

# South Battery Park City Resiliency Project

## Environmental Impact Statement Draft Scoping Document

Battery Park City Authority

AECOM Project Number: 60579231  
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# 1 Introduction

## 1.1 Overview

The Battery Park City Authority (BPCA), as lead agency, determined that the proposed South Battery Park City Resiliency (SBPCR) Project (the “SBPCR Project” or Proposed Action) may have a significant impact on the environment requiring the development of an Environmental Impact Statement (EIS).

This Scoping Document sets forth the content of the Draft EIS (DEIS) that the BPCA shall prepare for the proposed SBPCR Project. The Scoping Document provides: a general description of the State Environmental Quality Review (SEQR) requirements; a general description of alternatives to be evaluated in the DEIS, including the No-Action Alternative; identification of all resources to be addressed; and methodologies for assessing environmental impacts (based on SEQR and City Environmental Quality Review (CEQR) 2020 *Technical Manual* guidelines). This Scoping Document has been prepared in accordance with the requirements of 6 NYCRR Part 617 implementing regulations to Article 8 of the Environmental Conservation Law (SEQR).

## 1.2 Background and Description of Proposed Action

During Superstorm Sandy in 2012, coastal surge inundated Lower Manhattan on its western side through low elevation points near Pier A and in other parts of Battery Park City, damaging, destroying and/or negatively impacting significant components of Lower Manhattan’s critical and civic infrastructure. In response to the devastating impact of Superstorm Sandy in Lower Manhattan and in anticipation of future severe storm activity related to global climate change, the SBPCR Project has been developed by BPCA as an integrated coastal flood risk management project in Lower Manhattan (**Figure 1-1**). The SBPCR Project represents one of several projects within the overall Lower Manhattan Coastal Resiliency (LMCR) Master Plan.

The SBPCR Project Area (Project Area), the area of direct physical disturbance, extends from First Place and the Museum of Jewish Heritage, through Robert F. Wagner Park (Wagner Park), across Pier A Plaza, and then along the north side of the Battery Bikeway in The Battery to higher ground near the intersection of Battery Place and State Street. The SBPCR Study Area (Study Area), which extends beyond the Project Area, varies by resource but is generally defined as the area within 400 feet of the SBPCR Project improvements, **Figure 1-1**.

The SBPCR Project is being designed to provide independent utility with respect to flood risk reduction within the Project Area for the current 100-year flood, inclusive of increased intensity and frequency of rainfall, coastal surge, and predicted sea level rise. It is one of three (3) resiliency projects being undertaken by BPCA to address flood risk reduction throughout Battery Park City’s ninety-two (92) acres. The other two projects are the Battery Park City Ball Fields and Community Center Resiliency Project, and the North/West Battery Park City Resiliency Project (see **Figure 1-2**). The SBPCR Project is also being designed with adaptability for the 2050 100-year storm event when the North/West BPC Resiliency Project is completed, and the SBPCR Project ties into it (see **Figure 1-2**).

The flood alignment is composed of many different integrated features such as flip-up deployable gates (flip-up deployables), glass-topped floodwalls, buried floodwalls underneath terraced slopes, exposed

floodwalls, and bermed floodwalls. The term “flood alignment” is used to differentiate the combination of flood control measures represented by the Project from a traditional freestanding flood wall for risk reduction. In addition, interior drainage improvements are proposed for the SBPCR project, including the isolation of the existing underground sewer manholes and connected chambers. For more information on these improvements see Section 3.2.6 and **Figure 1-1**.

In addition to the Battery Park City projects, New York City’s The Battery Coastal Resilience Project, the Financial District and Seaport Climate Resilience Project, the Brooklyn Bridge-Montgomery Coastal Resiliency (BMCR) Project, and the East Side Coastal Resiliency (ESCR) Project will collectively serve to further reduce Lower Manhattan’s flooding exposure (see **Figure 1-3**).

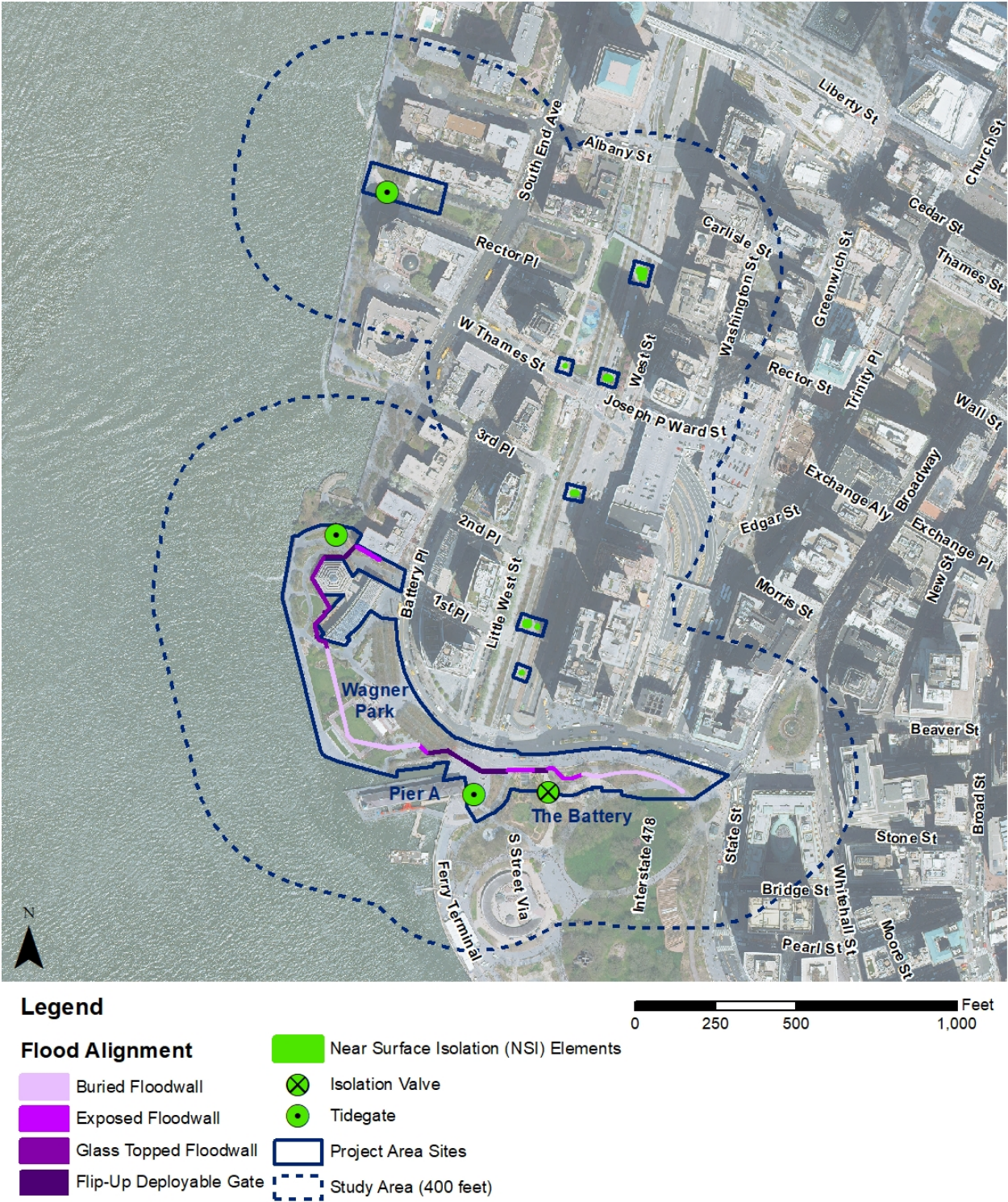
Battery Park City was planned and developed according to a Master Plan adopted in 1979 and is partially situated upon landfill generated by construction of the World Trade Center between the late 1960s and the early 1970s. Wagner Park was collaboratively designed by landscape architecture firm, Hanna/Olin, architecture firm, Machado and Silvetti, and public garden designer, Lynden Miller. It was built between 1994-1996 and offers panoramic views of the New York Harbor and the Statue of Liberty. It includes a pavilion, consisting of two structures connected by a rooftop walkway, two ornamental gardens, an esplanade, a central lawn, and various pieces of public art. The Museum of Jewish Heritage, which opened in Battery Park City in 1997, is located north of Wagner Park.

BPCA has proactively guided the process for the redesign of Wagner Park, retaining as many aspects as possible of the original design intent and site organization for the Park. In addition, BPCA found that four of the original eight principles from the 1979 Master Plan are relevant to the Project Area and are pertinent to an understanding of BPCA’s approach to the SBPCR Project design:

- Principle 1: Battery Park City should not be a self-contained new-town-in town, but a part of Lower Manhattan;
- Principle 2: The layout and orientation of Battery Park City should be an extension of Lower Manhattan’s system streets and blocks;
- Principle 3: Battery Park City should offer an active and varied set of waterfront amenities; and
- Principle 5: Circulation should reemphasize the ground level.



