Appendix D
Waterfront Revitalization Program

FOR INTERNAL USE ONLY	WRP No. _____
Date Received: _____	DOS No. _____

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM
Consistency Assessment Form

Proposed actions that are subject to CEQR, ULURP or other local, state or federal discretionary review procedures, and that are within New York City's Coastal Zone, must be reviewed and assessed for their consistency with the *New York City Waterfront Revitalization Program (WRP)* which has been approved as part of the State's Coastal Management Program.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, the New York City Department of City Planning, or other city or state agencies in their review of the applicant's certification of consistency.

A. APPLICANT INFORMATION

Name of Applicant: New York City Department of Parks and Recreation

Name of Applicant Representative: Colleen Alderson

Address: The Arsenal, Central Park, 830 Fifth Avenue, Room 401, New York, NY 10065

Telephone: 212-360-3403 Email: Colleen.Alderson@parks.nyc.gov

Project site owner (if different than above): NYC Parks, NYC SBS, NYC DOT, and private properties

B. PROPOSED ACTIVITY

If more space is needed, include as an attachment.

1. Brief description of activity

As part of its plan to address vulnerability to major flooding, New York City is proposing the East Side Coastal Resiliency (ESCR) 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). 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, elevated infrastructure and park areas, and/or closure structures (e.g., floodgates), and other infrastructure improvements to reduce the risk of flooding. In addition to providing a reliable coastal flood protection system for this area, another goal of the proposed project is to improve open spaces and enhance access to the waterfront, including East River Park and Stuyvesant Cove Park.

2. Purpose of activity

Hurricane Sandy underscored the City's need to bolster its resiliency efforts to protect property, vulnerable populations, and critical infrastructure during design storm events. The need to protect the area is magnified by the potential for more frequent flooding events and would align with resiliency planning goals described in OneNYC and A Stronger, More Resilient New York. To that end, the purpose of the proposed project is to address this coastal flooding vulnerability in a manner that reduces the flooding risk while enhancing waterfront open spaces and access to the waterfront. The principal objectives of the proposed project are to 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.

C. PROJECT LOCATION

Borough: New York Tax Block/Lot(s): 243,1; 244,19; 262,25; 316,114; 316,200; 321,1; 323,1; 367,1; 955,5; 981,2; 981,5; 988,1; 990,1; 990,70; 990,90; 991,29

Street Address: Montgomery Street to East 25th Street

Name of water body (if located on the waterfront): East River

D. REQUIRED ACTIONS OR APPROVALS

Check all that apply.

City Actions/Approvals/Funding

City Planning Commission ☑ Yes ☐ No

- ☑ City Map Amendment
- ☐ Zoning Map Amendment
- ☑ Zoning Text Amendment
- ☐ Site Selection – Public Facility
- ☐ Housing Plan & Project
- ☐ Special Permit (if appropriate, specify type: ☐ Modification ☐ Renewal ☐ other) Expiration Date: _____
- ☐ Zoning Certification
- ☐ Zoning Authorizations
- ☑ Acquisition – Real Property
- ☐ Disposition – Real Property
- ☐ Other, explain: _____
- ☐ Concession
- ☐ UDAAP
- ☐ Revocable Consent
- ☐ Franchise

Board of Standards and Appeals ☐ Yes ☑ No

- ☐ Variance (use)
- ☐ Variance (bulk)
- ☐ Special Permit (if appropriate, specify type: ☐ Modification ☐ Renewal ☐ other) Expiration Date: _____

Other City Approvals

- ☐ Legislation
- ☐ Rulemaking
- ☑ Construction of Public Facilities
- ☐ 384 (b) (4) Approval
- ☑ Other, explain: Environmental Review: New York City Department of Parks & Recreation, under CEQR
- ☑ Funding for Construction, specify: NYC OMB
- ☐ Policy or Plan, specify: _____
- ☐ Funding of Program, specify: _____
- ☐ Permits, specify: _____

State Actions/Approvals/Funding

- ☑ State permit or license, specify Agency: See EIS Permit type and number: _____
- ☐ Funding for Construction, specify: _____
- ☐ Funding of a Program, specify: _____
- ☑ Other, explain: _____

Federal Actions/Approvals/Funding

- ☑ Federal permit or license, specify Agency: See EIS Permit type and number: _____
- ☑ Funding for Construction, specify: U.S. Department of Housing and Urban Development
- ☐ Funding of a Program, specify: _____
- ☑ Other, explain: Environmental Review: New York City Office of Management and Budget, under NEPA

Is this being reviewed in conjunction with a Joint Application for Permits? ☑ Yes ☐ No

E. LOCATION QUESTIONS

1.	Does the project require a waterfront site?	☑ Yes	☐ No
2.	Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land under water or coastal waters?	☑ Yes	☐ No
3.	Is the project located on publicly owned land or receiving public assistance?	☑ Yes	☐ No
4.	Is the project located within a FEMA 1% annual chance floodplain? *(6.2)*	☑ Yes	☐ No
5.	Is the project located within a FEMA 0.2% annual chance floodplain? *(6.2)*	☑ Yes	☐ No
6.	Is the project located adjacent to or within a special area designation? See *Maps – Part III of the NYC WRP. If so, check appropriate boxes below and evaluate policies noted in parentheses as part of WRP Policy Assessment (Section F).*	☑ Yes	☐ No

- ☐ Significant Maritime and Industrial Area (SMIA) (*2.1*)
- ☐ Special Natural Waterfront Area (SNWA) (*4.1*)
- ☑ Priority Martine Activity Zone (PMAZ) (*3.5*)
- ☐ Recognized Ecological Complex (REC) (*4.4*)
- ☐ West Shore Ecologically Sensitive Maritime and Industrial Area (ESMIA) (*2.2, 4.2*)

F. WRP POLICY ASSESSMENT

Review the project or action for consistency with the WRP policies. For each policy, check Promote, Hinder *or* Not Applicable (N/A). *For more information about consistency review process and determination, see* ***Part I*** *of the NYC Waterfront Revitalization Program. When assessing each policy, review the full policy language, including all sub-policies, contained within* ***Part II*** *of the WRP. The relevance of each applicable policy may vary depending upon the project type and where it is located (i.e. if it is located within one of the special area designations).*

For those policies checked Promote *or* Hinder, *provide a written statement on a separate page that assesses the effects of the proposed activity on the relevant policies or standards. If the project or action promotes a policy, explain how the action would be consistent with the goals of the policy. If it hinders a policy, consideration should be given toward any practical means of altering or modifying the project to eliminate the hindrance. Policies that would be advanced by the project should be balanced against those that would be hindered by the project. If reasonable modifications to eliminate the hindrance are not possible, consideration should be given as to whether the hindrance is of such a degree as to be substantial, and if so, those adverse effects should be mitigated to the extent practicable.*

		Promote	Hinder	N/A
1	**Support and facilitate commercial and residential redevelopment in areas well-suited to such development.**	☑	☐	☐
1.1	Encourage commercial and residential redevelopment in appropriate Coastal Zone areas.	☑	☐	☐
1.2	Encourage non-industrial development with uses and design features that enliven the waterfront and attract the public.	☐	☐	☑
1.3	Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.	☐	☐	☑
1.4	In areas adjacent to SMIAs, ensure new residential development maximizes compatibility with existing adjacent maritime and industrial uses.	☐	☐	☑
1.5	Integrate consideration of climate change and sea level rise into the planning and design of waterfront residential and commercial development, pursuant to WRP Policy 6.2.	☐	☐	☑

		Promote	Hinder	N/A
2	**Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.**	☑	☐	☐
2.1	Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas.	☐	☐	☑
2.2	Encourage a compatible relationship between working waterfront uses, upland development and natural resources within the Ecologically Sensitive Maritime and Industrial Area.	☐	☐	☑
2.3	Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas or Ecologically Sensitive Maritime Industrial Area.	☑	☐	☐
2.4	Provide infrastructure improvements necessary to support working waterfront uses.	☑	☐	☐
2.5	Incorporate consideration of climate change and sea level rise into the planning and design of waterfront industrial development and infrastructure, pursuant to WRP Policy 6.2.	☑	☐	☐
3	**Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation.**	☑	☐	☐
3.1.	Support and encourage in-water recreational activities in suitable locations.	☑	☐	☐
3.2	Support and encourage recreational, educational and commercial boating in New York City's maritime centers.	☑	☐	☐
3.3	Minimize conflicts between recreational boating and commercial ship operations.	☑	☐	☐
3.4	Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.	☑	☐	☐
3.5	In Priority Marine Activity Zones, support the ongoing maintenance of maritime infrastructure for water-dependent uses.	☑	☐	☐
4	**Protect and restore the quality and function of ecological systems within the New York City coastal area.**	☑	☐	☐
4.1	Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas.	☐	☐	☑
4.2	Protect and restore the ecological quality and component habitats and resources within the Ecologically Sensitive Maritime and Industrial Area.	☐	☐	☑
4.3	Protect designated Significant Coastal Fish and Wildlife Habitats.	☐	☐	☑
4.4	Identify, remediate and restore ecological functions within Recognized Ecological Complexes.	☐	☐	☑
4.5	Protect and restore tidal and freshwater wetlands.	☑	☐	☐
4.6	In addition to wetlands, seek opportunities to create a mosaic of habitats with high ecological value and function that provide environmental and societal benefits. Restoration should strive to incorporate multiple habitat characteristics to achieve the greatest ecological benefit at a single location.	☑	☐	☐
4.7	Protect vulnerable plant, fish and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.	☑	☐	☐
4.8	Maintain and protect living aquatic resources.	☑	☐	☐

		Promote	Hinder	N/A
5	**Protect and improve water quality in the New York City coastal area.**	☑	☐	☐
5.1	Manage direct or indirect discharges to waterbodies.	☑	☐	☐
5.2	Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.	☑	☐	☐
5.3	Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.	☑	☐	☐
5.4	Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.	☑	☐	☐
5.5	Protect and improve water quality through cost-effective grey-infrastructure and in-water ecological strategies.	☑	☐	☐
6	**Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change.**	☑	☐	☐
6.1	Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.	☑	☐	☐
6.2	Integrate consideration of the latest New York City projections of climate change and sea level rise (as published in *New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms*) into the planning and design of projects in the city's Coastal Zone.	☑	☐	☐
6.3	Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.	☑	☐	☐
6.4	Protect and preserve non-renewable sources of sand for beach nourishment.	☐	☐	☑
7	**Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety.**	☑	☐	☐
7.1	Manage solid waste material, hazardous wastes, toxic pollutants, substances hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution and prevent degradation of coastal ecosystems.	☑	☐	☐
7.2	Prevent and remediate discharge of petroleum products.	☑	☐	☐
7.3	Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.	☑	☐	☐
8	**Provide public access to, from, and along New York City's coastal waters.**	☑	☐	☐
8.1	Preserve, protect, maintain, and enhance physical, visual and recreational access to the waterfront.	☐	☑	☐
8.2	Incorporate public access into new public and private development where compatible with proposed land use and coastal location.	☑	☐	☐
8.3	Provide visual access to the waterfront where physically practical.	☑	☐	☐
8.4	Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.	☑	☐	☐

		Promote	Hinder	N/A
8.5	Preserve the public interest in and use of lands and waters held in public trust by the State and City.	☑	☐	☐
8.6	Design waterfront public spaces to encourage the waterfront's identity and encourage stewardship.	☑	☐	☐
9	**Protect scenic resources that contribute to the visual quality of the New York City coastal area.**	☑	☐	☐
9.1	Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.	☑	☐	☐
9.2	Protect and enhance scenic values associated with natural resources.	☑	☐	☐
10	**Protect, preserve, and enhance resources significant to the historical, archaeological, architectural, and cultural legacy of the New York City coastal area.**	☑	☐	☐
10.1	Retain and preserve historic resources, and enhance resources significant to the coastal culture of New York City.	☑	☐	☐
10.2	Protect and preserve archaeological resources and artifacts.	☑	☐	☐

G. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If this certification can be made, complete this Section.

"The proposed activity complies with New York State's approved Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent's Name: NYC Department of Parks and Recreation / Colleen Alderson

Address: The Arsenal, Central Park, 830 Fifth Avenue, Room 401, New York, NY 10065

Telephone: 212-360-3403 Email: Colleen.Alderson@parks.nyc.gov

Applicant/Agent's Signature: Colleen Alderson

Date: March 27, 2019

Submission Requirements

For all actions requiring City Planning Commission approval, materials should be submitted to the Department of City Planning.

For local actions not requiring City Planning Commission review, the applicant or agent shall submit materials to the Lead Agency responsible for environmental review. A copy should also be sent to the Department of City Planning.

For State actions or funding, the Lead Agency responsible for environmental review should transmit its WRP consistency assessment to the Department of City Planning.

For Federal direct actions, funding, or permits applications, including Joint Applicants for Permits, the applicant or agent shall also submit a copy of this completed form along with his/her application to the NYS Department of State Office of Planning and Development and other relevant state and federal agencies. A copy of the application should be provided to the NYC Department of City Planning.

The Department of City Planning is also available for consultation and advisement regarding WRP consistency procedural matters.

New York City Department of City Planning
Waterfront and Open Space Division
120 Broadway, 31st Floor
New York, New York 10271
212-720-3525
wrp@planning.nyc.gov
www.nyc.gov/wrp

New York State Department of State
Office of Planning and Development
Suite 1010
One Commerce Place, 99 Washington Avenue
Albany, New York 12231-0001
(518) 474-6000
www.dos.ny.gov/opd/programs/consistency

Applicant Checklist

- ☐ Copy of original signed NYC Consistency Assessment Form
- ☐ Attachment with consistency assessment statements for all relevant policies
- ☐ For Joint Applications for Permits, one (1) copy of the complete application package
- ☐ Environmental Review documents
- ☐ Drawings (plans, sections, elevations), surveys, photographs, maps, or other information or materials which would support the certification of consistency and are not included in other documents submitted. All drawings should be clearly labeled and at a scale that is legible.

Appendix D: Waterfront Revitalization Program

A. INTRODUCTION

The East Side Coastal Resiliency Project (proposed project) is located in the Coastal Zone as designated by New York State and New York City (the "City") and would therefore be subject to State and City coastal management policies. In addition, the proposed project is federally funded and thus is subject to federal policies for coastal management. This document examines the compliance of the proposed project with those policies.

