter dated August 15, 2019, NOAA NMFS listed two Essential Fish Habitat (EFH) Conservation Recommendations specific to the East Side Coastal Resiliency (ESCR) Project. These recommendations are intended to minimize adverse impacts to EFH for winter flounder and for migratory anadromous shad and herring (i.e., prey species for summer flounder and bluefish). Those recommendations are listed below:

1. Avoid installing cofferdams within winter flounder early life stage EFH between January 15 and May 31 to minimize impacts to winter flounder eggs and larvae.
2. Avoid pile driving, sheetpile installation and other in-water construction activities occurring outside of the cofferdams from March 1 to June 30 to minimize adverse effects to migrating anadromous fishes.

Response to First Conservation Recommendation

The first conservation recommendation identified by NMFS to avoid cofferdam installation in EFH between January 15 and May 31 "to the extent practicable" is intended to avoid the entrapment of winter flounder eggs and larvae within the work area when those life stages are present. As noted by NMFS, EFH for winter flounder eggs and larvae is defined, in part, as habitat with water depths less than 6 meters (20 feet). Cofferdams at locations where water depths are shallower than 6 meters would be installed outside of the recommended window from January 15 through May 31 to avoid trapping winter flounder eggs or larvae within the work area.

Response to Second Conservation Recommendation

Based on its review of the project description and EFH assessment for ESCR, as the second Conservation Recommendation for the project, NMFS indicated a restriction on in-water work from March 1 to June 30. During this window, pile driving, sheet pile installation, and other activities outside of the cofferdam would not be conducted to minimize impacts of underwater noise from pile driving, as well as turbidity caused by bottom disturbance, on migrating anadromous fish species, specifically river herring (alewife and blueback herring), American shad, and striped bass, in the East River. NMFS expressed concerns that high-intensity sounds produced during pile driving have the potential to affect migrating anadromous fish by potentially causing recoverable tissue damage, physiological stress, or behavioral changes. NMFS also noted that increases in turbidity due to sediment resuspension can degrade water quality and can impede fish migrations by constricting or obstructing migratory routes.

The timing restriction in this Conservation Recommendation was recommended given the uncertainty associated with the spatial extent of the river that would be impacted by underwater noise and turbidity and the potential adverse impacts to anadromous fishes during the upstream migration to their spawning grounds. NMFS stated in its response letter that “it is not clear how much of the river will be affected by sound or suspended sediments and at what levels”, but that “the need for this conservation recommendation can be reevaluated...if additional information on the areal extent of elevated sound levels and turbidity are better defined.”

Based on our understanding of these concerns, it would follow that if in-water work associated with pile driving, sheet pile installation, or other in-water construction activities occurring outside of cofferdams does not result in elevated underwater noise levels in the East River, beyond an extent that would obstruct migration, such that river herring, shad, and striped bass would be able to migrate past the project area with no detrimental physiological or behavioral effects, then an in-water, no-work window from March 1 to June 30 would not provide any benefit in terms of minimizing the potential effects of underwater noise. Similarly, if the suspended sediment concentrations produced by bottom disturbing activities were limited in areal extent such that an adequate zone of passage was maintained in the East River, this Conservation Recommendation would not be necessary.

Spatial extent of underwater noise during pile installation

In order to address the need for additional information on the areal extent of underwater noise, an evaluation of noise levels and spatial extent during pile driving was conducted. This evaluation used standard noise criteria for physiological and behavioral effects to fishes, as recommended by NMFS in its technical guidance. The underwater noise threshold for behavioral effects to fishes is 150 dB re: 1 μ Pa root-mean square sound pressure level (SPLrms). Noise levels at, or exceeding, this threshold may cause a behavioral response in fish, including disruption of foraging, resting, or migrating behaviors, temporary startle, or avoidance of an ensounded area. The distance from the noise source (e.g., the pile) to the noise level associated with behavioral avoidance by fish was estimated using the simplified attenuation model and noise levels from the NMFS Greater Atlantic Regional Fisheries Office Acoustics Tool. Scenarios for unattenuated vibratory pile driving of 19-inch AZ piles for the cut-off wall to replace the existing bulkhead and attenuated impact pile driving of 24-inch H-piles for CSO cofferdams were modeled. For the purposes of this analysis, noise levels for vibrated 24-inch steel sheet piles and impact-driven 24-inch steel pipe piles were used as a conservative approximation because noise levels for the proposed piles were not available. Noise levels for proxy projects are shown in **Tables 1 and 2**. Additional detail on the analysis is provided in the ESA evaluation for the project (see **Attachment 1**).

Based on this acoustic analysis, the extent of underwater noise levels exceeding the behavioral threshold is expected to range up to 40 meters (130 feet) from the pile during vibratory pile driving to install the cut-off wall and up to 103 meters (338 feet) from the pile during attenuated impact pile driving to install

cofferdams for CSO reconstruction (**Table 3; Figure 1**). Migratory fish within these distances would be exposed to underwater noise levels at or above the behavioral threshold. Beyond those distances, fish are not expected to change their behavior and fish migrations would not be adversely affected. The width of the East River in the project area ranges from 730 meters (2,400 feet) at the Williamsburg Bridge to 1,340 meters (4,400 feet) at East 23rd Street.

Based on the results of this analysis, the underwater noise levels produced during impact and vibratory pile driving would be confined to the near shore area of the East River within 103 meters of the bulkhead, which represents no more than 14 percent of the river width at the narrowest point in the project area. During impact pile driving to construct the cut-off wall, no more than 6 percent of the river width would be ensonified (**Figure 1**). Because of the very localized spatial extent of underwater noise associated with pile driving for cofferdam construction and construction of the cut-off wall, 86 percent to 94 percent of the East River at the narrowest point would not be ensonified allowing migratory fish to move through the project area unimpeded during these activities. Underwater noise levels produced during these activities would not exceed the threshold for the potential onset of recoverable physiological injury (i.e., 206 dB re: 1 μ Pa peak sound pressure level). The single-strike sound exposure criterion of 150 dB re: 1 μ Pa²-s would occur over a smaller areal extent within the area of behavioral avoidance meaning that migrating fish would avoid the area and would not experience sound exposure levels exceeding this injury threshold. Therefore, injury to fish (e.g., tissue damage, changes to stress hormones, hearing loss) would not occur as a result of exposure to underwater noise.

Extent of resuspended sediment plume during bottom disturbing activities

As discussed in the EFH assessment, temporary increases in resuspended sediments are expected during bottom disturbing activities, specifically foundation construction for the flyover bridge, cofferdam construction, and installation of sheet pile for the new cut-off wall along the bulkhead on the western edge of the river. Turbidity curtains would be deployed during these activities and would minimize the spatial extent of elevated turbidity.

Water quality monitoring conducted during impact and vibratory pile driving for 89 piles driven in the Hudson River channel at the Tappan Zee Bridge during construction of the new Governor Mario M. Cuomo Bridge in 2014 indicated that 95 percent of observations were less than 46 mg/L above ambient concentrations at a distance of 500 feet down-current from the pile (Tappan Zee Constructors 2015). It is reasonable to expect similar concentrations during pile driving in the East River. Ambient turbidity levels at New York City Department of Environmental Protection (DEP) water quality station E2 at East 23rd St East in the East River averaged 17 mg/L (95th percentile: 38 mg/L) during the 10-year period from 2010-2019. Therefore, turbidity levels within a similar plume in the East River would be 63 mg/L on average and 84 mg/L during 95 percent of the time. These levels are significantly less than those associated with adverse effects on the most sensitive fish species (580 mg/L; Burton 1993) and several orders of magnitude less than the thresholds for avoidance and lethal effects for common estuarine fish species. Some species, like striped bass did not avoid concentrations as high as 1,920 mg/L during migrations to spawning sites (Summerfelt and Mosier 1976, Burton 1993). Lethal effects were not observed for bluefish, Atlantic menhaden or white perch until concentrations exceeded 750 mg/L. More tolerant species like cunner, mummichog, silversides, and spot did not exhibit 50 percent mortality until suspended sediment concentrations reached 2,500 to 39,000 mg/L.

Because of the current velocities in the river, which approached 2.5 knots during 95 percent of the DEP monitoring, much of the resuspended sediment would be carried down-current and the width of the plume would be less than 500 feet. Therefore, 500 feet would be a conservative estimate of the areal extent of elevated suspended sediments in the vicinity of pile driving activities. As shown in **Figure 2**, a turbidity plume with a width of 500 feet would occupy approximately 21 percent of the river width at the narrowest point in the project area, which would leave 79 percent of the river width below these levels. Because the

width of the plume is likely to be less than 500 feet, the width of the river is greater than 2,400 feet within most of the project area, and the turbidity levels within that plume are likely to be well below the levels associated with adverse effects to fish, the areal extent of turbidity associated with pile driving is likely to be less than estimated here and is unlikely to impede the migration of anadromous fish through the project area.

As demonstrated here, the areal extent and levels of underwater noise and resuspended sediment associated with in-water construction activities for the ESCR project are unlikely to result in adverse effects to migrating anadromous fishes in the East River. Therefore, implementing the in-water work restrictions identified in the second Conservation Recommendation provided by NMFS is unlikely to further minimize the likelihood of adverse effects to migrating anadromous fishes. With the additional analysis presented here, the City is requesting that NMFS revise the Conservation Recommendations to remove the seasonal restriction for in-water work for pile driving, sheetpile installation and other in-water construction activities.

Sincerely,



Eram Qadri

Unit Head – Environmental Review, CDBG Disaster Recovery
New York City Mayor’s Office of Management and Budget

Enclosures:

Attachment 1 – NOAA ESA Assessment

CC:

NOAA: L. Chiarella

HUD: T. Fretwell, D. Mahon

OMB: J. Jacobs

Parks: C. Anderson, E. Humes

DDC: T.L. Dinh, E. Ilijevich

Deputy Mayor’s Office: M. De Coo

JV: J. Einhorn, C. Campbell, K. Mui, R. White

References Cited

- Burton, W.H. 1993. Effects of bucket dredging on water quality in the Delaware River and the potential for effects on fisheries resources. Versar, Inc. 9200 Rumsey Road, Columbia, MD 21045
- National Marine Fisheries Service (NMFS). 2018. GARFO Acoustics Tool: Analyzing the effects of pile driving on ESA-listed species in the Greater Atlantic Region. Accessed 30 August 2019. <http://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/consultation/index.html>
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- Tappan Zee Constructors. 2015. Water Quality Monitoring Plan - Annual Monitoring Report - 2014 Monitoring Activities for the New NY Bridge Project. Revision 0. March 6, 2015. 24 pp. Accessed 30 August 2019. <https://www.newnybridge.com/documents/water-quality/2014/2014-monitoring-activities-annual-report.pdf>



- Attenuated impact pile driving to install temporary CSO cofferdams
- Unattenuated vibratory pile driving to install sheet pile for cut-off wall
- Cut-off wall along new bulkhead
- CSO locations



Figure 1. Spatial extent of underwater noise equal to, or exceeding, the behavioral threshold for fish (150 dB SPLrms) during impact and vibratory pile driving associated with the construction of bulkhead and central sewer outfalls for the East Side Coastal Resiliency Project



Figure 2. Spatial extent of elevated turbidity levels associated with pile driving during construction of bulkhead, cofferdams, and the flyover bridge for the East Side Coastal Resiliency Project

TABLE 1:

Proxy Projects for Estimating Underwater Noise

Project Location	Water Depth (m)	Pile Size (inches)	Pile Type	Hammer Type	Attenuation rate (dB/10m)
Loudest levels for this pile type and installation method, reported by Caltrans 2015 guidance	15	24"	AZ Steel Sheet	Vibratory	5
Rodeo, CA - San Francisco Bay	5	24"	Steel Pipe	Cushioned Impact	3

Source: NMFS 2018

TABLE 2:

Proxy-Based Estimates for Underwater Noise

Type of Pile	Hammer Type	Estimated Peak Noise Level (dB_{Peak})	Estimated Pressure Level (dB_{RMS})	Estimated Single Strike Sound Exposure Level (dB_{sSEL})
24" AZ Steel Sheet	Vibratory	182	165	165
24" Steel Pipe	Cushioned Impact	192	178	167

Source: NMFS 2018

TABLE 3:

Estimated Distances to Injury and Behavioral Thresholds for Fish

Type of Pile	Hammer Type	Distance (m) to 206dB_{Peak} (injury)	Distance (m) to sSEL of 150 dB (surrogate for 187 dBcSEL injury)	Distance (m) to Behavioral Disturbance Threshold (150 dB_{RMS})
24" AZ Steel Sheet	Vibratory	Not Applicable	40	40
24" Steel Pipe	Cushioned Impact	Not Produced	67	103

**ATTACHMENT 1
NOAA ESA ASSESSMENT**

**Capital Project SANDRESM1
East Side Coastal Resiliency Project
Borough of Manhattan, NY**



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930-2276

Eram Qadri
The City of New York
Office of Management and Budget
255 Greenwich Street
New York, NY 10007-2146

MAY 21 2019

Re: East Side Coastal Resiliency Project, NY, NY

Dear Ms. Qadri:

We have completed our consultation under section 7 of the Endangered Species Act (ESA) in response to your email received on May 13, 2019, regarding the above-referenced proposed project. We reviewed your consultation request document and related materials requesting reinitiation of consultation. Based on our knowledge, expertise, and your materials, we concur with your conclusion that reinitiation is necessary and that the new proposed action is not likely to adversely affect any National Marine Fisheries Service ESA-listed species or designated critical habitat. Therefore, no further consultation pursuant to section 7 of the ESA is required.

Reinitiation of consultation is required and shall be requested by the lead federal agency or by us, where discretionary federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation; or, (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, reinitiation would be required. Should you have any questions about this correspondence please contact Edith Carson-Supino at (978) 282-8490 or by email (Edith.Carson-Supino@noaa.gov). For questions related to Essential Fish Habitat, please contact Ursula Howson with our Habitat Conservation Division at (732)-872-3116 or Ursula.Howson@noaa.gov.

Sincerely,

Michael J. Asaro, PhD
Acting Assistant Regional Administrator
for Protected Resources

cc: Howson, NMFS/HCD; Mahon, HUD; Fretwell, HUD
ECO: GARFO-2019-00514
File Code: H:\Section 7 Team\Section 7\Non-Fisheries\HUD\2019\Informals\Fast-41 HUD NYC DDC East Coast Resiliency Project Reinitiation





The City of New York
Office of Management and Budget
255 Greenwich Street • New York, New York 10007-2146

NOAA's National Marine Fisheries Service
Protected Resources Division
55 Great Republic Drive
Gloucester, MA 01930

Attn: Dr. Michael J. Asaro

Re: Request for Endangered Species Act (ESA) Concurrence
East Side Coastal Resiliency Project
New York, New York
New York City Department of Design and Construction Capital Contract: SANDRESM1

Dear Dr. Asaro,

On behalf of the U.S. Department of Housing and Urban Development (HUD), the New York City (City) Office of Management and Budget (OMB) is requesting re-initiation of consultation and is providing the National Oceanic and Atmospheric Association (NOAA) National Marine Fisheries Service (NMFS) new design and construction information for the proposed East Side Coastal Resiliency (ESCR) project, located in New York City, New York. HUD has granted authority to OMB to act as the federal agency to prepare this consultation (see **Attachment 1**). OMB is requesting concurrence on our finding that the current design and construction plans of the proposed project *may affect but is not likely to adversely affect* any species listed as threatened or endangered by NMFS under the ESA of 1973, as amended. Our supporting analysis is provided below.

PROPOSED PROJECT

Hurricane Sandy, which made landfall in October 2012, greatly impacted New York City and surrounding areas, including the east side of Manhattan, highlighting existing deficiencies in the City's ability to adequately protect vulnerable populations and critical infrastructure during major storm events. Hurricane Sandy caused extensive inland flooding in the study area, resulting in damage to residential and commercial property; public open space; transportation; and critical power, water, and sewer infrastructure. Addressing the vulnerability of the study area by protecting critical infrastructure and resources on Manhattan's lower east side is essential to the City's resiliency planning.

In June 2013, the U.S. Department of Housing and Urban Development (HUD) launched Rebuild by Design (RBD), a competition to respond to Hurricane Sandy's devastation in the northeast region of the United States. The winning proposals would be implemented using Community Development Block Grant –

Disaster Recovery (CDBG-DR) funding as well as other public and private-sector funding sources. One of the winning proposals was an integrated flood protection system on the east side of southern Manhattan to reduce the risk of coastal flood hazards, which became the East Side Coastal Resiliency (ESCR) project. The flood protection system is comprised of a combination of floodwalls, 18 closure structures (i.e., swing and roller floodgates), and supporting infrastructure improvements that together would reduce risk of damage from coastal storms in the area proposed for protection. The project area spans from Montgomery Street on the south to East 25th Street on the north and is split into two segments for design purposes as shown in **Figure 1**.

In addition to providing a reliable flood protection system for this flood hazard area, the proposed project aims to improve and enhance access to the waterfront in East River Park and Stuyvesant Cove Park, which are located within the study area. As such, the City is proposing to construct and operate a flood protection system with integrated urban design features that will reduce flood hazards to a diverse and vulnerable residential population and safeguard critical energy, infrastructure, commercial, and transportation assets while enhancing access to the waterfront and parkland. Project construction is anticipated to commence in spring 2020 with an estimated 3.5-year construction schedule allowing the flood protection system to be in place in 2023.

Preferred Alternative (Alternative 4) – Flood Protection System with a Raised East River Park

Alternative 4, identified as the new Preferred Alternative, of the ESCR project proposes to provide flood protection by raising East River Park by approximately eight feet and installing below-grade floodwalls within the park to meet the design flood protection criteria, providing flood protection for both the park and the inland community. This alternative would enhance neighborhood connectivity to the East River Park by reconstructing the Delancey Street, East 10th Street, and Corlears Hook pedestrian bridges to provide universal accessibility. This alternative would require reconstructing the park's underground water supply and drainage infrastructure and the existing park structures and recreational features, including the park amphitheater, as well as relocating two embayments within East River Park. This alternative also includes construction of footings to accommodate a shared-use flyover bridge connecting the north end of East River Park to Captain Patrick J. Brown Walk to alleviate congestion in the East River Bikeway. Under this alternative, Murphy Brothers and Asser Levy Playgrounds would be reconstructed and protected by a floodwall that would connect the northern point of East River park to the existing VA Hospital flood protection system at East 25th Street.