Figure 1-1: South Battery Park City Project Area and Study Area



South Battery Park City Resiliency Project



Figure 1-2: Battery Park Resiliency Projects

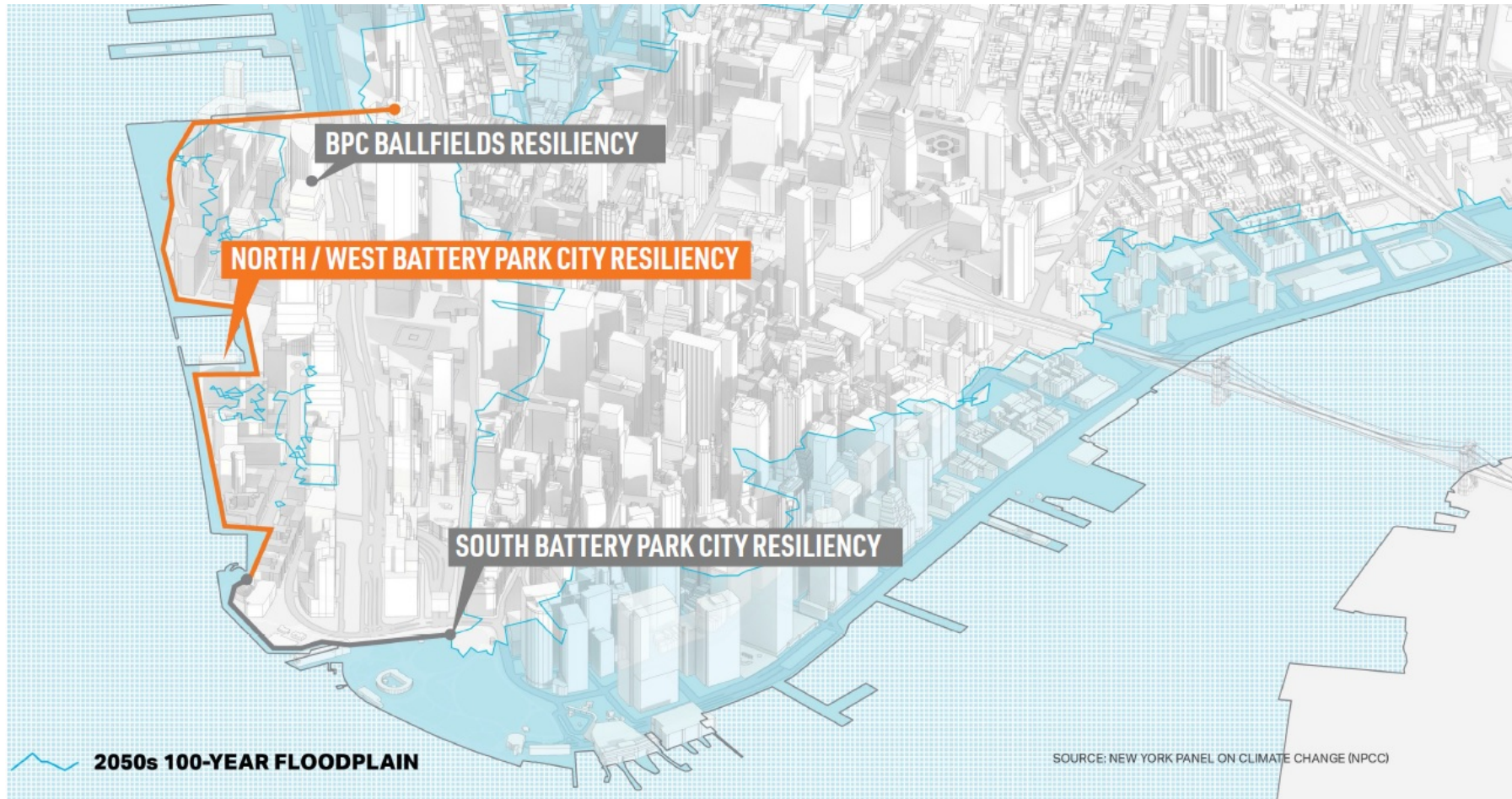
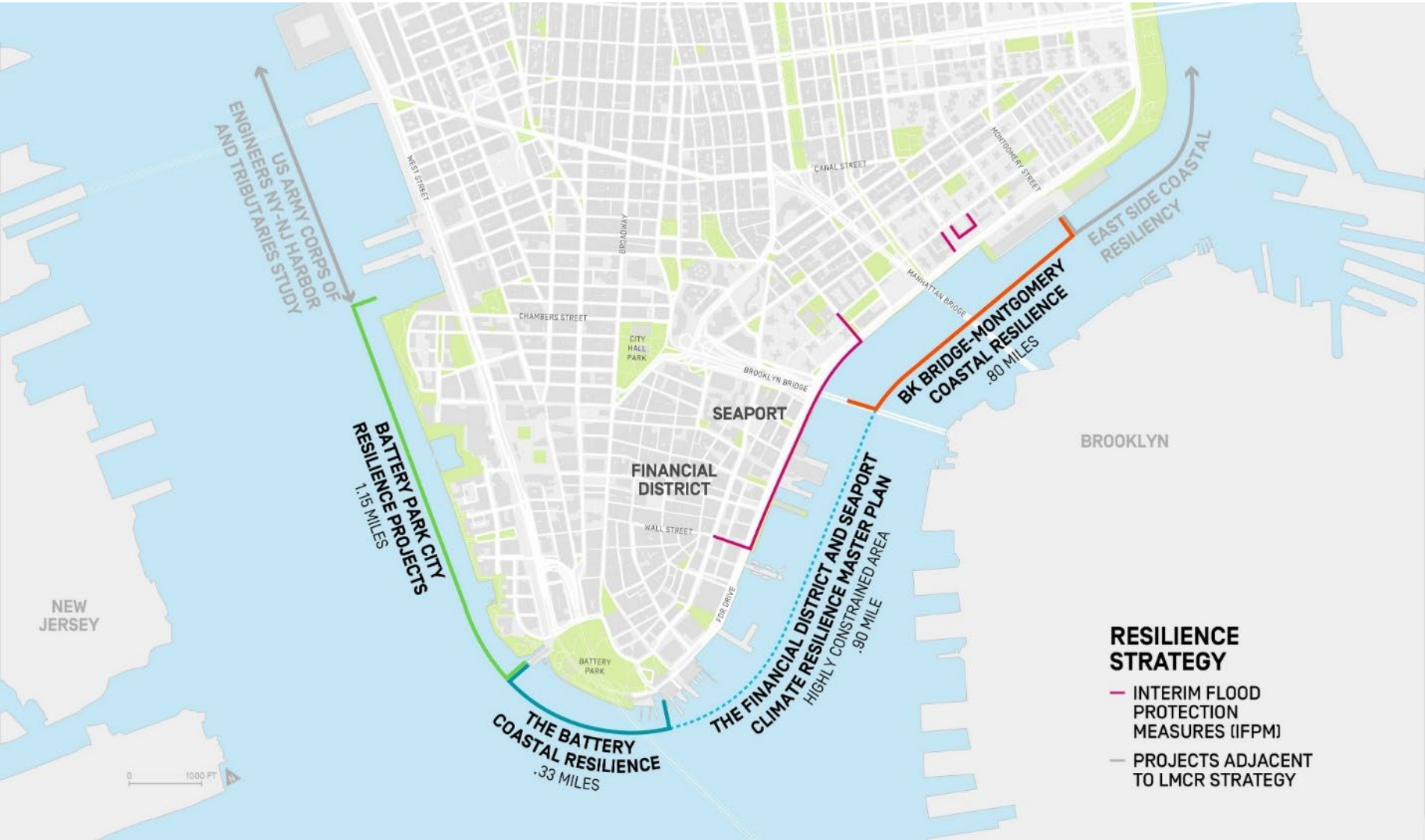




Figure 1-3: Lower Manhattan Resiliency Strategy Projects



### 1.3 Purpose and Need

During Superstorm Sandy in 2012, storm and coastal surge inundated portions of Lower Manhattan on its western side through areas of northern Battery Park City and Pier A Plaza south of Wagner Park. Water also found its way onto One World Trade Center and the Hugh L. Carey Tunnel (formerly known as the Brooklyn-Battery Tunnel) and impacted much of Lower Manhattan's critical infrastructure.

The SBPCR Project's primary goal is risk reduction in the southern extremes of Battery Park City. However, that goal is only attainable through the inclusion of risk reduction for areas that extend beyond the borders of Battery Park City. This will be accomplished through implementation of integrated flood risk measures, while meeting the design criteria for a 100-year storm event, inclusive of increased intensity and frequency of rainfall, coastal surge and predicted sea level rise. While the SBPCR Project will provide risk reduction for the 100-year storm, it will also provide immediate adaptability to the DFE for the 2050 100-year storm once the North/West Battery Park City Resiliency Project is constructed and a tie-in between the systems is accomplished. The SBPCR Project is expected to be accredited by the Federal Emergency Management Agency (FEMA). Accreditation requires a FEMA review of as-built plans and verification that the flood system meets all pertinent requirements and achieves acceptable risk reduction in practice.

The purpose of the SBPCR Project is to:

- Provide a reliable coastal flood control system to provide risk reduction to property, residents and assets within the vicinity of South Battery Park City in response to the design storm event;
- Protect and preserve to the maximum extent practicable, open space resources and opportunities to view and interact with the Manhattan waterfront, particularly in Wagner Park, Pier A Plaza and The Battery; and,
- Avoid or minimize disruption to existing below and above-ground infrastructure (i.e., water and sewer infrastructure, subways, tunnels, utilities, etc.) from flood events.

Specific objectives of the SBPCR Project are to:

- Provide a reliable coastal flood control system that minimizes risk and the need for operational interventions by relying primarily on passive flood control technology as opposed to mechanical "deployable" flood control technology;
- Construct and operate the project in an environmentally responsible manner;
- Preserve to the greatest extent practicable the character and design aesthetic of the community and its interface with the BPC waterfront and access to coastal viewsheds, particularly views of the harbor and Statue of Liberty; and,
- Utilize cost-effective solutions to maximize capital investment over the lifespan of the SBPCR Project.

## **2 State Environmental Quality Review (SEQR) Process**

The New York State Environmental Quality Review (SEQR) process provides for the consideration of potential significant adverse environmental impacts in the early planning stages of the approval, funding, or permitting process for proposed actions. By incorporating a systematic interdisciplinary approach to environmental review, impacts can be identified and projects can be modified, as needed, to avoid or minimize potential adverse impacts to the environment to the maximum extent practicable. All discretionary decisions of a state, regional, or local agency to approve, fund, or directly undertake an action that may affect the environment are subject to review under SEQR. It is the intent of SEQR that protection and enhancement of the environment and community resources be balanced with social and economic factors in the decision-making process.

### **2.1 Classification and Lead Agency Designation**

In accordance with 6 NYCRR Part 617, the Proposed Action is classified as a Type 1 action, as section 617.4(b)(10) includes “any Unlisted action, that exceeds 25 percent of any threshold in this section, occurring wholly or partially within or substantially contiguous to any publicly owned or operated parkland, recreation area or designated open space, including any site on the Register of National Natural Landmarks pursuant to 36 CFR part 62.” One such threshold is the physical alteration of 10 acres of land. As the SBPCR Project will result in the physical alteration of more than 2.5 acres of land occurring wholly or partially within or substantially contiguous to any publicly owned or operated parkland, this threshold is met. On March 18, 2021, the BPCA initiated a Coordinated Review of the Proposed Action to request Lead Agency designation and to solicit comments from all Involved and Interested Agencies.

In accordance with 6 NYCRR Part 617.7, the BPCA considered the potential environmental impacts of the proposed action and determined that this action may result in significant adverse environmental impacts and that a DEIS must be prepared.

### **2.2 Purpose of the Scoping Process**

To ensure that the DEIS will address all potentially significant environmental impacts identified by the Lead Agency in Parts 2 and 3 of the Environmental Assessment Form (EAF) and the Positive Declaration, and pursuant to 6 NYCRR Part 617.8(a) of the implementing regulations of SEQR, a formal scoping process will take place to focus the DEIS on potentially significant adverse impacts, and to eliminate consideration of those impacts that are irrelevant or not significant. Therefore, this Draft Scoping Document has been prepared pursuant to 6 NYCRR 617.8(b) to outline the topics and analysis of potentially significant environmental impacts related to the proposed action that will be addressed in the DEIS. This scoping process has eight objectives:

- 1) focus the DEIS on the potentially significant adverse environmental impacts;
- 2) focus on the relevant environmental impacts;
- 3) eliminate irrelevant impacts or issues;
- 4) identify the extent and quality of information needed;
- 5) list available sources of information;
- 6) specify methods or models to be used to generate new information;
- 7) identify the range of reasonable alternatives to be discussed; and,

- 8) specify possible measures for mitigation of potential impacts.

As part of the scoping process, and in accordance with SEQRA, the Draft Scoping Document will be made available for agency and public review and comment via posting on BPCA's website. A notice of scoping will be published in the New York State Department of Environmental Conservation (NYSDEC's) Environmental Notice Bulletin (ENB), which will announce the public comment period and the date for the virtual Scoping Meeting. Based on agency and public comment, a Final Scoping Document will be developed and will shape the content of the DEIS. Similarly, after the DEIS is circulated for public review and comment, a Public Hearing will be conducted to receive comments. There will also be the opportunity to comment on the DEIS following the close of the Public Hearing. Following the DEIS public comment period, the BPCA will prepare responses to the comments, develop the Final EIS, and issue SEQRA Findings.

## **2.3 Potential Regulatory Permitting, Approvals and Coordination**

Implementation of the Proposed Action would require federal, state, and local approvals involving the following agencies:

### **FEDERAL**

- U.S. Army Corps of Engineers (USACE) – Permits or authorizations for activities in Waters of the United States (Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act).
- U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) – Advisory agencies to the federal permitting process focusing on activities that affect wetlands, water quality, protected plant and wildlife species, and essential fish habitat.
- U.S. Coast Guard (USCG) – Coordination and authorization regarding placement of construction barges.
- Federal Emergency Management Agency (FEMA) – Review of flood protection design and potential changes to Flood Insurance Rate Maps (FIRM).

### **STATE OF NEW YORK**

- Department of Environmental Conservation (NYSDEC) – Permits related to activities in tidal wetlands or adjacent areas (Article 25) or protection of waters (Article 15), Water Quality Certification (Section 401); permits related to the State Pollutant Discharge Elimination System (SPDES) program; and approvals related to the import of fill material requiring Beneficial Use Determination.
- Department of State (NYSDOS) –Coastal Zone Consistency Determination.
- Office of Parks, Recreation and Historic Preservation (OPRHP) – State Historic Preservation Office (SHPO) leading federal review process pursuant to Section 106 of the National Historic Preservation Act (NHPA) with respect to designated and protected properties on the State and National Registers of Historic Places and properties determined eligible for such listing.
- Department of Transportation (NYSDOT) –Design coordination as needed and construction permits for work within the right-of way.



