

Executive Summary

A. PROJECT IDENTIFICATION

The proposed project is the creation of the Brooklyn Bridge Park, an approximately 85-acre park that would stretch along approximately 1.3 miles of Brooklyn's East River waterfront from Jay Street in the north, to Atlantic Avenue in the south. The park would dramatically transform a largely underused and publicly inaccessible waterfront into an important new public amenity that would serve the borough and the region. The proposed park would be created from those areas encompassing Piers 1 through 6 and related upland property, the existing Empire-Fulton Ferry State Park and New York City Department of Parks and Recreation (DPR)-operated Main Street Park, and the Con Edison property on John Street east of the Manhattan Bridge ("John Street Site"), creating a continuous waterfront esplanade along the entire site. The park would include landscaped areas and ecological habitats; recreational facilities for sports such as soccer and basketball; a marina for recreational boating; protected waters for kayaking; and a limited amount of development essential to the park's maintenance and operation, including retail, restaurant, residential, and hotel space. The development is also intended to enliven the site, attract visitors, and enhance security. The proposed project is the result of collaboration between New York State and New York City under the aegis of the Brooklyn Bridge Park Development Corporation (BBPDC), a subsidiary of the New York State Urban Development Corporation (UDC), doing business as the Empire State Development Corporation (ESDC).

The anticipated approvals required for the proposed project include:

- Approval of the General Project Plan by BBPDC; adoption of the General Project Plan and State Environmental Quality Review Act (SEQRA) Findings by the ESDC pursuant to the UDC Act;
- Authorization to conduct in-water construction activities under Articles 15 and 25 of the Environmental Conservation Law by the New York State Department of Environmental Conservation (NYSDEC);
- Possible NYSDEC Beneficial Use Determination for use of dredged materials on site;
- Coastal zone certification by the New York State Department of State;
- Conveyance of the Empire Stores property by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) to the BBPDC;
- Federal permits from the United States Army Corps of Engineers (USACOE) under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act;
- New York City approval for the closing of Joralemon Street at Furman Street to vehicular traffic;
- Potential disposition of New York City-owned parcels pursuant to the Urban Development Corporation Act; and

Brooklyn Bridge Park FEIS

- Approval for the disposition of the John Street Site may be required from the New York State Public Service Commission.

Aside from funding and the previously identified disposition of New York City-owned parcels, no other city actions are anticipated because ESDC is expected to override local zoning and the requirements of the City Map, and the proposed project is not subject to the city's Uniform Land Use Review Procedure (ULURP).

This Draft Environmental Impact Statement (DEIS) assesses the proposed plan for Brooklyn Bridge Park in accordance with SEQRA. ESDC is the lead agency for SEQRA review. The assessment methodology generally follows the guidelines of New York City's 2001 *City Environmental Quality Review (CEQR) Technical Manual*.

B. PURPOSE AND NEED

The proposed project would respond to a number of needs, as follows:

- The primary need to turn a prominent and declining segment of Brooklyn's waterfront into a public asset. The project area, with its beautiful views, large land and pier areas, and miles of water's edge should no longer remain moribund and isolated from the vibrant communities that surround it.
- The need to make the waterfront available for public access and use. The proposed project acknowledges that the extraordinary features of this segment of waterfront would be best preserved for the broadest public use. The piers on the site provide a unique opportunity to provide recreational space with access to the water and spectacular views of the harbor, the Manhattan skyline, and the Brooklyn skyline. As such, the proposed project is expected to attract people from New York's many diverse neighborhoods who would take advantage of the broad range of recreational opportunities available in the park.
- The need to create a project that will be financially self-sustaining. Under the terms of the Memorandum of Understanding (MOU) that was signed by Governor Pataki and Mayor Bloomberg in May 2002, creating Brooklyn Bridge Park, this must be accomplished by including in the project sufficient revenue-generating uses to cover the cost of maintenance and operations of the park.
- The need to provide more publicly accessible open space in Brooklyn. Brooklyn is second only to Manhattan for its lack of open space, with 547 residents per acre of available open space. No major park has been built in the borough since Prospect Park in the 1860s. The provision of an 85-acre park would help to fill this need.
- The need to restore some of the natural habitat that once lined all of Brooklyn's shores.
- The need to acknowledge the key role this segment of waterfront has played in New York's history and to preserve its historic resources.