This analysis concludes that the proposed project would be consistent with the City's coastal management policies and standards. The development of the proposed project is consistent with goals established for the Borough of Manhattan and the City for revitalizing and creating public access to the waterfront and would represent an increase in public access to the waterfront for recreational use, while implementing flood protection measures to protect Lower Manhattan.

B. REGULATORY CONTEXT

The federal Coastal Zone Management (CZM) Act of 1972 was established to encourage and assist states in preparing and implementing management programs to, "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone." The requirements for federal approval of coastal zone management programs and grant application procedures for development of the state programs are presented in 15 CFR Part 923, Coastal Zone Management Program Development and Approval Regulations, National Oceanic and Atmospheric Administration (NOAA). The CZM Act stipulates that federal actions and federally funded actions within the coastal zone must be, to the maximum extent feasible, consistent with approved state management programs. The New York State Department of State (NYSDOS) administers this program in New York.

In 1982, New York State adopted its Coastal Management Program (CMP), designed to balance economic development and preservation in the Coastal Zone by promoting waterfront revitalization and water-dependent uses while protecting fish and wildlife, open space and scenic areas, public access to the shoreline and farmland, and minimizing adverse changes to ecological systems and erosion and flood hazards. The program provides for local implementation when a municipality adopts a local waterfront revitalization program, as has been done in New York City.

The program also encourages coordination among all levels of government to promote sound waterfront planning and requires consideration of the program's goals in making land use decisions. The NYSDOS administers the program at the State level, and the New York City Department of City Planning (DCP) administers it in the City.

The proposed project is located within the City's Coastal Zone and is therefore subject to the policies of New York City's Waterfront Revitalization Program (WRP). The WRP was originally adopted in 1982 and approved by NYSDOS for inclusion in the New York State CMP. The WRP establishes the City's policies for development and use of the waterfront and provides a framework

for evaluating activities proposed in the Coastal Zone. The City's WRP was revised to 10 consolidated policies and adopted by the City Council in October 1999 and approved by NYSDOS in 2002, with concurrence from the U.S. Secretary of Commerce. In 2012, the City revised and expanded the 2002 WRP update following the issuance of *Vision 2020*, which lays out a ten-year blueprint for the future of the City's waterfront. These revisions to the WRP regulatory policies were proposed to advance the goals and priorities of *Vision 2020*. For instance, the new WRP encouraged the development of maritime industry while ensuring the protection of the environment, promoted recreation both at the shoreline and in the water, provided design principles that consider the effects of climate change and sea level rise, and fostered the preservation and restoration of ecologically significant sites. Following the public review and 197-a process for community input and adoption, the New York City Planning Commission approved the plan in 2013. In February 2016, the proposed amendment to the WRP was accepted by NYSDOS, and the U.S. Secretary of Commerce concurred in June 2016.

Consistency with waterfront policies is a key requirement of the CMP established in New York State's *Waterfront Revitalization and Coastal Resource Act* of 1981 (New York Executive Law, Article 42: [910-923]). NYSDOS administers the State's coastal management program through the implementing regulations contained in 19 NYCRR Parts 600 through 603, and NYSDOS is responsible for determining whether federal actions are consistent with the 44 coastal policies of the CMP. For actions directly undertaken by State agencies, including funding assistance and granting of approvals, the State agency with jurisdiction makes the consistency determination, which is then filed with NYSDOS. As an action initiated by New York City which will receive federal funding, the proposed project's compliance with the CMP policies will be reviewed by NYSDOS and the City Planning Commission, acting as the City Coastal Commission. The policy assessment provided below is intended to assist these agencies in making their consistency determination.

C. METHODOLOGY

This analysis evaluates the proposed project's compliance with the City's 10 WRP policies based on the analyses presented in the relevant chapters of this Final Environmental Impact Statement (FEIS). The study area for the analysis includes the proposed project area, which encompasses approximately 2.4 miles of shoreline located along the East River, as well as the protected area, which reflects the Federal Emergency Management Agency (FEMA)-designated special flood hazard area (SFHA) for the 100-year flood event, taking into consideration the 90th percentile projection of sea level rise to the 2050s (see Figure 1.0-5 of the FEIS). The project area extends along the East River waterfront from Montgomery Street on the south to East 25th Street and is comprised of two sub-areas—Project Area One and Project Area Two—for the purposes of project design and analysis.

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 a portion of the Franklin Delano Roosevelt East River Drive (the FDR Drive) right-of-way, a portion of Pier 42 and Corlears Hook Park as well as East River Park. The majority of Project Area One is within East River Park and includes four existing pedestrian bridges across the FDR Drive to East River Park (Corlears Hook, Delancey Street, East 6th Street, and East 10th Street Bridges) and the Houston Street overpass. Project Area Two is approximately 21 acres and extends north and east from Project Area One, from East 13th Street to East 25th Street. In addition to the FDR Drive right-of-way, Project Area Two includes

portions of the 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. Figure 1.0-3 of the FEIS is an aerial map depicting the limits of Project Area One and Project Area Two.

D. PROJECT ALTERNATIVES

This section describes the potential alternatives for the proposed project. These alternatives, which are described in greater detail in Chapter 2.0, "Project Alternatives," of the FEIS, include the No Action Alternative, the Preferred Alternative, and three additional alternatives. These four With Action Alternatives include:

- Flood Protection System with a Raised East River Park (Preferred Alternative)
- Flood Protection System on the West Side of East River Park - Baseline (Alternative 2)
- Flood Protection System on the West Side of East River Park – Enhanced Park & Access (Alternative 3)
- Flood Protection System East of FDR Drive (Alternative 5)

NO ACTION ALTERNATIVE (ALTERNATIVE 1)

The No Action Alternative is the future condition without the proposed project and assumes that no new comprehensive coastal protection system is installed in the proposed project area. The build year for the proposed project is 2025 and accordingly, the No Action Alternative assumes that projects planned or currently under construction in the project area are completed by the 2025 analysis year (i.e., No Action projects). A list of these planned projects is included in Appendix A1 of the FEIS. This alternative would not result in significant adverse effects on coastal resources; however, it also would not provide comprehensive coastal flood protection for the protected area, which would continue to experience flooding impacts during extreme coastal storm events (the 100-year flood events with sea level rise projections to the 2050s[1]), referred to herein as the design storm event, similar to Hurricane Sandy.

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

The Preferred Alternative proposes to move the line of flood protection further into East River Park, thereby protecting both the community and the park from design storm events, as well as increased tidal inundation resulting from 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 amphitheater and East 13th Street the park would be raised by approximately eight feet to meet the design flood criteria, with the floodwall installed below-grade. In addition to the Delancey Street and East 10th Street Bridges, the Corlears Hook Bridge would be reconstructed to be universally accessible. The park's underground water and drainage infrastructure, bulkhead and esplanade, and existing park structures and recreational features, including the amphitheater, track

[1] Sea level rise estimate represents the 90th percentile value for 2050 as presented by the New York City Panel on Climate Change. See Chapter 2.0, "Project Alternatives," of this DEIS for additional details on design principals and sea level rise.

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 allow for siting of active recreation fields within the park and to facilitate direct connection to the water.

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

This alternative also includes modifications of the existing sewer system, including installing gates underground near the northern and southern extents of the project area within the existing large capacity sewer pipe (interceptor) and flood-proofing manholes and regulators located on the unprotected side of the proposed project alignment to control flow into the project area from the larger combined sewer drainage area. Installation of additional sewer pipes and, in one location, enlarging existing sewer pipes, is also proposed within and adjacent to the project area to reduce the risk of street and property flooding within the protected area during a design storm event. A shared-use pedestrian/bicyclist flyover bridge linking East River Park and Captain Brown Walk would be built cantilevered over the northbound FDR Drive to address the narrowed pathway (pinch point) near the East River Dock between East 13th Street and East 15th Street, substantially improving the City's greenway network and north-south connectivity in the project area.

The flood protection system and raised East River Park proposed under this alternative would be constructed in 3.5 years and completed in 2023 compared to the 5-year construction duration anticipated under Alternatives 2, 3, and 5. The foundations for the shared-use flyover bridge would also be completed in 2023. Subsequently, a prefabricated bridge span would be installed and completed in 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. Protection would be provided by a concrete floodwall starting at Montgomery Street within the sidewalk adjacent to the Gouverneur Gardens Cooperative Village. The floodwall would then cross under the FDR Drive with closure structures across the FDR Drive's South Street off- and on-ramps. A combination of floodwalls and levees would then run along the west side of East River Park for the length of the entire park. The park-side landings for the Delancey Street and East 10th Street bridges would be rebuilt within East River Park to accommodate the flood protection system. In Project Area Two, the flood protection alignment

would be similar to that proposed in the Preferred Alternative 2, however this alternative would only include replacement in kind for portions of Murphy Brothers and Asser Levy Playgrounds that would be affected during constructed, instead of reconstructing and reconfiguring them as proposed for the Preferred Alternative. As with the Preferred Alternative, this alternative would include drainage components to reduce the risk of interior flooding and the shared-use flyover bridge to address the pinch point.

The flood protection alignment proposed in Alternative 2 would require that the majority of flood protection construction be performed during night-time single-lane closures of the FDR Drive, thus the flood protection system and associated components under this alternative are assumed to be constructed in five 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 3 provides flood protection using a combination of floodwalls, levees, and closure structures in Project Areas One and Two. As with Alternative 2, the line of protection in Project Area One would be generally located on the western side of East River Park. However, under Alternative 3, there would be more extensive use of berms and other earthwork in association with the flood protection along the FDR Drive to provide for more integrated access, soften the visual effect of the floodwall on park users, and introduce new types of park experience. The landscape would generally gradually slope down from high points along the FDR Drive towards the existing at-grade esplanade at the water's edge. Due to the extent of the construction of the flood protection system, this alternative would include a more extensive reconfiguration and reconstruction of the bulk of East River Park and its programming, including landscapes, recreational fields, playgrounds, and amenities. In addition, the existing pedestrian bridges and bridge landings at Delancey and East 10th Streets would be completely reconstructed to provide universal access, and a new raised and landscaped park-side plaza landing would be created at the entrance to the park from the East Houston Street overpass. In Project Area Two, the flood protection alignment would be similar to that proposed in Alternative 2, however this alternative would reconstruct and reconfigure the Murphy Brothers and Asser Levy Playgrounds similar to the Preferred Alternative.

As proposed in the Preferred Alternative and Alternative 2, this alternative would include drainage components to reduce the risk of interior flooding and the shared-use flyover bridge to address the pinch point.

Alternative 3 would involve construction of the flood protection system alignment along the FDR Drive and in close proximity to sensitive Con Edison transmission lines. Given the associated complexities and logistical considerations involved when working in and around these facilities, a 5-year construction duration is assumed, with the proposed project estimated to be completed in 2025.

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 to meet the design flood elevation then connect to closure structures at the south end of Stuyvesant Cove Park. Maintaining the flood protection alignment along the east side of the FDR Drive would eliminate the need for gates crossing the FDR Drive near East 13th Street as well as the need to

install floodwalls adjacent to NYCHA Jacob Riis Houses, Con Edison property, and Murphy Brothers Playground.

This alternative would also include drainage components to reduce the risk of interior flooding and construction of the shared-use flyover bridge to address the pinch point. Alternative 5 is anticipated to be constructed in five 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.

As described above, these alternatives were developed to provide coastal flood protection for the FEMA-designated 100-year special flood hazard area, taking into account sea level rise based on the New York City Panel on Climate Change 90th percentile sea level rise estimate to the 2050s (protected area). Special flood hazard areas in the study area were identified using the 2015 preliminary FEMA Flood Insurance Rate Maps (FIRMs) for New York City. The preliminary FIRMs are the Best Available Flood Hazard Data (BAFHD) for New York City at this time. FIRMs typically show the areas of inundation anticipated for the 100-year storm, or the storm that has a 1.0 percent chance of occurring annually.

These alternatives differ in terms of potential effects on neighborhood and park features, neighborhood connectivity, and integration of resiliency features into East River Park. These differences are described in detail in Chapter 2.0, "Project Alternatives." Any differences between the alternatives with respect to the coastal policy compliance are discussed below.

The studies and analyses undertaken for the proposed project and described in this FEIS are the primary foundation for evaluating consistency with the applicable WRP policies. Each policy is listed below, followed by a narrative response describing the consistency with applicable policies or the non-applicability of the policy to the proposed project. Only those components of the proposed project to which a particular policy is potentially applicable are evaluated in the following discussions. The following section provides a more detailed analysis to determine the consistency of the proposed project with the WRP.

E. CONSISTENCY OF PROPOSED PROJECT WITH WATERFRONT REVITALIZATION PROGRAM POLICIES

Policy 1: Support and facilitate commercial and residential redevelopment in areas well-suited to such development.

1.1: Encourage commercial and residential redevelopment in appropriate coastal zone areas.

No commercial or residential development is proposed under the proposed project. However, the proposed project would provide flood protection for existing and future upland residential and commercial areas using a combination of floodwalls, levees, and closure structures. Therefore, the proposed project would be consistent with this policy.

Policy 2: Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.

2.3: Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas or Ecologically Sensitive Maritime Industrial Area.

Con Edison electrical and steam transmission and generation infrastructure is in the vicinity of the proposed project, including a head house at the southern limit of East River

Park and the East River Complex. These facilities would not be disturbed as part of construction or operation of the proposed project. However, the flood protection system for the proposed project would tie into the existing reinforced brick façade wall that surrounds portions of Con Edison's East River Complex at 13th Street and north of East 14th Street. Close coordination with Con Edison would ensure that construction activities do not interfere with operation of these facilities. Therefore, it is concluded that the proposed project would be consistent with this policy.

2.4: Provide infrastructure improvements necessary to support working waterfront uses.

As noted under Policy 2.3 above, Con Edison electrical and steam transmission and generation infrastructure is located in the vicinity of the proposed project. Close coordination with Con Edison would ensure that construction activities minimize interference with operation of this infrastructure. Therefore, it is concluded that the proposed project would be consistent with this policy.

2.5: Incorporate consideration of climate change and sea level rise into the planning and design of waterfront industrial development and infrastructure, pursuant to WRP Policy 6.2.

A key design factor in the proposed flood protection system is the incorporation of sea level rise projections and the purpose of the project is to provide protection against coastal flooding to the protected area. See below for an analysis of this project's consistency with WRP Policy 6.2.