**CITY OF NEW YORK**

- Department of Parks & Recreation (NYCDPR) - Forestry Permits for tree removals and restitution and Capital Construction Permit for bikeway/Battery elements.
- Department of Environmental Protection (NYCDEP) – Review of design for project elements related to stormwater management, water and sewer infrastructure, and natural resources, as well as air quality and noise/vibration analysis.
- Department of Transportation (NYCDOT) – Coordination/review for bike lane, lighting, and other work in NYCDOT ROW.
- Department of City Planning (DCP) – Consistency determination under the Local Waterfront Revitalization Program.
- Small Business Services (NYCSBS) – Coordination and approval for activities on SBS owned property.
- Landmarks Preservation Commission (NYCLPC) – Advisory agency for activities on or near sites of historic or archaeological value.
- New York City Transit Authority (NYCTA) – Coordinate if any permanent or temporary impacts to bus routes/stops on Battery Place.
- New York City Police Department (NYPD) – Obtain approval for bollard and security design.
- New York City Fire Department (FDNY) – Coordinate access requirements and impact to FDNY facilities and conduits within the right-of-way.
- MTA - Triborough Bridge and Tunnel Authority (TBTA) – Obtain approval for alignment crossing over Brooklyn-Battery Tunnel.

### **3 Description of the Proposed Action**

#### **3.1 Proposed Action Location**

The Proposed Action is located in Lower Manhattan just west of the point where the Hudson River and East River diverge. The Project flood alignment spans an area from First Place and the Museum of Jewish Heritage, through Wagner Park, across Pier A Plaza, and then along the north side of the Battery Bikeway in The Battery to higher ground near the intersection of Battery Place and State Street as shown in **Figure 3-1**. In addition, the following interior drainage improvements are proposed: a near surface isolation (NSI) system along West Street between Battery Place and Albany Street; tide gates at First Place near the Museum of Jewish Heritage, Rector Place near the Hudson River, as well as in Pier A Plaza; and an isolation valve in The Battery portion of the Project Area, see **Figure 1-1**.

#### **3.2 Proposed Action Elements**

This section describes the elements of the flood alignment across five SBPCR Project segments, and associated interior drainage improvement areas, moving from west to east. The SBPCR Project segments are defined as First Place, Museum of Jewish Heritage, Wagner Park, Pier A Plaza and The Battery. In addition to the flood protection measures, an important element of the SBPCR Project is the inclusion of sustainable design measures. Construction is expected to begin in mid-2022 and conclude in mid-2024. **Figure 3-1** provides the type of flood alignment infrastructure proposed for each project segment and identifies the Design Flood Elevation (DFE). The DFEs and Height of Intervention (HOI) vary across the Project's flood alignment. The HOI for a project location is calculated by subtracting the elevation of the existing grade from the proposed DFE.

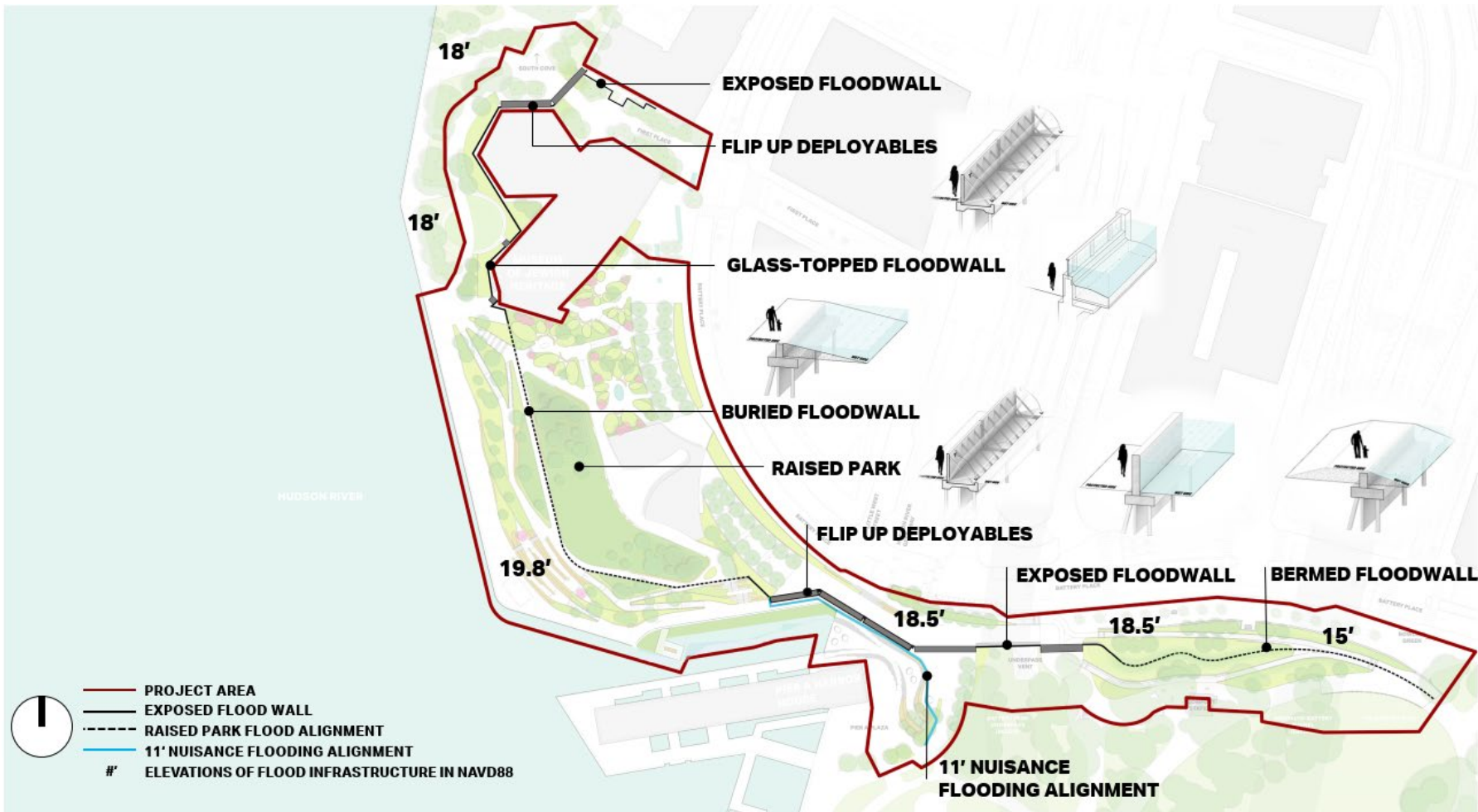
##### **3.2.1 First Place**

The flood alignment begins on the north side of First Place, where it ties into an existing, natural 11'-0" flood contour. It then extends south across First Place as a flip-up deployable, which would seal against permanent columns when deployed. The flip-up deployables across First Place would be installed to lie flat at ground level when not in use. First Place would not be altered in any material way beyond the installation of flip-up deployables in the street bed, with columns framing their edges. Grade changes to the street and right-of-way (ROW) would be avoided. The DFE in this area is 18 feet, and the HOI is 7 feet.

##### **3.2.2 Museum of Jewish Heritage**

At the southwest end of First Place, the flood alignment runs west across the north facing landscaped courtyard of the Museum of Jewish Heritage. The DFE in this location is 18 feet, and the HOI ranges from 7 to 8 feet. Flip-up deployables are planned for this section of the alignment, maintaining visual and physical access to the Museum and connecting to the flip-up deployables that span First Place. Existing landscape planters adjacent to the north façade of the Museum would be reconstructed and replaced after the installation of the flip-up deployables.

Figure 3-1: SBPCR Project Flood Alignment and DFE



The flood alignment then extends southeast along the west side of the Museum. This portion of the flood alignment is composed of flood-proof glass-topped floodwalls that would be integrated into terraced landscape planters. The floodwall would be screened from the existing garden pathways and lawn by rebuilding terraced planters that match the existing aesthetic of the landscape. In order to minimize visual impact and maintain views from the first floor of the building to the Hudson River, the top of the floodwall would be constructed of flood-proof glass, set within a metal frame. The glass-topped floodwall continues around the western perimeter of the Museum, until the flood alignment connects with Wagner Park. Flip-up deployables would be used to maintain egress at the existing fire exit doors.

### 3.2.3 Wagner Park

The flood alignment through Wagner Park would be constructed as a buried floodwall connecting to the glass-topped floodwall at the Museum of Jewish Heritage. The DFE for this portion of the flood alignment is +19.8 feet, and the HOI is 7.8 to 9.8 feet. To meet projected DFEs for coastal surge, Wagner Park would be elevated 10 to 12 feet, and the buried floodwall would be constructed beneath the raised park, maximizing the amount of protected open space within the park, while maintaining views to the waterfront. The buried floodwall also allows users to fully occupy the lawn, garden, and public park, in contrast to a traditional floodwall design which would bisect the space. At the connection between Wagner Park and Pier A Plaza, the flood alignment would be resurfaced and exposed as a short segment of exposed floodwall where it would meet the flip-up deployables being used through Pier A Plaza.

Five design principles helped to guide the proposed plan for Wagner Park:

- Elevate the site to maximize the protected area;
- Organize the site around the central lawn and axis to the Statue of Liberty;
- Move the building back to maximize continuous lawn area;
- Align building and approach with allées and establishing central connector space; and
- Provide universal access throughout the park.

With the five principles shaping the redesign, key features of Wagner Park include ornamental gardens, a central lawn, a stormwater reuse cistern, an infiltration gallery underneath the Battery Park City Esplanade, and performative gardens along the waterfront pedestrian esplanade (see **Figure 3-2**). The edges of Wagner Park would be gently sloped and terraced to allow for universal access to the raised park areas and the new pavilion described below (see **Figure 3-2**). Furthermore, the design of Wagner Park has been developed to comply with the Waterfront Edge Design Guidelines (WEDG) certification through innovative and integrated landscape architectural and engineering site planning. WEDG is a rating system and set of guidelines to create resilient, ecological and accessible waterfronts. The plantings on the water side of the Wagner Park flood alignment would tolerate salt spray and temporary inundation, reduce maintenance costs and provide ecological benefits. Planting designs in some of the terraced planters that transition down to the esplanade would serve as rain gardens for capturing and filtering precipitation. Stormwater from planters and hardscape would be routed to an infiltration gallery located underneath the Esplanade, to reduce the point source discharge of stormwater to the Hudson River. The layout reduces risk of coastal flood hazards while enhancing waterfront access and providing a newly continuous waterfront walkway experience that improves Battery Park City's connection to the Pier A Plaza and The



Battery. On the “dry” side of the flood alignment, a reuse cistern will capture stormwater generated during rain events. Reuse measures include site washdown, drip irrigation, and pavilion flush fixtures. Water captured by the cistern will be treated via a proprietary treatment system and distributed throughout the park.

The SBPCR Project enhances Wagner Park’s programmatic diversity and provides an opportunity for a new waterfront marine habitat educational area along the Pier A inlet. The Pier A Inlet design converts a concrete relieving platform and rip-rap edge to a terraced condition that improves habitat opportunities. An observation deck is proposed along the Pier A Inlet as shown in **Figure 3-3**. The construction of the deck would remove a portion of the relieving platform and replace it with a metal grate platform. Creating a new pedestrian overlook over the new intertidal habitat areas for educational purposes with a deck formed by metal grating will allow 50 percent of available light to pass through. This is anticipated to provide an estimated 500 square feet of additional partial daylighting to waters of the New York Harbor.

The SBPCR Project design calls for assessing all materials, including existing site stone, wood, trench drains, trees, shrubs and plants for salvage. A select amount of materials has been targeted to be reused within the SBPCR Project Area. Paving color and material selections are carefully calibrated to increase the parks solar reflectance index (SRI), thereby reducing the park’s urban heat island contribution. Site lighting carefully follows dark sky principles to reduce glare and enhance nighttime viewing of the New York Harbor and Statue of Liberty. Wagner Park’s carefully designed planting plan is organized around four regional plant communities including tidal estuary, maritime meadow, maritime forest, and upland woodland. The landscape’s design use of native plants reduces water consumption and reduces maintenance labor while significantly boosting local biodiversity and habitat support. The SBPCR Project’s turfgrass areas make use of subsurface irrigation to reduce water consumption by more than 30 percent.