As described below, the proposed project has been designed to address these compelling public needs and to create a waterfront park and experience that encompasses a range of recreational activities serving Brooklyn and the city as a whole. The proposed array of uses responds to community comments and suggestions, particularly with respect to the need for maritime elements, recreational boating opportunities, and access to the water.

C. DESCRIPTION OF THE PROPOSED PROJECT

PROJECT AREA

The project site comprises the East River waterfront area from Pier 6 at the foot of Atlantic Avenue to just north of the Manhattan Bridge (see Figure S-1). Currently, it contains a mix of active warehousing, storage, open space and recreation, and commercial uses. Other uses include vacant structures and areas, surface parking, and buildings used by the New York City Department of Environmental Protection (DEP) and Office of Emergency Management (OEM).

DESCRIPTION OF THE PROPOSED PLAN

As shown in Figures S-2 through S-4, the plan provides for a continuous park extending along the East River from the foot of Atlantic Avenue to Jay Street, north of the Manhattan Bridge. The entire park would comprise approximately 85 acres. The plan, as currently proposed and described below, forms the basis for the impact studies in the EIS.

The proposed park would offer the public unparalleled access to the water, making innovative use of boardwalks, floating bridges, and canals that would wind along the water's edge. It would also include rolling hills, marshland, and abundant recreational opportunities with multi-purpose playing fields, playgrounds, shaded ball courts, open lawns, and 12 acres of safe paddling waters. There would be pockets of natural landscape on some of the parkland to attract birds and other wildlife. The park's pathways would increase the water's edge from 2.4 miles to 4 miles and provide pedestrian connections both to the water and to the full range of the park's experiences.

In addition, a relatively small portion of the park would contain revenue generating development, including hotel, residential, retail and restaurant uses, ancillary office space, parking and, possibly, research and development facilities. These uses would attract people to the park and provide critical funding to sustain the maintenance and operation of the park. The development proposed to support park maintenance and operations and would take up approximately 8 acres, or about 10 percent of the total park area.

The entrances to the proposed park would be defined by three urban junctions, located, from south to north, at the foot of Atlantic Avenue, at Fulton Ferry Landing, and in D.U.M.B.O. (Down Under the Manhattan Bridge Overpass). The proposed park is designed so that at each of these entrances the visitor would have access to a wide range of amenities nearby and would not have to walk long distances to arrive at features such as playgrounds and lawn areas.