Description of In-Water Components

Construction of the overall proposed project will require specific work to be conducted in federally and state regulated waters. The in-water construction activities detailed in the previous consultations are provided in **Attachment 2**. Some of the in-water components from the previous consultations remain a component of the Preferred Alternative, though with modified assumptions. The design of the Preferred Alternative is currently underway and in the conceptual stage at present; therefore, this consultation assumes a reasonable worst-case scenario, specifically with respect to the in-water disturbances associated with the implementation of the Preferred Alternative. The primary in-water activities associated with the Preferred Alternative are described below and the area of impact summarized in **Table 1** and **Figure 2**:

- Use of construction barges and the installation of temporary mooring spuds and monopile dolphins for stabilization (resulting in approximately 160 square feet of temporary disturbance)
- Cofferdams for the reconstruction of ten combined sewer outfalls (resulting in approximately 10,000 square feet of temporary disturbance)
 - 24-inch H-type steel pile installed with cushioned impact hammer
- Demolition of the existing bulkhead for the installation of the cut-off wall, which will be installed by pile driving in the same alignment (resulting in 7,284 square feet of temporary disturbance)
 - 19-inch AZ steel piles installed with vibratory hammer
- Filling approximately 20,600 square feet of two existing embayments and filling 2,833 square feet behind the cutoff wall for the new embayments (permanent disturbance)
- Demolition of the existing esplanade in areas where new embayments will be constructed (resulting in 22,764 square feet of temporary disturbance)
- Pile drilling for the installation of ten 8-foot diameter shafts and installation of five footings to be placed atop of the shafts for the shared use flyover bridge (resulting in approximately 652 square feet of permanent disturbance)
 - 48-inch diameter steel caissons and 12-inch steel micropiles installed with drill rig

The reasonable worst-case scenario assumes the use of barges for construction due to the site constraints of East River Park that include limited vehicular access and extent of ongoing construction activities in the park. Approximately 600,000 cubic yards of fill is estimated to be required for the construction under the Preferred Alternative. An average of 3 barge trips per day are anticipated throughout the 3.5-year construction period. East River is a busy maritime port with tour boats, tugs, barges, and recreational vessels traversing the waters 24 hours a day. The United States Coast Guard (USCG) operates a harbor surveillance system to help provide separation between large vessels. The maritime trips generated by construction of the proposed project are expected to be limited to tug-assisted barges for equipment and materials. All of these vessels are operated by captains licensed by USCG. The origin of the source material and vessel routes are not yet known. Temporary construction barging operations would primarily require the installation of mooring spuds and monopile dolphins on the East River floor that would result in approximately 160 square feet of temporary disturbance. The construction would likely involve the use of equipment such as barge-mounted cranes and a vibratory pile driver or other drilling equipment to place the mooring spuds and monopile dolphins. At the completion of construction, all barge components would be removed. Operations of the proposed project will not result in a permanent increase of vessel traffic in the area.

To relocate and reconstruct the 10 sewer outfalls, a watertight cofferdam would be installed adjacent to the bulkhead at each sewer outfall location and the work area would be dewatered. The top of the cofferdam would be above the mean higher-high water line to isolate the work area from tidal influence. The work area would not contain standing water and approved dewatering measures would be installed, as necessary, and would discharge below the mean higher-high water line. A portable sediment tank or approved equivalent would be used to treat dewatering effluent. Approximately 1,000 square feet of temporary disturbance to regulated tidal wetlands between the cofferdams and East River bulkhead is anticipated for each sewer outfall for a total temporary disturbance area of 10,000 square feet. Existing sewer infrastructure is anticipated to be filled with concrete and abandoned in place.

To install the new cut-off wall, the existing bulkhead must first be demolished. Turbidity curtains would be installed prior to the start of demolition activities along the entire length of the bulkhead. In the same alignment as the bulkhead, the cut-off wall sheet piles would be pile driven, initially vibrated down and driven to final tip elevation. Where obstructions are encountered some pre-drilling may be needed prior to installing the cut-off wall sheet piles. In areas where the entire esplanade would be demolished to accommodate the new embayments, debris nets would be utilized to minimize the amount of debris falling

into the waterway. Any large debris would be retrieved and disposed of in accordance with applicable regulations and best practices.

At the existing embayments, the area inland of the cutoff wall would be backfilled, which would involve the loss of approximately 20,600 square feet of existing tidal wetlands. These embayments were created as part of the esplanade redesign in 2005–2008 to make the East River more accessible to park users and heighten their experience of the river and its currents and tidal flow. They consist of narrow areas that allow tidal water from the East River to flow beneath short pedestrian bridges along the esplanade, which causes the shading of significant portions of the water below. The bulkhead edge includes rocky fill material that was placed as part of the recent reconstruction to improve slope stabilization. The proposed relocated embayments would be of comparable or larger size (approximately 26,000 square feet in total) with improved habitat conditions, including the elimination of bridges that shade aquatic habitat, which can reduce benthic productivity and biomass. In addition, the provision of habitat enhancements designed for the recruitment of shellfish and other aquatic life along East River Park is also being explored.

To install the shafts and footings associated with the flyover bridge, the current assumption includes use of land-based drill rigs positioned in East River Park, the East River Greenway path and the Con Edison pier to install these support structures south of East 15th Street. Drilling for footings to be installed along Captain Patrick J Brown walk would be performed using barge mounted drill rigs. Pile drilling activities for the flyover bridge would involve the installation of a turbidity curtain and sinking of the pipe with a rotating cutter head to push the pipe into the river bed. After sinking the pipe, a rebar cage is lowered prior to installing a tremie pipe. Concrete is then pumped into the tremie pipe. As the tremie pipe is filled with concrete, river water and sediment within that pipe is gradually displaced or may require pumping to remove the sediment and water. In either case, the discharge material would be tested for quality before being discharged either to the river or the existing sewer system. Once the installation of these components is complete, the rebar cage, tremie pipe and any turbidity curtains would be removed.

Table 1**Temporary Disturbances and Permanent Impacts to Tidal Wetlands**

Capital Project	Impact Type	Area of Disturbance or Impacts (Sq. Ft.)	
SANDRESM1 East Side Coastal Resiliency Project	Temporary Disturbances	Reconstructed Sewer Outfalls	10,000
		Demolition of Bulkhead for Cut-off Wall Installation	7,284
		Demolition of Areas of Existing Esplanade	22,764
		Construction Barge Moorings	160
		Total	40,208
	Permanent Impacts	Flyover Bridge Shafts	502
		Flyover Bridge Footings	150
		Filling Northern Embayment	16,000
		Filling Southern Embayment	4,600
		Filling Behind Cut-off Wall for New Embayments (Existing Esplanade)	2,833
		Total	24,085

Summary of Protective Measures

Design and construction phasing planning for the Preferred Alternative is ongoing. However, pile driving and pile drilling associated with installation of the support structures of the shared use flyover bridge, the cut-off wall in the alignment of the existing bulkhead, and the cofferdams to protect the work area of sewer outfall reconstruction is anticipated to take place adjacent to and within the East River. The noise generated by pile driving and pile drilling that would be associated with construction of the Preferred Alternative is known to cause behavioral and physiological impacts to fish. Due to the potential for adverse effects to fish, the City has committed to implementing conservation measures for in-water pile installation associated with the Preferred Alternative including:

- **Cushion blocks.** Cushion blocks are wooden blocks placed on the top of the pile and act as a buffer between the impact hammer and the pile, reducing total noise from each impact.
- **Pile driving ramp up.** Pile driving would begin with a series of low impact hits and gradually increase to normal impact levels. This method allows for some warning to aquatic fauna prior to attaining peak noise levels of the pile driving.
- **Bubble Curtains.** Bubble curtains are hoses or manifolds that are placed on the sea floor around the project impact area. Air compressors disburse air into the hoses and air bubbles then discharge up into the water column. Bubble curtains have been shown to be effective at reducing the sound level of pile driving to acceptable underwater levels. Where practicable, bubble curtains would be used during installation of support structures for the shared use flyover bridge.

Moreover, to reduce suspension of sediment into the water column to the greatest extent practicable, turbidity curtains would be installed prior to any construction, where practicable. Sediments in the East River are anticipated to be contaminated due to historic land uses. All sediments removed from the flyover bridge support shaft casings will be handled, stored, and disposed of in accordance with all applicable health, safety, and sediment and waste management plans including a site specific Remedial Action Plan (RAP), a Construction Health and Safety Plan (CHASP), a NYSDEC approved stormwater pollution prevention plan (SWPPP), and a U.S. Environmental Protection Agency (USEPA) approved spill prevention control and countermeasures plan (SPCCP).

Wetland mitigatory measures have the potential to provide new and improved habitat within the action area and at off-site wetland areas. The proposed embayments within East River Park to replace the existing embayments would be of comparable or larger size with improved habitat conditions, including the elimination of bridges that shade aquatic habitat, which can reduce benthic organism productivity and biomass. Moreover, the provision of habitat enhancements designed for the recruitment of shellfish and other aquatic life along East River Park is also being explored as design advances. Additional off-site tidal wetland creation and/or rehabilitation would also be undertaken to satisfy NYSDEC mitigation requirements of a 2:1 square footage ratio and would be sited within the NY Harbor Estuary.

Alternatives Assessed

Three other “with action” alternatives were assessed alongside the Preferred Alternative. The Flood Protection System on the West Side of East River Park – Baseline Alternative, referred to as Alternative 2, The Flood Protection System on the West Side of East River Drive – Enhanced Park and Access Alternative (Alternative 3), and The Flood Protection System East of FDR Drive (Alternative 5). While the first two alternatives mentioned would have fewer in-water construction components than the Preferred Alternative,

the construction period would be longer (5 years as compared to 3.5 years), which would constitute a longer time of construction related impacts such as construction barging. The last “with action” alternative includes the same in-water construction elements as the Preferred Alternative with additional fill required in the East River to accommodate the substructure for the raised FDR platform. Design is currently progressing solely for the Preferred Alternative. Should another alternative be chosen for implementation, this consultation will be reinitiated to address any new in-water elements or impacts that have not already been analyzed.

The City evaluated and reviewed the proposed alternatives’ conceptual design against the principal objectives of the project, including providing a reliable flood protection system for the protected area, improving access to and enhancing open space resources along the waterfront, and meeting HUD funding deadlines for federal spending, along with the goal to minimize potential environmental effects and disruptions to the community. With the implementation of the Preferred Alternative, which is described above, East River Park would experience significant risk reduction from flooding and inundation from sea level rise in addition to substantial enhancements to its value as a recreational resource and providing flood protection to the inland communities. East River Park is crucial parkland in a neighborhood that is already deficient in open space resources when compared to the City’s guidelines and optimal planning goals for ratios of open space acreage per 1000 residents. Protecting East River Park by installing the flood protection near the shoreline aims to ensure that this valuable resource is resilient to future storms and sea level rise, and available for community use rapidly following a storm event.

Park user experience would be enhanced with the reconstruction of East River Park and the reconstruction of pedestrian bridges to improve access. Additionally, a long-standing deficiency along the East River Greenway at the Con Edison 13th Street Generating Station would be remedied with the construction of a shared-use pedestrian/bicyclist flyover bridge linking East River Park and Captain Patrick J. Brown Walk, substantially improving the City’s greenway network. In addition, Stuyvesant Cove Park, Murphy Brothers Playground, and Asser Levy Playground would be reconstructed and improved, resulting in enhanced recreational spaces throughout the project area. The selection of this alternative also allows for a shorter construction duration and park closure, earlier deployment of the flood protection system (which is expected to be completed in mid-2023), and reduced construction disruption along the FDR Drive.

CONSULTATION HISTORY TO DATE

To implement the proposed project, the City is receiving funds from HUD, a federal agency, and is therefore subject to Section 7 of the Endangered Species Act as well as the Magnuson-Stevens Fishery Conservation and Management Act of 1976, as amended. Requests for concurrence on findings regarding threatened and endangered species and Essential Fish Habitat (EFH) were previously submitted to NMFS on January 25, 2016. A project update was provided on May 26, 2016 (with a follow up email transmitting these materials on May 27, 2016) to request additional guidance on the addition of a new potential project alternative that would create a more robust line of protection and eliminate the need for closure structures across the FDR (Alternative 5). The original consultation requests, all correspondence associated with those requests, and NMFS’ responses are provided in **Attachment 2**.

The in-water work for the project at that time included:

- Installation of a turbidity curtain prior to installing the cofferdam.

- Installation of 24-inch steel sheet piles to be used as a cofferdam. The sheet piles were installed via a vibratory or impact hammer, depending on subsurface conditions. The area enclosed by the sheet piles was anticipated to measure approximately 300 square feet.
- Removal of the piles after the completion of the project.
- The construction of an outfall that occurred in a dewatered cofferdam.

NMFS returned the results of the Section 7 consultation on March 18, 2016 and concurred with the findings that the proposed limited in-water construction activities, including pile driving a 24-inch sheet pile cofferdam with an impact hammer for a 300-square foot area, is not likely to adversely affect species listed as threatened or endangered.

As noted above, a project update was provided on May 26, 2016, to request additional guidance on the addition of a new potential project alternative. A response was received from NMFS on June 2, 2016 that concurred that the proposed modification would not increase effects to ESA-listed species and that no reinitiation for consultation was necessary. Due to the larger portion of habitat that will be impacted or modified in the current proposed project, we are requesting reinitiation of consultation.

DESCRIPTION OF ACTION AREA

The action area is comprised of “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50CFR§402.02). The action area for this analysis of natural resources includes the area of direct impact, all areas surrounded by turbidity curtains or cofferdams, and a 103.3 meter radius to account for the acoustic behavior threshold for sturgeon, and all routes traveled by the project vessels. Based on this, the action area includes a 400-foot buffer surrounding the project areas and includes 127 acres of water and 2.2 miles of shoreline of the East River that abuts the project areas. This area is expected to encompass all of the effects of the proposed project. For the purpose of this consultation, the action area is limited to the East River, and the center point is located at 40°43'28.084" North, 73°58'27.401" West.

The area of direct impact is comprised of the following elements:

- Construction barge moorings – 160 square feet (temporary)
- Cofferdams for sewer outfall reconstruction – 10,000 square feet (temporary)
- Demolition of bulkhead for cut-off wall installation – 7,284 square feet (temporary)
- Filling of existing embayments – 20,600 square feet (permanent)
- Demolition of existing esplanade – 22,764 square feet (temporary)
- Filling behind cut-off wall for new embayments – 2,833 square feet (permanent)
- Flyover bridge substructure – 652 square feet (permanent)

Beyond the areas of direct impact, the action area was defined as the 400-foot buffer utilized in the Draft Environmental Impact Statement (DEIS), which encompasses the noise, water quality, and vessel traffic stressors, including the maximum extent of noise impacts to sturgeon from the loudest expected in-water construction (103.3 meters / 339 feet), as cited in the noise analysis below. Significant impacts from turbidity are not expected due to the use of turbidity curtains for all pile-driving operations. Vessel traffic impacts, while still being determined as project design advances, will be temporary and are not expected to represent a significant increase in vessel traffic in an already heavily used navigational channel.

The East River is a tidal strait that connects New York Harbor with Long Island Sound. The river is approximately 16 miles long and generally ranges between 600 to 4,000 feet wide. The lower East River, which runs from the Battery in Manhattan to Hell Gate in Queens, is narrower and deeper than the upper East River, which runs from Hell Gate in Queens to Long Island Sound. Mean depth of the lower East River is approximately 30 feet below mean low water (Blumberg and Pritchard, 1997); however, depth varies and can be as deep as approximately 65 feet below mean low water (USACE, 2015).

Surface Water Resources

The East River's circulation and salinity structure are largely determined by conditions in the Upper Harbor and Long Island Sound. Currents in the East River are swift and can approach 8 feet/second (Bowman, 1976). The strong currents are a result of the width of the East River, its channelization and bottom topography, and the influence of tidal water from the Hudson River, Harlem River, and Long Island Sound. Ebb tides are particularly powerful. A large difference in water surface elevation from the Long Island Sound to The Battery also contributes to the strong currents (Blumberg and Pritchard, 1997).

Freshwater input into the East River consists of several systems: the Bronx River, Westchester Creek, and the Hudson River. Additionally, overland flow, combined sewer overflow, and point source discharges from wastewater treatment plants account for freshwater inputs into the East River. There are over 100 combined sewer overflow outfalls in the lower East River, with 23 occurring along the shoreline of Project Area One and Project Area Two (OASIS, 2014).

Wetland Resources

The entire East River shoreline within the action area is bulkheaded. The East River is mapped by The National Wetlands Inventory as estuarine subtidal wetlands with an unconsolidated bottom (E1UBL) (**Figure 3**). Subtidal estuarine wetlands are defined by United States Fish and Wildlife Service as deep-water tidal habitats and adjacent tidal wetlands that are influenced by water runoff, often enclosed by land, that have low energy and variable salinity. Unconsolidated bottoms have at least 25 percent cover of particles smaller than six to seven centimeters and less than 30 percent vegetative cover (Cowardin et. al., 1979).

The action area also includes New York State Department of Environmental Conservation (NYSDEC) regulated littoral zone tidal wetland (**Figure 4**). Littoral zone is defined as "the tidal wetland zone that includes all lands under tidal waters which are not included in any other category. There shall be no littoral zone under waters deeper than six feet at mean low water (6NYCRR Part 661)." NYSDEC tidal wetland maps indicate that the entire East River constitutes littoral zone. However, much of the East River exceeds depths of six feet below mean low water. Based on observations made during the low tide shoreline surveys, it is anticipated that there are portions of the East River adjacent to or underneath the bulkhead that are six feet deep or less at mean low water and, therefore, have the littoral zone classification. This includes two existing embayments, which are areas where the shoreline curves inward, located along the East River just north and south of the Houston Street entrance to the park. These embayments were created as part of the esplanade redesign in 2005–2008 to make the East River more accessible to park users and heighten their experience of the river and its currents and tidal flow. They consist of small areas that allow tidal water from the East River to flow beneath short pedestrian bridges along the esplanade onto a rip rap slope that

ends at the bulkhead (**Figure 5**). The existing northern and southern embayments were constructed with pedestrian bridges spanning across the embayment, shading significant portions of the water below. The majority of both embayments consist of rocky fill material that was placed as part of the recent reconstruction to improve slope stabilization. The southern embayment is approximately 4,600 square feet, of which approximately 3,600 square feet (78 percent) is shaded by the short pedestrian bridge; the northern embayment is approximately 16,000 square feet, of which approximately 5,200 square feet (32 percent) is shaded.

Water Quality

Title 6 NYCRR Part 701 is the regulatory framework that classifies surface water and groundwater in New York State. The lower portion of the East River within the action area is a Class I saline surface water body. Class I water bodies are best suited for secondary contact, which includes fishing and recreational activities. Wildlife species should be capable of establishing successful habitats in these waters. Prolonged physical contact, such as swimming in these waters, is not advised. Consumption of fish from this classification of water body is restricted or not advised.