**Figure 3-2: Proposed Pavilion for Wagner Park**

Following the Wagner Park design principles, the north and south allées of trees along Battery Place would be recreated along two ramps which connect the northern and southern arrival points of Wagner Park with the raised park and the new pavilion. In 2017, BPCA conducted an assessment of the existing pavilion as part of the Wagner Park Resiliency Assessment project. This assessment revealed structural deficiencies and façade delamination due to the marine environment. As a result of this condition, as well as accessibility and functionality issues related to the elevation of the park, the existing pavilion would be replaced with a new park pavilion in a manner that is sensitive to, and in overall harmony with, the elements of the 1995 Wagner Park design statement.

The location of the proposed pavilion would be similar to the existing structure, but elevated approximately 11 to 12 feet above ground level, as shown in **Figure 3-2**. The design of the proposed pavilion targets International Living Future Institute (ILFI) Zero Carbon certification which requires reduction of operational and embodied carbon. In addition, the SBPCR Project is being designed to exceed the ILFI target of 25 percent reduction of energy use intensity (EUI). The SBPCR Project will exceed this target with energy reduction of 38 percent and 25 percent over the baseline via a geothermal loop and a Variable Refrigerant Flow (VRF) heat recovery system, respectively and many other energy conservation measures in selection of building systems. Highly efficient, low carbon insulation, high recycled content rebar, low carbon concrete, low emitting materials, triple glazing with low-E coating and bird deterrence are among the many sustainable features of the design.

**Figure 3-3: Pier A Proposed Observation Platform**

### 3.2.4 Pier A Plaza

Pier A Plaza is at the lowest elevation in the Project Area. The flood alignment will consist of a newly raised segment of Pier A Plaza in conjunction with flip-up deployables and a short section of exposed floodwall. The DFE in this area is 18.5 feet, and the HOI ranges from approximately 8.5 to 11.5 feet. Flip-up deployables would seal up against new permanent columns to be located on the upper level of the plaza. The columns are designed to complement the materials of Pier A Plaza, and placed to accommodate views to the water, circulation (pedestrian, biking, and vehicular), and the programmed use of the plaza. The existing paving materials of Pier A Plaza would be retained, with new material added for seating and increased planting. The plaza would allow for direct and universal access to Pier A, as well as maintaining the bicycle connection from The Battery to the Hudson River Greenway, at the periphery of the plaza. Provision of building-specific wet-waterproofing protection of Pier A has been previously addressed by BPCA and is not part of this project scope.

To protect against accidental or intentional vehicle breaches of the pedestrian plaza, physical site security measures are planned for the northern perimeter of the Pier A Plaza, adjacent to the flood alignment. A 40-inch high barrier is proposed along the southern sidewalk of Battery Place running from the end of the southern allée of trees in Wagner Park eastward along the northern line of Pier A Plaza, then turning south and terminating at the exposed floodwall above the Battery Park Underpass. This security barrier is to be supplemented with bollards at stairs and access points as needed. The exposed floodwall is also anticipated to serve as a site security measure.

In order to address the greater flood vulnerability of the lower lying portions of Pier A Plaza that would be subject to daily tidal flooding in the future, the northern section of the plaza would be raised by approximately four feet, thereby reducing the required height of the flip-up deployables. In addition, the two-level plaza design would allow NYC's Battery Coastal Resilience Project, which traverses The Battery along the water's edge, to tie into the SBPCR Project. The Battery Coastal Resilience Project would be implemented by New York City Economic Development Corporation (NYCEDC) on behalf of NYC Parks, and would consist of rebuilding The Battery Wharf to an elevation intended to address tidal flooding impacts associated with projected sea level rise.

### **3.2.5 The Battery**

As the flood alignment continues east from Pier A Plaza, it extends into the Battery Bikeway on the north side of The Battery. The flood alignment is comprised of a combination of flip-up deployables, an exposed floodwall, and a floodwall beneath a landscaped berm. In this segment, the DFE ranges from 18.5 down to 15 feet, and the HOI ranges from 9.5 to 0 feet, as the alignment approaches increasing natural elevation at the east end of the Project alignment. This concept reconfigures the existing bikeway and requires the relocation of the Peter Caesar Alberty Marker monument situated along the south side of the Battery Place sidewalk. This monument would be relocated as close to the current location as possible to be consistent with the NYC Park's Monuments Plan.

Although the grades in this portion of the Project Area are being elevated to meet required DFEs, the circulation, landscape architecture, use of the bikeway, and a landscaped public park edge would remain. As the flood alignment continues east towards State Street, which is on naturally higher ground, the DFEs start to descend, affected by existing contours and increased distance from the Hudson River shoreline. Once the flood alignment reaches high ground in the easternmost section of the Project Area, which naturally aligns with the DFE, it terminates.

The physical site security measures described in Section 3.2.4 (Pier A Plaza) above, will terminate at the exposed floodwall above the Battery Park Underpass in this segment of the SBPCR Project. This will include the 40-inch high barrier supplemented with bollards at stairs and access points as needed.

### **3.2.6 Interior Drainage Improvements**

The existing sewer infrastructure crossing underneath the SBPCR Study Area will have to be isolated to preclude the coastal surge from entering the Project Area. To prevent storm surge from entering the SBPCR Study Area, an interior drainage management system would be implemented that includes:

- Installation of tide gates – Tide gates would be installed at two existing separate municipal storm sewer (MS4) overflows – one at First Place and the second at Rector Street. A third tide gate would be installed on the combined sewer overflow line at Pier A Plaza southeast of Pier A;
- Installation of an isolation valve - An isolation valve would be installed at the storm drain that collects runoff from The Battery. This valve would be installed in the vicinity of the Battery Bikeway, approximately 50 feet east of the Battery Park Underpass alignment; and,



- Isolation of the interceptor line branches rising to the street level (near surface isolation).

The near surface isolation system would consist of the installation of a gate within the existing regulator structures, M9, M8, and M7, which would be closed in a flood event to prevent the storm surge rising through the interceptor line from reaching the street level. Additionally, four interceptor manholes along West Street between Battery Place and Albany Street would be pressure proofed and retrofitted to receive a cover that can be sealed shut and locked during a flood event to resist the pressure resulting from the surge rising through the interceptor line and the piping connecting the manholes to the interceptor. All proposed interior drainage improvements are shown in **Figure 1-1**.

## **4 Content of the Draft Environmental Impact Statement**

6 NYCRR Part 617.9(b) of the SEQR Regulations set forth the minimum content that should be included in a DEIS. The subject areas to be included in the DEIS are described in Section 4.6 below.

### **4.1 Cover Sheet and Table of Contents**

The cover sheet will identify all required information contained in applicable SEQR regulations in 6 NYCRR 617.9(b)(3), including the descriptive title of the Project, location of the Project, the name, address, and telephone number of the lead agency and its contact person, contact information for the preparer of the DEIS, the date of acceptance of the DEIS by the Lead Agency, and the date by which comments must be submitted. The table of contents will follow the cover sheet.

### **4.2 Executive Summary**

The executive summary will present a brief overview of the DEIS in an easily accessible format, including the most pertinent information from the technical analyses.

### **4.3 Description of the Proposed Action**

This section will describe the Proposed Action, including the following elements:

- Project location and setting;
- Project description (including proposed elements, changes to site, acreage developed, etc.);
- Purpose and objectives;
- Public needs and benefits;
- Required public actions and approvals; and
- SEQR process and chronology.

This description will also address all aspects of site development with graphics (site plans, renderings, photographs, cross sections, and maps), such as:

- Site layout and design;
- Architectural design of the Wagner Park pavilion and flood wall design elements in the context of the site and the buildings in the surrounding areas;
- Landscaping, lighting, and signage;
- Parking and loading areas for the Wagner Park Pavilion and Museum of Jewish Heritage;
- On-site traffic, pedestrian, and bicycling circulation;
- Utilities and stormwater management facilities;
- Site access;
- Specific uses to be included in the Proposed Action;
- Proposed hours of operation, including delivery times for the Wagner Park Pavilion; and
- Regulatory compliance, including zoning, permitting, and other approvals needed.

## **4.4 Reasonable Alternatives to the Proposed Action**

Pursuant to 6 NYCRR Part 617, the DEIS must contain a description and evaluation of reasonable alternatives to the Proposed Action that would allow some or all of the adverse impacts to be avoided while generally satisfying BPCA's goals. Because of the unique characteristics of the Project Area and the agency jurisdictional boundaries within the Project Area, the Proposed Action was divided into five sections for the purposes of evaluating alternatives. As the DEIS will analyze only the Proposed Action and the No Action Alternative, the purpose of this section will be to identify other build alternatives that have been eliminated from further consideration.

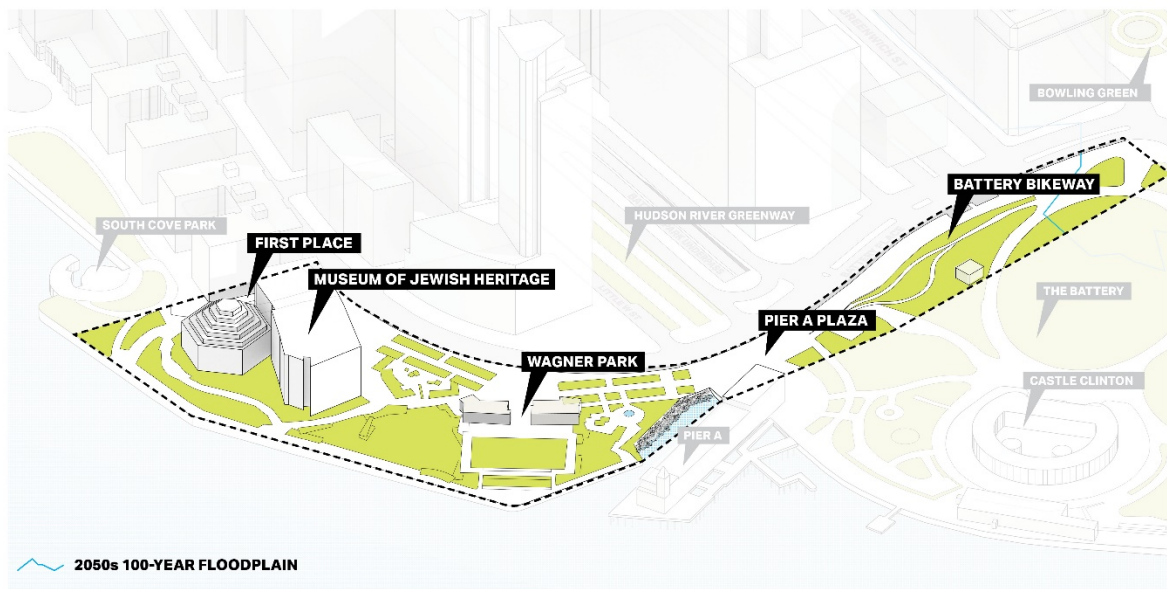
### **4.4.1 No Action Alternative**

This section will include an evaluation of the potential impacts that would result by the build year if the Proposed Action was not undertaken. Within the Study Area, there are two projects that will be constructed regardless of whether the SBPCR Project moves forward. These include the Battery Coastal Resiliency Project (by NYCEDC) and the Battery Park Tunnel and West Street Tunnel Resiliency Project (by NYCDOT).

### **4.4.2 Action Alternatives Considered**

This section will identify alternatives considered for the five segments of the Project Area, individually due to their differing characteristics, as well as interior drainage alternatives. These five segments are shown in **Figure 4-1** and include:

- First Place
- Museum of Jewish Heritage
- Wagner Park
- Pier A Plaza
- The Battery

**Figure 4-1: SBPCR Project Segments**

#### **4.4.3 First Place**

The area around First Place is under the jurisdiction of the BPCA, and First Place itself is under the jurisdiction of NYCDOT. Due to the limited size of this section, the necessity for the Proposed Action to follow the 100-year floodplain contours, provide FEMA certification and to maintain emergency access and egress, only one alternative is feasible for First Place (as described in Section 3.2.1 above).

#### **4.4.4 Museum of Jewish Heritage**

This segment runs along the landscaped courtyard of the Museum of Jewish Heritage, connecting with the southern end of the First Place segment. The park area around the Museum of Jewish Heritage is under the jurisdiction of the BPCA. The Museum of Jewish Heritage itself is owned and operated privately. Two alternatives were considered for this segment: Museum Alternative 1; and Museum Alternative 2.