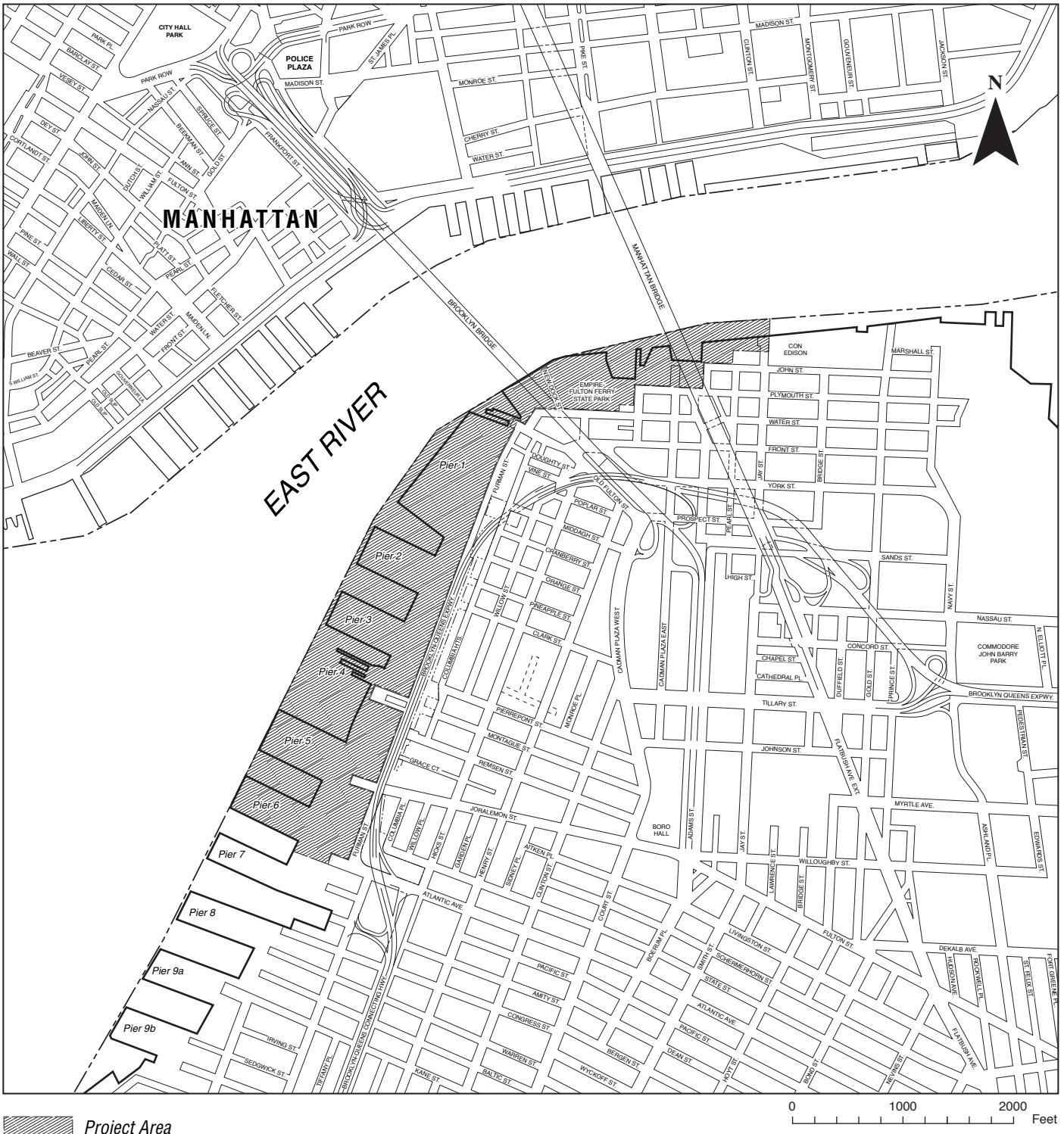
The proposed park is envisioned as five interconnected areas. From the south, these are: the Atlantic Avenue Gateway including Pier 6 and its upland; Piers 5, 4, 3, and 2 and their uplands; Pier 1 and Fulton Ferry Landing; the Interbridge Area; and North of the Manhattan Bridge and the Manhattan Bridge Gateway. The park program contains elements available throughout the park ("parkwide elements") and specific components for each of the five subareas, as described below.

PARKWIDE ELEMENTS

Waterfront Access and Circulation

Several elements of the proposed plan encourage interaction with the water, both visually and physically. The waterfront area across from Pier 4 could be transformed into a beach for