Policy 3: Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation centers.

3.1: Support and encourage in-water recreational activities in suitable locations.

The proposed project would provide coastal flood protection in addition to enhancing open space access and amenities along the East River waterfront, to varying degrees depending upon the alternative. The enhanced access and amenities would not specifically include in-water recreational activities but would not preclude other projects that aimed to support and encourage such efforts within the project area, including a potential new kayak launch in Stuyvesant Cove Park proposed as part of a separate project. Therefore, it is concluded that the proposed project would be consistent with this policy.

3.2: Support and encourage recreational and commercial boating in New York City's maritime centers.

The proposed project would not introduce opportunities for commercial or recreational boating. Operation and construction of the proposed project would be integrated with the existing Citywide Ferry Service to ensure continued service to ferry users. Access to the ferry landings would be maintained at all times during construction. As mentioned above, a new kayak launch in Stuyvesant Cove Park is proposed to be constructed as part of a separate project. The proposed project would not conflict with the kayak launch and has been designed to accommodate the project. Additionally, Skyport Marina is located adjacent to the proposed project area near East 23rd Street; construction and operation of the proposed project would not preclude the operation of this marina. Therefore, it is concluded that the proposed project would be consistent with this policy.

3.3: Minimize conflicts between recreational boating and commercial ship operations.

The proposed project does not include any recreational or commercial boating operations. Any barges required to support construction of the proposed project would be closely coordinated with the appropriate agencies, including the U.S. Coast Guard Harbor Operations Steering Committee, and would be sited outside of the East River navigation channel. Therefore, it is concluded that the proposed project would be consistent with this policy.

3.4: Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.

The proposed project does not include marinas or other docking facilities and would not result in additional recreational boating. Any barging proposed during construction would also not result in significant adverse effects to the estuarine environment (see Chapter 6.5, "Construction—Natural Resources," of this FEIS) and surrounding land and water uses (see Chapter 5.1, "Land Use, Zoning, and Public Policy," of this FEIS). Therefore, it is concluded that the proposed project would be consistent with this policy.

3.5: In Priority Marine Activity Zones, support the ongoing maintenance of maritime infrastructure for water-dependent uses.

Areas with a concentration of water-dependent activity or sites that are key nodes in the waterborne transportation network, and which have the infrastructure to support these uses, have been designated as Priority Marine Activity Zones (PMAZs) in the 2013 WRP update. These shorelines are used for vessel docking, berthing, or tie-up and the shoreline infrastructure, such as bulkheads, docks, and piers, is designed to support such uses.

The project area is directly adjacent to one area mapped as PMAZ: the Skyport Marina located on East 23rd Street at the FDR Drive. As stated in the 2013 WMP Revisions at Policy 3.5, "priority should be given towards shoreline design, erosion prevention, and flood-control measures that allow for continuation of water-dependent uses." The proposed project involves construction of a coastal flood protection system, which would not adversely affect the Skyport Marina or its associated parking garage. Therefore, the proposed project would be consistent with this policy.

Policy 4: Protect and restore the quality and function of ecological systems within the New York City coastal area.

4.5: Protect and restore tidal and freshwater wetlands.

There are no vegetated tidal wetlands within the project area. Operation and construction of the proposed project would result in adverse effects to New York State Department of Environmental Conservation (NYSDEC)-regulated littoral zone tidal wetland and U.S. Army Corps of Engineers (USACE) Waters of the United States, but these adverse effects would not be considered significant (defined and analyzed in Chapter 5.6, "Natural Resources," and in Chapter 6.5, "Construction—Natural Resources," of this FEIS).

Construction of the proposed project would require 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, and the demolition of the existing embayments and existing piles and formwork associated with the esplanade in these areas. These construction activities would cause temporary adverse effects to unvegetated tidal wetlands (littoral zone). Turbidity curtains, water-tight cofferdams, and debris nets would be used as applicable to lessen impacts to these

natural resources. Ongoing coordination with NYSDEC will determine the need for mitigation, if any, in response to temporary in-water impacts. Upon completion of construction, the spuds, barges, turbidity curtains and debris nets would be removed, and the affected area would be allowed to naturally restore to pre-construction conditions. All adverse effects to NYSDEC and USACE regulated tidal wetlands would be subject to the regulatory permitting process and would be mitigated for in accordance with NYSDEC and USACE permit conditions.

Adverse effects would result from 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 as well as relocating the two existing embayments within the park. Installation of the 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. This permanent adverse effects would require approximately 59,650 square feet of tidal wetland mitigation under general 2:1 ratio recommendations for unvegetated tidal wetland impacts. Continued coordination with NYSDEC will determine the total extent of mitigation required for the proposed project.

On-site, in-kind tidal wetland mitigation would consist of constructing two new embayments within the project area which would restore 24,868 square feet of the adversely affected tidal wetlands. The remaining 34,782 square feet of required mitigation would be accomplished through the purchase of tidal wetland mitigation bank credits or with off-site tidal wetland restoration or creation. The New York City Economic Development Corporation (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 off-site tidal wetland restoration sites. Selection and implementation of off-site tidal wetland mitigation will be coordinated with EDC, NYC Parks, and other involved agencies. Off-site tidal wetland mitigation would likely include the restoration or creation of open water, mud flats, low marsh, high marsh, and coastal upland habitats. It is anticipated that the design and construction of the off-site tidal wetland mitigation would be completed by the proposed construction end date of 2023.

As permanent adverse effects would be mitigated for in accordance with all NYSDEC and USACE permit conditions, including mitigation as described above, it is concluded that the proposed project would be consistent with this policy.

4.6: In addition to wetlands, seek opportunities to create a mosaic of habitats with high ecological value and function that provide environmental and societal benefits. Restoration should strive to incorporate multiple habitat characteristics to achieve the greatest ecological benefit at a single location.

The project area currently contains open space, lawns, planted areas, and shade trees within the publicly accessible lands that are part of the East River Greenway, including natural areas within East River Park, Stuyvesant Cove Park, and the grounds surrounding the Solar One Environmental Education Center. During Hurricane Sandy, many of the trees along the waterfront were inundated by storm surge and damaged by extreme winds.

After Hurricane Sandy, it was found that certain species of trees were more resilient to the brackish floodwaters and were able to recover faster, while some tree species were unable to recover. For the landscaping included in the proposed project, resilient species would be prioritized, consistent with this policy.

Construction of the proposed project would temporarily disturb lawn and landscaped areas within East River Park and 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. These disturbed areas would be restored in accordance with a pre-approved NYC Parks comprehensive planting program as part of a 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 handle 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 pre-approved landscape restoration plan and tree mitigation plan would also include plantings that would support typical urban wildlife upon completion of construction, including milkweed species that attract and support monarch butterflies.

A number of the existing trees within East River and Stuyvesant Cove Parks would be affected by the construction of the proposed project, though the exact number of trees varies by design alternative (see Chapter 5.6, "Natural Resources," of this FEIS). Trees would be replanted or replaced in accordance with a NYC Parks landscape restoration plan. The value of this restoration plan, in combination with approximately $32.9 million of restitution under the Preferred Alternative, would be 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. As discussed above, tree species and herbaceous species in other landscaped areas that demonstrated better resiliency to flooding during Hurricane Sandy would be prioritized (consistent with this policy). These trees and plantings would support typical urban wildlife upon completion of construction. Overall, areas that were disturbed during construction would be restored or improved following construction, allowing species to return and repopulate the area. Therefore, it is concluded that the proposed project would be consistent with this policy.

4.7: Protect vulnerable plant, fish, and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.

The proposed project would not result in significant adverse effects to vulnerable plant, fish, wildlife, and ecological communities (see also Chapter 5.6, "Natural Resources," and Chapter 6.5, "Construction— Natural Resources," of this FEIS). Consultations with the New York Natural Heritage Program (NYNHP) and the U.S. Fish and Wildlife Service (USFWS), and the National Oceanic and Atmospheric Association's National Marine Fisheries Service (NOAA NMFS) have been reinitiated for the Preferred Alternative(see **Appendices G, H1, and H2** of this FEIS). Construction and operation of the flood

protection system would also not result in adverse effects to any USFWS-regulated species, nor would it effect the New York State listed peregrine falcon (*Falco peregrinus*), as the proposed project would not adversely affect the Williamsburg Bridge or any other potential nesting habitat for peregrine falcon. Consultation with the NOAA 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 ESA-listed species, EFH, and FWCA species:

- 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

NOAA NMFS recommended the following conservation measures in addition to the BMPs listed above to avoid impacts to essential fish habitat (EFH) and Magnuson Stevens Fishery Conservation and Management Act (FWCA) species during construction of the proposed project:

- 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
- 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 fish

NOAA NMFS indicated that these conservation recommendations can be reevaluated as project designs are further developed and if additional analysis on the extent of impacts to EFH and FWCA species are better defined.

To design and develop land and water uses that maximize their integration or compatibility with the identified ecological community, the design of the proposed project includes two proposed embayments that would be comparable in size to the existing embayments and would be similarly located within East River Park. As the proposed project design progresses, the proposed embayments would provide improved habitat type over what currently exists in the embayments that are to be filled by omitting bridges that shade aquatic habitat, which can reduce benthic productivity and biomass, and providing habitat enhancements designed for the recruitment of shellfish and other aquatic life. The proposed design includes ECOncrete® elements that provide the necessary structural elements of an urban waterfront while also providing opportunities for flora and fauna to thrive.

4.8: Maintain and protect living aquatic resources.

To support construction of the proposed project, measures would be taken to protect the water quality and living aquatic resources of the East River. As described in Chapter 5.6, "Natural Resources," and Chapter 6.5, "Construction—Natural Resources," of this FEIS,

consultations with NYNHP, USFWS, and NOAA NMFS were reinitiated for the Preferred Alternative (see **Appendices G, H1, and H2** of this FEIS). A response letter dated August 15, 2019 indicated NOAA NMFS's concurrence that the project would not result in substantial impacts to EFH and FWCA species with the implementation of conservation measures. Recommended conservation measures specific to the construction of the Preferred Alternative are discussed in Chapter 6.5, "Construction—Natural Resources."

In-water components proposed as part of the With Action Alternatives include the construction of shafts for a shared-use flyover bridge connecting the north end of East River Park to Captain Patrick J. Brown Walk to the north. Additional in-water components proposed as part of the Preferred Alternative and Alternative 5 includes the relocation of two existing embayments, installation of the structural supports for the reconstruction of the park esplanade, and reconstruction of 10 outfalls along East River Park that will require the temporary installation of cofferdams to construct. Installation of the shafts to support the flyover bridge and the placement of fill in the existing embayments would result in permanent adverse effects to NYSDEC unvegetated littoral zone tidal wetlands and USACE Waters of the United States within the East River as described above under Policy 4.5. Any permanent adverse effects would require tidal wetland mitigation. As described above, on-site wetland mitigation would consist of constructing two new embayments within the project area. Specific elements of the new embayments that will improve habitat include ECOncrete® tidal pools, ECOncrete® pile jackets installed on the existing steel esplanade piles of the northern embayments, as well as an ECOncrete® armor block breakwater at the southern embayment as described in detail in Section 5.6 of the FEIS, "Natural Resources." Additional required mitigation would be accomplished with the purchase of credits from the Saw Mill Creek tidal wetland mitigation bank or off-site tidal wetland restoration and/or creation. Permanent adverse effects would be mitigated for in accordance with all NYSDEC and USACE permit conditions.

As described in Chapter 6.0, "Construction Overview," of this FEIS, spuds would be placed in the East River to anchor construction barges. The spuds would be removed following construction. Construction barges would be equipped with gangways extending from the barge to the project area, which could allow barges to be moored in deeper waters, which would eliminate the need for any dredging adjacent to the existing bulkhead. To further minimize the potential for significant adverse effects to tidal wetlands and the East River, all barges would have spill kits.

In addition, construction would be completed in accordance with NYSDEC's technical standards for erosion and sediment control, which would be implemented in accordance with an approved Stormwater Pollution Prevention Plan (SWPPP) that would detail the erosion and sediment control measures that would be installed in East River Park and Stuyvesant Cove Park during construction. This SWPPP would minimize, to the greatest possible extent, the discharge of sediments and stormwater into the East River. In-water construction activities would also be conducted in accordance with NOAA NMFS guidelines to minimize potential adverse effects to EFH and threatened and endangered species, particularly living aquatic resources. Therefore, it is concluded that the proposed project would be consistent with this policy.

Policy 5: Protect and improve water quality in the New York City coastal area.

5.1: Manage direct or indirect discharges to waterbodies.

As stated above, during construction of the proposed project, erosion and sediment controls would be implemented in accordance with a pre-approved SWPPP. Following construction, there would be no direct or indirect discharges to the East River under Alternatives 2 and 3 that do not already occur under the No Action Alternative. Direct discharges to the East River would be managed by post-construction stormwater BMPs proposed as part of the improved drainage system under the Preferred Alternative and Alternative 5. Minor changes to land cover under the proposed project would not result in adverse effects to the East River under any alternative. Thus, stormwater in the project area would continue to be managed and controlled as part of the park and streets stormwater collection system.

The pedestrian flyover bridge would represent new impervious surface in the study area that would drain to East River Park and eventually into the East River. However, as this new bridge would be limited to pedestrian and bicyclist traffic, there would be no stormwater runoff contaminants from vehicular traffic. Overall, the additional potential impervious area would be minor, and it is not anticipated that any additional runoff contribution would have an effect on the quality of the East River. These conditions would generate a small amount of stormwater runoff compared to the amount of runoff already entering the East River under the No Action Alternative. During design storm conditions, there would be no additional effects to water quality under the With Action Alternatives. Additionally, reconstruction of 10 sewer outfalls along the bulkhead of the project area under the Preferred Alternative and Alternative 5 would not increase combined sewer discharge amounts to the East River. Therefore, there are no significant adverse effects to water quality under the proposed project, and it is concluded that the proposed project would be consistent with this policy.

5.2: Protect the quality of New York City's waters by managing activities that generate non-point source pollution.

During construction of the proposed flood protection system, erosion and sediment controls would be installed in accordance with an approved SWPPP. Following construction, there would be no direct or indirect discharges to the East River under Alternatives 2 and 3 that do not already occur under the No Action Alternative. Direct discharges to the East River would be managed by post-construction stormwater BMPs proposed as part of the improved drainage system under the Preferred Alternative and Alternative 5. Minor changes to land cover under the proposed project would not result in adverse effects to the East River under any alternative. Thus, stormwater in the project area would continue to be managed and controlled as part of the park and streets stormwater collection system.