##### **Museum - Alternative 1**

Museum Alternative 1 proposes a flood mitigation landscape integration on the water side of the Museum. The flood alignment would be integrated into the landscaped areas along the building but just outside of the building facade. This alternative would minimize any work needing to be done on the Museum itself and maintain views to the Hudson River while still providing the necessary flood protection. The top of the floodwall would be constructed of flood-proof glass, set within a metal frame.

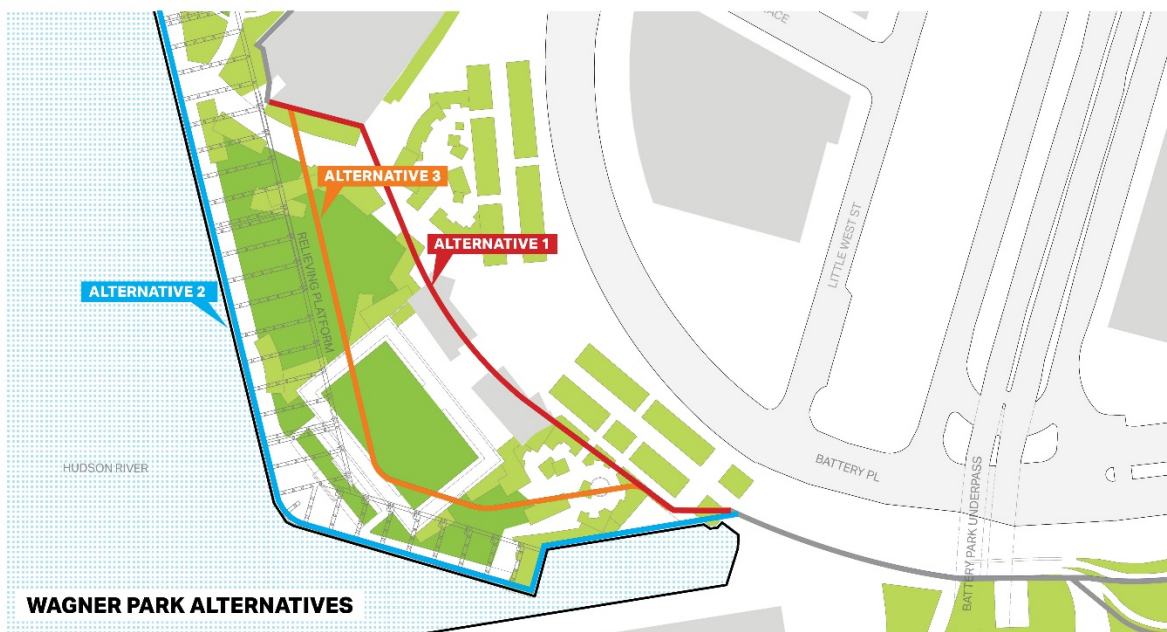
### Museum - Alternative 2

Museum Alternative 2 proposes flood mitigation built into the façade of the Museum. This alternative would dry-floodproof the existing building. Existing windows and doors would be protected using deployable floodproof panels. To provide floodproofing, the existing cladding would be removed and replaced with a thickened wall section supported by the foundation of the existing building or supported on an independent pile foundation.

#### 4.4.1 Wagner Park

Wagner Park is owned by and under the jurisdiction of the BPCA. Three alternatives were considered for this segment of the Proposed Action (see **Figure 4-2**).

**Figure 4-2: Wagner Park Alternatives**



#### Wagner Park - Alternative 1 (Inland Alternative)

Under Alternative 1 – Inland Alternative, the flood alignment would be constructed furthest from the waterfront, and closer to Battery Place. The DFE would be 16 to 17.5 feet. The alignment in this location would bisect Wagner Park and would require the installation of two types of flood barrier systems: a recommended new pavilion (per Perkins Eastman July 13, 2017 Study) designed to function as a barrier against the storm; flanked by flip-up deployables stowed below ground in chambers that would measure approximately 26 feet deep and 25 feet wide. The freestanding columns that would support the flip-up deployables would be designed as decorative elements for Wagner Park, and possibly incorporate other park amenities such as lighting or charging stations for mobile devices. The new pavilion would have to be built at a height sufficient to act as a barrier to storm surge (Perkins Eastman, July 13, 2017).



### **Wagner Park - Alternative 2 (Waterfront Edge)**

Under Alternative 2, the flood alignment would be constructed on the edge of the waterfront along the Esplanade. The DFE would be 21 feet to 24.5 feet. This section of the Project Area has an existing relieving platform, which was constructed on piles when Battery Park City was built, as a support system for the Esplanade. The subsurface relieving platform coincides with a load-restricted zone of 750 pounds per square foot (psf). Two options were considered for flood protection, an exposed floodwall and a flip-up deployable floodwall.

#### **Exposed Floodwall Option**

An exposed floodwall option was considered for the waterfront edge. This option involved constructing an exposed floodwall along the waterfront. The construction of the exposed floodwall would require reconstruction of the relieving platform.

#### **Flip-up Deployable Floodwall Option**

A flip-up deployable option was also considered for the waterfront edge. The foundations for the flip-up deployables would be constructed on top of the existing relieving platform, requiring demolition and/or reconstruction of the platform. This alternative would require a one-way lane for maintenance to allow emergency vehicles to raise the deployables in the event that they cannot deploy mechanically. The flip-up deployables would be supported by permanent square columns that measure approximately 12 feet high and a minimum of 5 feet-wide. These columns would be spaced 40 feet apart to support the deployables along the waterfront edge.

### **Wagner Park - Alternative 3 (Buried Floodwall)**

Under Alternative 3, a buried floodwall would be constructed beneath the park. The DFE would be 19.8 feet, the HOI would be 7.8 to 9.8 feet. Wagner Park would be raised 10 to 12 feet, while preserving the elevation of the existing Battery Park City Esplanade. At the connection between Wagner Park and Pier A Plaza, the flood alignment would resurface and be exposed as a short segment of floodwall where it would meet the flip-up deployables being used through Pier A Plaza.

#### **4.4.2 Pier A Plaza**

Within this section, Pier A Plaza is under the jurisdiction of the BPCA, NYC Department of Small Business Services (NYC SBS), and NYCEDC. Pier A Plaza is at the lowest elevation in the Project Area. Two alternatives were evaluated for the Pier A Plaza.

#### **Pier A Plaza – Alternative 1**

The existing grade of the plaza is the lowest through the entire Project Area and therefore would require the tallest height of intervention. Alternative 1 would not disturb the existing condition and would preserve the existing design and aesthetic of the plaza. Due to the relatively low elevation of the grade, the flip-up deployables would need to be deployed on a more frequent basis to prevent nuisance flooding

due to storms smaller than the design storm. This alternative does not address nuisance flooding and would require taller flip-up deployable gates than Alternative 2.

### **Pier A Plaza – Alternative 2**

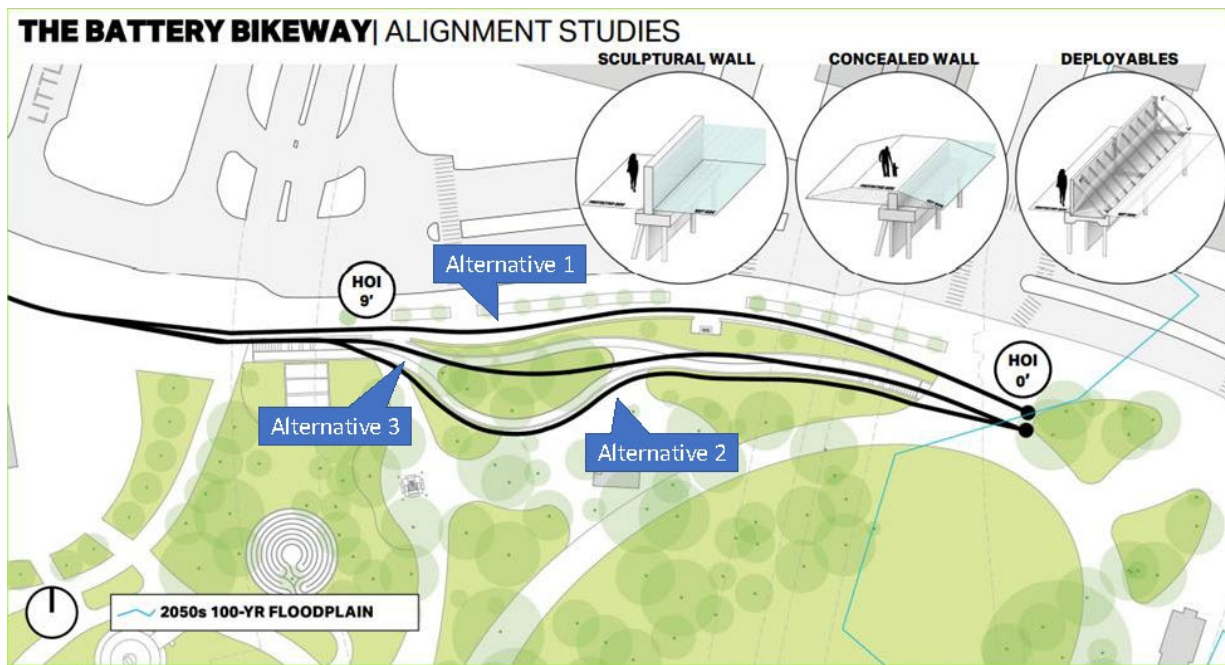
For Alternative 2, the grade of the plaza would be raised, reducing the height of intervention of the flip-up deployable gates and decreasing the frequency that the gates would need to be deployed for smaller storms. Alternative 2 requires reconfiguration of the plaza to raise the grade and continue to provide access for various stakeholders to Pier A Harbor House, Battery Park and Wagner Park. This alternative does address nuisance flooding and would require lower flip-up deployables.

Two flood system technology options were evaluated for a short portion of this alignment at the connection between Wagner Park and Pier A: a horizontal sliding deployable gate and a free-standing floodwall.

- Horizontal sliding deployable gates – This technology consists of steel gates on wheels that could be stored behind a wall during non-storm conditions and then slid into place to provide a continuous barrier. This would require walls or columns on either side of the opening for the gate to seal against.
- Free-standing floodwall - A free-standing flood wall would consist of a solid wall that would serve as a barrier to storm surge and flooding.

### **4.4.3 The Battery**

The Battery is owned by and under the jurisdiction of NYC Parks. The subsurface conditions in the Battery include the Battery Park Underpass of the FDR Drive, Brooklyn Battery Tunnel, MTA Subway lines for the 1 Train, the Bowling Green Subway Station for the 4 and the 5 Trains, as well as other utilities. Three alternatives were evaluated for this segment as shown in **Figure 4-3**.

**Figure 4-3: The Battery Alternatives**

#### **The Battery - Alternative 1**

Alternative 1 considered a flood wall alignment within the Battery, located at the northern edge of the park area, parallel to Battery Place. This option evaluated using a combination of raised grade with deployables and or floodwalls.

#### **The Battery - Alternative 2**

Alternative 2 considered a flood wall alignment within the Battery that runs through the park area parallel to the southern bikeway. This alternative considered a freestanding sculptural wall that wove through The Battery.

#### **The Battery - Alternative 3**

Alternative 3 considered placement of the flood alignment between the alignments for Alternatives 1 and 2. The flood alignment is comprised of a combination of flip-up deployables, exposed floodwall, and buried floodwall beneath a landscaped berm. This concept reconfigures the existing bikeway. The design of the flood alignment that transitions from Pier A Plaza through the northern side of The Battery had to account for a range of existing and complex subsurface infrastructure conditions. The flood alignment across the northern portion of The Battery from west to east consists of an exposed concrete floodwall over the Battery Park Underpass, a flip-up deployable, a partially exposed wall, and a buried floodwall beneath a landscaped berm.