DEP has monitored New York Harbor water quality since 1909 through the Harbor Survey. Over the past twenty years, Harbor Survey data show that the water quality of New York Harbor has improved significantly as a result of measures undertaken by the City (DEP 2012). These measures include eliminating 99 percent of raw dry-weather sewage discharges, reducing illegal discharges, increasing the capture of wet-weather related floatables, and reducing the toxic metals loadings from industrial sources by 95 percent (DEP 2002). The 1999 and 2000 Interstate Environmental Commission (IEC) 305(b) reports also indicate that the year-round disinfection requirement for discharges to waters within its district (including New York Harbor) has contributed significantly to water quality improvements since the requirement went into effect in 1986 (IEC 2000, 2001). In the 2012 State of the Harbor Report, seven of the eight water quality performance metrics showed an improvement in the Inner Harbor (DEP 2012).

Dissolved oxygen in the water column is necessary for respiration by all aerobic forms of life, including fish and invertebrates such as crabs, clams, and zooplankton. The bacterial breakdown of high organic loads from various sources can deplete dissolved oxygen to low levels and persistently low dissolved oxygen can degrade habitat and cause a variety of sublethal or, in extreme cases, lethal effects. Consequently, dissolved oxygen is one of the most common indicators of overall water quality in aquatic systems. Dissolved oxygen concentrations in the Inner Harbor area have increased over the past 30 years from an average of below 3 mg/L in 1970 to above 5 mg/L in 2001, a value supportive of ecological productivity (DEP 2002). Dissolved oxygen concentrations in the study area at Harbor Survey Station E2, adjacent to the proposed project area, ranged from 4.03 to 10.67 mg/l at the surface and from 3.80 to 10.71 mg/l in bottom waters in 2017 (DEP 2017). The lower dissolved oxygen values were recorded during the summer months.

Secchi transparency measures the clarity of surface waters. Transparency greater than five feet is indicative of clear water. Decreased clarity can be caused by high suspended solid concentrations or blooms of plankton. Secchi transparencies less than three feet are generally indicative of poor water quality conditions. Average secchi readings in the Inner Harbor area have remained relatively consistent since measurement of this parameter began in 1986, ranging between about 3.5 and 5.5 feet (DEP 2012). For the Harbor Survey Monitoring Program in 2017, secchi transparency at Station E2 averaged 3.3 feet (DEP 2017).

Aquatic Resources

The East River is an urban water body situated along the shores of the boroughs of Queens, Manhattan, and Brooklyn. The variation in sources of runoff affect the type of biota that can exist in the river where a wide array of conditions must be tolerated.

Phytoplankton/Zooplankton

Phytoplankton are microscopic plants whose movements are largely dictated by prevailing tides and currents. Light penetration, turbidity, and nutrient concentrations are important in determining phytoplankton productivity and biomass. Organisms found in Long Island Sound and Hudson River are also usually found in the East River due to the proximity of these waterbodies to each other and strong currents.

Zooplankton are an integral component of aquatic food webs. They are primary grazers on phytoplankton and detritus material and are themselves used by organisms of higher trophic levels as a food source. The higher-level consumers of zooplankton typically include forage fish, such as bay anchovy, as well as commercially and recreationally important species, such as striped bass (*Morone saxatilis*) and white perch (*Morone americana*) during their early life stages.

Submerged Aquatic Vegetation and Benthic Algae

Submerged aquatic vegetation (SAV) refers to rooted aquatic plants that are often found in shallow areas of estuaries. These organisms are important because they provide nursery and refuge habitat for fish. Benthic algae can be large multicellular plants that can be important primary producers in the aquatic environment. They are often seen on rocks, jetties, pilings, and sandy or muddy bottoms (Hurley 1990). Since these organisms require sunlight as their primary source of energy, the limited light penetration of New York Harbor limits their distribution to shallow areas. Light penetration, turbidity, and nutrient concentrations are all important in determining SAV and benthic algae productivity and biomass. Surveys conducted in the action area documented sea lettuce and rockweed, which are species of benthic algae, occurring on intertidal riprap at several locations along the shoreline including just north of Pier 42, the riprap coves at Stanton Street and East 4th Street, and at Stuyvesant Cove Park. No SAV was observed within the action area.

Benthic Invertebrates

Over 100 benthic invertebrate taxa (mostly crustaceans or polychaete worms) have been identified in the East River (Coastal Environmental Services 1987). Two benthic invertebrate sub-communities were identified in the East River in the vicinity of the proposed project on the basis of substrate hardness (Hazen and Sawyer 1983). The hard substrate community is characterized by organisms that are either firmly attached to rocks and other hard objects (e.g., mussels or barnacles), or that build or live in tubes. Species of polychaete worms, amphipods, and several other species have adapted to the East River's hard bottoms and rapid currents by living within the abandoned tubes of other species. The soft substrate community occurs in the more protected areas within the East River where detritus, clay, silt, and sand have accumulated in shallow, low velocity areas near piers and pilings. Common soft substrate organisms included oligochaete worms, the soft-shelled clam *Mya arenaria*, and a variety of flatworms, nemerteans, polychaetes, and crustaceans (Hazen and Sawyer 1985). Recent benthic and epibenthic sampling by DEP in the lower East River documented nine benthic macroinvertebrate taxa, including annelids, arthropods, and mollusks. The annelid *Haploscoloplos robustus* and mollusks *Melampus bidentatus* and *Mulinia lateralis* were found in the highest densities (DEP 2007). Benthic macroinvertebrates sampled between Piers 6 and 9 on the Manhattan shoreline of the East River south of the proposed project area in 2002 found mostly pollution-tolerant taxa (primarily polychaetes in the families *Capitellidae* and *Spionidae*), although some pollution-sensitive species (e.g., *Ampelisca* spp.) were also found. Other invertebrates collected were mussels, crabs, shrimp, isopods, and nematodes (AKRF 2002).

Fish

The finfish community in Upper New York Harbor, including the lower East River, is typical of large coastal estuaries and inshore waterways along the Mid-Atlantic Bight, supporting a variety of estuarine, marine, and diadromous fish species that use this area as spawning grounds, a migratory pathway, or nursery/foraging habitat. American eel (*Anguilla rostrata*), blueback herring (*Alosa aestivalis*), alewife (*Alosa pseudoharengus*), American shad (*Alosa sapidissima*), hickory shad (*Alosa mediocris*), striped bass, tomcod, Atlantic sturgeon (*Acipenser oxyrinchus*), and rainbow smelt (*Osmerus mordax*) are diadromous fish that may pass through the East River during migration to and from spawning areas in the upper Hudson River and its tributaries (NOAA 2001). Transient shortnose sturgeon (*Acipenser brevirostrum*) also have the potential to occur briefly in the East River (Bain 1997). Examples of marine species found in the East River from spring through fall include bluefish (*Pomatomus saltatrix*), scup (*Stenotomus chrysops*), black sea bass (*Centropristis striata*), tautog, and weakfish (*Cynoscion regalis*) (NOAA 2001). Overall, the East River's fish community is spatially and seasonally dynamic.

NMFS LISTED SPECIES IN THE ACTION AREA

There are two endangered fish with the potential to occur in the action area:

Shortnose sturgeon (*Acipenser brevirostrum*)(32 FR 4001; Recovery plan: NMFS 1998)

Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*)(77 FR 5880 and 77 FR 5914)

Atlantic Sturgeon

There are four DPSs of Atlantic sturgeon listed as endangered (New York Bight, Chesapeake Bay, Carolina, and South Atlantic) and one DPS listed as threatened (Gulf of Maine) under the ESA. The marine range for all five DPSs includes marine waters, coastal bays, and estuaries from the Labrador Inlet in Labrador, Canada to Cape Canaveral, Florida. The sub-adult and adult Atlantic sturgeon travel within the marine environment, coastal bays, sounds, and ocean waters (Erickson et al. 2011). Atlantic sturgeon originating from any of the five DPSs could occur in the action area. Atlantic sturgeon belonging to the New York Bight DPS spawn in freshwater sections of the Hudson River and overwinter throughout the Bight, off the south shore of Long Island, and throughout Long Island Sound (Bain 1997, Savoy and Pacileo 2003). Because the water in the East River is mainly saline, no spawning or early life stages of Atlantic sturgeon are expected to be present in the action area.

The Atlantic waters off of Rockaway Peninsula and Sandy Hook are a significant concentration area of wintering Atlantic sturgeon (Dunton et al. 2010) and transients moving between Hudson River spawning grounds and these overwintering areas must pass through Upper Bay and may pass through the East River. Telemetry receivers in the lower East River and on the east and west sides of Roosevelt Island have recently detected tagged Atlantic sturgeon moving through this area (Tomechik et al. 2015). Occurrences of Atlantic sturgeon in the East River are likely brief, as these individuals are strictly transients. Atlantic sturgeon prefer open, marine waters and greater water depths than those of the East River for overwintering, but have been known to also occur in shallower waters, potentially for foraging of benthic resources (Hatin et al. 2002, 2007; Savoy and Pacileo 2003, Dunton et al. 2010). Migrating and opportunistically foraging Atlantic sturgeon are most abundant in these waters from late September to late March (Dunton et al. 2010), however, adult and subadult species may be found in the East River year round (NOAA 2019).

Shortnose Sturgeon

The shortnose sturgeon is an anadromous fish that is endangered throughout their range from the Minas Basin, Nova Scotia, Canada, to northeastern Florida. They spawn, develop, and usually overwinter in the upper Hudson River. Because the water in the East River is mainly saline, no spawning or early life stages of shortnose sturgeon are expected to be present in the action area. Shortnose sturgeon are also found in the Connecticut River and, based on known movement patterns and a history of a few tagged individuals migrating from the Hudson to the Connecticut River, it is expected that on rare occasion sturgeon may travel through the East River and the proposed action area (NOAA 2016). It is believed that the occurrence of shortnose sturgeon in shallow waters would be due to the presence of benthic resources for foraging, however, there is limited benthic resources and no SAV within the action area. Additionally, waters below the Tappan Zee Bridge are suboptimal due to their high salinities (Bain 1997). Migrating and opportunistically foraging adult shortnose sturgeon, therefore, have limited potential to occur in the lower East River, and only on rare and brief occasions as transients emigrating from the Hudson River (Waldman et al. 1996, Kynard 1997).

Critical Habitat

There is no designated critical habitat for these species within the action area.

EFFECTS DETERMINATION

An evaluation of four potential types of impacts with implementation of the Preferred Alternative are presented to determine effects to ESA species.

- Noise Impacts
- Water Quality Impacts
- Vessel Impacts
- Impacts to Prey Species (Habitat Modification)

Noise Impacts

The Preferred Alternative includes noise-producing, in-water construction work for installing the substructure for the flyover bridge, installing a new cut-off wall in the approximate alignment of the existing bulkhead, and installing a temporary water-tight cofferdam for the reconstruction of the sewer outfalls. The installation of the flyover bridge substructure will be done using a drill rig. Noise impacts associated with the drill rig are expected to be lower than pile driving activities, therefore, it is omitted from the acoustic analysis below.

Pile driving activities to install the cut-off wall in the approximate alignment of the existing bulkhead will use 19-inch AZ steel sheet piles with a vibratory hammer. For the purpose of analyzing a reasonable worst-case scenario, a larger, 24-inch steel pile was utilized in the acoustic analysis as shown in **Table 2**. The cofferdams for the reconstruction of the sewer outfalls will be installed with 24" H-type steel piles using a cushioned impact hammer. For the purpose of the acoustic analysis, the steel pipe pile type was selected to provide a reasonable worst-case scenario related to noise impacts.

The Greater Atlantic Fisheries Office (GARFO) of NOAA has supplied an acoustic tool to aid in the analysis of noise impacts to ESA species. The tool defines estimated noise and pressure levels of pile driving activities associated with proxy projects, threshold values for physiological and behavioral impacts to ESA species, and attenuation rates. It is expected that the in-water construction of the cofferdam will produce the loudest noises estimated at a peak level of 192 decibels (dB_{Peak}) (Table 3). Table 4 calculates the distances from the origin of the noise producing element to the area where the sturgeon would not be affected by the in-water construction.

Table 2
Proxy Projects for Estimating Underwater Noise

Project Location	Water Depth (m)	Pile Size (inches)	Pile Type	Hammer Type	Attenuation rate (dB/10m)
Rodeo, CA - San Francisco Bay, CA	5	24"	Steel Pipe	Cushioned Impact	3
Not Available	15	24"	AZ Steel Sheet	Vibratory	5

Table 3
Proxy-Based Estimates for Underwater Noise

Type of Pile	Hammer Type	Estimated Peak Noise Level (dB_{Peak})	Estimated Pressure Level (dB_{RMS})	Estimated Single Strike Sound Exposure Level (dB_{sSEL})
24" Steel Pipe	Cushioned Impact	192	178	167
24" AZ Steel Sheet	Vibratory	182	165	165

Table 4
Estimated Distances to Sturgeon Injury and Behavioral Thresholds

Type of Pile	Hammer Type	Distance (m) to $206\text{dB}_{\text{Peak}}$ (injury)	Distance (m) to sSEL of 150 dB (surrogate for 187dBcSEL injury)	Distance (m) to Behavioral Disturbance Threshold ($150\text{dB}_{\text{RMS}}$)
24" Steel Pipe	Cushioned Impact	NA	66.7	103.3
24" AZ Steel Sheet	Vibratory	NA	40.0	40.0

Exposure to underwater noise levels of $206\text{dB}_{\text{Peak}}$ and 187cSEL can result in injury to sturgeon. In addition to the "peak" exposure criteria, which relates to the energy received from a single pile strike, the potential for injury exists for multiple exposures to noise over a period of time; this is accounted for by the cSEL threshold. The cSEL is not an instantaneous maximum noise level but is a measure of the accumulated energy over a specific period of time (e.g., the period of time it takes to install a pile). When it is not possible to accurately calculate the distance to the 187dBcSEL isopleth, we calculate the distance to the 150dBsSEL isopleth. The farther a fish is away from sheet piles being driven, the more strikes it must be exposed to in order to accumulate enough energy to result in injury. At some distance from the pile, a fish is far enough away that, regardless of the number of strikes it is exposed to, the energy accumulated is low enough that there is no potential for injury. For this project, the distance to the 150dBsSEL isopleth is no greater than 66.7 meters. In order to be exposed to potentially injurious levels of noise during installation of the piles, a sturgeon would need to be within 66.7 meters of the pile being driven to be exposed to this noise for any prolonged time period. This is extremely unlikely to occur as it is expected that sturgeon would modify

their behavior at 103.3 meters from the installed piles and quickly move away from the area before cumulative injury levels are reached.

Behavioral effects, such as avoidance or disruption of foraging activities, may occur in sturgeon exposed to noise above 150 dBRMs. It is expected that underwater noise levels would be below 150 dBRMs at distances beyond approximately 103.3 meters from the pile being installed. Should sturgeon move into the action area where the 150 dBRMs isopleth extends, as described above, it is reasonable to assume that a sturgeon, upon detecting underwater noise levels of 150 dBRMs, will modify its behavior such that it redirects its course of movement away from the ensonified area and therefore, away from the project site. If any movements away from the ensonified area do occur, it is extremely unlikely that these movements will affect essential sturgeon behaviors (e.g., spawning, resting, and migration), as the area is not a spawning or overwintering area, and the rest of the East River is sufficiently large enough to allow sturgeon to avoid the ensonified area while continuing to forage and migrate. Given the small distance a sturgeon would need to move to avoid the disturbance levels of noise, any effects will not be able to be meaningfully measured or detected. Therefore, the effects of noise on sturgeon are insignificant.

Water Quality Impacts

It is expected that turbidity would increase temporarily during pile driving activities associated with the construction of the support structure for the shared-use flyover bridge, the cofferdams for reconstructing sewer outfalls, and the installation of the cut-off wall in the alignment of the existing bulkhead. Turbidity curtains would be utilized for each of these operations to prevent the loosened sediment from entering the larger waterbody of the East River. The curtains will also prevent sturgeon from entering the area and thus, will prevent them from being exposed to the turbid water.

The installation of piles will disturb bottom sediments and may cause a temporary increase in suspended sediment in the action area. Using available information collected from a project in the Hudson River, we expect pile driving activities to produce total suspended sediment (TSS) concentrations of approximately 5.0 to 10.0 mg/L above background levels within approximately 300 feet (91 meters) of the pile being driven (FHWA 2012). Using a clamshell to extract piles allows sediment attached to the pile to move vertically through the water column until gravitational forces cause it to slough off under its own weight. The small resulting sediment plume is expected to settle out of the water column within a few hours. Studies of the effects of turbid water on fish suggest that concentrations of suspended sediment can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton 1993). The TSS levels expected for pile driving or removal (5.0 to 10.0 mg/L) are below those shown to have adverse effect on fish (580.0 mg/L for the most sensitive species, with 1,000.0 mg/L more typical; see summary of scientific literature in Burton 1993) and benthic communities (390.0 mg/L (EPA 1986)). TSS is most likely to affect sturgeon if a plume causes a barrier to normal behaviors. However, we expect sturgeon to either swim through the plume with no adverse effects or make small evasive movements to avoid it. Due to the proposed turbidity conservation measures in waters where suspended solids baseline conditions are generally moderate to poor according to secchi transparency readings (DEP 2017), effects to water quality from pile driving activities would be too small to be meaningfully measured or detected and are insignificant.

Other impacts to water quality were also assessed and screened from the analysis. The reconstruction of sewer outfalls along the East River Park bulkhead is not anticipated to change stormwater effluent from the current baseline conditions. During reconstruction, effluent will continue to flow through the existing outfalls until the new system comes online. The flyover bridge would represent new impervious surface in

the study area that would drain to East River Park and eventually into the East River. The new impervious surface would be approximately 15,000 square feet; however, this represents a small increase in impervious area within the study area and there would be no vehicular traffic and therefore no associated contaminants to be mobilized by stormwater runoff. Because the effluent will continue to be rapidly diluted to within minimum water quality standards or to non-detectable levels, it would have discountable effects on water depth, water flow, dissolved oxygen levels, salinity, temperature, or the ability for sturgeon to migrate in the action area.

Vessel Impacts

In our analysis we considered three elements: (1) the existing baseline conditions, (2) the action and what it adds to existing baseline conditions, and (3) new baseline conditions (the existing baseline conditions and the action together). We have determined that vessel traffic added to baseline conditions as a result of the proposed project is not likely to adversely affect ESA-listed species for the following reasons.

Adding project vessels to the existing baseline will not increase the risk that any vessel in the area will strike an individual, or will increase it to such a small extent that the effect of the action (i.e., any increase in risk of a strike caused by the project) cannot be meaningfully measured or detected. The baseline risk of a vessel strike within East River is unknown. The increase in traffic associated with the proposed project is extremely small. During the project activities, an estimate of 3 project vessels per day will be added to the baseline. The addition of project vessels will also be intermittent, temporary, and restricted to a small portion of the overall action area on any given day. As such, any increased risk of a vessel strike caused by the project will be too small to be meaningfully measured or detected. As a result, the effect of the action on the increased risk of a vessel strike in the action area is insignificant.