Under the Preferred Alternative and Alternative 5, the majority of East River Park would be elevated in a way that could reduce potential erosion and sedimentation to the East River that may occur during storm events. While 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, these changes would have no effects on the quality of the East River. These conditions would generate a small amount of stormwater runoff compared to the amount of runoff already entering the East River under the No Action Alternative. During design storm conditions, there would be no additional effects to water quality under these alternatives. Therefore, there would be no significant adverse effects to water quality as a

result of non-point pollution under the proposed project and it is concluded the proposed project would be consistent with this policy.

5.3: Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes or wetlands.

The proposed project would result in permanent and temporary placement of fill in waters under six feet in depth (e.g., NYSDEC-regulated littoral zone tidal wetlands and USACE-regulated Waters of the United States), in the East River, which is a navigable waterway. This fill would consist of temporary mooring spuds for construction barges and the shafts for a shared-use flyover bridge connecting the north end of East River Park to Captain Patrick J. Brown Walk to the north. Under the Preferred Alternative and Alternative 5, additional in-water components would include temporary cofferdams to reconstruct 10 outfalls along East River Park shoreline as well as filling of two existing embayments, which would be relocated within East River Park, ultimately resulting in a larger combined area for these Park features. The Preferred Alternative and Alternative 5 would also result in excavation upland of the East River for construction of the two proposed relocated embayments within East River Park.

As described in Chapter 5.7, "Hazardous Materials," sediments of the East River in the area where in-water work would be constructed could be potentially contaminated due to historic land uses. Construction of the shafts associated with the flyover bridge, installation of the cut-off wall, or the relocation of embayments would require excavation or disturbance of potentially contaminated sediments. The BMPs described below would be implemented in accordance with all applicable permits and regulations to minimize mobilization of the contaminated sediments into the water column and ensure any excavated sediments would be disposed of at a pre-approved NYSDEC disposal facility.

- Turbidity curtain shall be used for the duration of the construction activities, including material removal, bulkhead/sheet pile installation, cap placement, and tieback grout injection program. It is anticipated that the turbidity curtain would be maintained along the active work area(s) and moved or extended as necessary to ensure the controls remain sufficient
- Absorbent oil booms (fence boom) shall be placed on the terminus-side of the turbidity curtain any time the turbidity curtain is deployed.
- Periodic inspection of the boom and boom area shall be conducted during construction activities. If an exceedance of the threshold turbidity criteria is observed during the Work, the Contractor shall implement water quality controls in accordance with Section 01 57 19 – Temporary Environmental Controls, including but not limited to slowing or halting operations, modifying operational procedures, and modifying turbidity control measures.
- If, upon inspection, it is determined that any part of the turbidity curtain is damaged or no longer functional, it must be repaired or replaced prior to continued construction activities.
- If observed, the Contractor shall collect, remove, and dispose of floating debris and visual surface oil sheen collected in the turbidity curtain system. The Contractor shall drum spent absorbent materials and transport them for disposal or to the Staging Area for temporary off-loading and on-site storage.

- When the turbidity curtain system is no longer required, as determined by the Engineer following completion of the Work, the pilings, curtains, and related components shall be removed in such a manner as to minimize turbidity. The Contractor is responsible for the removal and disposal of the turbidity curtains and related components.

Upon completion of construction, any engineering controls would be removed, and the surface water environment would be expected to return to pre-construction conditions.

Procedures for soil and groundwater management for the upland area of East River Park (ERP) would be implemented in accordance with a Remedial Action Plan (RAP) and Construction Health and Safety Plan (CHASP), which would be approved by NYCDEP. In addition, due to the presence of manufactured gas plant (MGP)-related coal tar contamination beneath the northern portion of ERP and in the vicinity of Stuyvesant Cove Park, a DEC-approved Mitigation Work Plan (MWP) which will include an MGP Waste Management Plan (WMP) would also be implemented in the areas of MGP-related coal tar contamination during construction.

During construction, all measures would be undertaken to ensure that impacts on NYSDEC-regulated littoral zone wetlands are limited and contained. Mitigatory measures such as turbidity curtains, water-tight cofferdams, and debris nets would be used as applicable during construction. To further minimize the potential for significant adverse effects to tidal wetlands and the East River, all barges would have spill kits. As a result, the proposed project would not result in any significant adverse effects to water quality and is therefore concluded to be consistent with this policy.

5.4: Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.

There are no streams or freshwater wetlands existing or proposed in the project area. Construction of the proposed project would not result in any degradation of the quality or quantity of groundwater or other water resources in the project area. Groundwater in the project area is also not used for any potable or non-potable purpose. During construction, temporary groundwater dewatering may be required; however, this dewatered groundwater would be treated and discharged in accordance with applicable NYSDEC and New York City Department of Environmental Protection (DEP) permitting. During construction, erosion and sediment controls would be installed in accordance with the pre-approved SWPPP. Therefore, it is concluded that the proposed project would be consistent with this policy.

5.5: Protect and improve water quality through cost-effective grey-infrastructure and in-water ecological strategies.

As described in Chapter 5.8, "Water and Sewer Infrastructure," of this FEIS, grey infrastructure proposed under the With Action Alternatives includes interceptor gates, installation of a gate valve, upsizing of some existing sewers, and parallel conveyance to isolate the protected area from the larger sewershed and improve drainage management in the protected area during design storm events. In addition, the Preferred Alternative and Alternative 5 would include reconstructing existing water and sewer infrastructure within East River Park. This infrastructure would reduce the risk of flooding within the protected area during design storm events, including those with coincident rainfall, as well as reduce the risk of impacts to infrastructure and residents as a result of sewer surcharge and

backups. The proposed project would not adversely affect the existing sewer system or existing water quality, which is consistent with this policy. In addition, as design advances, options to improve habitat within the East River designed for the recruitment of shellfish and other aquatic life along East River Park would be explored, which would enhance the ecological value of this area. The two proposed embayments would be designed to provide enhanced ecological value to the aquatic environment compared to the existing embayments thereby further improving habitat within the East River. Therefore, it is concluded that the proposed project would be consistent with this policy.

Policy 6: Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change.

6.1: Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.

The objective of the proposed project as defined in Chapter 1.0, "Purpose and Need," of this FEIS, is to provide a reliable coastal flood protection system for the FEMA-designated flood hazard area, taking into consideration sea level rise to the 2050s, for the area between Montgomery Street to the south and East 25th Street to the north. The proposed project would include the construction of a flood protection system using a combination of floodwalls, levees, and closure structures to meet this objective. Within a built urban setting, structural means of flood protection are the only viable option to protect from the loss of human life and structures. The entire shoreline along the project area is a hardened shoreline with either bulkhead or relieving platform. There are no natural coastal processes or natural features within this area that may reduce the loss of life, structures, infrastructure, or natural resources caused by flooding and erosion. Therefore, it is concluded that the proposed project would be consistent with this policy.

6.2: Integrate consideration of the latest New York City projections of climate change and sea level rise (as published in New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms) into the planning and design of projects in the city's Coastal Zone.

Step 1

(a) The completed Flood Elevation Worksheet is attached. **Figures D-1–D-9** (appended to this WRP consistency analysis) provide schematics showing the proposed project with current and future projected floodplains and high tides.

(b) The following analysis is based on the charts shown in Tab 4 of the worksheet and also provided in **Figure 1** below.

The low points and average elevation of East River Park, Captain Patrick J. Brown Memorial Walkway, and the FDR Drive between East 13th and East 18th Streets are below the current 1 percent flood elevation. The average elevation of Stuyvesant Cove Park is above the elevation of the current 1 percent annual chance floodplain and is below the 1 percent flood elevation by the 2020s under all sea level projections. Potential consequences include flooding and interruption to public access to the waterfront open space during storm events. However, improvements to open spaces within East River Park and Stuyvesant Cove Park, such as selection of more resilient plant species and elevation of certain East River Park features under

Alternative 3 and elevation of the majority of East River Park under the Preferred Alternative and Alternative 5 would increase open space resiliency into the future.

The proposed elevation of flood protection components, including levees, floodwalls and closure structures, are above the elevation of the 1 percent annual chance floodplain under all other projections. The flood protection components of the proposed project could be below the elevation of the 1 percent annual chance floodplain by the 2100s under high projections. Potential consequences include flooding within the protected area inland of the flood protection alignment under the 1 percent annual chance storm in the 2100s.

(c) The features that would be expected to be below the elevation of Mean Higher High Water at some point over the lifetime of the proposed project (i.e., the 2050s) include the areas with the lowest elevations within East River Park, the areas of lowest elevations on the FDR Drive, and the Captain Patrick J. Brown Walk. These features would be at or below elevation of Mean Higher High Water by the 2080s under high sea level rise projections. This could result in flooding due to elevated groundwater tables; however, as noted above, improvements to open spaces within East River Park include selection of resilient plant species and, under the Preferred Alternative and Alternative 5, elevation of East River Park would increase resiliency into the future. Depending upon the alternative, flooding of portions of the FDR Drive would be addressed either by a combination of floodwalls and closure structures (the Preferred Alternative and Alternatives 2 and 3), or the elevation of the northbound lanes of the FDR Drive by approximately 6 feet between East 13th Street and East 18th Street (Alternative 5).

(d) Coastal storms could bring high winds in addition to flood hazards described above. Portions of the project area are within Coastal A and V zones. The project does not contain any materials or substances that if made insecure from wind, water, or debris would result in a threat to public health or the environment.

Step 2

(a) The waterfront open space would be designed with plants and materials that can withstand saltwater flooding, where practicable, and allow for occasional inundation without experiencing significant damage compared to existing vegetation and infrastructure. In addition, critical park facilities and utilities are elevated above current grade to varying degrees in Alternative 3, the Preferred Alternative, and Alternative 5. In the future, if warranted, flood protection features could be modified to a higher elevation for increased protection of inland areas.

(b) Proposed elements to reduce the possibility of damage due to future Mean Higher High Water vary by project alternative. Under Alternatives 2 and 3, flood protection is achieved by using a combination of floodwalls, levees, and closure structures. Under the Preferred Alternative and Alternative 5, most of East River Park is elevated to protect public amenities from design storm events and sea level rise inundation. Additionally, depending upon the alternative, flooding of portions of the FDR Drive would be addressed either by a combination of floodwalls and closure structures (the Preferred Alternative and Alternative 2 and 3), or the elevation of the northbound lanes of the FDR Drive by approximately 6 feet between East 13th Street and East 18th Street (Alternative 5). Furthermore, the foundations of the flood protection system would be designed and constructed to increase the design height in the future.

(c) New and reconstructed facilities would be required to meet NYC Building Code standards for wind loading. Selection of vegetation would consider installation of vigorous, low, dense, and

fibrous rooted plants at water's edge and at sloes to withstand wave action and erosion. Flood protection components would be designed to account for wave overtopping, wave run-up, high winds, and impacts of debris per FEMA requirements from CFR Title 44.

(d) The project would not worsen flooding on adjacent sites, nor would it conflict with other plans for flood protection on adjacent sites. The proposed project complements planned flood protection projects, including those proposed at the NYCHA properties and the recently completed measures at the Con Edison East River Complex and at the VA Medical Center.

Step 3

The proposed project advances Policy 6.2. No new vulnerable, critical, or potentially hazardous features would be located within an area flooded by current or future high tide, or current or future 1 percent annual chance flood, as a result of the project over the project's lifetime.

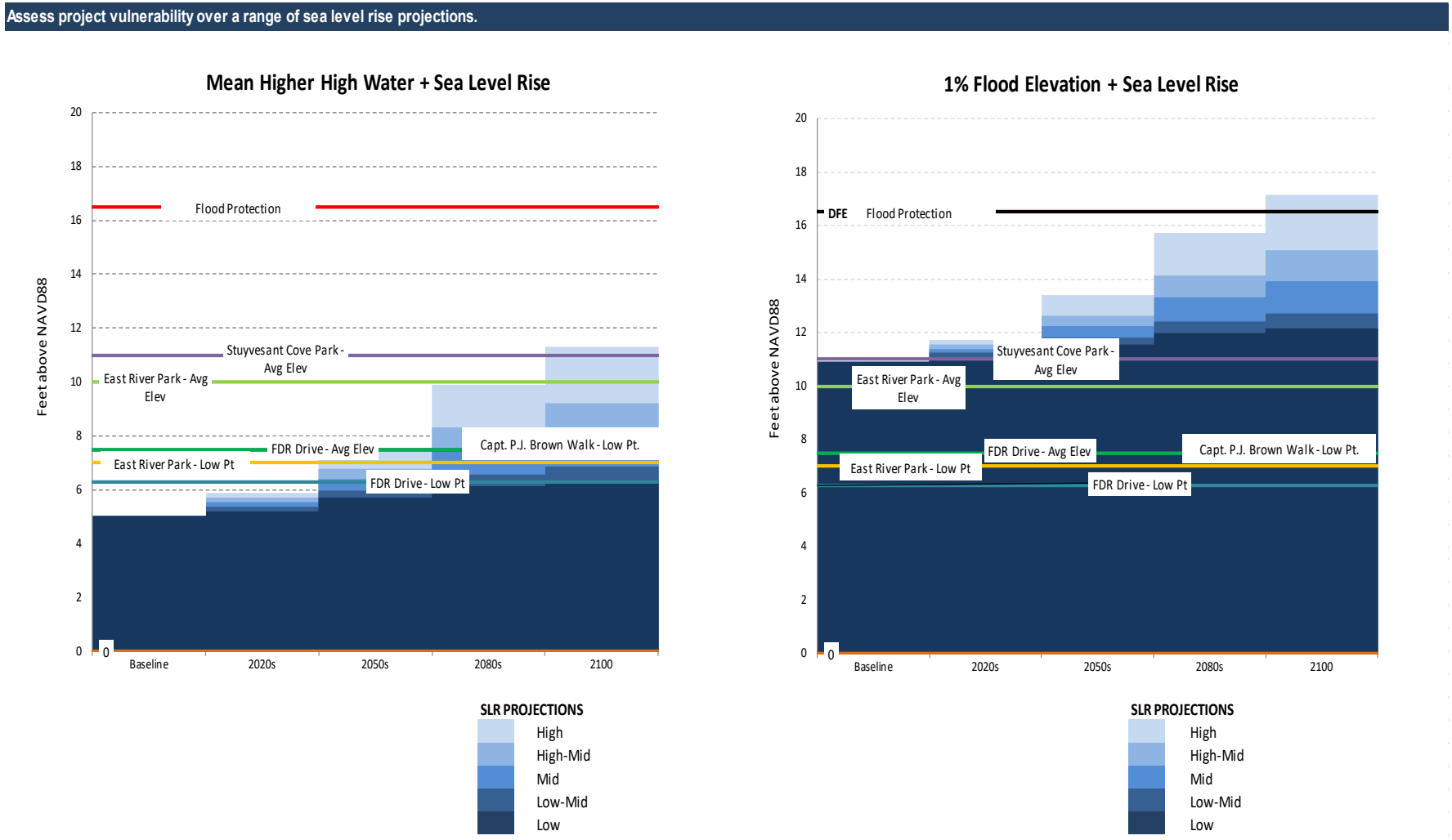


Figure 1. Tab 4 from Flood Evaluation Worksheet

6.3: Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.