At the area over the Battery Park Underpass, which is approximately 92 feet, three flood system technologies were evaluated to avoid impacts to the existing tunnels:

- Free-standing floodwall - See definition in Section 4.4.2.
- Flip-up deployable gates on a raised concrete sill – Flip-up deployable gates would lay flat against the ground during non-storm conditions. The gates would require permanent columns that would be spaced in-between each gate segment. During a storm event, the gates would be deployed to create a continuous wall. The gates would be placed on a raised sill, similar to a raised platform to provide further protection from flooding.
- Horizontal sliding deployable gates – See definition in Section 4.4.2.

#### **4.4.4 Interior Drainage Improvements**

As described in Section 3.2.6, interior drainage improvements are required to prevent storm surge from entering the SBPCR Study Area. Two alternatives were considered to manage storm surge through the interior drainage systems.

##### **Interior Drainage – Alternative 1 (Interceptor Gate Chambers and Buildings)**

For Alternative 1, two isolation gates in conjunction with the flood alignment were considered. Each isolation gate would require construction of an underground chamber along the existing combined sewer interceptor, and an above-ground building to house mechanical equipment that controls operation of the underground interceptor gate. The underground chambers would be approximately 27 feet deep and have approximate dimensions of 24-feet by 22-feet. The above-ground buildings would be located within 200 feet of the underground chambers, and would be approximately 11 feet high, 12 feet wide, and 60 feet long. Pedestrian access would be maintained around the buildings.

##### **Interior Drainage – Alternative 2 (Near Surface Isolation System)**

Alternative 2 considered a near surface isolation (NSI) system to prevent storm surge from entering the SBPCR Study Area. The NSI system would consist of the installation of a gate within the existing regulator structures, M9, M8, and M7, which would be closed in a flood event to prevent the storm surge from rising through the interceptor line and reaching street level. Additionally, four interceptor manholes along West Street between Battery Place and Albany Street would be pressure proofed and retrofitted to receive a cover that can be sealed shut and locked during a flood event.

##### **Other Interior Drainage Improvements**

Additional interior draining improvements include tide gates and an isolation valve. Tide gates would be installed at two separate existing municipal storm sewer system (MS4) overflows:

- Newtown Creek Wastewater Treatment Plant Manhattan Side (NCM)-634 (First Place)
- NCM-628 (Rector Street).

A third tide gate would also be installed at the combined sewer overflow (CSO) NCM-070 (Pier A Plaza), to the southeast of Pier A. These gates would be located within 250 feet from the existing discharge points,

and measure approximately 20-feet-by-20-feet. Additionally, an isolation valve would be installed at the storm drain that collects runoff from The Battery. This valve would be installed in the vicinity of the Battery Bikeway, approximately 50-feet east of the Battery Park Underpass alignment.

## 4.5 Analysis Framework

This section will describe the framework for the DEIS technical analysis and identify the analysis year (2024) for the Proposed Action. The DEIS will document the affected environment and environmental impacts for future conditions with and without the Proposed Action for the following technical resources: land use, zoning and public policy, socioeconomic conditions, community facilities, open space, shadows, historic and cultural resources, urban design and visual resources, neighborhood character, natural resources, hazardous materials, water and sewer, solid waste and sanitation services, energy transportation, air quality, greenhouse gas emissions (GHG), noise and vibration, public health and construction. Both the long term (operational) and short term (construction) impacts will be evaluated for each technical resource.

Of the technical analyses that will be evaluated in the DEIS, socioeconomic conditions, community facilities and services, solid waste and sanitation services, and public health technical disciplines have screened out and will not require detailed analysis in the DEIS. The following summarizes why each of those technical resources did not meet the criteria for a detailed analysis.

### ***Socioeconomic Conditions***

According to the 2020 *CEQR Technical Manual* there are six guidelines for determining whether a socioeconomic assessment is required. They are related to the following:

- Displacement of residential population
- Displacement of more than 100 employees
- Business displacements
- New development that is markedly different from existing land uses
- New or improved retail development
- Effects on a specific industry

As the Proposed Action requires no residential, employee or business displacements, includes no retail development, does not create land uses markedly different from existing conditions and does not affect a specific industry, no further socioeconomic assessment is required.

### ***Community Facilities and Services***

As the Proposed Action would not physically impact or displace any community resources, nor result in any increases in resident population, nor have any impact on public schools, healthcare facilities, publicly funded group early childhood programs, libraries or local police and fire facilities, no detailed assessment of community facilities is required.



***Solid Waste and Sanitation Services***

According to the *CEQR Technical Manual*, further analysis would be conducted if the project:

- Exceeds 50 tons per week or more of solid waste generation;
- Involves the construction, operation, or closing of any type of regulated solid waste management facility, New York City Department of Sanitation (DSNY) district garage, or borough repair shop; or,
- Involves a change to the public or private waste collection.

As operation of the Proposed Action does not meet any of these criteria, no further assessment is required.

***Public Health***

According to the *CEQR Technical Manual*, assessment of public health impacts would be required if there are significant unmitigated adverse impacts associated with the Proposed Action. Long term operation of the SBPCR Project would not have any unmitigated air quality, noise, hazardous materials or natural resource impacts, therefore, no further assessment is required.

**4.6 Affected Environment and Environmental Impacts****4.6.1 Land Use, Zoning, and Public Policy**

This section will examine the potential for the Proposed Action to impact land use, zoning and public policy. As recommended by the *CEQR Technical Manual*, a 400-foot Study Area from the proposed flood alignment will be used for the analysis. The analysis will describe land uses, zoning regulations, and applicable policies within the Study Area, and then will assess the potential land use impacts and compliance with zoning regulations and policies.

Land use refers to the activity that is occurring on land and within the structures that occupy it. Types of uses include residential, retail, commercial, industrial, vacant land, and parks. According to the *CEQR Technical Manual*, the appropriate study area for land use and zoning is related to the type and size of a proposed action, the location and context of the area that could be affected by the project, and other factors, such as natural and man-made geographic boundaries. Land uses in the Study Area will be determined through a review of New York City Department of City Planning (NYCDCP) Primary Land Use Tax Lot Output (PLUTO) data (20v7).

The New York City Zoning Resolution (ZR) dictates the use, density and bulk of developments within the City. The ZR is divided into two parts: zoning text and zoning maps. The zoning text establishes the zoning districts within New York City and dictates the zoning regulations governing land uses and developments, while zoning maps show the boundaries of the City's zoning districts. Zoning designations in the Study Area will be determined through a review of New York City Department of Planning Zoning Map 12b (effective date March 20, 2013) and through a review of the City's online Zoning Resolution (as updated through January 6, 2021).

Various public policies can affect the allowable land uses on a project site. Officially adopted and promulgated public policies also describe the intended use applicable to an area or particular sites in the City. Some public policies have regulatory status, while others describe general goals that can help define the existing and future context of the land use and zoning of an area. Policies may also change over time to reflect the evolving needs of the City, as determined by appointed and elected officials and the public. The DEIS will include an analysis of the No Action and Proposed Action's impact of land use, zoning and public policies.

#### **4.6.2 Open Space**

This section will examine the potential for the Proposed Action to impact open space directly or indirectly in the Study Area by reducing or changing open space. According to the 2020 *CEQR Technical Manual*, open space is defined as “publicly or privately owned land that is publicly accessible and available for leisure, play, or sport, or is set aside for the protection and/or enhancement of the natural environment.” Public open space is available “to the public on a constant and regular basis, including for designated daily periods.” Examples of public open space in the Study Area include, but are not limited to, City parks, Wagner Park, the Battery Park City Esplanade, and waterfront piers with passive or active recreational uses. Private open space is “not publicly accessible or is available only to limited users and is not available to the public on a regular or constant basis.”

Direct effects include those in which a project reduces or limits access to open space. In addition, a direct effect could occur “if the facilities within an open space would be so changed that the open space no longer serves the same user population.” Indirect effects could result from projects that generate residential or commercial population, and that additional population “overtaxes the capacity of existing open space so that their service provided to existing and future populations in the area would be substantially or noticeably diminished.”

The purpose of the assessment is to measure the “usability of the open space” impacted by the Proposed Action and the change in the amount of open space available relative to additional population created by the Proposed Action. The *CEQR Technical Manual* states that the median open space ratio for New York City is 1.5 acres of open space for every 1,000 residents with a goal of achieving 2.5 acres of open space for every 1,000 residents. With the limitations of the urban environment throughout New York City, these open space ratios are considered benchmarks, not “impact thresholds.” In addition to open space ratio benchmarks, the *CEQR Technical Manual* provides an additional criteria of the percent decrease in the open space ratio from the No Action Alternative to Proposed Action scenarios. A decrease in open space ratio that “approaches or exceeds 5 percent” would be considered “a substantial change warranting more detailed analysis.” Typically, a project that maintains an open space ratio above 1.5 acres for every 1,000 residents and does not exceed a 5 percent decrease in open space ratio would not require a detailed analysis. The DEIS will include an analysis of the No Action and Proposed Action's impact on open space.

### 4.6.3 Shadows

This section examines the potential for the Proposed Action to produce incremental shadows long enough to cover all or portions of publicly-accessible sunlight-sensitive resources. Public open spaces, architectural resources, natural resources, and greenstreets are resources that depend on sunlight either for their enjoyment or to maintain their natural condition. The incremental shadow is the additional, or added, shadow cast onto a sunlight-sensitive resource by the Proposed Action. A significant adverse impact of this incremental shadow is determined if it “falls on a sunlight-sensitive resource and substantially reduces or completely eliminates direct sunlight exposure, thereby significantly altering the public’s use of the resource or threatening the viability of vegetation or other resources.”

The *CEQR Technical Manual* outlines a tiered screening assessment designed to identify sunlight-sensitive resources within the study area, measure the incremental shadows on the sunlight-sensitive resources added by the Proposed Action, and determine the impacts of those incremental shadows. A shadow assessment is required for projects that would “either (a) result in new structures (or additions to existing structures including the addition to rooftop mechanical equipment) of 50 feet or more or (b) be located adjacent to, or across the street from, a sunlight sensitive resource.” The Tier 1 screening assessment involves mapping the sunlight-sensitive resources within the longest shadow area, which “encompasses the site of the Proposed Action and a perimeter around the site’s boundary with a radius equal to the longest shadow that could be cast by the proposed structure, which is 4.3 times the height of the structure and occurs on December 21, the winter solstice.”

If there are sunlight-sensitive resources within this longest shadow study area, the analysis proceeds to the second tier, which reduces the area that could be affected by project shadow by accounting for the path of the sun in the northern hemisphere. The Tier 2 screening assessment assesses sunlight-sensitive resources determined to be within the longest shadow study area and within the path of the sun in the northern hemisphere. Within the northern hemisphere, the path of the sun will not cast shadows in a triangular area south of any project; and the specific areas in New York City where no shadows can be cast “lie between -108 and +108 degrees from true north.”

A Tier 3 screening assessment should be conducted only for projects in which all or a portion of a sunlight-sensitive resource is within the longest shadow study area and outside the triangular area south of the project that will not experience shadows. The Tier 3 screening assessment further refines the area that could be reached by project shadows by looking at specific representative days in each season and determining the maximum extent of shadow over the course of each representative day.

If the third tier of analysis does not eliminate the possibility of new shadows on sunlight-sensitive resources, a detailed shadow analysis is required to determine the extent and duration of the incremental shadow resulting from the project. The detailed analysis provides the data needed to assess the shadow impacts. The effects of the new shadows on the sunlight-sensitive resources are described, and their degree of significance is considered. The results of the analysis and assessment are documented with graphics, a table of incremental shadow durations, and narrative text. The DEIS will include a detailed analysis of the No Action and Proposed Action’s impact on shadows.