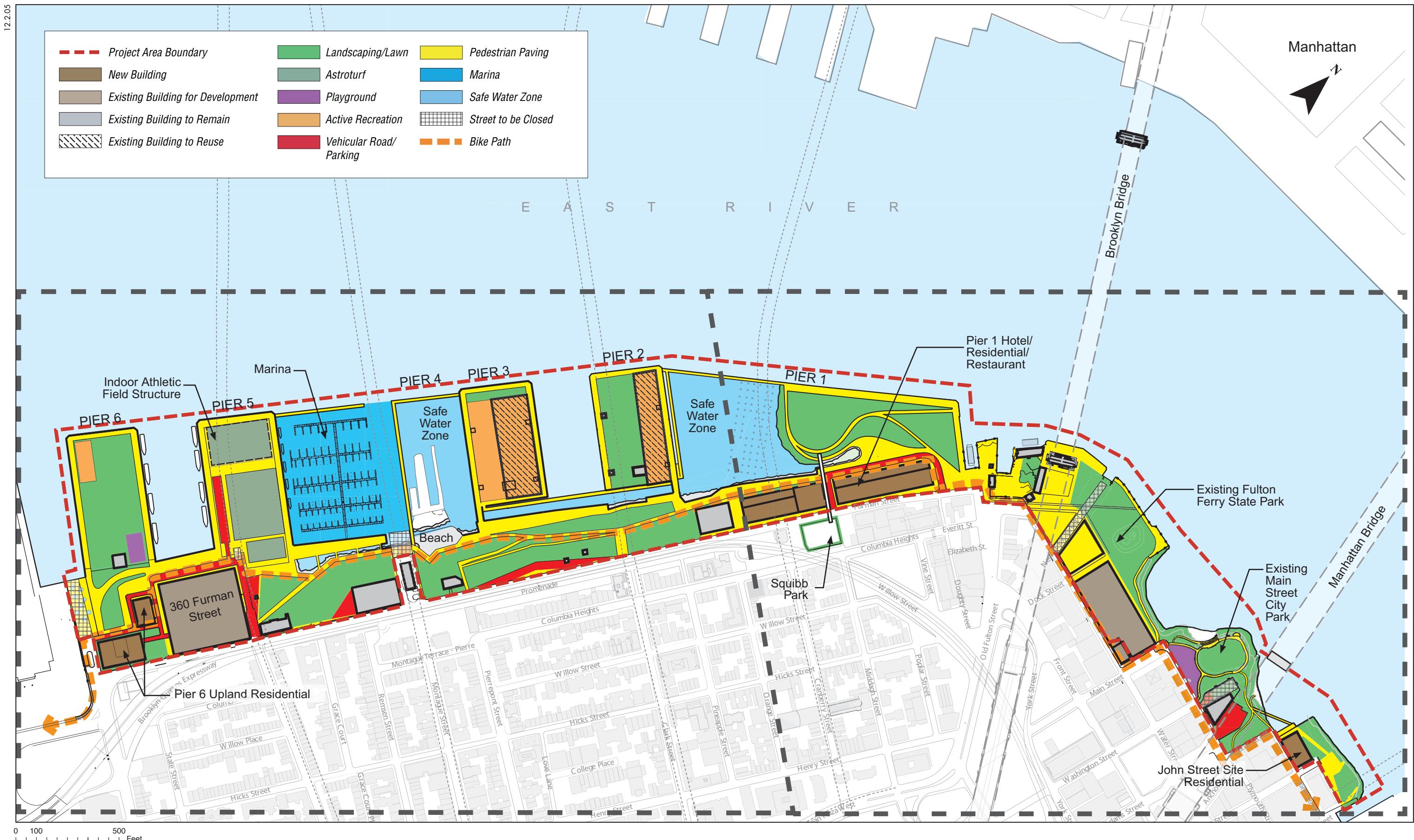
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BROOKLYN BRIDGE PARK