Federal funding for the proposed project is provided via a U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant-Disaster Recovery (CDBG-DR) grant in addition to city funding. The objective of the proposed project as defined in Chapter 1.0, "Purpose and Need," of this FEIS, is to provide a reliable coastal flood protection system for the protected area. The proposed project would include construction of a flood protection system using a combination of floodwalls, levees, and closure structures to meet this objective and is expected to yield substantial public benefits (see also Chapter 5.2, "Socioeconomic Conditions," of this FEIS). Therefore, it is concluded that the proposed project would be consistent with this policy.

Policy 7: Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to environment and public health and safety.

7.1: Manage solid waste material, hazardous waste, toxic pollutants, and substances hazardous to the environment, and the unenclosed storage of industrial materials to protect health, control pollution, and prevent degradation of coastal ecosystems.

As described in Chapter 5.7, "Hazardous Materials," of this FEIS, the project area has a long history of commercial/industrial uses. Based on the project area's history and subsurface investigations that were performed as part of design, subsurface contaminants along the proposed project area include those related to manufactured gas plants (MGPs) that were historically located in the vicinity as well as other subsurface contamination that is associated with urban fill. Any required disturbance to bridges or elevated roadways may also entail addressing any asbestos and/or lead-based paint (LBP) or lead-containing paint (LCP) that might be disturbed. Construction of the proposed project would require excavation along the waterfront and reconstruction of sidewalks and bridges. Dewatering of groundwater may also be required.

The Preferred Alternative would involve demolition and excavation activities and would have their potential to disturb hazardous materials in existing structures and the subsurface. However, with the implementation of appropriate protection measures governing the construction phase, 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 Construction Health and Safety Plan (CHASP) 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. Therefore, with these measures in place, it is concluded that the proposed project would be consistent with this policy.

7.2: Prevent and remediate discharge of petroleum products.

Construction of the proposed project would require excavation and, considering the historical industrial land uses of the project area, there is the potential to encounter buried petroleum storage tanks. As described above under Policy 5.3, a site-specific MGP Waste Management Plan (WMP), Remedial Action Plan (RAP), and CHASP would be prepared that details procedures to follow for safely excavating potentially hazardous materials including contaminated soils, storage tanks, and groundwater. The CHASP would ensure that all soil disturbance is performed in a manner protective of workers, the community, and the environment, including procedures for odor, dust, and nuisance control. Therefore, it is concluded that the proposed project would be consistent with this policy.

7.3: Transport solid waste and hazardous substances and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.

The proposed project does not involve the siting of a solid or hazardous waste facility. All excavated fill and solid waste generated during construction would be transported to an approved off-site waste disposal facility in accordance with all applicable federal, State, and local rules and regulations. In addition, the required excavation for construction of the proposed project may be removing contaminated material for the upland areas surrounding coastal resources. Therefore, it is concluded that the proposed project would be consistent with this policy.

Policy 8: Provide public access to and along New York City's coastal waters.

8.1: Preserve, protect, and maintain existing physical, visual, and recreational access to the waterfront.

Preferred Alternative (Alternative 4): Flood Protection System with a Raised East River Park

The Preferred Alternative would provide flood protection by raising the majority of 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 project makes public access to a waterfront park more certain as it will be resilient and raised to withstand sea level rising. This alternative further enhances neighborhood connectivity beyond Alternatives 2 and 3 by reconstructing the Delancey Street, East 10th Street, and Corlears Hook Bridges to provide universal accessibility. The Preferred Alternative would include construction of the foundations for the shared-use flyover bridge to provide a more accessible connection between East River Park and Captain Patrick J. Brown Walk. The specific objective of the Preferred Alternative is to enhance the resiliency of features in East River Park; as such, this alternative also includes additional measures to address potential effects of increased storm surge on East River Park through the 2050s (the design year for sea level rise). 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 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.

In addition, the two existing embayments would be relocated within the project area in order 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. The two proposed embayments would be comparable in size and would be designed to provide enhanced ecological value to the aquatic environment compared to the existing embayments.

As described in Chapter 5.5, "Urban Design and Visual Resources," of this FEIS, views to the waterfront would be improved under this alternative compared to views under Alternatives 2 and 3. The absence of floodwalls along the park's western frontage and the design of the park to slope down to the level of the FDR Drive would maintain views of East River Park from the adjacent neighborhoods. 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 waterfront views 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. At East 6th and East 10th Streets, views to the waterfront would be improved under this alternative compared to Alternatives 2 and 3, because there would be no floodwalls along the park's western frontage. 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. It is not expected that there would be significant adverse effects on views in Project Area Two. Additionally, views of the waterfront from the existing waterfront open spaces such as East River Park and Stuyvesant Cove Park would remain unaffected. Thus, the proposed flood protection would still allow for sufficient waterfront views while providing protection from the design storm. Therefore, it is concluded that the Preferred Alternative is consistent with this policy.

Other Alternative (Alternative 2): Flood Protection System on the West Side of East River Park - Baseline

Under Alternative 2, in Project Area One, flood protection features (i.e., levees, floodwalls and closure structures) would avoid or minimize significant adverse effects to existing recreational facilities, waterfront access, and other park features. Alternative 2 would also modestly enhance passive recreation and landscaped spaces. There would be no net loss of existing public access associated with this alternative. Through these proposed flood protection measures and moderate open space enhancements, Alternative 2 would be consistent with the policy goals to preserve, maintain, and protect existing physical and recreational access to the waterfront, although East River Park would remain vulnerable to design storm events and inundation from sea level rise.

As described in Chapter 5.5, "Urban Design and Visual Resources," of this FEIS, this alternative would potentially result in significant adverse visual effects on waterfront and East River views at the Grand Street, East 6th Street, and East 10th Street view corridors, through and from within some ground-level locations within the Bernard Baruch, Lillian Wald, and Jacob Riis Houses, and from portions of the FDR Drive and FDR Drive Service Road that run through Project Area One. The proposed levees, floodwalls, and closure

structures would typically range in height from 5 feet to 10 feet above grade along the entire western edge of East River Park and would obscure some existing views to the East River from some upland neighborhoods. However, views within the park of the East River would be largely unaltered for park users. 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. It is not expected that there would be significant adverse effects on views within Project Area Two.

These potential significant adverse effects within Project Area One would not be mitigated, resulting in unavoidable significant adverse effects. Lowering the floodwalls to allow continued views to the 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. While the treatment of floodwalls would not mitigate the potential significant adverse effects of blocked views to the East River, the aesthetics of the finishes would affect the experience of pedestrians, residents, motorists, and bicyclists. Therefore, the finishes are being taken into account. Additionally, views of the waterfront from the existing waterfront open spaces such as East River Park and Stuyvesant Cove Park would remain unaffected, and it is therefore concluded that the proposed flood protection would still allow for sufficient waterfront views while providing protection from the design storm. Therefore, it is concluded that Alternative 2 would be largely consistent with this policy.

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

Through the flood protection measures, open space enhancements, and new accessways to East River Park proposed under Alternative 3 it is concluded that this alternative would be consistent with the policy goals to preserve, maintain, and protect existing physical and recreational access to the waterfront, although East River Park would remain vulnerable to design storm events and inundation from sea level rise.

Similar to Alternative 2, and as described in Chapter 5.5, "Urban Design and Visual Resources," of this FEIS, this alternative would potentially result in significant adverse visual effects on view corridors to the waterfront and East River from certain inland neighborhoods. The proposed levees, floodwalls, and closure structures would typically range in height from 5 feet to 10 feet above grade along the entire western edge of East River Park (except where the park would be raised higher for the new pedestrian connections) and would obscure some existing views to the East River from upland neighborhoods. On Grand Street, views to the river would be blocked; views would instead be of the redesigned park, which would lessen the effect on this view corridor. However, views within the park of the East River would be largely unaltered for park users. As with Alternative 2, it is not expected that there would be significant adverse effects on views on within Project Area Two.

As with Alternative 2, these potential significant adverse effects within Project Area One would not be mitigated, resulting in unavoidable significant adverse effects. While the treatment of floodwalls would not mitigate the significant adverse effects of blocked views to the East River, the aesthetics of the finishes would affect the experience of pedestrians, residents, motorists, and bicyclists. Therefore, the finishes are being considered. Additionally, views of the waterfront from the existing waterfront open spaces such as East River Park and Stuyvesant Cove Park would remain unaffected. Thus, the

proposed flood protection would still allow for sufficient waterfront views while providing protection from the design storm. Therefore, it is concluded that Alternative 3 would be largely consistent with this policy.

Other Alternative (Alternative 5): Flood Protection System East of FDR Drive

As with the Preferred Alternative, physical and recreational access to the waterfront would be provided along the esplanade under Alternative 5 with stepped seating areas to offer additional locations for passive recreation and waterfront views. There would be no net loss of existing public access associated with this alternative. The additional flood protection measures would be consistent with the policy goals to preserve, maintain, and protect existing physical and recreational access to the waterfront.

As described in Chapter 5.5, "Urban Design and Visual Resources," of this FEIS, views to the waterfront in Project Area One would be the same with this alternative as under the Preferred Alternative. In Project Area Two, the proposed floodwall along the east side of the raised portion of the FDR Drive would potentially result in significant adverse effects from blocked waterfront views seen from the FDR Drive; these potential adverse effects would not occur with the Preferred Alternative and Alternative 2 and 3. There are no view corridors to the waterfront between East 13th and East 18th Streets; therefore, the elevated northbound FDR Drive would not block any views.

The potential significant adverse effects would not be mitigated, resulting in unavoidable significant adverse effects. While the treatment of the floodwall in Project Area Two would not mitigate the significant adverse effects of blocked views to the East River, the aesthetic effects of the finishes on pedestrians, residents, motorists, and bicyclists have been considered during the design process. Additionally, views of the waterfront from existing waterfront open spaces such as East River Park and Stuyvesant Cove Park would remain unaffected. Thus, the proposed flood protection would still allow for sufficient waterfront views while meeting the flood protection goals. Therefore, it is concluded that Alternative 5 would be largely consistent with this policy.

8.2: Incorporate public access into new public and private development where compatible with proposed land use and coastal location.

Preferred Alternative (Alternative 4): Flood Protection System with a Raised East River Park

Consistent with this policy, this alternative would incorporate public access improvements. In Project Area One, proposed access improvements include enhancements to the existing pedestrian bridges at Corlears Hook, Delancey, and East 10th Streets, the creation of a park-side plaza landing at the Houston Street overpass and the proposed resiliency measures for certain recreational facilities in East River Park. The majority of East River Park would be elevated to meet the design flood protection criteria. In Project Area Two, proposed access improvements include the reconstruction of a majority of Stuyvesant Cove Park as a raised landscape, a closure structure to allow access to the water's edge and the continuance of the shared-use path and waterfront esplanade, and a reconfigured and redesigned Murphy Brothers Playground and recreational area at Asser Levy Playground. A shared-use flyover bridge would be also be built cantilevered over the northbound FDR Drive to address the narrowed pathway (pinch point) near the Con Edison facility between East 13th Street and East 15th Street, thus providing a more accessible connection between East River Park and Captain Patrick J. Brown Walk. In

addition, the two existing embayments would be relocated within the project area in order 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. The two proposed embayments would be comparable in size and would be designed to provide enhanced ecological value to the aquatic environment compared to the existing embayments. These additional components would further support public access to the waterfront and minimize or reduce effects to East River Park associated with design storms and sea level rise. Therefore, it is concluded that the Preferred Alternative would be consistent with this policy.

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

Consistent with this policy, this alternative would incorporate some public access improvements, and would provide flood protection using a combination of floodwalls, levees, and closure structures with a reconstructed shared-use path. In Project Area One, the essential flood project elements in East River Park include floodwalls and levees that avoid or minimize significant adverse effects to existing recreational facilities and other park features. Alternative 2 would also modestly enhance passive recreation areas and landscaped spaces including a reconstructed shared-use path. As proposed under the Preferred Alternative, this alternative would include construction of a shared-use flyover bridge to address the pinch point. Recreational access to the waterfront would be enhanced through the reconstructed shared-use path as well as limited enhancements to the pedestrian bridge connections at Delancey Street and East 10th Street. These proposed improvements would further improve public access to East River Park and the waterfront. Therefore, it is concluded that Alternative 2 would be consistent with this policy.

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

The proposed enhancement and realignment of the existing pedestrian bridges at Delancey Street, East 10th Street, and the park-side plaza area at the Houston Street overpass as proposed under the Preferred Alternative are also proposed under Alternative 3. This alternative would also include more extensive improvements to East River Park as well as construction of a shared-use flyover bridge to address the pinch point. These proposed improvements would further improve public access to East River Park, Stuyvesant Cove Park, and the waterfront beyond Alternative 2. Therefore, is it concluded that Alternative 3 would be consistent with this policy.

Other Alternative (Alternative 5): Flood Protection System East of FDR Drive

The proposed enhancement and realignment of the existing pedestrian bridges at Delancey Street, East 10th Street, and Corlears Hook and the park-side plaza area at the Houston Street overpass as proposed under Alternative 3 and the Preferred Alternative are also proposed under Alternative 5. This alternative would include construction of a shared-use flyover bridge to address the pinch point. The proposed flood protection measures under Alternative 5 would support public waterfront access by protecting the segment of the FDR Drive between East 13th and East 18th Streets from design storm events. Therefore, it is concluded that Alternative 5 would be consistent with this policy.