The flood protection system will reduce risk of damage from coastal storms in the area. Allowing protection of critical infrastructure is not expected to change the number of vessels that use the action area; thus, preserving the status quo with regard to vessel routes and vessel numbers will not change the risk of a vessel strike. Any slight increase in risk from altered patterns of use would be too small to be detected or measured, and effects are, therefore, insignificant.

Impacts to Prey Species (Habitat Modification)

The Preferred Alternative proposes the installation of the permanent support structures for the shared use flyover bridge and fill placed within the existing embayments and behind the cutoff wall at the edges of the proposed embayments. With this alternative, 40,208 square feet of existing habitat will only be temporarily disturbed. Also, 24,085 square feet of existing habitat (see **Table 1**) would no longer support benthic organisms that may provide a foraging habitat for certain fish, however, the project area constitutes a very small portion of the available benthic foraging habitat within the action area (the project area, plus a 103.3 meter radius, and all routes traveled by the project vessels). In addition, the installation of the proposed new embayments are anticipated to constitute an improvement over the existing embayments. The proposed embayments would be of comparable or larger size (approximately 26,000 square feet in total) with improved habitat conditions, including the elimination of pedestrian bridges that shade aquatic habitat, which can reduce benthic productivity and biomass. In addition, the provision of habitat enhancements designed for the recruitment of shellfish and other aquatic life along East River Park is also being explored. Additional off-site tidal wetland mitigation would also be undertaken with either the creation and/or

rehabilitation of tidal wetland habitat within the NY Harbor Estuary or the purchase of wetland mitigation credits through the Saw Mill Creek Wetland Mitigation Bank located on Staten Island New York.

Shading effects from barging as well as reduced habitat from installation of cofferdams and the cut-off wall would be temporary. Due to the lack of SAV present in these areas, impacts to flora are anticipated to be minimal or non-existent. Prey species would be expected to avoid the action area during construction activities and relocate to nearby available habitat. Upon completion of construction, the affected area would be recolonized and be anticipated to return to existing conditions. As a result, temporary and permanent effects to habitat and prey species would be too small to be meaningfully measured or detected and are, therefore, insignificant.

CONCLUSION

Based on the analysis that all effects of the proposed action when added to the baseline will be insignificant or discountable, we have determined that the effects of the East Side Coastal Resiliency Project may affect but is not likely to adversely affect any listed species or critical habitat under NMFS' jurisdiction. We certify that we have used the best scientific and commercial data available to complete this analysis. We request your concurrence with this determination.

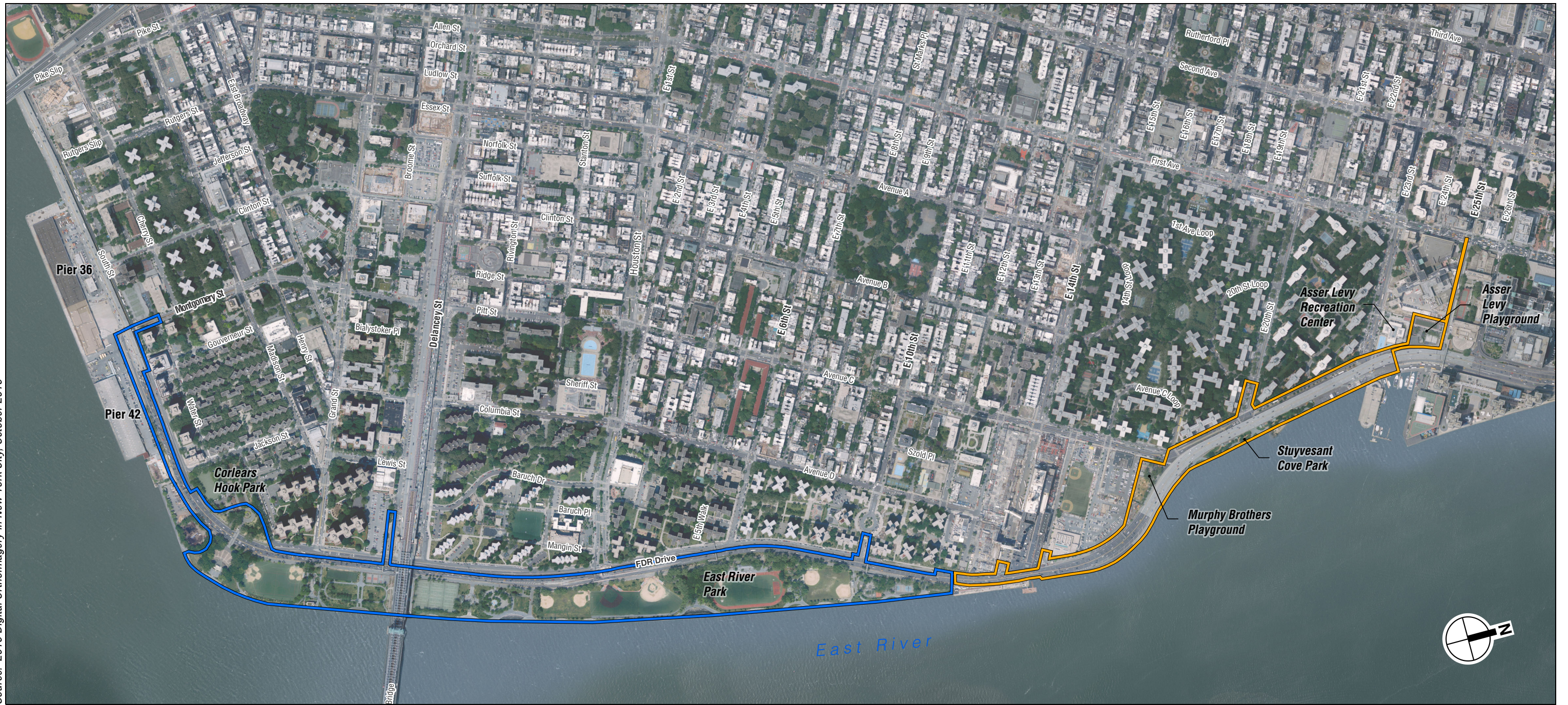
Sincerely,



Eram Qadri

Unit Head – Environmental Review, CDBG Disaster Recovery
New York City Mayor's Office of Management and Budget

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

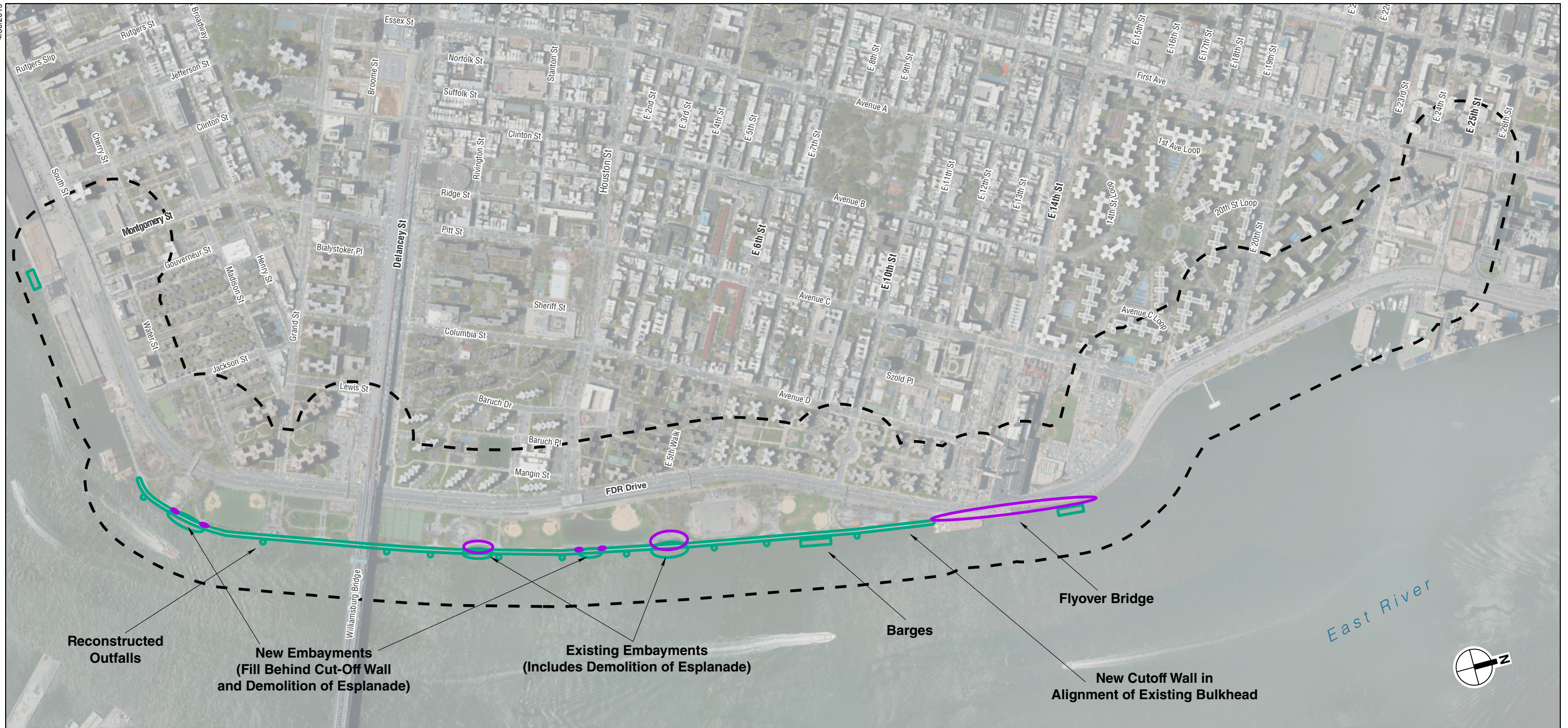





-  Project Area One
-  Project Area Two

0 1,000 FEET

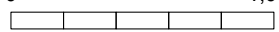


4/30/2019



-  Natural Resources Study Area (400-Foot Study Area Radius)
-  Approximate Locations of Permanent In-Water Impacts
-  Approximate Locations of Temporary In-Water Disturbances

0 1,000 FEET



3/15/2019

Source: USFWS



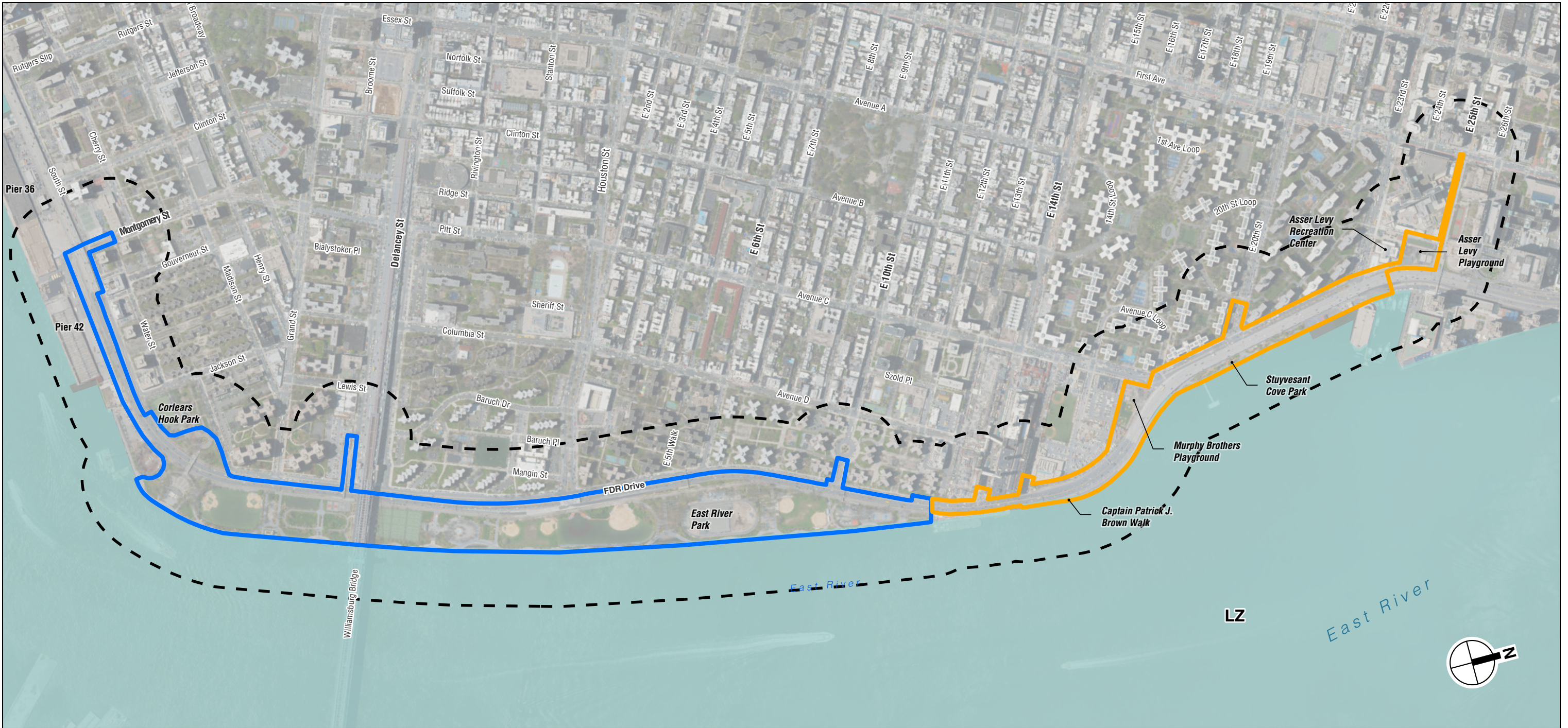
- Project Area One
- Project Area Two
- Natural Resources Study Area (400-Foot Study Area Radius)

Estuarine and Marine Deepwater (Estuarine Subtidal Wetlands with an Unconsolidated Bottom- E1UBL)

0 1,000 FEET

3/15/2019

Source: Tidal Wetlands, NYS Department of Environmental Conservation, 1974

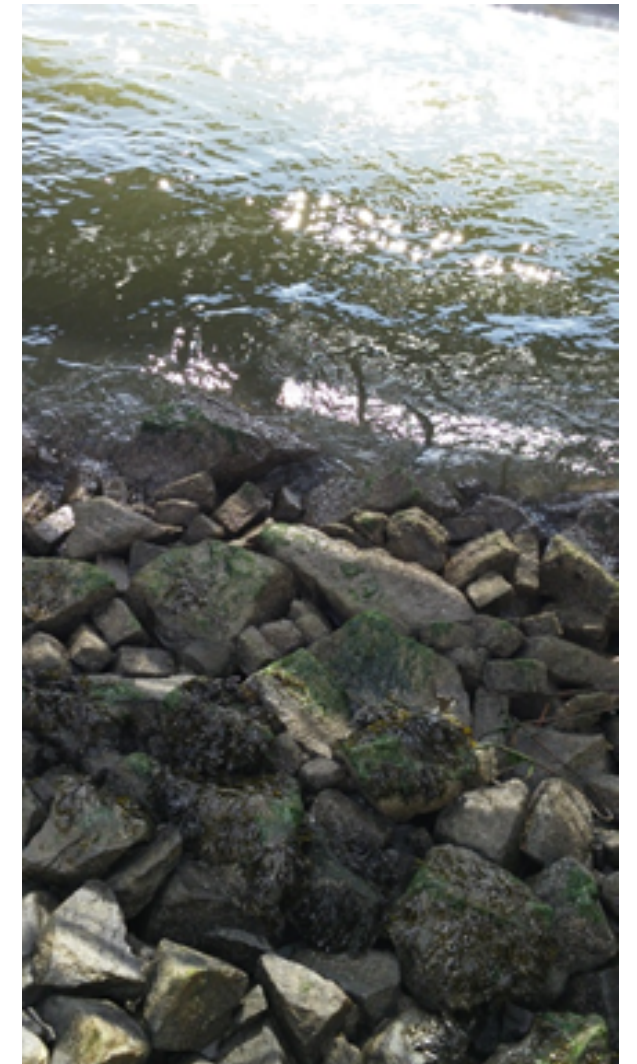


- Project Area One
- Project Area Two
- Natural Resources Study Area (400-Foot Study Area Radius)

Littoral Zone

0 1,000 FEET





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Appendix E
Comments on the Final Notice of a Proposed Activity
in a 100-Year Floodplain and Wetland

Appendix E: Comments on the Final Notice of a Proposed Activity in a 100-Year Floodplain and Wetland

A. INTRODUCTION

This document presents and responds to comments on the Final Notice of a Proposed Activity in a 100-Year Floodplain and Wetland for the East Side Coastal Resiliency (ESCR) Project, which was published on September 13, 2019. Pursuant to 24 CFR Part 58, the City, as the subrecipient of CDBG-DR grant funds, has identified its Office of Management and Budget (OMB) as the Responsible Entity for maintaining the CDBG-DR Environmental Review Record. The notice was required by Section 2(a)(4) of Executive Order (EO) 11988 for Floodplain Management, and by Section 2(b) of EO 11990 for the Protection of Wetlands and is implemented by the U.S. Department of Housing and Urban Development's (HUD) Regulations found at 24 CFR 55.20(g) for the HUD action that is within and/or affects a floodplain or wetland. The comment period ended on September 23, 2019.

PUBLIC COMMENTS

During the public comment period, all interested persons, groups, and agencies were invited to submit written comments regarding the proposed use of federal funds to support the construction of the proposed project in a floodplain and/or wetland. Written comments were accepted in the following ways:

- Submittal to OMB at 255 Greenwich Street, 8th Floor, New York, New York 10007, Attention: Calvin Johnson, Assistant Director CDBG-DR
- Submittal via email at CDBGDR-Enviro@omb.nyc.gov

This document presents substantive comments received during the public comment period for the Final Notice.

B. CONTENTS OF THIS DOCUMENT

Pursuant to 24 CFR Part 55, a Final Notice and Public Review of a Proposed Activity in a 100-Year Floodplain and Wetland, was published on September 13, 2019. Publication of this notice was followed by a 10-day comment period that ended on September 23, 2019. One public comment was received during this comment period. This comment is included below. Section C lists the individual that provided comments on to the Final Notice. Section D presents the comment, and the response to the comment.

C. LIST OF ORGANIZATIONS AND INDIVIDUALS WHO COMMENTED ON THE FINAL NOTICE

- Daniel Tainow, email dated September 23, 2019

D. COMMENTS AND RESPONSES

Comment 1: The response to comments from the Early Notice and Public Review of a Proposed Activity in a 100-Year Floodplain and Wetland for ESCR are severely inadequate and misleading in the Final Notice and Public Explanation of a Proposed Activity in a 100-Year Floodplain or Wetland.

First, the notice says “relocation of existing embayments...would be located within unvegetated Littoral Zone, a NYSDEC tidal wetland,” but if anyone from the environmental review team would actually visit the park, they would see that the existing embayments are vegetated with both littoral and upland wetland plants.