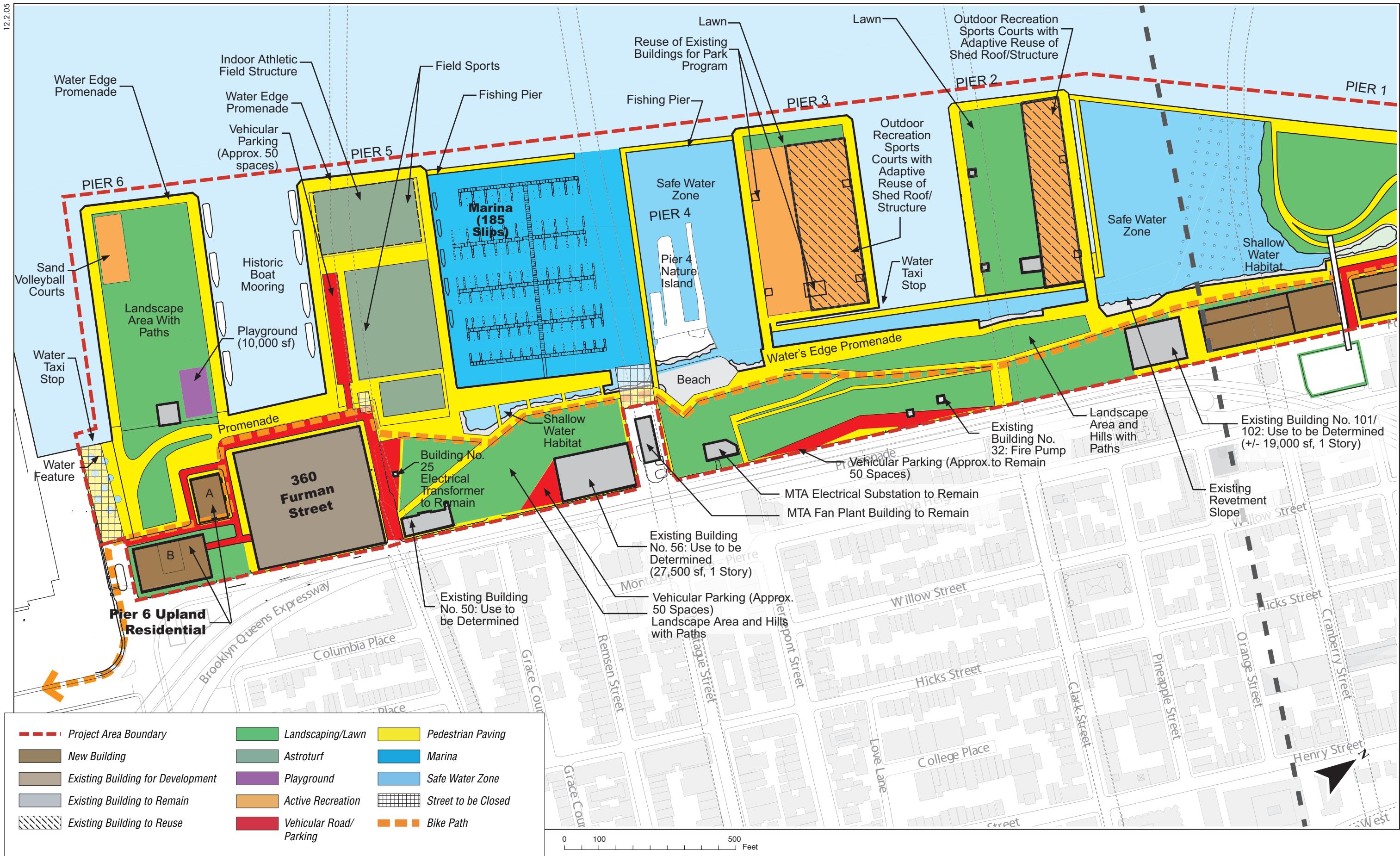
Project Location

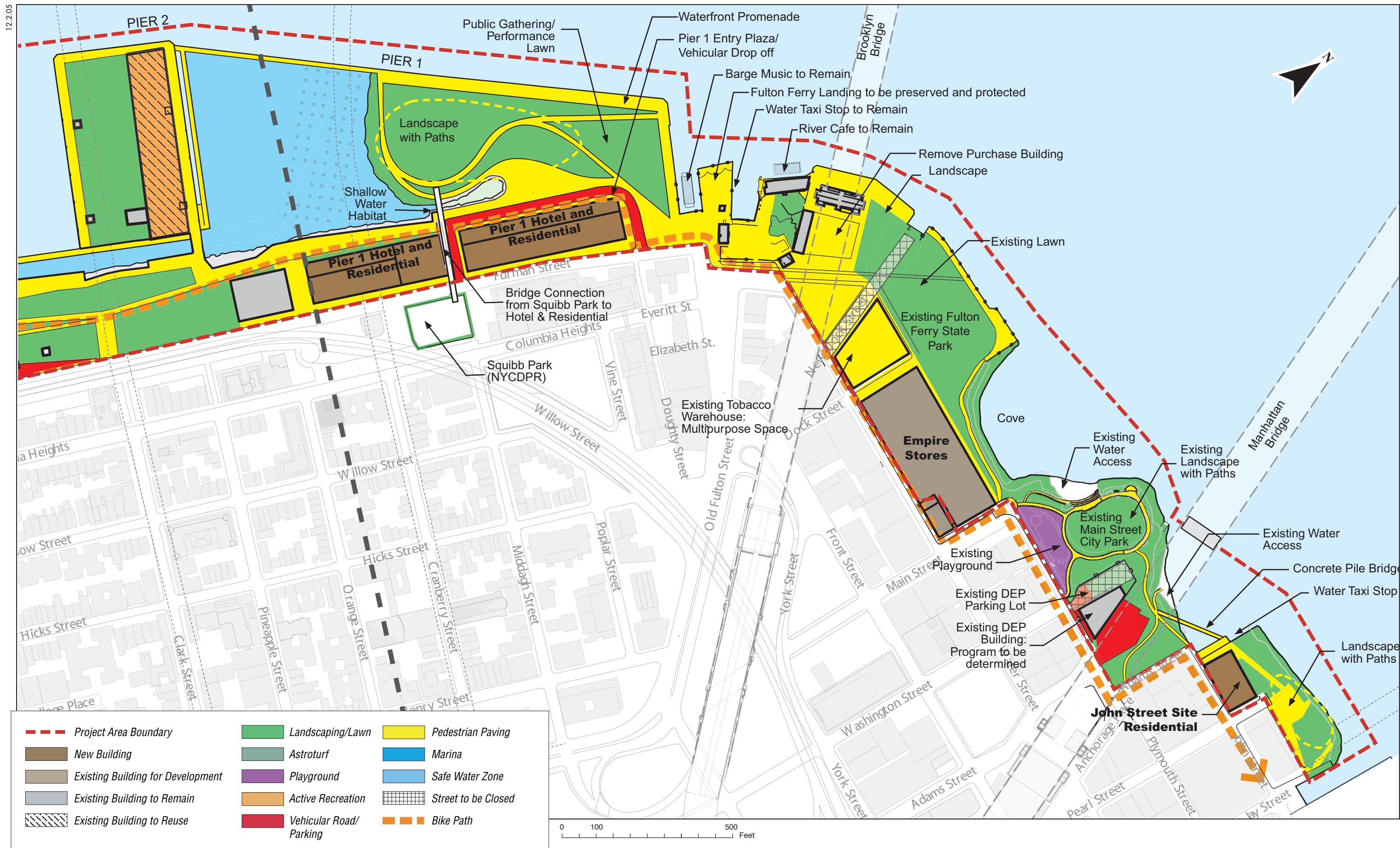
Figure S-1



Proposed Site Plan: Overview

Figure S-2





Proposed Site Plan: Northern Portion

Figure S-4

Brooklyn Bridge Park FEIS

launching kayaks and canoes. The area between Piers 1 and 6 would feature a waterfront promenade extending roughly along the bulkhead line (see Figure S-5). This paved promenade would serve as a main pedestrian thoroughfare running through the park and would allow views of the water, piers, harbor, and the Manhattan skyline. Through a series of sloping ramps and floating and fixed walkways, park users would also be able to experience the water at sea level. This water-level access would allow for fishing, additional park circulation, and other water-dependent activities.

In the Interbridge Area, existing access to the water (in Empire-Fulton Ferry State Park, the Main Street Park, and Fulton Ferry Landing) would be extended to connect with the areas to the east and south. East of the existing Main Street Park, new walkways and an esplanade would be created, as well as a bridge linking the park to the area north of Adams Street.

“Safe Water” Zones and Water-Dependent Uses