#### **4.6.4 Historic and Cultural Resources**

This section examines the potential for the Proposed Action to impact historical and cultural resources with the Study Area. Section 14.09 of the New York State Historic Preservation Act (SHPA) of 1980 was established as a counterpart to the federal National Historic Preservation Act (NHPA) of 1966, and declares historic preservation to be the public policy of, and in the public interest of, the state. The SHPA created the State Register, the official list of resources significant in the history, architecture, archeology or culture of the state, its communities, or the nation. The act requires State agencies to consult with the commissioner of NYS Office of Parks, Recreation, and Historic Preservation (OPRHP) if it appears that any project which is being planned may or will cause any change, beneficial or adverse, in the quality of any historic, architectural, archeological or cultural property that is listed on the National Register or property listed on the State Register or that is determined by the commissioner to be eligible for listing on the State Register of Historic Places. It requires State agencies, to the fullest extent practicable, consistent with other provisions of the law, to avoid or mitigate adverse impacts to such properties, to fully explore all feasible and prudent alternatives and to give due consideration to feasible and prudent plans which would avoid or mitigate adverse impacts to such property. It establishes agency preservation officers for the purpose of implementing these provisions. Under Subdivision 428.2(a) of the Section 14.09 regulations, the SBPCR Project is being reviewed by SHPO in accordance with Section 106 (due to the requirement for a permit from the USACE) and is therefore exempt from Section 14.09 review.

A required step in the Section 106 process is the identification of the Area of Potential Effect (APE). Section 106 defines the APE as “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if such properties exist” (36 CFR § 800.16[d]). The APE is influenced by the scale and nature of an undertaking and may vary for different kinds of effects caused by the undertaking. Archaeological and historic architectural APEs have been delineated to take into account potential direct effects of the proposed action on archaeological resources, and potential direct and indirect effects of the proposed flood control system on historic architectural resources.

##### **Archaeological Resources**

Archaeological resources are concerned with direct effects caused by subsurface disturbances to previously undisturbed soils or minimally disturbed soils associated with the execution of project actions. The Archaeological APE includes two components: the horizontal APE, which is the footprint of proposed ground disturbance; and the vertical APE, which is considered as the depth to which the proposed ground disturbance is anticipated to extend.

The proposed actions for the SBPCR Project include alterations to First Place, Wagner Park, Pier A Plaza, the area traversed by the Battery Bikeway in the northern portion of The Battery, and along West Street, namely through installation of the utility relocations and drainage improvements. The project actions would create varying levels of ground disturbance, each of which could directly impact potential archaeological resources. As part of the DEIS analysis, a Phase 1A Archaeological Study will be conducted

to determine the potential effects on archaeological resources caused by subsurface disturbance. The DEIS will include an analysis of the No Action and Proposed Action's impact to archaeological resources.

### **Architectural Resources**

The historic architectural APE for the SBPCR Project includes all areas where the action may cause changes to land or structures and their uses, including the area of ground disturbance caused by the action, and locations from which elements of the undertaking may be visible. The project area includes both parkland and a dense urban fabric, which includes historic and contemporary commercial and residential buildings. The historic architectural APE forms a 400-foot buffer around the project area and flood alignment.

According to *CEQR Technical Manual* guidelines, historic resources study areas are generally defined as the project site plus a 400-foot radius around the Proposed Action site. Therefore, the 400-foot APE is adequate to take into account potential direct effects of the proposed flood alignment, extends through the southern portion of Battery Park City, spanning from existing high points near First Place and the Museum of Jewish Heritage, through Wagner Park and abutting Pier A Plaza, and along the north side the Battery Bikeway in The Battery, to the higher ground near the intersection of Battery Place and State Street. It also takes into account the proposed location of the interior drainage improvements, including the near surface isolation system along West Street between Battery Place and Albany Street, the tide gates on Rector Street and First Place in Battery Park City, and outside Battery Park City at Pier A Plaza; and an isolation valve in The Battery, south of the flood alignment along West Street. The proposed APE also takes into account indirect visual effects, premised upon the concept that views toward the Statue of Liberty, and New York Harbor, would be preserved. Twenty-six architectural resources have been identified within the architectural APE. The DEIS will include an analysis of the No Action and Proposed Action's impact on architectural resources.

#### **4.6.5 Urban Design and Visual Resources**

This section examines the potential for the Proposed Action to impact urban design and cultural resources with the Study Area. Based on *CEQR Technical Manual* guidance, the urban design and visual analysis considers a 400-foot Study Area around the Project Area where the Proposed Action would most likely be visible and affect the pedestrian experience and the viewsheds of aesthetic and visual resources. Due to the dense urban environment of Lower Manhattan, the Project Area is generally not visible from longer distances. However, this analysis will consider longer views from the Project Area to surrounding visual resources that are beyond the Study Area, primarily the Statue of Liberty National Monument. This analysis will address the urban design and visual resources of the Study Area for existing conditions, the no action condition, and the future with the Proposed Action. To prepare this analysis, information will be collected through field visits, visually sensitive locations and viewer groups will be identified, and duration of views will be assessed to determine any potential effects.

In compliance with NYSDEC guidelines, aesthetic resources will be identified, and a visual assessment will be conducted. Utilizing visual modeling techniques, the conditions that would be present for the Proposed Action will be assessed as to their relative visual effects from specific viewpoints and distances. This



modeling will be conducted to provide some indication as to whether any specific viewpoint might be associated with obvious positive or negative visual effects.

In assessing the significance of a visual resource impact, key considerations include “whether the project obstructs important visual resources and whether such obstruction would be permanent, seasonal, or temporary; how many viewers would be affected; whether the view is unique or do similar views exist; or whether it can be seen from many other locations.” According to the *CEQR Technical Manual*, a detailed analysis would be required if the preliminary assessment shows that changes to the pedestrian environment could be significant and adverse. This determination would happen if the following was determined:

- When the project partially or totally blocks a view corridor or a natural or built visual resource, and that resource is rare in the area or considered a defining feature of the neighborhood; or
- When the project changes urban design elements so that the context of a natural or built visual resource is altered.

The DEIS will include an analysis of the No Action and Proposed Action’s impact on urban design and visual resources.

#### **4.6.6 Neighborhood Character**

This section examines the potential for the Proposed Action to impact the neighborhood character within the Study Area. Under the CEQR guidance, neighborhood character assessments consider how elements of the environment combine to create the context and feeling of a neighborhood and how a Proposed Action may affect that context and feeling. To determine a Proposed Action's effects on neighborhood character, the elements that contribute to a neighborhood’s context and feeling are considered together. As defined by the *CEQR Technical Manual*, neighborhood character is considered to be a combination of the various elements that give a neighborhood its distinct “personality.” These elements may include a neighborhood’s land use, urban design, visual resources, historic resources, socioeconomics, traffic, and/or noise.

An assessment of neighborhood character is generally recommended when a Proposed Action has the potential to result in significant adverse impacts in any, or moderate effects on several, of the following technical areas that define a neighborhood’s character: land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; shadows; transportation; and noise. A “moderate” effect is generally defined as an effect considered reasonably close to the significant adverse impact threshold for a particular technical analysis area. When considered together, there are elements that may have the potential to significantly affect neighborhood character.

Since many of the relevant components of neighborhood character are considered in other sections of this DEIS, this section will be coordinated with those analyses. The DEIS will include an analysis of the No Action and Proposed Action’s impact on neighborhood character.

#### **4.6.7 Natural Resources**

The assessment of Natural Resources includes ground water, soils, geologic features, natural and human-created aquatic and terrestrial habitats, and areas used by wildlife. This assessment will be undertaken in accordance with SEQR and the *CEQR Technical Manual*.

The natural resources assessment will document the existing conditions or presence of the following: terrestrial ecosystems, aquatic ecosystems, habitats, wetlands, submerged aquatic vegetation, water quality, essential fish habitat and threatened and endangered species. Evaluation of the identified resources will determine if any resources will be significantly impacted, and if so, mitigation to minimize those impacts will be identified. The DEIS will include an analysis of the No Action and Proposed Action's impact on natural resources.

#### **4.6.8 Hazardous Materials**

The section examines the potential for environmental concerns associated with construction of the Proposed Action. A Phase I Environmental Site Assessment (ESA) and a Phase II Limited Site Investigation (SI) were conducted to assist in the initial evaluation of potential environmental concerns associated with the Proposed Action. The scope of these evaluations included the work associated with construction of the flood alignment, from the Museum of Jewish Heritage, through Wagner Park, across Pier A Plaza, and along the northern border of The Battery. The Phase I ESA was conducted in accordance with the scope and limitations of ASTM Standard Practice Designation E 1527-13 for ESAs. The DEIS will include an analysis of the No Action and Proposed Action's impact on hazardous materials.

#### **4.6.9 Water and Sewer Infrastructure**

This section assesses the potential for the Proposed Action to impact the infrastructure, treatment and demand for sewer and water service in the Study Area. The section provides an overview of the sewer and water service areas where the project is located, as well as the potential for the Proposed Action's impact on the physical components or the treatment/demands on these sewer and water systems. Since the Proposed Action is located within an area of the City that is served by a combined sewer system, the potential for effects on stormwater drainage are also discussed. The *CEQR Technical Manual* indicates significant effects on water and sewer infrastructure would be expected when an action results in physical changes to the infrastructure or in situations where an action will increase demands for these services or affects treatment capacities. As the Proposed Action includes changes to the drainage infrastructure, the DEIS will include an analysis of the No Action and Proposed Action's impact on water and sewer infrastructure.

#### **4.6.10 Energy**

This section examines the potential for energy impacts from the Proposed Action on existing utility infrastructure in the Study Area. According to the *CEQR Technical Manual*, the analysis of energy "focuses on a project's consumption of energy and, where relevant, potential effects on the transmission of energy

that may result from the project. The assessment evaluates energy sources typically used in a project's operation (HVAC, lighting, etc.) and includes electricity, fossil fuels (oil, coal, gas, etc.), nuclear power, hydroelectric power, and occasionally, miscellaneous fuels like wood, solid waste, and other combustible materials." The purpose of the analysis is to determine if the Proposed Action would result in a significant impact on energy supply and to ensure the City's power supply and transmission systems have the capacity to meet future demand. The DEIS will include an analysis of the No Action and Proposed Action's impact on energy infrastructure.

#### **4.6.11 Transportation**

This section examines the potential for impacts to the transportation operations including traffic, parking, transit and pedestrian facilities during the operation of the Proposed Action. According to the *CEQR Technical Manual*, interrelationships between the key technical areas of the transportation system – Traffic, Parking, Transit, and Pedestrians – should be taken into account in any assessment. Furthermore, the individual technical areas should be separately assessed to determine whether a project has the potential to adversely and significantly affect a specific area of the transportation system. The *CEQR Technical Manual* states that a preliminary trip generation assessment should be prepared to determine whether a quantified analysis of any technical areas of the transportation system is necessary. Except in unusual circumstances, a further quantified analysis would typically not be needed for a technical area if the proposed development would result in fewer than the following increments:

- 50 peak hour vehicle trips;
- 200 peak hour subway/rail or bus transit riders; or
- 200 peak hour pedestrian trips.

The *CEQR Technical Manual* also states that if the threshold for traffic is not surpassed, it is likely that further parking assessment is also not needed.

In its post-construction, fully operational phase, the Proposed Action is not expected to generate the minimum CEQR threshold of vehicular, transit and pedestrian volumes, and parking demand that would require detailed analyses. A Transportation Planning Assumptions (TPA) Memorandum documenting the assumptions regarding the proposed Traffic, Parking, Pedestrian and Transit assessment during the permanent, post-construction state of the proposed flood resiliency measures (i.e., During Operations) was prepared and submitted to NYCDOT on October 16, 2020. It was concluded in the TPA memo that no detailed Traffic, Parking, Pedestrian or Transit analyses would be required for the operational condition. NYCDOT concurred with these findings and conclusions.

Accordingly, no transportation analyses will be required for the operational phase, and no significant adverse impacts to transportation resources are expected to occur during deployment or operations of the proposed flood resiliency measures.

#### 4.6.12 Air Quality

This section examines the potential for air quality impacts from long term operation of the Proposed Action. The air quality assessment determines if the Proposed Action affects ambient air quality, which is the quality of the surrounding air.

Pollutant sources that could affect air quality include mobile and stationary sources. Mobile sources are related to vehicular traffic or other moving sources, such as vehicles, airplanes, trains, or boats. Mobile sources are generally linked to projects that add vehicles to an area or “change traffic patterns by diverting vehicles.” Long-term operation of the Proposed Action will not generate mobile sources, therefore no analysis will be required. Stationary sources are pollutants that are fixed in a location and can include “exhaust stack(s) used for the heating, hot water, ventilation, and air conditioning (HVAC) systems of a building” amongst other manufacturing or industrial processes.