Second, the notice says, “This plan would reduce the length of wall between the community and the waterfront to provide for enhanced neighborhood connectivity and integration.” However, the length of wall, even if buried under a new park, is actually longer between the community and the waterfront and is further away from the connective bridges to the community. Therefore it will block more views of the river from the community, and inhibit future building of bridges or decking to connect the community to their waterfront.

Third, the notice says, “While the Preferred Alternative would change the elevation of the floodplain in the vicinity of the proposed project, it would not change the occupancy of the floodplain and would not have effects on flood velocities upstream or downstream.” None of the environmental review documents have shown the public how this blockage of using the park as a floodplain will not lead to increased flood velocities for surrounding unprotected areas. In a storm surge like the one that happened during Superstorm Sandy, this Preferred Plan that eliminates the park as a floodplain will leave hundreds of millions of gallons of water to be pushed to other waterfront communities.

Fourth, the notice says, “While there would be adverse effects to regulated tidal wetlands resulting from construction of the proposed project, the Preferred Alternative would not significantly adversely affect tidal wetland resources in the area.” While the extensive tidal wetlands in the area were destroyed over the last 200 years, that does not excuse this projects failure to preserve the tidal wetlands that we have left. In fact, the alternatives other than the Preferred alternative would have allowed for restoring more tidal wetlands that would add to the protection of the community by slowing down storm surge and adapting to sea level rise.

Finally, the notice claims, “the project area is already highly developed, and the implementation of the Preferred Alternative would not encourage new development within the floodplain or wetlands in the proposed project area.” Again, there is no evidence presented to the public that substantiates this claim of the Preferred Alternative not leading to more high income development in the project area aka the floodplain. The area is already under tremendous development pressure, and protecting it with a fancy, new, protected park that does not consider the needs and wants of the existing community can only lead to more high income development that will displace the existing community.

I hope that you will consider these comments and either change which alternative is chosen to be built based on protecting wetlands and floodplains or, at a minimum, acknowledge that the current Preferred Alternative does significantly adversely affect the tidal wetlands and floodplain and then work with the community to fix the plan.

Response: *Wetlands Concerns:*

As noted in FEIS Chapter 5.6, “Natural Resources,” the study area includes NYSDEC regulated littoral zone tidal wetland that is unvegetated, as confirmed by natural resources surveys conducted on-site by a Certified Environmental Professional. These surveys confirmed that at low tide only green algae and rockweed on riprap were observed. No other plants were observed in this area.

The two existing embayments in East River Park would be relocated with the objective of improving access and providing for improved aquatic habitat conditions. Filling of the existing embayments and creation of the new embayments is necessary to increase

community access to the water's edge, a principal objective of the proposed project, and provide adequate space to site heavily utilized active recreation facilities. In addition, the Corlears Hook Bridge and the East Houston Street overpass would both lead park users directly to proposed embayments, providing maximum opportunities for the community to connect with the water.

The two new embayments would be comparable in size to the existing embayments and would be similarly located along the East River Park waterfront. Moreover, the new embayments would be constructed with innovative design elements that would enhance opportunities for flora and fauna to thrive, including the creation of intertidal pools, armor blocks to serve as breakwater for tidal energies, and outfitting the existing steel piles with specially designed jackets that promote growth of benthic and sessile species. The new embayments would not include pedestrian walkways that currently span the existing embayments, which shade the aquatic habitat below and reduce benthic productivity. Following release of the FEIS, a new design to minimize impacts to wetlands has been identified. This design uses a pile-supported structure instead of the use of bulk fill material for the proposed embayments, resulting in a significant reduction to area and fill impacts to wetlands and jurisdictional waters.

Compensatory mitigation associated with impacts to Waters of the United States and NYSDEC Regulated Tidal Wetlands, described in FEIS Chapter 5.6, "Natural Resources," would be finalized as part of ongoing coordination with NYSDEC and USACE as design advances in accordance with all NYSDEC and USACE permit conditions, which would conform with applicable regulations, including the Clean Water Act (CWA), Section 10 of the Rivers and Harbors Act, ECL Article 25, NYCRR Part 661, and ECL Article 15, NYCRR Part 608.

Floodwall Concerns:

As described in FEIS Chapter 2.0, "Project Alternatives," within East River Park the floodwall would be a below-grade flood protection structure running parallel to the existing East River Park bulkhead, generally beginning at the existing amphitheater and continuing northward to the northern end of the park near East 13th Street. As the floodwall within the park would be below-grade (i.e., located beneath the ground surface of the elevated East River Park), it would not be visible. FEIS Chapter 5.5, "Urban Design and Visual Resources," disclosed that the elevated East River Park with the floodwall below grade would block some views of the East River from the adjacent neighborhoods. However, these views would be of a landscaped waterfront park.

Redesigned and enhanced connections to the waterfront and East River Park are proposed as part of the ESCR project, with the reconstruction of the Corlears Hook Bridge, the replacement of the Delancey and East 10th Street Bridges, and the new shared-use flyover bridge that will address the narrow and substandard waterfront public access along the segment near the East River Dock (on the east side of the FDR Drive) known as the "pinch point." These proposed bridge improvements would create more inviting and accessible crossings over the FDR Drive to the reconstructed East River Park and the East River waterfront, including the waterfront shared-use path. With the proposed project, the reconstructed bridges at Delancey and East 10th Street have also been designed to provide more community-oriented access that supports and encourages public access to the waterfront with gentler grades that are consistent with the principle of universal access. Within the park, the bridge landings would provide an elevated gateway with expanded views of the reconstructed park and the river. Furthermore, the proposed project would not

preclude the longer-term vision of the decking and greening of the FDR Drive from future consideration.

Floodplain/Storm Surge Concerns:

As discussed above, unlike natural area open space with wetlands, East River Park is a constructed landscape with hardscape, synthetic athletic fields, structures, and infrastructure. It is primarily designed to meet the waterfront access and active recreational needs of the community.

The proposed project is an element in a comprehensive plan for flood protection in Manhattan referred to as the Big U extending along the Hudson River from West 57th Street to the Battery, and then north up the East River to East 42nd Street. Construction of the proposed project is anticipated to commence in the spring of 2020, while other aspects of the Big U planned concept (the concept a flood protection system around Manhattan which extends along the Hudson River from West 57th Street to the Battery), including Two Bridges, Battery Coastal Resiliency, and Battery Park Resiliency, are anticipated to be constructed starting in 2020 to 2021 based on currently available information. The planning, design, and implementation for these projects is being coordinated by the City to ensure they function together as an integrated flood protection system for Lower Manhattan. Moreover, the planning, design, and implementation of other projects the City is envisioning for protection of properties along the East River and the harbor have different schedules but are also being coordinated by the City to ensure they function together as an integrated flood protection system.

As described in FEIS Chapter 2.0, “Project Alternatives,” the flood protection system is designed to provide drainage within the protected area and not increase flooding in the adjacent community during a design storm event. Three projected storm surge events were modeled using existing conditions, as well as with the future flood protection system in place (current 100-year storm, current 500-year storm, and future 100-year storm with 2.5 feet of sea level rise). The outputs of the models for the pre- and post-project conditions were then compared to evaluate whether the flood protection system would have an impact on adjacent or nearby areas. The flood modeling analysis, which examined maximum storm surge and maximum waves, concluded that the proposed project would not affect the flooding conditions in neighborhoods to the north and south of the project area as well as east of the East River in Brooklyn which are all related to the effect of similarly abnormally high tides. Information pertaining to the flood modeling analysis may be found in the Coastal Hydraulics Report – Final Design (October 2019), which is available online at <https://www1.nyc.gov/site/escr/progress/environmental-review.page>.

Development/Displacement Concerns:

East River Park is dedicated parkland and residential development is not permitted on the park. The socioeconomic analysis presented in FEIS Chapter 5.2, “Socioeconomic Conditions,” examined the potential for indirect residential and business displacement due to increased rents, and the analysis concludes that the proposed project would not result in any significant adverse effects to socioeconomic conditions. The analysis concluded that within the flood hazard area portions of the study area, while flood protections measures could lead to increases in privately held residential and commercial property values and rents over time due to several influences, one of which may be the reduction of risk of property damage from flooding and the reduction of costs associated with investing in resiliency measures for individual properties, the provision of flood protection would not substantively alter existing residential market trends. As evidenced by the amount of commercial and residential development already planned within the study area, with or

without the proposed project, the study area will continue to be an attractive area to live and work, and will experience substantial new development and increases in private property value and rents. In addition, as detailed in Chapter 5.2, recent trends already show study area market housing costs to be well above rents affordable to low- and moderate-income households. These trends are expected to continue with or without the proposed project. Finally, as documented in the FEIS, the majority of housing in the flood protection area is comprised of NYCHA housing developments. Rents in these developments are regulated by NYCHA, not market trends, and therefore would not be affected by changes in value. Similarly, area households who live in other forms of rent-regulated housing—including the approximately 5,000 units within Peter Cooper Village and Stuyvesant Town abutting the project area—would not see rent increases as a result of potential market changes. Finally, irrespective of rent protections, with the proposed project’s flood protection measures residents within the flood protection area would directly benefit from potential avoided social and economic costs associated with relocation in the event of a major storm event.

Selection of Preferred Alternative:

One of the City’s priorities with this project is to ensure that flood protection is delivered as quickly as possible so that tens of thousands of residents are protected from the risk of damage from coastal storms. Subsequent to the release of the FEIS, the City has identified an approach that will allow for phased construction, including safely keeping parts of East River Park open and reopening parts of East River Park, as well as developing a robust neighborhood park improvements program that provides active and passive recreational areas for the community throughout the 5-year construction period. Technical Memorandum 001 (dated November 12, 2019) has been prepared to assess the environmental effects of the modified Preferred Alternative, including the revised construction phasing plan, and concluded that the modified Preferred Alternative would not result in any new significant adverse effects not identified in the FEIS.

Appendix F
Programmatic Agreement

PROGRAMMATIC AGREEMENT
Among
The New York City Office of Management and Budget,
The New York State Historic Preservation Office,
and
The Advisory Council on Historic Preservation
Regarding
The East Side Coastal Resiliency Project
New York City, New York

WHEREAS, in response to Hurricane Sandy, which made landfall on October 29, 2012, and as part of its plan to address vulnerability to such major flooding, the City of New York (the “City”) proposes to construct the East Side Coastal Resiliency Project (the “project”), which involves the construction of a coastal flood protection system along a portion of the east side of Manhattan between Montgomery and East 25th Streets and related improvements to City infrastructure (see **Exhibit A – Project Location**); and

WHEREAS, the project would consist of a flood protection system generally located within City parkland and streets that would include a combination of floodwalls, levees, closure structures (e.g., floodgates), and drainage improvements to reduce the risk of flooding; and

WHEREAS, the project would also elevate and reconstruct East River Park to make it more resilient to coastal storms and would replace the Corlears Hook, Delancey Street, and East 10th Street pedestrian bridges over the FDR Drive; and

WHEREAS, in addition to providing a reliable coastal flood protection system for this area, another goal of the project is to improve open spaces and enhance access to the waterfront, including East River Park and Stuyvesant Cove Park; and

WHEREAS, 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 related to Hurricane Sandy for the design and construction of the project, which would be provided to the City through the New York City Office of Management and Budget (OMB), acting under HUD’s authority; and

WHEREAS, HUD has granted OMB the authority under 24 CFR Part 58 to serve as the Responsible Entity (“RE”) for the CDBG-DR program activities in New York City and, in accordance with 24 CFR 58.2(a)(7), as the lead agency responsible for environmental review, decision-making, and action under 42 U.S.C. § 5304(g); and

WHEREAS, the United States Congress has authorized HUD to delegate legal responsibility for compliance with Section 106 of the National Historic Preservation Act (NHPA, codified at 54 USC §306108, and herein “Section 106”) to a local government through the Housing and Community Development Act of 1974; and

WHEREAS, OMB has agreed to take into account the effects of its undertakings and satisfy its Section 106 responsibilities. OMB, therefore, is the agency responsible for compliance with NEPA and Section 106; and

WHEREAS, OMB, in consultation with the New York State Historic Preservation Office (“SHPO”) has determined that the project could adversely affect properties included in or eligible for inclusion in the National Register of Historic Places (“Historic Properties”) and has determined that it is appropriate to enter into this Programmatic Agreement (the “Agreement”) to resolve adverse effects as such effects cannot be fully determined prior to approval of the project, pursuant to 36 CFR 800.14(b)(1)(ii) of Section 106; and

WHEREAS, OMB invited the Advisory Council on Historic Preservation (“ACHP”) to participate in the Section 106 process for the project and ACHP has accepted; and

WHEREAS, the project is located within the identified area of interest of four federally recognized Indian tribes, and OMB has consulted with the Delaware Nation, the Delaware Tribe of Indians, the Shinnecock Nation, and the Stockbridge-Munsee Band of Mohicans on a government-to-government basis in accordance with 36 CFR Part 800.2(c)(ii), and invited them to sign this Agreement as concurring parties; and

WHEREAS, the New York City Department of Parks & Recreation (NYC Parks) has accepted the invitation to be a concurring party to this Agreement”); and

WHEREAS, the New York City Landmarks Preservation Commission (“LPC”), an agent of the City of New York, has been consulted in the Section 106 review process in accordance with Section 106 Regulations (36 CFR 800.2(c)(3)), and has accepted the invitation to be a concurring party to this Agreement; and

WHEREAS, in keeping with 36 CFR 800.2(c)(3) and (5), OMB identified representatives of local governments, individuals, and organizations with a demonstrated interest in the undertaking, and has invited them to participate in Section 106 consultation for the project as Consulting Parties. (The invited Section 106 Consulting Parties for the project are presented in **Exhibit B – Consulting Parties**); and

WHEREAS, the Municipal Art Society, the New York Landmarks Conservancy, and the Lower East Side Preservation Initiative accepted the invitation to be Consulting Parties and are accordingly concurring parties to this Agreement; and

WHEREAS, OMB has provided the Consulting Parties opportunities to review and comment on Section 106 documents and findings through review of drafts of this Agreement and the Historic and Cultural Resources analysis of the Draft Environmental Impact Statement (DEIS), two conference calls held in August 2019, and a meeting held on September 27, 2019; and

WHEREAS, OMB has provided the public appropriate opportunities to review and comment on Section 106 documents and findings through a public scoping meeting on the Draft Scope of Work for the preparation of a DEIS held on December 3, 2015 with a public input and review period that remained open until December 21, 2015, and through a public review period for the DEIS that commenced with publication of the DEIS on April 5, 2019 and continued through August 30, 2019, with a public hearing held on July 31, 2019; and

WHEREAS, in consultation with SHPO and LPC, an Area of Potential Effect (APE) has been established for the project as defined by 36 CFR 800.16(d), in which construction and operation of the project may directly or indirectly affect Historic Properties, extending 400 feet from the project area to encompass indirect visual or contextual effects from construction of the project (The APE for the project is depicted on the maps presented in **Exhibit C – Areas of Potential Effect**); and

WHEREAS, OMB in consultation with SHPO and LPC carried out steps to evaluate previously unevaluated properties in the APE—a historian who met NPS Professional Qualification Standards for Architectural History, codified under 36 CFR § 61, conducted field surveys of the APE supplemented by research, and an initial list of 13 potential historic resources within the APE was compiled and submitted to SHPO and LPC for their evaluation and determination of eligibility, followed by additional consultation with SHPO—and identified seven properties

determined eligible for the National Register of Historic Places (“National Register”), thereby supplementing existing data on Historic Properties in the APE that had been previously listed or determined eligible for National Register listing; and

WHEREAS, there are a total 17 Historic Properties located within the APE that are either listed on the National Register or determined eligible for such listing and that could be directly or indirectly affected by the project (**Exhibit D – Historic Properties in APE**); and

WHEREAS, two Phase 1A Archaeological Documentary Studies and a Supplemental Phase 1A Archaeological Documentary Study were completed for the APE, and these reports identified areas of potential archaeological sensitivity potentially associated with four broad categories of potential historic-period archaeological resources—river bottom remains, landfill retaining structures and landfill deposits, historic streetbed resources (i.e., utilities, transportation elements, artifact deposits), and former city block resources (i.e., foundation remains and historic shaft features)—and determined that additional archaeological testing would be needed to determine the presence or absence of such resources in the APE; and

WHEREAS, OMB determined that the additional archaeological testing would not be done during the EIS process but would occur before and/or during project construction; and

WHEREAS, this Agreement was developed in consultation with NYC Parks, LPC, the Municipal Art Society, the New York Landmarks Conservancy, and the Lower East Side Preservation Initiative; and

WHEREAS, this Agreement was developed with appropriate public participation by providing a draft of proposed stipulations to the Agreement in the DEIS, including in and distributing with the Final EIS a copy of the draft Agreement, and duly notifying the public as to the execution

and effective dates of this Agreement through the issuance of the FEIS and Record of Decision (“ROD”) for the project; and

NOW, THEREFORE, the signatories agree that the implementation of the project shall take into account effects on Historic Properties and shall be administered in accordance with the following stipulations to avoid, mitigate, and minimize Adverse Effects in order to satisfy OMB’s Section 106 responsibilities.

STIPULATIONS

OMB will ensure, in coordination with SHPO, that the following stipulations are implemented.

I. ARCHAEOLOGICAL RESOURCES

OMB will ensure that required archaeological investigations will be performed, as needed, prior to or during construction in the areas of potential archaeological sensitivity as determined through the Phase IA studies to determine the presence or absence of archaeological resources within the APE and to evaluate their eligibility for the National Register.

1. A scope of work for additional archaeological investigation will be prepared prior to the commencement of construction in accordance with Section 106 regulations and for review and approval by SHPO and, in accordance with FEIS requirements, LPC. The Phase 1B archaeological investigation will include additional research, as needed, pre-construction testing and/or monitoring during project construction, artifact processing, and report preparation. The work plan will include the following:
 - a) A sampling strategy that will select specific areas of the APE to be further investigated. The work plan should assess each of the identified sensitive areas with regard to previous disturbances. For those locations identified as sensitive for former city block resources such as foundations and historic shaft features, the specific locations with archaeological potential within the overall lots will be determined to more narrowly focus any archaeological testing.
 - b) Identification of those areas that are believed to be most sensitive for recovering landfill retaining structures across the overall APE.