From the southern edge of Pier 4 to the southern edge of Pier 1 two connected “safe water zones” are planned (see Figures S-2 and S-3). These would provide approximately 12 acres of secure water area for non-motorized boats including kayaks, canoes, and paddle boats. Marine structures would define the area, serving to attenuate waves from passing boats. Floating boardwalks would be arranged to contain the boaters and kayakers and provide additional wave attenuation within the safe water area. Connecting the two safe water zones, between Piers 3 and 4 and between Piers 1 and 2, would be a channel, created along the upland of Piers 2 and 3 by cutting away the existing pier structure from the upland portion of the pier. This “canal” would allow kayaks or other small non-motorized craft to navigate from the area between Piers 1 and 2 to the area south of Pier 3. Piers 2 and 3 would be connected across the canal to the upland areas of the park by an overhead pedestrian walkway that would also provide access for emergency vehicles. The remnants of Pier 4 would be left in place and used as a nature preserve. At Pier 1, some timber piles would be left in place following removal of the pier deck to preserve a physical record of the site’s industrial past.

Outside the safe water zones, the area between Piers 5 and 6 would provide slips for the mooring of historic or educational vessels. Between Piers 5 and 4 would be an approximately 185-slip marina for sailboats and powerboats. The marina would provide limited boating services, including utility hook-ups and fueling.