It is standard practice to utilize National Ambient Air Quality Standards (NAAQS) to measure the effects of pollutant sources in ambient air. In order to protect public health and welfare from the adverse effects associated with pollutants in the ambient air, as required under the Clean Air Act (CAA) (42 USC § 7401 et seq.), the United States Environmental Protection Agency (USEPA) has established NAAQS for seven contaminants, referred to as criteria pollutants (40 Code of Federal Regulations (CFR) part 50). The criteria pollutants are carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter with diameters up to 10 µm (PM<sub>10</sub>), particulate matter with diameters up to 2.5 µm (PM<sub>2.5</sub>), lead (Pb), and sulfur dioxide (SO<sub>2</sub>). The criteria pollutants of primary concern related to the SBPCR Project are vehicle and/or construction equipment-related CO, PM<sub>10</sub> and PM<sub>2.5</sub>, and O<sub>3</sub> precursors (nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs)).

The CAA requires geographic areas to be designated according to their ability to attain the NAAQS, and these areas are categorized for each criteria pollutant as:

- Attainment Area – Areas where no exceedance of NAAQS for a specific criteria pollutant occurred.
- Nonattainment Area – Areas where exceedance of NAAQS for a specific criteria pollutant occurred.
- Maintenance Area – Areas that have previously been designated as a nonattainment area but are still in need of efforts to maintain the improved conditions in the future. Most of the CAA rules for nonattainment areas are still applicable to a maintenance area.

If an area is designated as nonattainment for a criteria pollutant under the NAAQS, state governments must develop a State Implementation Plan (SIP) and implement control plans to reduce the emission level of that pollutant.

For stationary sources, an air quality impact screening analysis will be conducted to assess the potential effects of HVAC systems at the new pavilion. This screening assessment will include a comparison of the HVAC system screening threshold charts included in the *CEQR Technical Manual*. It is anticipated that a

detailed impact modeling analysis will not be warranted. The DEIS will include an analysis of the No Action and Proposed Action's impact on air quality.

#### **4.6.13 Greenhouse Gas Emissions and Climate Change**

This section evaluates the greenhouse gas (GHG) emissions that would be generated by the Proposed Action and its consistency with the citywide and statewide GHG reduction goals under PlaNYC, New York City's long-term sustainability program, and the new state law, Climate Leadership and Community Protection Act (CLCPA), signed in July 2019.

GHG emissions are gas emissions that trap heat in the atmosphere. Under Section 202(a) of the Clean Air Act (CAA), the USEPA has recognized potential risks to public health or welfare and signed endangerment findings regarding GHG emissions. These findings reveal that the current and projected concentrations of six key, well-mixed GHG emissions in the atmosphere, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>), threaten the public health and welfare of current and future generations. The dominant GHG gas emitted by manmade sources is CO<sub>2</sub>, mostly from fossil fuel combustion.

According to CEQR, climate change is projected to have wide-ranging effects on the environment, including rising sea levels, increases in temperature, and changes in precipitation levels. Although this is occurring on a global scale, the environmental effects of climate change are also likely to be felt at the local level.

According to the *CEQR Technical Manual*, although the contribution of a Proposed Action's GHG emissions to global GHG emissions is likely to be considered insignificant when measured against the scale and magnitude of global climate, it should still be analyzed to determine a project's consistency with the City's citywide GHG reduction goal "... of reducing citywide GHG emissions by 30% below 2005 levels by 2030." This is currently the most appropriate standard by which to analyze a project under CEQR. The SBPCR Project would include one replacement pavilion building totaling no more than 10,000 square feet, well under the 350,000 square foot threshold requiring further GHG analysis. Therefore, the GHG consistency assessment will be qualitatively performed in the DEIS.

#### **4.6.14 Noise and Vibration**

This chapter examines the potential for noise and vibration from the operation of the Proposed Action to impact nearby sensitive receptors in the vicinity of the Study Area. In accordance with the *CEQR Technical Manual*, a noise and vibration assessment will be conducted to assess the potential for impacts during operation of the flip-up deployables.

The noise assessment will include a monitoring program to document baseline noise levels at the closest noise-sensitive receptors and a screening analysis to evaluate the potential for noise effects during operation of the flood gates. The DEIS will include an analysis of the No Action and Proposed Action's long term (operational) impact on noise and vibration.



#### 4.6.15 Construction

An assessment of the construction activities on the following resources will be conducted including a screening assessment of transportation, air quality, noise, historic and cultural resources, natural resources, open space socioeconomic conditions, community facilities, land use and public policy, neighborhood character, water and sewer infrastructure and hazardous materials. A preliminary assessment is conducted when construction activities are anticipated to be long-term, more than two years or when short term construction activities would directly impact a technical resource. The Project is anticipated to have a 26-month construction schedule and a preliminary assessment will be conducted.

The preliminary assessment will evaluate the Project's construction activities impact on the above-mentioned technical resources. A detailed assessment is anticipated for transportation, air quality and noise and vibration. The detailed assessment methodology is summarized in the following sections.

##### Transportation

Since construction of the Proposed Action will exceed two (2) years, a screening assessment of Construction traffic was performed to determine if detailed traffic analyses "*During Construction*" will be required. The assessment included an estimation of additional construction-related vehicle trips that would be generated on the roadway system as a result of construction activities during the peak construction phase. Based on estimates of preliminary manpower distribution over the construction duration, the peak month of construction activity was determined. The "*During Construction*" traffic impact assessment was performed for a typical weekday during the peak construction month.

The result of the screening assessment is intended to indicate whether or not 50 or more vehicular trips are expected to occur at any intersection – the threshold for detailed analyses. If the threshold is not met, no further analysis of traffic during construction will be needed. If the threshold is met or exceeded, detailed traffic analyses during construction may be required. Based on the Level 1 screening assessment described above, it was determined that the traffic volume threshold of 50 vehicles per hour will not be met or exceeded at any intersection during the AM peak arrival and PM peak departure hours during construction.

A Transportation Screening Assessment "*During Construction*" was prepared that supplements the October 2020 TPA memo. This assessment presents the results of a screening assessment that was performed to determine if detailed transportation analyses may be required During Construction. On March 19, 2021, NYCDOT agreed with this finding and conclusion that detailed traffic, parking, transit or pedestrian analyses during construction were not required for the Proposed Action.

Maintenance and Protection of Traffic (MPT) plans during construction will be prepared and submitted to NYCDOT, Office of Construction Management and Coordination (OCMC) for review and approval. These plans will identify any short-term lane closures and other measures such as temporary consolidation and/or relocation of bus stops and parking regulation changes that may be needed during construction. The Contractor will be responsible for implementing these OCMC-approved temporary measures during construction.

### **Air Quality**

The construction of the Proposed Action is expected to span slightly over two years and the major tasks are expected to occur in close proximity to one another such that there is the potential for air quality impacts to nearby sensitive receptors. Therefore, a quantitative air quality impact assessment will be conducted.

On-site construction activities are considered stationary source activities. Because these activities would occur over multiple years between 2022 and 2024, the reasonable worst-case periods for the pollutants of concern (PM, CO, NO<sub>2</sub>) will be determined throughout the duration of construction on an 'annual average' and a 'peak day' basis for PM<sub>2.5</sub>. PM<sub>2.5</sub> was selected for determining the worst-case periods, because the ratio of predicted PM<sub>2.5</sub> incremental concentrations due to construction activities is higher than for other pollutants. Therefore, estimates of PM<sub>2.5</sub> emissions throughout the construction years will be used for determining the worst-case periods for the analysis of all pollutants.

The types and number of units of construction equipment will be identified based on the construction activity schedule established for the Proposed Action. Emission factors for NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> from on-site construction engines from both nonroad equipment and trucks will be estimated using the latest EPA's Motor Vehicle Emission Simulator (Version MOVES2014b) associated with default New York County model input parameters provided by the NYSDEC. Fugitive dust emissions from construction operations (e.g., excavation, grading, and transferring of excavated materials into dump trucks) will be estimated based on EPA procedures provided in AP-42 Sections 13.2.1 and 13.2.2.

The refined dispersion model (the EPA/AMS AERMOD dispersion model) will be used to predict the reasonable worst-case condition of PM, CO, and NO<sub>2</sub> concentrations during the construction period at the sensitive receptors located within the 400-foot radius impact area of the main construction sites located within the project area.

The highest predicted concentrations will be compared with the National Ambient Air Quality Standards (NAAQS) and the NYC *de minimis* thresholds particularly for PM<sub>2.5</sub> as shown below:

- Predicted increase of more than half the difference between the background concentration and the 24-hour NAAQS; and
- Annual average PM<sub>2.5</sub> concentration increments which are predicted to be greater than 0.3 µg/m<sup>3</sup> at a discrete receptor location (elevated or ground level).

If the worst-case results show exceedances, the next level of annual and/or short-term period activities would be considered in the modeling in order to determine the duration and magnitude of potential impacts.

### **Noise and Vibration**

Construction noise will be assessed using the prediction methods outlined in the Federal Highway Administration's (FHWA) Highway Construction Noise Handbook and codified in the FHWA Roadway Construction Noise Model (RCNM). The *CEQR Technical Manual* guidelines utilize the same construction equipment reference noise levels as the FHWA RCNM. These references include maximum noise emission

levels ( $L_{max}$ ) and equipment usage factors, which are then used to predict  $Leq(1)$  noise levels at a given distance. As set forth in Chapter 22 of the *CEQR Technical Manual*, an assessment of noise from construction activities is warranted for the following reasons:

- The duration of the Proposed Action is expected to last longer than two years; and,
- Several noise-sensitive receptors are located near the proposed construction activities.

The Proposed Action is scheduled to take place during a time span of over two years for all stages of construction. Additionally, all of the major tasks are expected to occur in proximity to sensitive receptors. Therefore, a quantitative construction noise assessment will be conducted in accordance with *CEQR Technical Manual* Chapters 19 and 22 as well as the Rules of New York City Chapter 28. In accordance with *CEQR Technical Manual* Chapter 19, Section 410, operational noise criteria of 3-5 dBA over the No-Action noise level were applied to all noise-sensitive receptors. This allowable increase in noise is based on the future cumulative hourly noise level ( $L_{eq(1)}$ ) threshold of 65 dBA whereby:

- 5 dBA increase – No-Action levels are less than or equal to 60 dBA
- 4 dBA increase – No-Action levels are equal to 61 dBA
- 3 dBA increase – No-Action levels are greater than or equal to 62 dBA

Therefore, since the measured noise levels as part of the Existing Condition (or “No-Action”) are expected to be well above 65 dBA due to local traffic, project impacts during temporary daytime construction activities would be evaluated based on a 3 dBA change above existing [CEQR Chapter 19 Section 410]. No construction activities are proposed during the nighttime period (10:00 pm and 7:00 am).

#### **4.6.16 Unavoidable Adverse Impacts**

This section will describe those impacts, if any, that could not be avoided and could not be practicably mitigated.

#### **4.6.17 Growth Inducing Aspects of the Proposed Action**

This section will focus on whether the Proposed Action has the potential to induce new development within the surrounding area.

#### **4.6.18 Irreversible and Irretrievable Commitments of Resources**

This section will focus on those resources, such as energy and construction materials, that would be irretrievably committed if the project is built.

### **4.7 Mitigation**

If the Proposed Action would result in a significant adverse impact to any of the above referenced resources, measures will be identified and assessed to minimize the impacts. If any impacts can't be mitigated, they will be identified as unavoidable adverse impacts. All proposed mitigation measures will be discussed in the DEIS.

## **5 Additional DEIS Contents**

The SEQR regulations (6 NYCRR 617.9) establish the elements that must be contained in a DEIS. In addition to those discussed above, the following elements will be included in the DEIS.

### **5.1 List of Preparers**

A list of the authors responsible for the preparation of the DEIS document and analysis will be included in this section.

### **5.2 References**

The complete list of the reference documents used to prepare the technical sections and perform the analysis will be included in this section.

### **5.3 List of Acronyms**

A list of acronyms referenced in the DEIS will be included in this section.

### **5.4 Appendices**

Appendices will include all technical reports, project related correspondence and relevant forms and other documentation as appropriate.