8.3: Provide visual access to coastal lands, waters, and open space where physically practicable.

As described in Chapter 1.0, "Purpose and Need," of this FEIS, one of the objectives of the proposed project is to improve access to, and enhance open space resources along, the waterfront, including East River Park and Stuyvesant Cove Park. The With Action Alternatives involve the enhancement of access to waters and open space. As described in greater detail in Chapter 5.5, "Urban Design and Visual Resources," of this FEIS, the proposed project would not result in significant adverse urban design effects from improvements in East River Park and Stuyvesant Cove Park but would potentially result in significant adverse visual effects on certain view corridors to the waterfront and East River. These visual effects would be limited to the components proposed for Project Area One; no significant adverse effects to visual resources are anticipated in Project Area Two. The elevated FDR Drive viaduct would continue to dominate views to the waterfront on Avenue C, East 20th Street, and East 23rd Street.

The Preferred Alternative would maintain the visual connectivity between 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 impact, but these eastward views would be of East River Park with Brooklyn in the distance. The raised park would block waterfront views 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. At East 6th and East 10th Streets, views to the waterfront would continue to be of East River Park. 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.

Overall, Alternative 2 would result in a lengthy and monolithic floodwall between the waterfront and the adjacent, upland neighborhoods, reducing the visual connectivity between those neighborhoods and the waterfront and diminishing visual quality. In comparison, the Preferred Alternative would maintain the visual connections between the upland neighborhoods and East River Park. In addition, the levees, floodwalls, and closure structures constructed under this alternative would likely block existing waterfront and East River views in the Cherry Street, Grand Street, East 6th Street, and East 10th Street view corridors and from within the Bernard Baruch, Lillian Wald, and Jacob Riis Houses, potentially resulting in significant adverse effects. This alternative would also potentially result in significant adverse effects to waterfront and river views seen from the portions of the FDR Drive and FDR Drive Service Road that run through Project Area One. In Project Area Two, views on Avenue C and East 20th Street would continue to be of Stuyvesant Cove Park in the background of the FDR Drive viaduct but with sections of visible floodwalls. On East 23rd Street and from the outdoor pool at Asser Levy Playground, the proposed floodwalls would obscure views of the existing gas station and the northernmost tip of Stuyvesant Cove Park. The flood protection measures constructed in Project Area Two are not expected to result in significant adverse visual effects. 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.

Views to the waterfront under Alternative 3 would be largely the same as with Alternative 2, with reduced visual connectivity between the waterfront and the adjacent, upland neighborhoods, and there would potentially be significant adverse effects from blocked views of the East River on Cherry and Grand Streets; blocked waterfront views in the East 6th Street and East 10th Street view corridors; blocked waterfront views from within the Bernard Baruch, Lillian Wald, and Jacob Riis Houses; and blocked waterfront and river views seen from the portions of the FDR Drive and FDR Drive Service Road that run through Project Area One. On Grand Street, views to the river would be blocked; views would instead be of the redesigned park, which would lessen the impact on this view corridor. As with the Preferred Alternative and Alternative 2, the floodwalls, levees, raised landscape, and closure structures constructed in Project Area Two are not expected to result in significant adverse visual effects.

Under Alternative 5, In Project Area One, views to the waterfront would be the same with this alternative as with the Preferred Alternative. In Project Area Two, the proposed floodwall along the east side of the raised portion of the FDR Drive would obscure views of the waterfront as seen from the FDR Drive.

Under the proposed project, the potential adverse visual effects would not be mitigated but lowering the levees and/or floodwalls to allow continued views to the 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. While treatment of the floodwall would not mitigate the significant adverse effects of blocked views to the East River, the aesthetic effects of the finishes on pedestrians, residents, motorists, and bicyclists have been considered during the design process. Additionally, views of the waterfront from the existing waterfront open spaces such as East River Park and Stuyvesant Cove Park would remain unaffected. Thus, the proposed flood protection would still allow for sufficient waterfront views while meeting the flood protection goals for the protected area. Therefore, it is concluded that the proposed project would be largely consistent with this policy.

8.4: Preserve and develop waterfront open space and recreation of publicly owned land at suitable locations.

As described in Chapter 1.0, "Purpose and Need," of this FEIS, it is an objective of the proposed project to integrate public access into the proposed flood protection design, and specifically to improve access to, and enhance open space resources along, the waterfront, including East River Park and Stuyvesant Cove Park. In accordance with this objective, work within Project Area One would be coordinated with planned waterfront improvements adjacent to the project area, including the improvements along Pier 42. As noted above under Policy 8.2 and 8.3 and in Chapter 5.4, "Open Space," of this FEIS, the proposed project would enhance a currently well-used publicly accessible waterfront open space. Construction of the flood protection system under each of these design alternatives includes preserving, restoring, and improving recreational opportunities within East River and Stuyvesant Cove Parks, although these improvements are more extensive under the Preferred Alternative and Alternatives 3 and 5. Therefore, it is concluded that the proposed project would be consistent with this policy.

8.5: Preserve the public interest in and use of lands and waters held in public trust by the State and City.

As described in Chapter 1.0, "Purpose and Need," of this FEIS, one of the objectives of the proposed project is to improve access to, and enhance open space resources along, the waterfront, including East River Park and Stuyvesant Cove Park. As noted above under Policy 8.2 and 8.3 and in Chapter 5.4, "Open Space," of this FEIS, the proposed project involves the enhancement of a currently well-used publicly accessible waterfront open space and improving access to lands and waters held in public trust.

As described in Chapter 5.1, "Land Use, Zoning, and Public Policy," of this FEIS, the With Action Alternatives would require a zoning text amendment to acknowledge compliance of the proposed design with the City's waterfront zoning regulations. Additionally, the Preferred Alternative, Alternative 3, and Alternative 5 would require amendments to the City Map for changes related to existing and proposed pedestrian bridges. These measures would be necessary to implement the proposed project, which would minimize significant adverse effects associated with coastal storms to open spaces on or near the East River waterfront and are subject to public review through the Uniform Land Use Review Procedure (ULURP). These changes would not have an overall adverse effect on the public interest in and use of lands and waters held in public trust by the State and City. Therefore, it is concluded that the proposed project would be consistent with this policy.

8.6: Design waterfront public spaces to encourage the waterfront's identity and encourage stewardship.

As described in Chapter 1.0, "Purpose and Need," of this FEIS, it is an objective of the proposed project to integrate public access into the proposed flood protection design, and specifically to improve access to, and enhance open space resources along, the waterfront, including East River Park and Stuyvesant Cove Park. As noted above under Policy 8.2 and 8.3 and in Chapter 5.4, "Open Space," of this FEIS, the proposed project would enhance a currently well-used publicly accessible waterfront open space. Construction of the flood protection system under each of these design alternatives includes preserving, restoring, and improving recreational opportunities within East River and Stuyvesant Cove Parks, which are adjacent to the waterfront and vital to its identity. These improvements are more extensive under the Preferred Alternative and Alternatives 3 and 5. Therefore, it is concluded that the proposed project would be consistent with this policy.

Policy 9: Protect scenic resources that contribute to the visual quality of the New York City coastal area.

9.1: Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.

As described in Chapter 5.5, "Urban Design and Visual Resources," of this FEIS, the proposed project would result in improvements to East River Park and Stuyvesant Cove Park (varying by alternative) and would largely preserve the visual character and historic recreational character of these sections of the waterfront. Overall, the Preferred Alternative would largely 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. While raising the majority of East River Park would potentially block some views of the East River under the Preferred Alternative (as would Alternatives 3 and 5), resulting in potential significant adverse effects, views would be of a landscaped East River Park with

Brooklyn in the distance. 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. By constructing levees and floodwalls along the entire western edge of East River Park that would typically range in height from 5 feet to 10 feet above grade (except where the park would be raised higher for the new pedestrian connections under the Preferred Alternative and Alternatives 3 and 5), the proposed project would obscure some existing views to the East River from upland communities, resulting in potential significant adverse effects. Under Alternative 5, the section of the FDR Drive from East 13th Street to East 18th Street would include a proposed floodwall along the east side of the raised portion of the roadway, which would potentially result in additional significant adverse effects from blocked waterfront views seen from the FDR Drive. However, there are no view corridors to the waterfront between East 13th and East 18th Streets and, therefore, the elevated northbound FDR Drive would not block any waterfront views.

The Preferred Alternative and Alternative 5 includes the relocation of two existing embayments, and the reconstruction of the park esplanade. The esplanade would be enhanced and protected for the longer term. The embayments would be relocated within the project area to increase community access to the water's edge and provide adequate space to site heavily utilized active recreation facilities. These embayments would also offer opportunities for the public to utilize a step design that would provide for a closer connection to the East River. The two proposed embayments would be comparable in size and would be designed to provide enhanced ecological value to the aquatic environment compared to the existing embayments.

The larger goal of the Preferred Alternative, in addition to providing adequate flood protection for the communities within the protected area, is to enable the East River Park to be a continuous resource and withstand storm surge events and be built to withstand projections of sea level rise. Lowering the levees or floodwalls or not elevating the majority of East River Park to allow continued views to the East River from upland areas would compromise the design objectives of the proposed project to provide adequate flood protection for the communities within the protected area. Moreover, views of and along the waterfront from within East River Park and Stuyvesant Cove Park, and along Captain Patrick J. Brown Walk would remain unaffected. Thus, the proposed flood protection would still provide sufficient waterfront views while providing protection from the design storm. For these reasons, it is concluded that the proposed project would be consistent with this policy.

9.2: Protect scenic values associated with natural resources.

The setting of the project area consists primarily of urban parks with terrestrial landscaped resources, which is adjacent to the East River, an important natural and scenic feature of the City's coastal zone. In addition, the two existing embayments would be relocated within the project area in order 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. The two proposed embayments would be comparable in size, would allow opportunities for the public to utilize a step design that would bring them closer to the East River, and would be designed to provide enhanced ecological value to the aquatic environment compared to the existing embayments, thereby enhancing the

visual experience for Park users. It is therefore concluded that the proposed project would be consistent with this policy.

Policy 10: Protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City coastal area.

10.1: Retain and preserve designated historic resources and enhance resources significant to the coastal culture of New York City.

As described in Chapter 5.4, "Historic and Cultural Resources," of this DEIS, the proposed project would not significantly adversely affect any designated historic resources significant to the coastal culture of New York City.

In Project Area One, the proposed project would directly affect the FDR Drive, which has been determined eligible for listing on the State and National Registers of Historic Places (S/NR-eligible) through the construction of floodwalls and closure structures. Construction affecting the FDR Drive would be coordinated with New York City Department of Transportation (NYCDOT) to ensure that it is protected.

Additionally, Alternative 5 would reconstruct the section of the FDR Drive between approximately East 13th and East 18th Streets. However, it is not expected that this work would adversely affect the FDR Drive, as only an approximately 6-block section of the 9.44-mile-long FDR Drive would be reconstructed. Further, because the FDR Drive currently has elevated sections, raising the northbound lanes within a portion of Project Area Two would not affect the overall appearance of the highway, and it would still convey its historic significance. Also, the FDR Drive has been altered over time. All construction affecting the FDR Drive would be coordinated with NYCDOT to ensure that the FDR Drive is protected during construction of Alternative 5.

Construction of the With Action Alternatives would occur within 90 feet of the following architectural resources: the FDR Drive (S/NR-eligible); Williamsburg Bridge (S/NR-eligible); the Fireboat House (S/NR-eligible), Gouverneur Hospital (S/NR); Gouverneur Hospital Dispensary (S/NR-eligible); a portion of the Vladeck Houses within the Lower East Side Historic District (S/NR); the Baruch Houses (S/NR-eligible); the Asser Levy Public Baths (S/NR, NYCL); the Jacob Riis Houses (S/NR-eligible); Stuyvesant Town (S/NR-eligible); and Peter Cooper Village (S/NR-eligible). Therefore, the City, in consultation with the New York City Landmarks Preservation Commission (LPC), and New York State Office of Parks, Recreation and Historic Preservation (OPRHP), acting in its capacity as the New York State Historic Preservation Office (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. In addition, a Programmatic Agreement (PA) is being prepared and will be included in the Final EIS (FEIS). It is expected that the PA will be executed among the U.S. Department of Housing and Urban Development (HUD), the New York City Office of Management and Budget (OMB), NYC Parks, SHPO, the Delaware Nation, the Delaware Tribe of Indians, the Shinnecock Nation, the Stockbridge-Munsee Community Band of Mohicans, and ACHP.

It is not expected that the proposed project would result in any contextual effects on architectural resources. Floodwalls and closure structures would be constructed adjacent to Asser Levy Public Baths (S/NR, NYCL), which is now part of the Asser Levy

Recreation Center. Therefore, an effort would be made to design these walls so that they are compatible with the historic building, and the design would be coordinated with LPC.

10.2: Protect and preserve archaeological resources and artifacts.

The Phase 1A Archaeological Documentary Study prepared for the proposed project identified historic-period archaeological sensitivity for portions of the project area. Therefore, a scope of work for additional archaeology will likely be needed. Such scope of work will be prepared in consultation with LPC and the SHPO, and the City will complete any further phase of archaeological work per the *CEQR Technical Manual*. With these proposed measures in place, the proposed project would be consistent with this policy.

NYC Waterfront Revitalization Program - Policy 6.2 Flood Elevation Workhsheet

COMPLETE INSTRUCTIONS ON HOW TO USE THIS WORKSHEET ARE PROVIDED IN THE "CLIMATE CHANGE ADAPTATION GUIDANCE" DOCUMENT AVAILABLE AT www.nyc.gov/wrp

Enter information about the project and site in highlighted cells in Tabs 1-3. Tab 4, "Summary Charts" contains primary results. Tab 5, "0.2%+SLR" produces charts to be used for critical infrastructure or facilities. Tab 6, "Calculations" contains background computations. Appendix A contains tide elevations for station across the city to be used for the elevation of MHHW if a site survey is not available. Non-highlighted cells have been locked.