- c) A description of the basis for the proposed sampling design, including a tabulation of the various archaeological contexts within the APE and a quantification of the sample fraction for each context.
 - d) Additionally, as part of this project, locations of new sewers will be subjected to geotechnical soil borings in advance of construction. If the data from these soil borings become available prior to creation of the work plan, results of these borings will be analyzed and used to help formulate the archaeological field investigation sampling strategy.
- 2. A report, documenting the findings of the Phase IB archaeological investigations and the project's potential effects on any identified significant resources shall be prepared and submitted to SHPO, LPC, NYC Parks, the Delaware Nation, Delaware Tribe of Indians, Stockbridge-Munsee Community Band of Mohicans, Shinnecock Nation, Municipal Art Society, New York Landmarks Conservancy, and Lower East Side Preservation Initiative for a 30-day review and concurrence period. The resulting report should include an assessment of the sensitivity of untested portions of the APE based on the results of the Phase 1B sample and include recommendations for further investigations (including Phase II and Phase III), as needed.
- 3. Should significant resources be identified, OMB, in consultation with SHPO, LPC, NYC Parks, the Delaware Nation, Delaware Tribe of Indians, Stockbridge-Munsee Community Band of Mohicans, Shinnecock Nation, Municipal Art Society, New York Landmarks Conservancy, and Lower East Side Preservation Initiative will make a Determination of Effect with a 30-day period for the parties to concur or object.

4. Should an Adverse Effect be determined, OMB will notify ACHP and will consider if the resource can be avoided through localized project redesign.
5. If avoidance is not practicable due to engineering or other considerations, OMB, in consultation with SHPO, ACHP, LPC, NYC Parks, the Delaware Nation, Delaware Tribe of Indians, Stockbridge-Munsee Community Band of Mohicans, Shinnecock Nation, Municipal Art Society, New York Landmarks Conservancy, and Lower East Side Preservation Initiative will develop a plan to mitigate adverse impacts through data recovery or alternate mitigation measures. The parties will have a 30-day review and concurrence period. All archaeological investigations will be performed in accordance with the Secretary of the Interior's *Standards and Guidelines for Archaeology* (48 FR 44734-37), ACHP's *Section 106 Archaeological Guidance* (www.achp.gov/archguide), and the New York Archaeological Council's *Standards for Cultural Resource Investigations and Curation of Archaeological Collections* (NYAC 1994).
6. All cultural resource studies carried out pursuant to this Agreement will be conducted by or under the direct supervision of a person or persons meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 44138-9).
7. All artifacts, notes, and other documentation of archaeological investigations will be curated according to federal (36 CFR 79) and state (NYAC 1994) guidelines.

II. UNANTICIPATED DISCOVERIES PROTOCOL

An Unanticipated Discoveries Protocol shall be prepared and submitted to SHPO and LPC for review and approval prior to any project excavation and construction activities. The Unanticipated Discoveries Protocol shall also be submitted for review to the Delaware Nation,

Delaware Tribe of Indians, the Stockbridge-Munsee Band of Mohicans, and the Shinnecock Nation. The Unanticipated Discoveries Protocol will include procedures for human and non-human archaeological resources in the event that any unanticipated archaeological resources are encountered during construction of the project. The Unanticipated Discoveries Protocol will also include procedures in the event any previously unidentified historic architectural resource is discovered or if known historic properties are affected in an unanticipated manner.

III. HUMAN REMAINS

Should human remains be encountered, all work in the area must cease and the immediate area secured. Appropriate representatives from OMB must be notified. The New York City Police Department and Office of Chief Medical Examiner must also be contacted. Human remains must be treated with respect and care. The SHPO Human Remains Discovery Protocol (August 2018) will be implemented (see **Exhibit E**). Section D, “Burials and Human Remains: Detailed Discovery Procedures” of LPC’s 2018 Guidelines for Archaeological Work in New York City will also be followed.

IV. DESIGN REVIEW – ASSER LEVY PUBLIC BATHS

1. At the northern end of the APE, floodwalls and closure structures would be constructed along the east and north sides of the Asser Levy Public Baths (National Register-listed, New York City Landmark). Therefore, OMB will coordinate the design of these project elements with SHPO and LPC in an effort to design them—in terms of proportions and finishes—so that they are compatible with the historic property. The design of these walls will be undertaken in accordance with the Secretary of the Interior’s Standards for the Treatment of Historic Properties. OMB will submit the preliminary and pre-final design

plans for the floodwalls and closure structures that would be constructed along the east and north sides of the Asser Levy Public Baths to SHPO and LPC for review. SHPO and LPC will respond within 30 calendar days or earlier to the design plans at each stage of completion. If SHPO or LPC make substantive comments during the preliminary and pre-final design review, SHPO or LPC may request the opportunity to review the final design plans.

2. The preliminary and pre-final design plans will be made available to the Municipal Art Society, New York Landmarks Conservancy, and Lower East Side Preservation Initiative at the time such preliminary and pre-final design plans are submitted to SHPO and LPC, along with instructions regarding how they may submit comments on such plans. The Municipal Art Society, New York Landmarks Conservancy, and Lower East Side Preservation Initiative shall have 30 days to comment on the plans.
3. In the event that SHPO or LPC find that the design of the floodwalls and closure structures are not compatible with the Asser Levy Public Baths, OMB shall consult with SHPO, LPC, Municipal Art Society, New York Landmarks Conservancy, and Lower East Side Preservation Initiative to negotiate design measures that are compatible with the historic resource.

V. DESIGN REVIEW – ENGINE CO. 66 FIREBOAT HOUSE

1. The City is continuing to evaluate flood resilience options for the Engine Co. 66 Fireboat House (S/NR-eligible). When the City identifies a feasible flood resilience measure, OMB will coordinate the design with SHPO and LPC, and the flood resilience measure will be undertaken in accordance with the Secretary of the Interior’s Standards for the Treatment of

Historic Properties. OMB will submit the preliminary and pre-final design plans for the identified flood resilience measure to SHPO and LPC for review. SHPO and LPC will respond within 30 calendar days or earlier to the design plans at each stage of completion. If SHPO or LPC make substantive comments during the preliminary and pre-final design review, SHPO or LPC may request the opportunity to review the final design plans.

2. The preliminary and pre-final design plans will be made available to the Municipal Art Society, New York Landmarks Conservancy, and Lower East Side Preservation Initiative at the time such preliminary and pre-final design plans are submitted to SHPO and LPC, along with instructions regarding how they may submit comments on such plans. The Municipal Art Society, New York Landmarks Conservancy, and Lower East Side Preservation Initiative shall have 30 days to comment on the plans.
3. In the event that SHPO or LPC find that the flood protection measures are not compatible with the Engine Co. 66 Fireboat House, OMB shall consult with SHPO, LPC, Municipal Art Society, New York Landmarks Conservancy, and Lower East Side Preservation Initiative to negotiate design measures that are compatible with the historic resource.

VI. CONSTRUCTION PROTECTION PLANS

1. Prior to construction, OMB, in consultation with SHPO and LPC, will develop and implement Construction Protection Plans for 13 Historic Properties (identified below) to avoid inadvertent construction-period damage from ground-borne vibrations, falling debris, collapse, dewatering, subsidence, or construction equipment. (The remaining 4 of the 17 Historic Properties within the APE are not located close enough to project construction—within 90 feet—to potentially experience inadvertent construction-related

damage.) The Construction Protection Plans will include provisions that the construction manager will follow to evaluate potential adverse effects on the Historic Properties. These provisions will include protective measures such as monitoring during construction to detect vibration or other physical impact. The plans would follow the guidelines of the New York City Department of Building's *Technical Policy and Procedure Notice #10/88*, which "requires a monitoring program to reduce the likelihood of construction damage to adjacent historic structures and to detect at an early stage the beginnings of damage so that construction procedures can be changed." The Construction Protection Plans will also be prepared in accordance with LPC's guidance document *Protection Programs for Landmarked Buildings* and the National Park Service's *Preservation Tech Notes, Temporary Protection #3: Protecting a Historic Structure during Adjacent Construction*.

2. The Historic Properties to be included in the Construction Protection Plans are: the FDR Drive (National Register-eligible); Williamsburg Bridge (National Register-eligible); East River Bulkhead (National Register-eligible); Engine Co. 66 Fireboat House (National Register-eligible); Gouverneur Hospital (National Register-listed); Gouverneur Hospital Dispensary (National Register-eligible); a portion of the Vladeck Houses within the Lower East Side Historic District (National Register-listed); Bernard Baruch Houses (National Register-eligible); Asser Levy Public Baths (National Register-listed, New York City Landmark), East River Housing Cooperative (National Register-eligible), Jacob Riis Houses (National Register-eligible); Stuyvesant Town (National Register-eligible); and Peter Cooper Village (National Register-eligible).

3. OMB shall ensure that all appropriate Historic Properties are included in the Construction Protection Plans and thereafter ensure that the provisions of the Construction Protection Plans are included in the Construction Documents and implemented by the project contractors.
4. The Construction Protection Plans will be submitted to SHPO, LPC, NYC Parks, Municipal Art Society, New York Landmarks Conservancy, and Lower East Side Preservation Initiative for a 30-day review and comment period.
5. Within 10 days, OMB will respond in writing to any comments on the Construction Protection Plans.
6. Construction adjacent to the FDR Drive would be coordinated with the New York City Department of Transportation to ensure that it is protected during project construction.

VII. DISPUTE RESOLUTION

Should any party to this Agreement object in writing to OMB regarding any action carried out or proposed with respect to the project or to the implementation of this Agreement, OMB shall consult with the objecting party to resolve this objection.

If after initiating consultation OMB determines within 30 days that the objection cannot be resolved through consultation, OMB shall forward all documentation relevant to the objection to ACHP, including OMB's proposed response to the objection.

Within 30 days after receipt of all pertinent documentation, ACHP shall exercise one of the following options:

- A. Advise OMB that ACHP concurs with its proposed response to the objection, whereupon OMB will be respond to the objection accordingly;
- B. Provide OMB with recommendations, which OMB shall take into account in reaching a final decision regarding its response to the objection; or
- C. Notify OMB that the objection will be referred for comment pursuant to 36 CFR 800.7(a)(4) and proceed to refer the objection and comment. OMB shall take the resulting comment into account in accordance with 36 CFR 800.7(c)(4).

VIII. REVIEW OF PUBLIC OBJECTIONS

At any time during implementation of the measures stipulated in this Agreement, should any objection to any such measure or its manner of implementation be raised by a member of the public, OMB shall take the objection into account, notify SHPO of the objection, and consult as needed with the objecting party, SHPO, or ACHP to seek resolution of the objection.

IX. REPORTING AND OVERSIGHT

1. OMB will provide to SHPO, LPC, NYC Parks, Municipal Art Society, New York Landmarks Conservancy, and Lower East Side Preservation Initiative all final reports, studies, and construction protection plans resulting from this Agreement.
2. SHPO and LPC shall provide written concurrence or comments within 30 calendar days of receipt of draft and final reports, studies, and construction protection plans. If no comments are received, OMB shall consider SHPO and/or LPC in concurrence.

3. Concurring parties to this Agreement shall provide written comments within 30 days of receipt of any final reports, studies, and construction protection plans provided for their review. OMB shall take all written comments into consideration.
4. OMB shall maintain records of all activities undertaken pursuant to this Agreement.
5. On or before December 31 of each year, until this Agreement expires or is terminated, OMB shall provide all parties to the Agreement and LPC a summary report detailing all work carried out pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received while carrying the terms of this Agreement.

X. DURATION, AMENDMENT, AND TERMINATION

- A. This Agreement shall take effect on the date it is signed by the last signatory, and will remain in effect until December 31, 2025.
- B. This Agreement may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

If any signatory to this Agreement determines that its terms will not or cannot be carried out, that party shall immediately consult with the other signatories to attempt to develop an amendment per Stipulation IX.B, above. If within 30 days an amendment cannot be reached, any signatory may terminate the Agreement upon written notification to the other signatories. Once the Agreement is terminated, and prior to work continuing on the undertaking, OMB must either (a) execute a new agreement pursuant to 36 CFR § 800.6 or (b) request, take into account, and

respond to the comments of the ACHP under 36 CFR § 800.7. OMB shall notify the signatories as to the course of action it will pursue.

EXECUTION OF THIS PROGRAMMATIC AGREEMENT and implementation of its Stipulations evidences that OMB has taken into account the effects of the project on Historic Properties and afforded the ACHP an opportunity to comment on those effects.

APPROVAL AND SIGNATURE PAGE FOR PROGRAMMATIC AGREEMENT

Among

The New York City Office of Management and Budget,

The New York State Historic Preservation Office, and

The Advisory Council on Historic Preservation

Regarding

The East Side Coastal Resiliency Project

New York City, New York

NYC OFFICE OF MANAGEMENT AND BUDGET

By:  _____

Name: Eram Qadri

Title: Unit Head, Environmental Review, *CDBG-DR*

Date: 11/25/19

APPROVAL AND SIGNATURE PAGE FOR PROGRAMMATIC AGREEMENT

Among

The New York City Office of Management and Budget,

The New York State Historic Preservation Office, and

The Advisory Council on Historic Preservation

Regarding

The East Side Coastal Resiliency Project

New York City, New York

NEW YORK STATE HISTORIC PRESERVATION OFFICE

By: R. Daniel Mackay

Name: R. Daniel Mackay

Title: Deputy Commissioner, State Historic Preservation office

Date: 11/25/2019

APPROVAL AND SIGNATURE PAGE FOR PROGRAMMATIC AGREEMENT

Among

The New York City Office of Management and Budget,

The New York State Historic Preservation Office, and


The Advisory Council on Historic Preservation

Regarding

The East Side Coastal Resiliency Project

New York City, New York

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: 

Name:

Title:

Date: 12/4/19

INVITED SIGNATORY PAGE FOR PROGRAMMATIC AGREEMENT

Among

The New York City Office of Management and Budget,

The New York State Historic Preservation Office, and

The Advisory Council on Historic Preservation

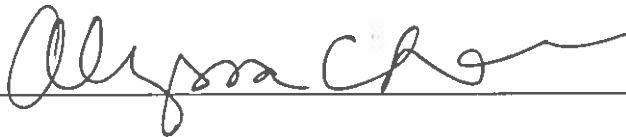
Regarding

The East Side Coastal Resiliency Project

New York City, New York

NEW YORK CITY DEPARTMENT OF PARKS & RECREATION

By: _____



Name: Alyssa Cobb Konon

Title: Deputy Commissioner, Planning

Date: 11/26/2019

INVITED SIGNATORY PAGE FOR PROGRAMMATIC AGREEMENT

Among

The New York City Office of Management and Budget,

The New York State Historic Preservation Office, and

The Advisory Council on Historic Preservation

Regarding

The East Side Coastal Resiliency Project

New York City, New York

NEW YORK CITY LANDMARKS PRESERVATION COMMISSION

By: Sarah Carroll

Name: Sarah Carroll

Title: chair

Date: 11/26/2019

INVITED SIGNATORY PAGE FOR PROGRAMMATIC AGREEMENT

Among

The New York City Office of Management and Budget,

The New York State Historic Preservation Office, and

The Advisory Council on Historic Preservation

Regarding

The East Side Coastal Resiliency Project

New York City, New York

MUNICIPAL ART SOCIETY

By: 

Name: Elizabeth Goldstein

Title: President

Date: December 2, 2019

INVITED SIGNATORY PAGE FOR PROGRAMMATIC AGREEMENT

Among

The New York City Office of Management and Budget,

The New York State Historic Preservation Office, and

The Advisory Council on Historic Preservation

Regarding

The East Side Coastal Resiliency Project

New York City, New York

THE NEW YORK LANDMARKS CONSERVANCY

By: 

Name: Peg Breen

Title: President

Date: November 25, 2019

INVITED SIGNATORY PAGE FOR PROGRAMMATIC AGREEMENT

Among

The New York City Office of Management and Budget,

The New York State Historic Preservation Office, and

The Advisory Council on Historic Preservation

Regarding

The East Side Coastal Resiliency Project

New York City, New York

LOWER EAST SIDE PRESERVATION INITIATIVE

By:  _____

Name: RICHARD D. MOSES

Title: PRESIDENT

Date: 11/25/19

* with the understanding that the NY State Historic Preservation Office will review the Park's two existing W.P.A.-era comfort stations individually for eligibility on the State/National Register of Historic Places.

EXHIBIT A – PROJECT LOCATION



 *Proposed Project Area*

0 1 MILES


EXHIBIT B – INVITED CONSULTING PARTIES

- 1. New York City Landmarks Conservancy**
- 2. Historic Districts Council**
- 3. Lower East Side Preservation Initiative**
- 4. Greenwich Village Society for Historic Preservation**
- 5. Preservation League of New York State**
- 6. Municipal Art Society**
- 7. Professional Archaeologists of New York City**

EXHIBIT C – AREAS OF POTENTIAL EFFECT

Source: NYC Landmarks Preservation Commission, NYS OPRHP



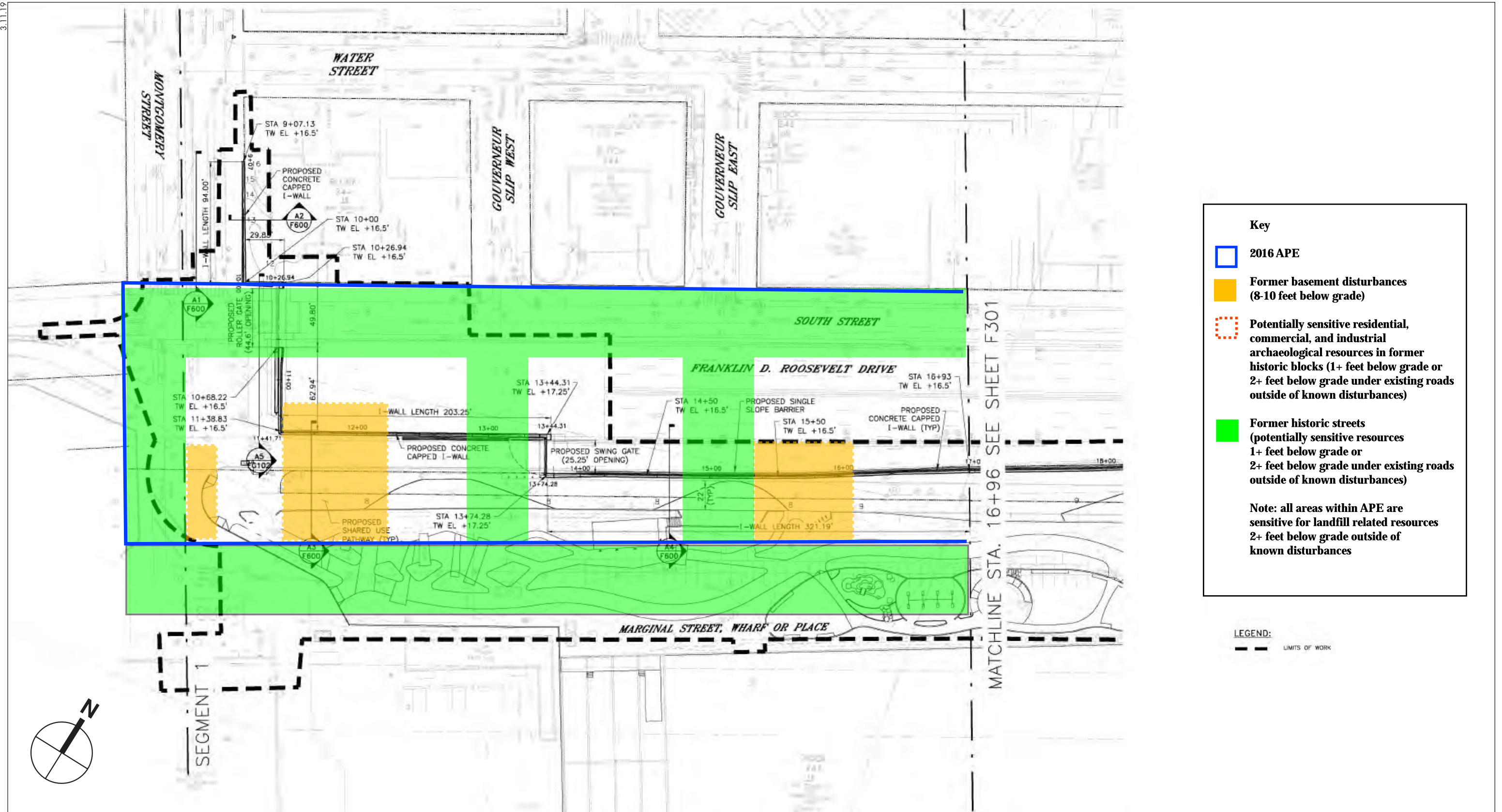
- Project Area One
- Project Area Two
- Primary (400-foot) APE
- Secondary APE