Background Information	
Project Name	East Side Coastal Resiliency
Location	East Side of Manhattan from Montgomery Street to East 25th Street
Type(s)	☐ Residential, Commercial, Community Facility ☑ Parkland, Open Space, and Natural Areas ☐ Tidal Wetland Restoration ☐ Critical Infrastructure or Facility ☐ Industrial Uses ☐ Over-water Structures ☑ Shoreline Structures ☐ Transportation ☐ Wastewater Treatment/Drainage ☑ Coastal Protection
Description	The East Side Coastal Resiliency project proposes to construct an integrated critical flood protection system in a portion of the east side of Manhattan. Within the proposed project area, the City is proposing to install a critical flood protection system that is within City parkland and streets. This critical flood protection system may include a combination of levees, floodwalls, and closure structures (i.e., deployable gates) with other infrastructure improvements to reduce flooding. Additionally, Con Edison's existing live transmisison lines located below ground along the west side of East River Park would be wrapped in a protective carbon fiber material to protect the lines during construction and ensure long-term viability and access. In addition to providing a reliable
Planned Completion Date	10/1/2023
Expected Project Lifespan	50 years

For technical assistance on using this worksheet, email wrp@planning.nyc.gov, using the message subject "Policy 6.2 Worksheet."

Last update: Sept. 7, 2018

Establish current tidal and flood heights.

	FT (NAVD88)	Feet	Datum	Source
MHHW	5.05	**5.05**	**NAVD88**	*2015 FEMA pFIRM*
1% flood height	10.90	**10.90**	**NAVD88**	*2015 FEMA pFIRM*
Design flood elevation	16.50	**16.50**	**NAVD88**	
As relevant:				
0.2% flood height	14.00	14.00	**NAVD88**	*2015 FEMA pFIRM*

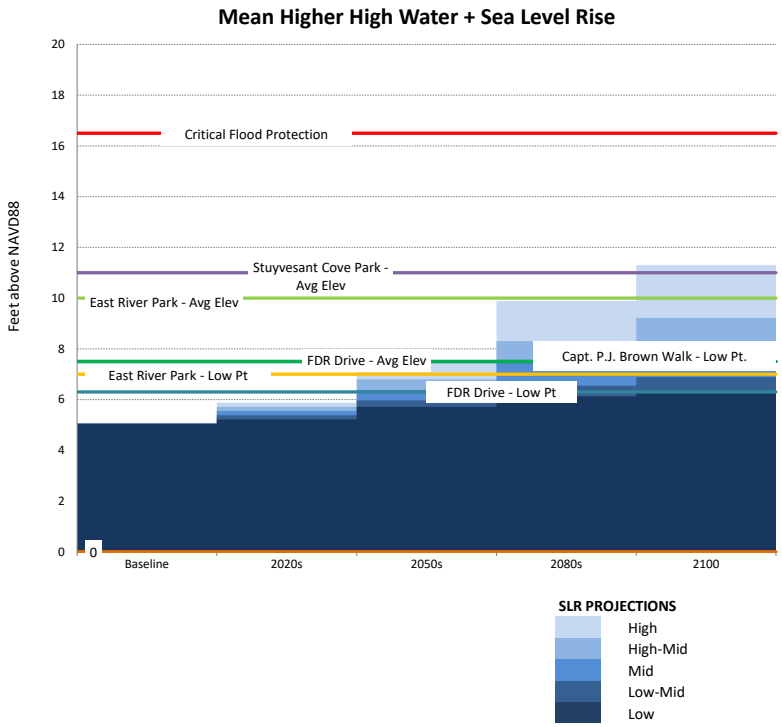
Data will be converted based on the following datums:

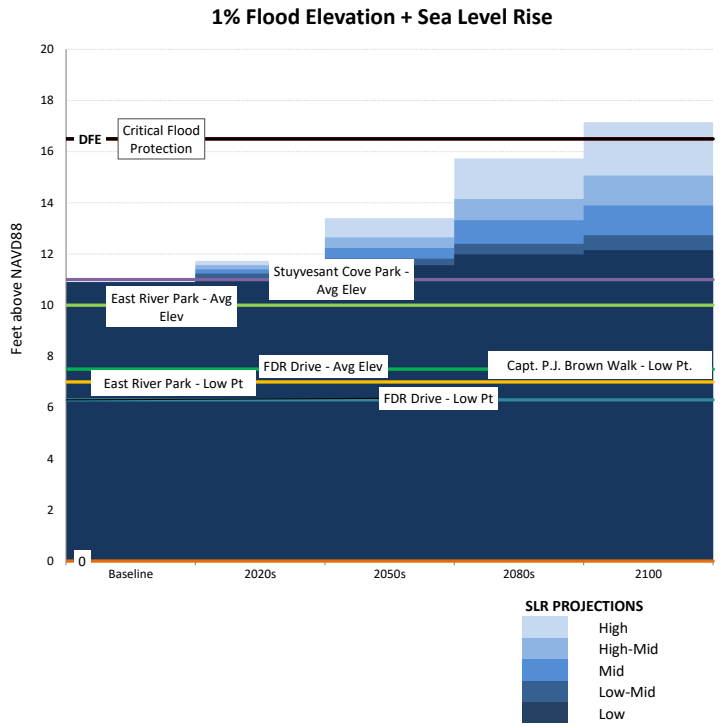
Datum	FT (NAVD88)
NAVD88	*0.00*
NGVD29	*-1.10*
Manhattan Datum	*1.65*
Bronx Datum	*1.51*
Brooklyn Datum (Sewer)	*0.61*
Brooklyn Datum (Highway)	*1.45*
Queens Datum	*1.63*
Richmond Datum	*2.09*

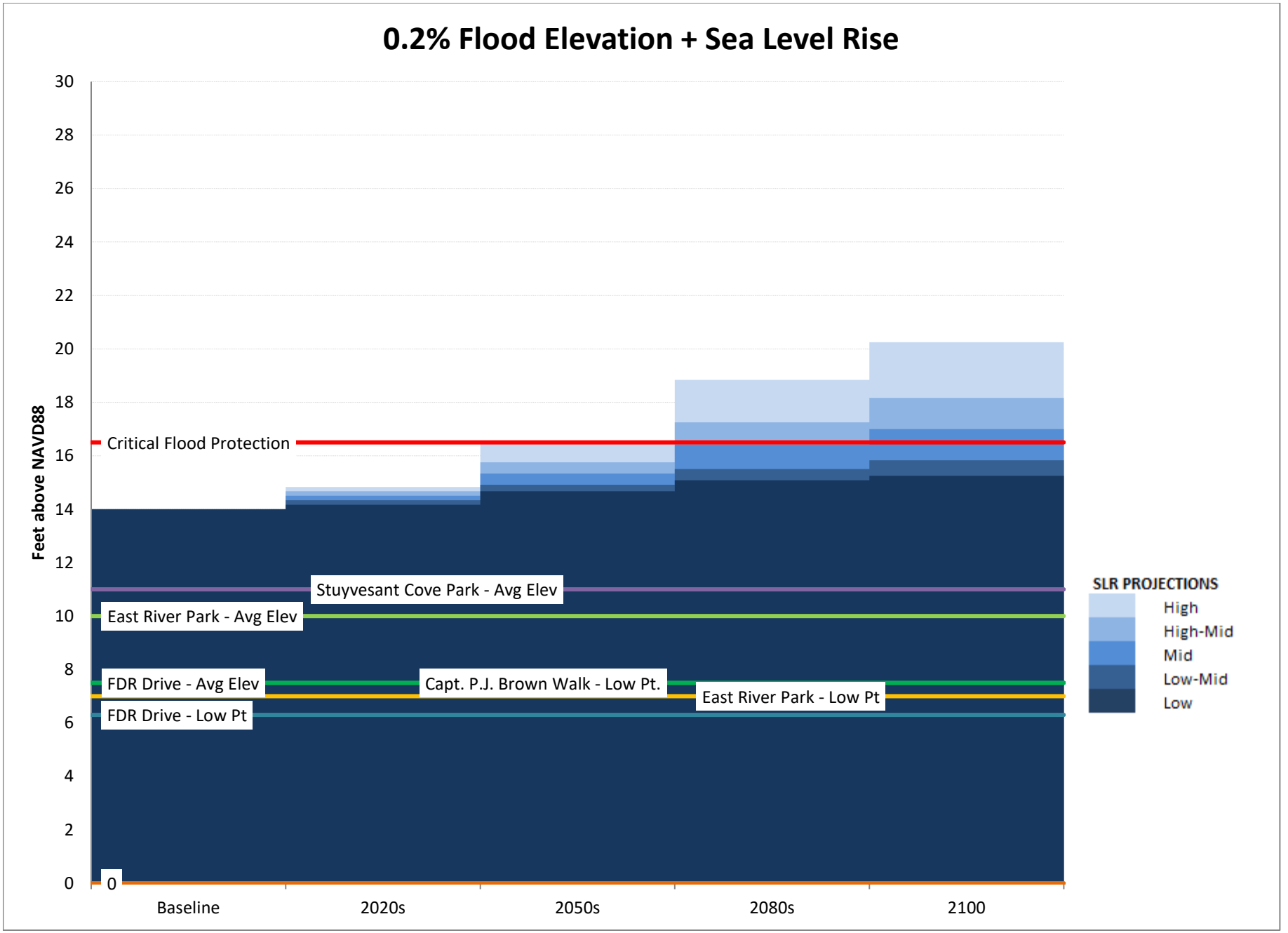
Describe key physical features of the project.

Feature *(enter name)*	Feature Category	Lifespan	Elevation	Units	Datum	Ft	Ft Above NAVD88	Ft Above MHHW	Ft Above 0.2% flood height
Critical Flood Protection	☐Vulnerable ☑Critical ☐Potentially Hazardous ☑Other	2074	16.5	Feet	NAVD88	*16.5*	*16.5*	*11.5*	*2.5*
There are four action alternatives for the critical flood protection system located in the proposed project area: Flood Protection System with a Raised East River Park Alternative (Preferred Alternative); Flood Protection System on the West Side of East River Park - Baseline Alternative; Flood Protection System on the West side of East River Park - Enhanced Park & Access Alternative; and Flood Protection System East of FDR Drive Alternative. These alternatives differ in terms of potential effects									
East River Park - Low Pt	☐Vulnerable ☐Critical ☐Potentially Hazardous ☑Other	2074	7.0	Feet	NAVD88	*7.0*	*7.0*	*2.0*	*-7.0*
Lowest elevation point (currently 7.0 ft) within East River Park. Includes bike/ped pathway made of concrete and asphalt.									
East River Park - Avg Elev	☐Vulnerable ☐Critical ☐Potentially Hazardous ☑Other	2074	10.0	Feet	NAVD88	*10.0*	*10.0*	*5.0*	*-4.0*
Average existing elevation point within East River Park. Includes bike/ped pathway made of concrete and asphalt.									
Capt. P.J. Brown Walk - Low Pt.	☐Vulnerable ☐Critical ☐Potentially Hazardous ☑Other	2074	7.5	Feet	NAVD88	*7.5*	*7.5*	*2.5*	*-6.5*
Lowest existing elevation along shared use path. Open space with shared walkway/bikeway.									
Stuyvesant Cove Park - Avg Elev	☐Vulnerable ☐Critical ☐Potentially Hazardous ☑Other	2074	11.0	Feet	NAVD88	*11.0*	*11.0*	*6.0*	*-3.0*
Average existing elevation within Stuy Cove Park. Open space with planted areas and hardscape.									
FDR Drive - Avg Elev	☐Vulnerable ☐Critical ☐Potentially Hazardous ☑Other	2074	7.5	Feet	NAVD88	*7.5*	*7.5*	*2.5*	*-6.5*
The average existing elevation of the FDR Drive between East 13th Street and East 18th Street. Note: under Alternatives 2, 3, and 4, this elevation would remain the same. Under Alternative 5, this portion of the FDR Drive would be protected to the stillwater DFE.)									
FDR Drive - Low Pt	☐Vulnerable ☐Critical ☐Potentially Hazardous ☑Other	2074	6.3	Feet	NAVD88	*6.3*	*6.3*	*1.3*	*-7.7*
The lowest existing avereage elevation of the FDR Drive between East 13th Street and East 18th Street. Note: under the Preferred Alternative (Alternative 4) and Alternatives 2 and 3, this elevation would remain the same. Under Alternative 5, this portion of the FDR Drive would be protected to the stillwater DFE.									
	☐Vulnerable ☐Critical ☐Potentially Hazardous ☐Other			Feet	NAVD88				
Description of Planned Uses and Materials									

Assess project vulnerability over a range of sea level rise projections.






0.2% Flood Elevation + Sea Level Rise
Feet above NAVD88
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
Critical Flood Protection
Stuyvesant Cove Park - Avg Elev
East River Park - Avg Elev
FDR Drive - Avg Elev
Capt. P.J. Brown Walk - Low Pt.
East River Park - Low Pt
FDR Drive - Low Pt
0
Baseline
2020s
2050s
2080s
2100
SLR PROJECTIONS
High
High-Mid
Mid
Low-Mid
Low

	SLR (ft)				
	Low	**Low-Mid**	**Mid**	**High-Mid**	**High**
Baseline	0.00	0.00	0.00	0.00	0.00
2020s	0.17	0.33	0.50	0.67	0.83
2050s	0.67	0.92	1.33	1.75	2.50
2080s	1.08	1.50	2.42	3.25	4.83
2100	1.25	1.83	3.00	4.17	6.25

	SLR (in)				
	Low	**Low-Mid**	**Mid**	**High-Mid**	**High**
2014	0	0	0	0	0
2020s	2	4	6	8	10
2050s	8	11	16	21	30
2080s	13	18	29	39	58
2100	15	22	36	50	75

	MHHW+SLR (ft above NAVD88)				
	Low	**Low-Mid**	**Mid**	**High-Mid**	**High**
Baseline	5.05	5.05	5.05	5.05	5.05
2020s	5.22	5.38	5.55	5.72	5.88
2050s	5.72	5.97	6.38	6.80	7.55
2080s	6.13	6.55	7.47	8.30	9.88
2100	6.30	6.88	8.05	9.22	11.30

	1%+SLR (ft above NAVD88)				
	Low	**Low-Mid**	**Mid**	**High-Mid**	**High**
Baseline	10.90	10.90	10.90	10.90	10.90
2020s	11.07	11.23	11.40	11.57	11.73
2050s	11.57	11.82	12.23	12.65	13.40
2080s	11.98	12.40	13.32	14.15	15.73
2100	12.15	12.73	13.90	15.07	17.15

	0.2%+SLR (ft above NAVD88)				
	Low	**Low-Mid**	**Mid**	**High-Mid**	**High**
Baseline	14.00	14.00	14.00	14.00	14.00
2020s	14.17	14.33	14.50	14.67	14.83
2050s	14.67	14.92	15.33	15.75	16.50
2080s	15.08	15.50	16.42	17.25	18.83
2100	15.25	15.83	17.00	18.17	20.25

	0	1
Critical Flood Protection	17	16.5
East River Park - Low Pt	7	7
East River Park - Avg Elev	10	10
Capt. P.J. Brown Walk - Low P	7.5	7.5
Stuyvesant Cove Park - Avg El	11	11
FDR Drive - Avg Elev	7.5	7.5
FDR Drive - Low Pt	6.3	6.3
0	0	0
DFE	16.50	16.50

NOAA Tide Station Data

(to be used only when a site survey is unavailable)

Station ID	*Station Name*	*Source MHHW (Feet, NAVD88)**	*Adjusted MHHW (Feet, NAVD88)**
8518687	Queensboro Bridge	2.27	2.60
8530095	Alpine	2.11	2.44
8516614	Glen Cove	3.72	4.05
8516990	Willets Point	3.72	4.05
8518639	Port Morris	3.33	3.66
8518699	Williamsburg Bridge	2.14	2.47
8518750	The Battery	2.28	2.61
8531680	Sandy Hook	2.41	2.74
8518490	New Rochelle	3.71	4.04
8531545	Keyport	2.66	2.99
8516891	Norton Point	2.08	2.41
8517201	North Channel	2.72	3.05
8517137	Beach Channel	2.10	2.43
8517756	Kingsborough	2.13	2.46
8519436	Great Kills	2.22	2.55
8531142	Port Reading	2.82	3.15
8519483	Bergen Point	2.56	2.89
8519050	USCG	2.28	2.61
8518902	Dyckman St	2.01	2.34
8517251	Worlds Fair Marina	3.59	3.92
8518668	Horns Hook	2.54	2.87
8518643	Randalls Island	2.60	2.93
8518526	Throggs Neck	3.68	4.01

* MHHW values include an addition 0.33 feet to account for changes in sea level since the 1983-200

Source
NOAA Tides and Currents
NOAA Tides and Currents
NOAA Tides and Currents
NOAA Tides and Currents
NOAA Tides and Currents
NOAA Tides and Currents
NOAA Tides and Currents
NOAA Tides and Currents
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NOAA Tides and Currents
NOAA Tides and Currents
NOAA VDATUM
NOAA VDATUM
NOAA VDATUM
NOAA Tides and Currents

)1 tidal epoch.


Alpine
8530095
New
Rochelle
8518490
Dyckman St
8518902
Glen Cove
8516614
Randalls
Island
8518643
Port
Morris
8518639
Throggs
Neck
8518526
Willets
Point
8516990
Worlds Fair
Marina
8517251
Queensboro
Bridge
8518687
Horns Hook
8518668
Williamsburg
Bridge
8518699
The Battery
8518750
North
Channel
8507201
Norton
Point
8516891
CG
9050
Beach
Channel
8517137
Kingsborough
8517756
Sandy Hook
8531680

Source: FEMA, New York City Panel on Climate Change, June 2013, 2016 Digital Orthoimagery in New York City, October 2016

Pike Slip
Rutgers St
Rutgers Slip
East Broadway
Ludlow St
Essex St
Norfolk St
Suffolk St
Clinton St
Jefferson St
Broome St
Stanton St
Rivington St
Ridge St
Pitt St
Houston St
E 1st St
E 2nd St
E 3rd St
E 4th St
E 5th St
E 6th St
E 7th St
E 8th St
E 9th St
E 10th St
E 11th St
E 12th St
E 13th St
E 14th St
14th St Loop
Second Ave
First Ave
Avenue A
Avenue B
Avenue C
Avenue D
1st Ave Loop
20th St Loop
E 15th St
E 16th St
E 17th St
E 18th St
E 19th St
E 20th St
E 21st St
E 22nd St
E 23rd St
E 24th St
E 25th St
E 26th St
Cherry St
South St
Montgomery St
Gouverneur St
Madison St
Henry St
Water St
Grand St
Jackson St
Lewis St
Bialystoker Pl
Delancey St
Sheriff St
Columbia St
Baruch Dr
Baruch Pl
Mangin St
Szold Pl
Avenue C Loop
E 5th Walk
FDR Drive
Williamsburg Bridge
East River

Pier 36
Pier 42
Montgomery Street Tie-back
Maintenance
Corlears Hook Park
Corlears Hook Bridge
Maintenance
Delancey Street Bridge
Basketball
(12) Tennis Courts
Ampitheater and Event Lawn
Embayment
LES Ecology Fireboat House
Picnic
Tennis House
Passive Lawns
Embayment
Track House
Track and Field
10th Street Bridge
Maintenance
Comfort Station
Gates
Playground
Basketball
Future Flyover Bridge
East River Park
Asser Levy Recreation Center
Gates
Asser Levy Playground
Gates
Gate
Gates
Stuyvesant Cove Park
Murphy Brothers Playground

1% Annual Chance of Flooding
0.2% Annual Chance of Flooding
Floodwall
Below Ground Flood Protection

0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Future Floodplain 2080s
Figure D-1

Source: NPCC, New York Department of City Planning, November 2016. 2016 Digital Orthoimagery in New York City, October 2016

Low Estimate (13 inches SLR)

Low-Mid Estimate (18 inches SLR)

Middle Estimate (29 inches SLR)

Mid-High Estimate (39 inches SLR)

High Estimate (58 inches SLR)

0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Future High Tide 2080s

Figure D-2

Source: FEMA, New York City Panel on Climate Change, June 2013, 2016 Digital Orthoimagery in New York City, October 2016

Pier 36
Montgomery Street Tie-back
Montgomery St
Gouverneur St
Madison St
Henry St
Bialystoker Pl
Ridge St
Pitt St
Delancey St
Houston
E 6th St
Avenue B
E 10th St
E 11th St
E 12th St
E 13th St
E 14th St
Avenue C
Sheriff St
Columbia St
Pier 42
Water St
Grand St
Jackson St
Lewis St
Avenue D
Szold Pl
Maintenance
Corlears Hook Park
Corlears Hook Bridge
Delancey Street Bridge
Baruch Dr
Baruch Pl
Track House
Track and Field
10th Street Bridge
Maintenance
Basketball
(12) Tennis Courts
Mangin St
E 5th Walk
Comfort Station
Gates
FDR Drive
East River Park
Ampitheater and Event Lawn
Embayment
LES Ecology Fireboat House
Picnic
Tennis House
Passive Lawns
Embayment
Maintenance
Playground
Basketball
Future Flyover Bridge
East River
N

1% Annual Chance of Flooding
0.2% Annual Chance of Flooding
Floodwall
Below Ground Flood Protection

0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Future Floodplain 2080s
Project Area 1
Figure D-4

Source: NPCC, New York Department of City Planning, November 2016. 2016 Digital Orthoimagery in New York City, October 2016

Pier 36
Montgomery Street Tie-back
Montgomery St
Gouverneur St
Madison St
Henry St
Bialystoker Pl
Ridge St
Pitt St
Delancey St
Houston
E 6th St
Avenue B
E 11th St
E 12th St
E 13th St
E 14th St
E 10th St
Sheriff St
Avenue C
Pier 42
Water St
Grand St
Jackson St
Columbia St
Lewis St
Avenue D
Szold Pl
Maintenance
Corlears Hook Park
Corlears Hook Bridge
Delancey Street Bridge
Baruch Dr
Baruch Pl
Track House
Track and Field
10th Street Bridge
Maintenance
Basketball
(12) Tennis Courts
Mangin St
E 5th Walk
Comfort Station
Gates
FDR Drive
Ampitheater and Event Lawn
East River Park
Embayment
Tennis House
Playground
Basketball
Future Flyover Bridge
LES Ecology Fireboat House
Picnic
Passive Lawns
Maintenance
East River

Low Estimate (13 inches SLR)
Low-Mid Estimate (18 inches SLR)
Middle Estimate (29 inches SLR)
Mid-High Estimate (39 inches SLR)
High Estimate (58 inches SLR)
Floodwall
Below Ground Flood Protection

0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Future High Tide 2080s
Project Area 1
Figure D-5

Source: FEMA, New York City Panel on Climate Change, June 2013, 2016 Digital Orthoimagery in New York City, October 2016

Houston St
E 7th
Avenue B
E 6th St
E 10th St
E 11th St
E 12th St
E 13th St
E 14th St
14th St Loop
1st Ave Loop
20th St Loop
E 20th St
Avenue C
Avenue C Loop
Avenue D
Szold Pl
E 5th Walk
FDR Drive
East River Park
East River
Gates
Asser Levy Recreation Center
Asser Levy Playground
Gate
Stuyvesant Cove Park
Murphy Brothers Playground
Track House
Track and Field
10th Street Bridge
Comfort Station
Maintenance
Playground
Basketball
Future Flyover Bridge
Passive Lawns
Embayment

1% Annual Chance of Flooding
0.2% Annual Chance of Flooding
Floodwall
Below Ground Flood Protection

0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Future Floodplain 2080s
Project Area 2
Figure D-7

Source: FEMA, January 2015 / NYS GIS Program Office, 2016 Digital Orthoimagery in New York City, October 2016

Pier 36
Montgomery Street Tie-back
Montgomery St
Gouverneur St
Madison St
Henry St
Bialystoker Pl
Delancey St
Ridge St
Pitt St
Houston
E 6th St
Avenue B
E 10th St
E 11th St
E 12th St
E 13th St
E 14th St
Avenue C
Sheriff St
Columbia St
Pier 42
Water St
Grand St
Jackson St
Lewis St
Delancey Street Bridge
Baruch Dr
Avenue D
Szold Pl
Maintenance
Corlears Hook Park
Corlears Hook Bridge
Maintenance
Basketball
(12) Tennis Courts
Baruch Pl
Mangin St
E 5th Walk
FDR Drive
Track House
Track and Field
10th Street Bridge
Comfort Station
Gates
Ampitheater and Event Lawn
Embayment
LES Ecology Fireboat House
Picnic
Tennis House
Passive Lawns
Embayment
East River Park
Maintenance
Playground
Basketball
Future Flyover Bridge
East River
N

V Zone
A Zone
Shaded X Zone
Floodwall
Below Ground Flood Protection

0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Current Floodplain (2015 pFIRM)
Project Area 1
Figure D-6

Source: FEMA, January 2015 / NYS GIS Program Office, 2016 Digital Orthoimagery in New York City, October 2016

V Zone
A Zone
Shaded X Zone
Floodwall
Below Ground Flood Protection

0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Current Floodplain (2015 pFIRM)
Figure D-3

Source: NPCC; New York Department of City Planning, November 2016. 2016 Digital Orthoimagery in New York City, October 2016

- Low Estimate (13 inches SLR)
- Low-Mid Estimate (18 inches SLR)
- Middle Estimate (29 inches SLR)
- Mid-High Estimate (39 inches SLR)
- High Estimate (58 inches SLR)
- Floodwall
- Below Ground Flood Protection

0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Future High Tide 2080s
Project Area 2
Figure D-8

Source: FEMA, January 2015 / NYS GIS Program Office, 2016 Digital Orthoimagery in New York City, October 2016

Houston St
E 7th
E 11th St
E 12th St
E 13th St
E 14th St
14th St Loop
20th St Loop
E 20th St
Avenue B
E 6th St
E 10th St
Avenue C
Avenue C Loop
Avenue D
Szold Pl
E 5th Walk
FDR Drive
East River Park
East River
Asser Levy Recreation Center
Asser Levy Playground
Stuyvesant Cove Park
Murphy Brothers Playground
Track House
Track and Field
10th Street Bridge
Comfort Station
Gates
Gate
Maintenance
Playground
Basketball
Future Flyover Bridge
Passive Lawns
Embayment

V Zone
A Zone
Shaded X Zone
Floodwall
Below Ground Flood Protection

0 1,000 FEET

Capital Project SANDRESM1
EAST SIDE COASTAL RESILIENCY PROJECT

Current Floodplain (2015 pFIRM)
Project Area 2
Figure D-9

From: Allan Zaretsky (DCP) <AZARETSKY@planning.nyc.gov>
Sent: Wednesday, March 27, 2019 2:21 PM
To: Alderson, Colleen (Parks); Humes, Emily (Parks)
Cc: Winter, Annie; Hook, Christina; Longobardi, Kathryn (DDC); Michael Marrella (DCP); Matthew Pietrus (DCP); Laura Kenny (DCP)
Subject: WRP Concurrence Review: East Side Coastal Resiliency Project (WRP #15-067)

Follow Up Flag: Follow up
Flag Status: Flagged

Hello Colleen,

We have completed the review of the project as described below for consistency with the policies and intent of the New York City Waterfront Revitalization Program (WRP).

East Side Coastal Resiliency Project (*CEQR #15DPR013M*): Installation of a flood protection system on the East Side of Manhattan between Montgomery Street to East 23rd Street with the objective of reducing flood hazards, protecting a diverse and vulnerable residential population and safeguarding critical energy, infrastructure, commercial and transportation assets.

Based on the information submitted, the Waterfront Open Space Division, on behalf of the New York City Coastal Commission, having reviewed the waterfront aspect of this action, hereby concurs with Department of Parks and Recreation (NYCDPR) that the actions will not substantially hinder the achievement of any Waterfront Revitalization Program (WRP) policy.

This determination is only applicable to the information received and the current proposal. Any additional information or project modifications would require an independent consistency review.

For your records, this project has been assigned WRP #15-067. If there are any questions regarding this review, please contact me.

Allan Zaretsky
Planner | WATERFRONT & OPEN SPACE DIVISION
Waterfront Revitalization Program Consistency Review

NYC DEPT. OF CITY PLANNING
120 Broadway, 31st Floor • NEW YORK, NY 10271
t 212.720.3448 • azaretsky@planning.nyc.gov

http://www1.nyc.gov/site/planning/applicants/wrp/wrp.page