Known Historic and Cultural Resources

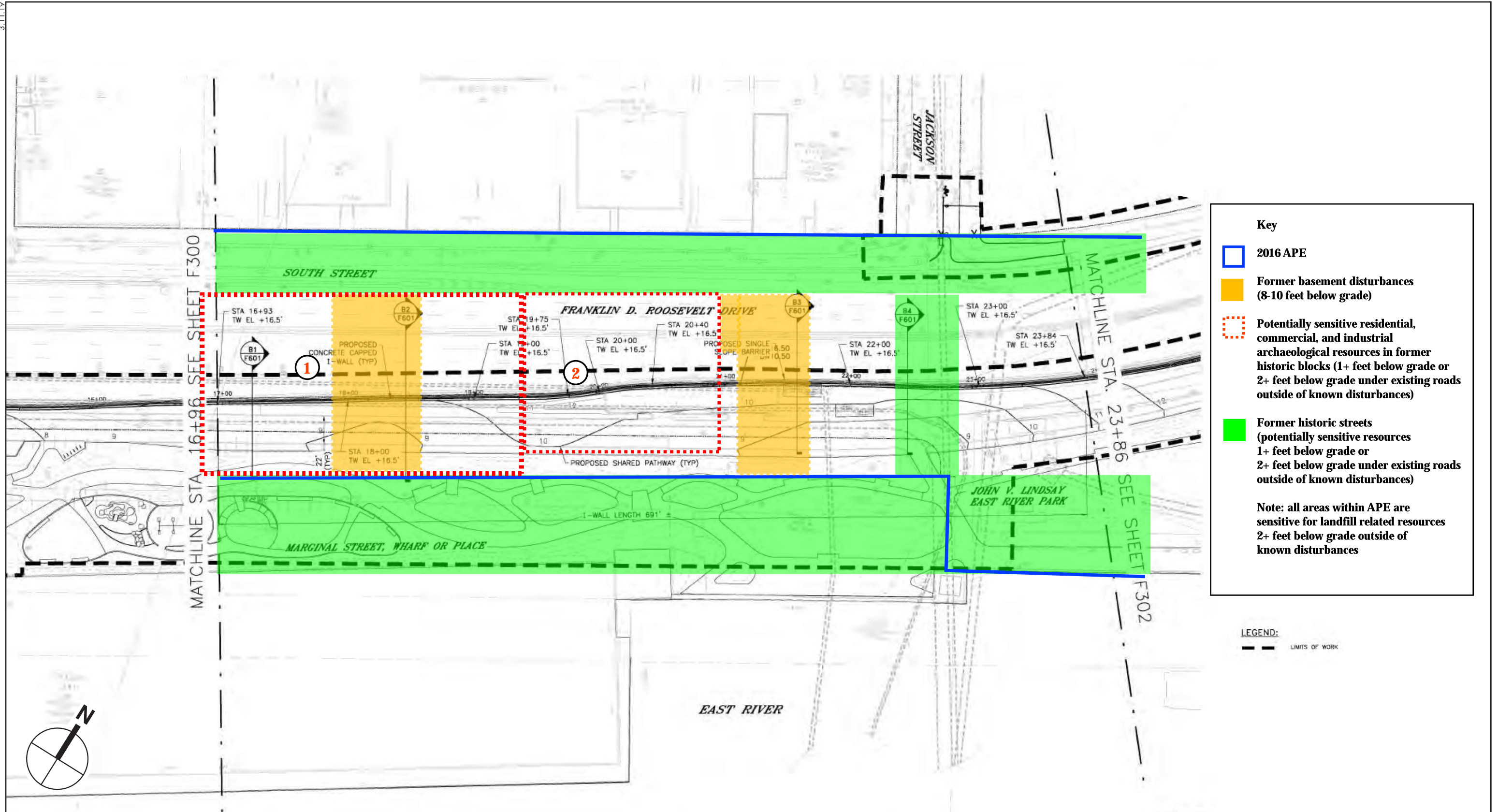
- East 10th Street Historic District (NYCL, S/NR-eligible)
- Lower East Side Historic District and Extension (S/NR)
- Stuyvesant Square Historic District (NYCL, S/NR)
- FDR Drive (S/NR)
- Individual Architectural Resources

0 1,000 FEET

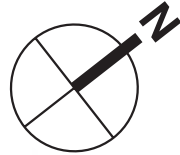
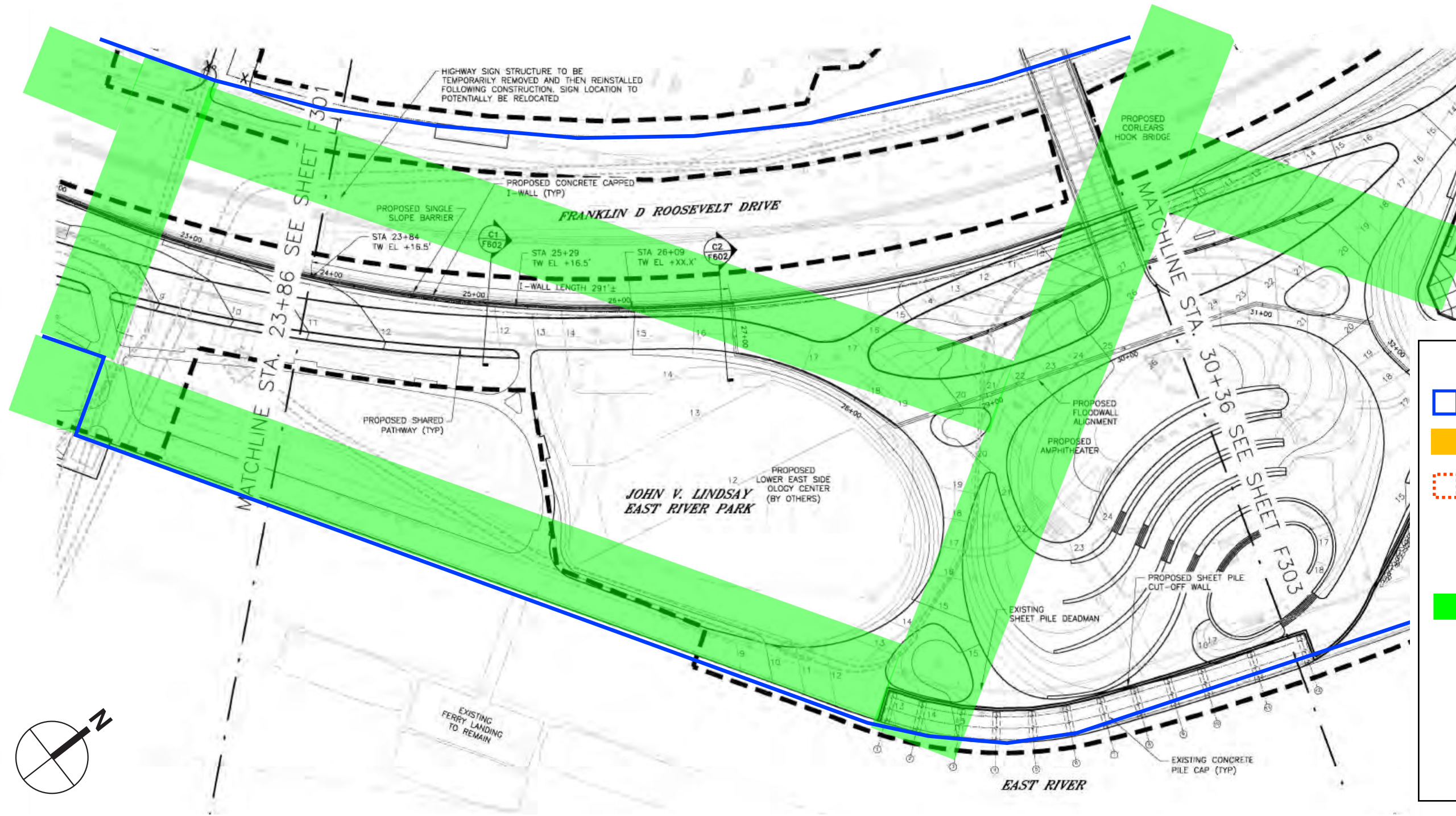




Montgomery Street to Gouverneur Slip East
 Area of Potential Effect – Montgomery to Rivington Streets
 Areas of Archaeological Sensitivity
Figure 5.4-2a



Gouverneur Slip East to Jackson Street
 Area of Potential Effect – Montgomery to Rivington Streets
 Areas of Archaeological Sensitivity
Figure 5.4-2b

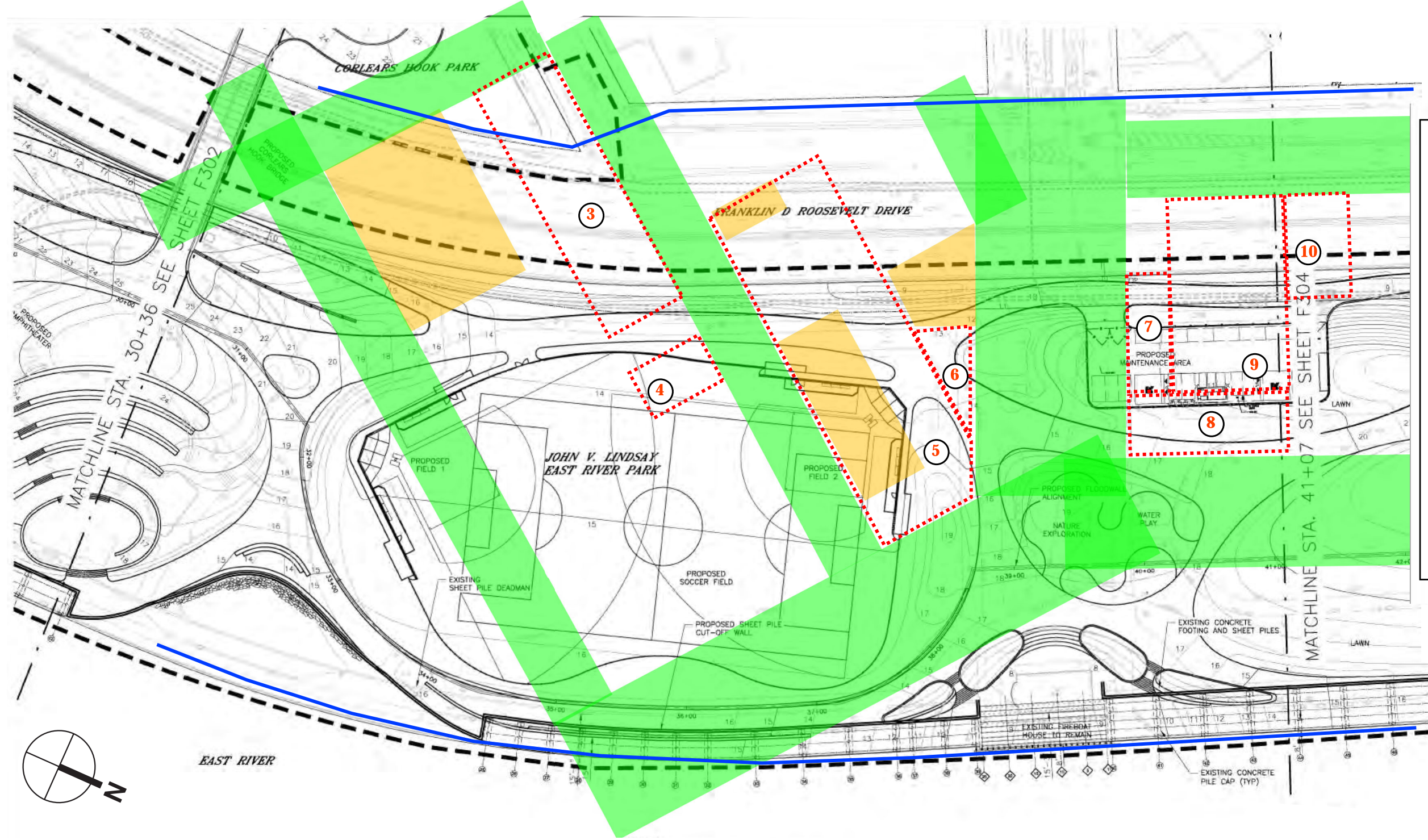


Key

- 2016 APE
- Former basement disturbances (8-10 feet below grade)
- Potentially sensitive residential, commercial, and industrial archaeological resources in former historic blocks (1+ feet below grade or 2+ feet below grade under existing roads outside of known disturbances)
- Former historic streets (potentially sensitive resources 1+ feet below grade or 2+ feet below grade under existing roads outside of known disturbances)

Note: all areas within APE are sensitive for landfill related resources 2+ feet below grade outside of known disturbances

LEGEND:
 LIMITS OF WORK



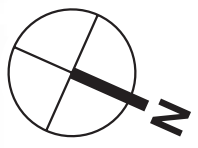
Key

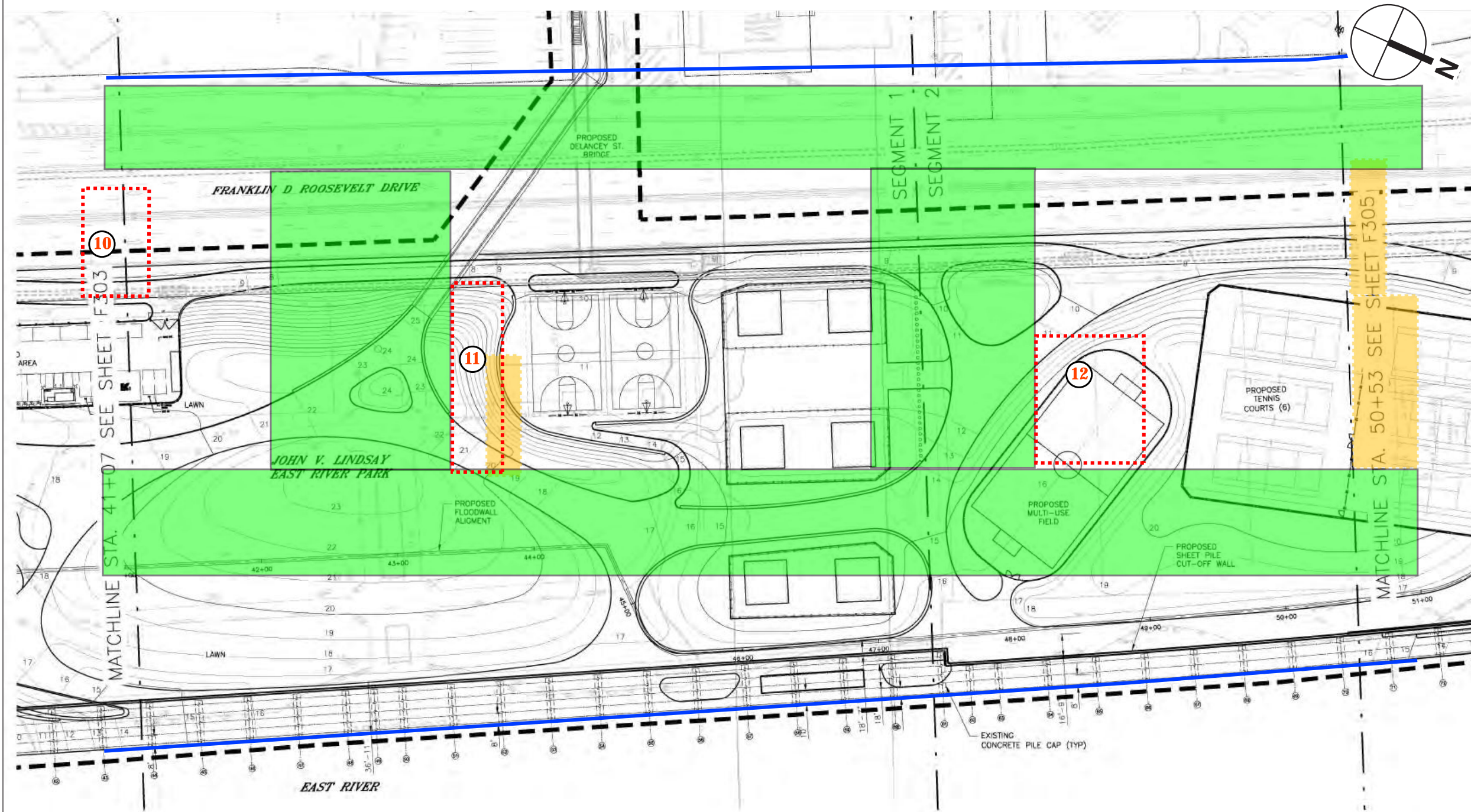
- 2016 APE
- Former basement disturbances (8-10 feet below grade)
- Potentially sensitive residential, commercial, and industrial archaeological resources in former historic blocks (1+ feet below grade or 2+ feet below grade under existing roads outside of known disturbances)
- Former historic streets (potentially sensitive resources 1+ feet below grade or 2+ feet below grade under existing roads outside of known disturbances)

Note: all areas within APE are sensitive for landfill related resources 2+ feet below grade outside of known disturbances

LEGEND:

- LIMITS OF WORK



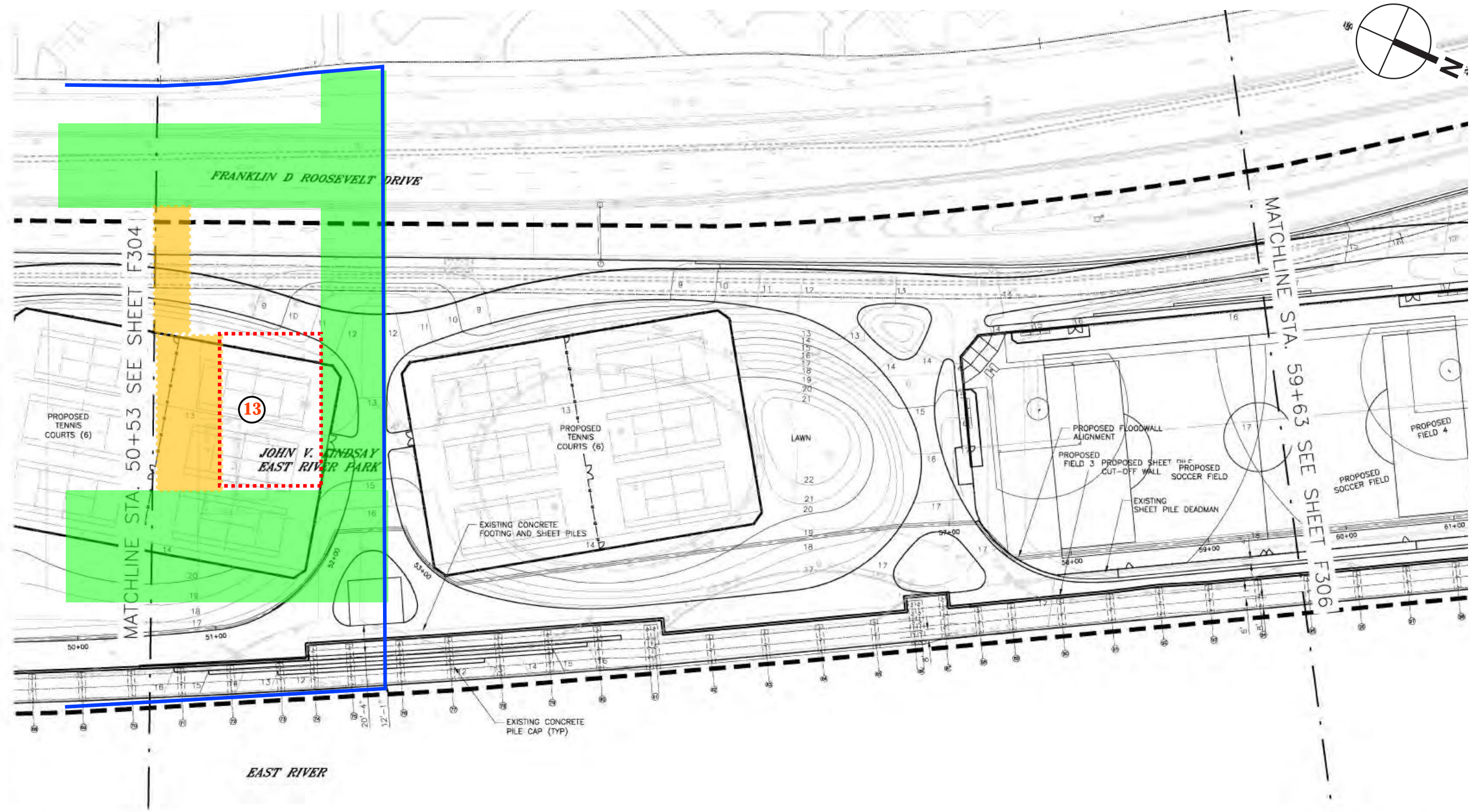


Key

- 2016 APE
- Former basement disturbances (8-10 feet below grade)
- Potentially sensitive residential, commercial, and industrial archaeological resources in former historic blocks (1+ feet below grade or 2+ feet below grade under existing roads outside of known disturbances)
- Former historic streets (potentially sensitive resources 1+ feet below grade or 2+ feet below grade under existing roads outside of known disturbances)

Note: all areas within APE are sensitive for landfill related resources 2+ feet below grade outside of known disturbances

LEGEND:
 LIMITS OF WORK

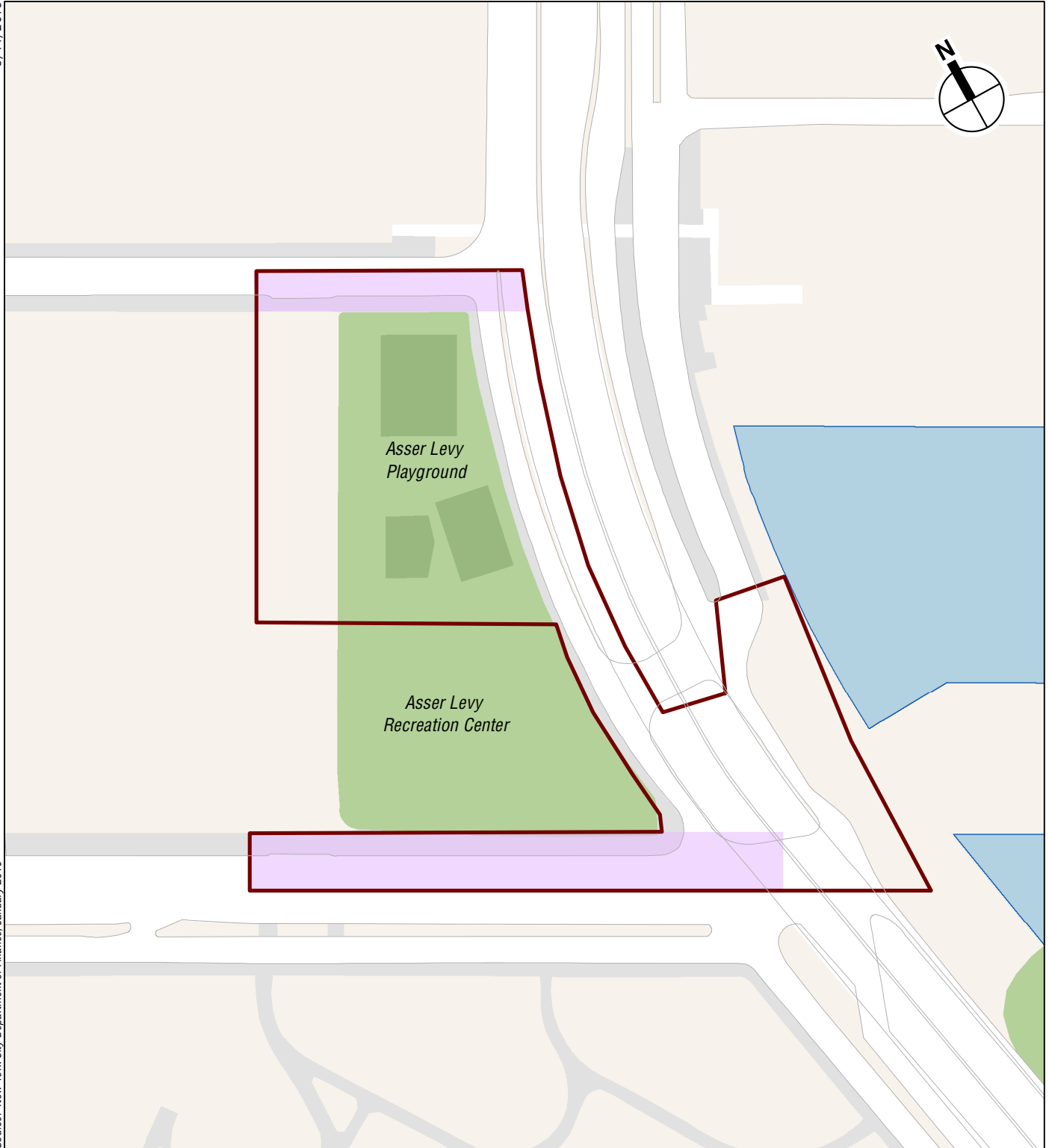


Key

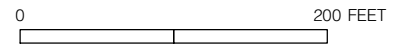
- 2016 APE
- Former basement disturbances (8-10 feet below grade)
- Potentially sensitive residential, commercial, and industrial archaeological resources in former historic blocks (1+ feet below grade or 2+ feet below grade under existing roads outside of known disturbances)
- Former historic streets (potentially sensitive resources 1+ feet below grade or 2+ feet below grade under existing roads outside of known disturbances)

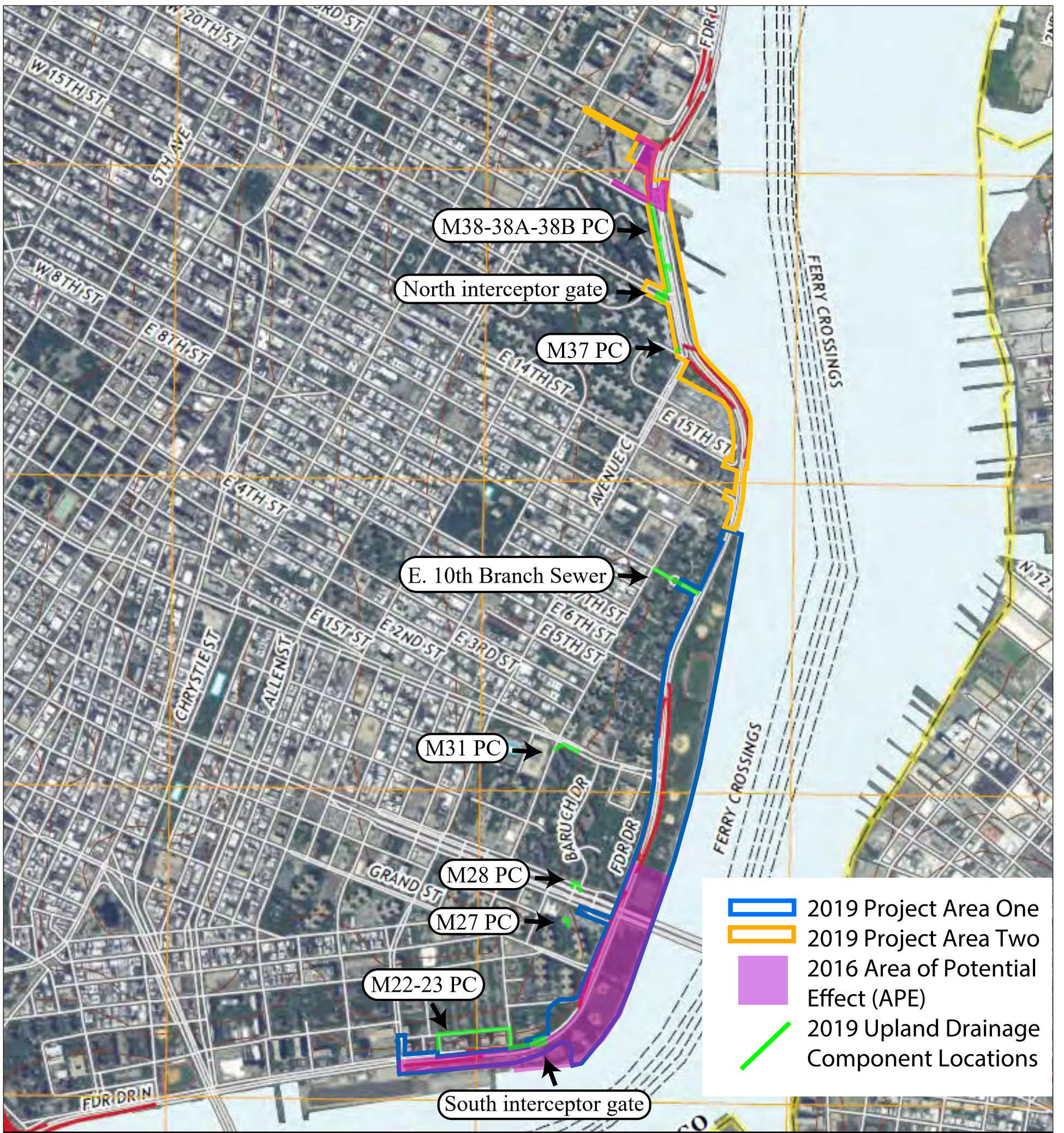
Note: all areas within APE are sensitive for landfill related resources 2+ feet below grade outside of known disturbances

LEGEND:
 LIMITS OF WORK



- APE
- Archaeologically Sensitive Area (1+ Feet Below Grade)





JECT

Rivington Street
 Area of Potential Effect – Montgomery to Rivington Streets
 Upland Drainage Components
 Figure 5.4-3

EXHIBIT D – HISTORIC PROPERTIES IN THE APE

APE—Historic Properties

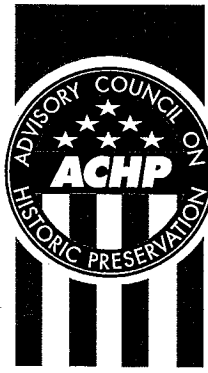
Map Ref. Letter #	Name/Type	Address/Location	NHL	S/NR	S/NR-eligible	NYCL-eligible	NYCL
Project Area One							
1	FDR Drive	Battery Park underpass to East 125th Street			X		
2	Williamsburg Bridge	Across East River Park at Delancey Street			X		
3	East River Bulkhead	Whitehall to Jackson Streets			X		
4	Engine Co. 66 Fireboat House	East River Park near Grand Street			X		
Project Area Two							
1	FDR Drive	Battery Park underpass to East 125th Street			X		
400-Foot Study Area							
5	Former Gouverneur Hospital	621 Water Street		X			
6	Gouverneur Hospital Dispensary	2 Gouverneur Slip East			X		
7	Lower East Side Historic District	Bounded by East Houston, Essex, Allen, and Division Streets, with blocks on East Broadway and Henry and Madison Streets		X		X	
8	Henry Street Settlement Buildings	263-267 Henry Street and 281 East Broadway		X			X
9	Baruch Houses	Bounded by FDR Drive, East Houston, Delancey, and Columbia Streets			X		
10	Public School 97 (Bard High School)	525 East Houston Street			X		
11	Lavanburg Homes	126 Baruch Place			X		
12	Asser Levy Public Baths	384 Asser Levy Place		X			X
13	East River Housing Cooperative	Bounded by FDR Drive, and Delancey, Lewis, Jackson and Cherry Streets			X		
14	Rivington Street Baths	Located within Baruch Houses			X	X	
15	Jacob Riis Houses	Bounded by FDR Drive, Avenue D, and East 6th and East 14th Streets			X		
16	Stuyvesant Town	Bounded by First Avenue, East 14th and East 20th Streets, Avenue C, and FDR Drive			X		
17	Peter Cooper Village	Bounded by First Avenue, East 20th and East 23rd Streets, and FDR Drive			X		
Notes:							
NHL: National Historic Landmark							
S/NR: Listed on the State and National Registers of Historic Places.							
S/NR-eligible: Officially determined eligible for listing on the State and National Registers of Historic Places.							
NYCL: New York City Landmark							
Heard: Application has been heard at the NYC Landmarks Preservation Commission.							
NYCL-eligible: Determined to appear eligible for designation as a NYCL.							
Sources: New York State Office of Parks, Recreation, and Historic Preservation Cultural Resource Information System (CRIS), https://cris.parks.ny.gov/Login.aspx?ReturnUrl=%2f ; NYCityMap, http://gis.nyc.gov/doitt/nycitymap/ ; Lower Manhattan Development Corporation, <i>East River Waterfront Esplanade and Piers Final Environmental Impact Statement (FEIS)</i> , May 18, 2007; NYCEDC, <i>Seward Park Mixed-Use Development Project FEIS</i> , August 10, 2012; Field surveys, July 2015; SHPO letter dated April 25, 2016.							

EXHIBIT E – SHPO HUMAN REMAINS DISCOVERY PROTOCOL

**State Historic Preservation Office/
New York State Office of Parks, Recreation and Historic Preservation
Human Remains Discovery Protocol
(August 2018)**

If human remains are encountered during construction or archaeological investigations, the New York State Historic Preservation Office (SHPO) recommends that the following protocol is implemented:

- Human remains must be treated with dignity and respect at all times. Should human remains or suspected human remains be encountered, work in the general area of the discovery will stop immediately and the location will be secured and protected from damage and disturbance.
- If skeletal remains are identified and the archaeologist is not able to conclusively determine whether they are human, the remains and any associated materials must be left in place. A qualified forensic anthropologist, bioarchaeologist or physical anthropologist will assess the remains in situ to help determine if they are human.
- No skeletal remains or associated materials will be collected or removed until appropriate consultation has taken place and a plan of action has been developed.
- The SHPO, the appropriate Indian Nations, the involved state and federal agencies, the coroner, and local law enforcement will be notified immediately. Requirements of the coroner and local law enforcement will be adhered to. A qualified forensic anthropologist, bioarchaeologist or physical anthropologist will assess the remains in situ to help determine if the remains are Native American or non-Native American.
- If human remains are determined to be Native American, they will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Please note that avoidance is the preferred option of the SHPO and the Indian Nations. The involved agency will consult SHPO and the appropriate Indian Nations to develop a plan of action that is consistent with the Native American Graves Protection and Repatriation Act (NAGPRA) guidance. Photographs of Native American human remains and associated funerary objects should not be taken without consulting with the involved Indian Nations.
- If human remains are determined to be non-Native American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Please note that avoidance is the preferred option of the SHPO. Consultation with the SHPO and other appropriate parties will be required to determine a plan of action.
- To protect human remains from possible damage, the SHPO recommends that burial information not be released to the public.



Preserving America's Heritage

December 3, 2019

Ms. Eram Qadri
Unit Head
Environmental Review, CDBG Disaster Recovery
Mayor's Office of Management and Budget
255 Greenwich Street, 8th Floor
New York, NY

REF: *East Side Coastal Resiliency Project*
City of New York, New York
ACHPConnect Log Number: #013783

Dear Ms. Qadri:

Enclosed is your copy of the fully executed Section 106 agreement (Agreement) for the referenced undertaking. By carrying out the terms of the Agreement, the City of New York's Office of Management and Budget (the City) will fulfill its responsibilities under Section 106 of the National Historic Preservation Act (NHPA) and the regulations of the Advisory Council on Historic Preservation, "Protection of Historic Properties" (36 CFR Part 800). Please ensure that all consulting parties are provided a copy of the executed Agreement in accordance with 36 CFR 800.6(c)(9). The original Agreement will remain on file at our office.

We appreciate the City working closely with the New York State Historic Preservation Officer, the New York City Landmarks Preservation Commission, and numerous other consulting parties to develop the Agreement.

If we may be of further assistance as the Agreement is implemented, please contact Ms. Jaime Loichinger at (202) 517-0219 or by e-mail at jloichinger@achp.gov and reference the ACHPConnect Log Number above.

Sincerely,

Jaime Loichinger
Assistant Director
Federal Permitting, Licensing, and Assistance Section
Office of Federal Agency Programs