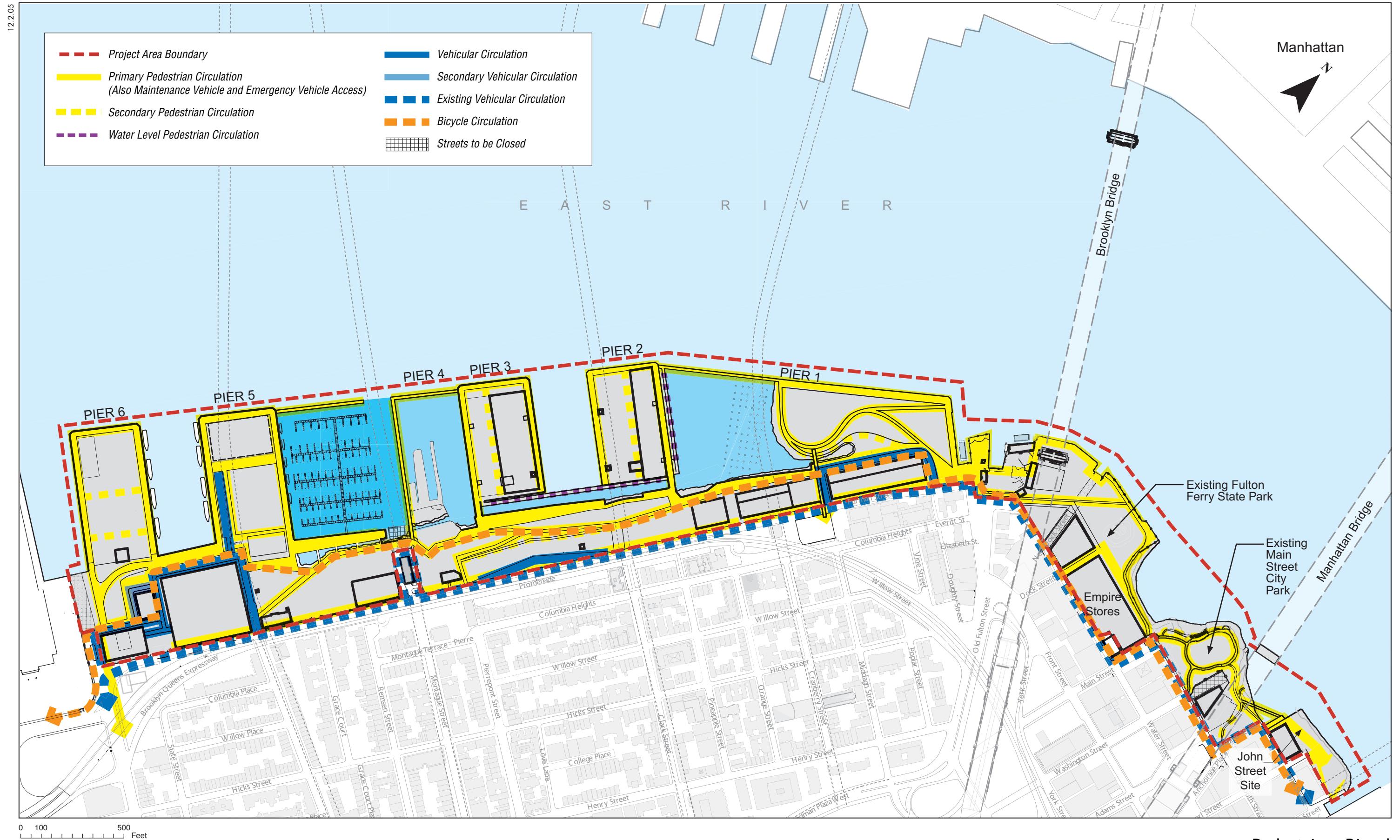
Water taxi stops would be located along the south side of Pier 6, at the slip between Piers 2 and 3, at the north side of Pier 1, and near the John Street site, allowing waterborne transportation options for park users and others coming to the project site.

Bikeways

A designated bikeway, coordinated with the Greenway Initiative effort, would be integrated into the park from Pier 1 to Pier 6 (see Figures S-2 through S-4). Entry for cyclists to the park would primarily be at Old Fulton Street and Atlantic Avenue. At Fulton Ferry Landing, the bicycle route connects north to the proposed Greenway route along Water Street.

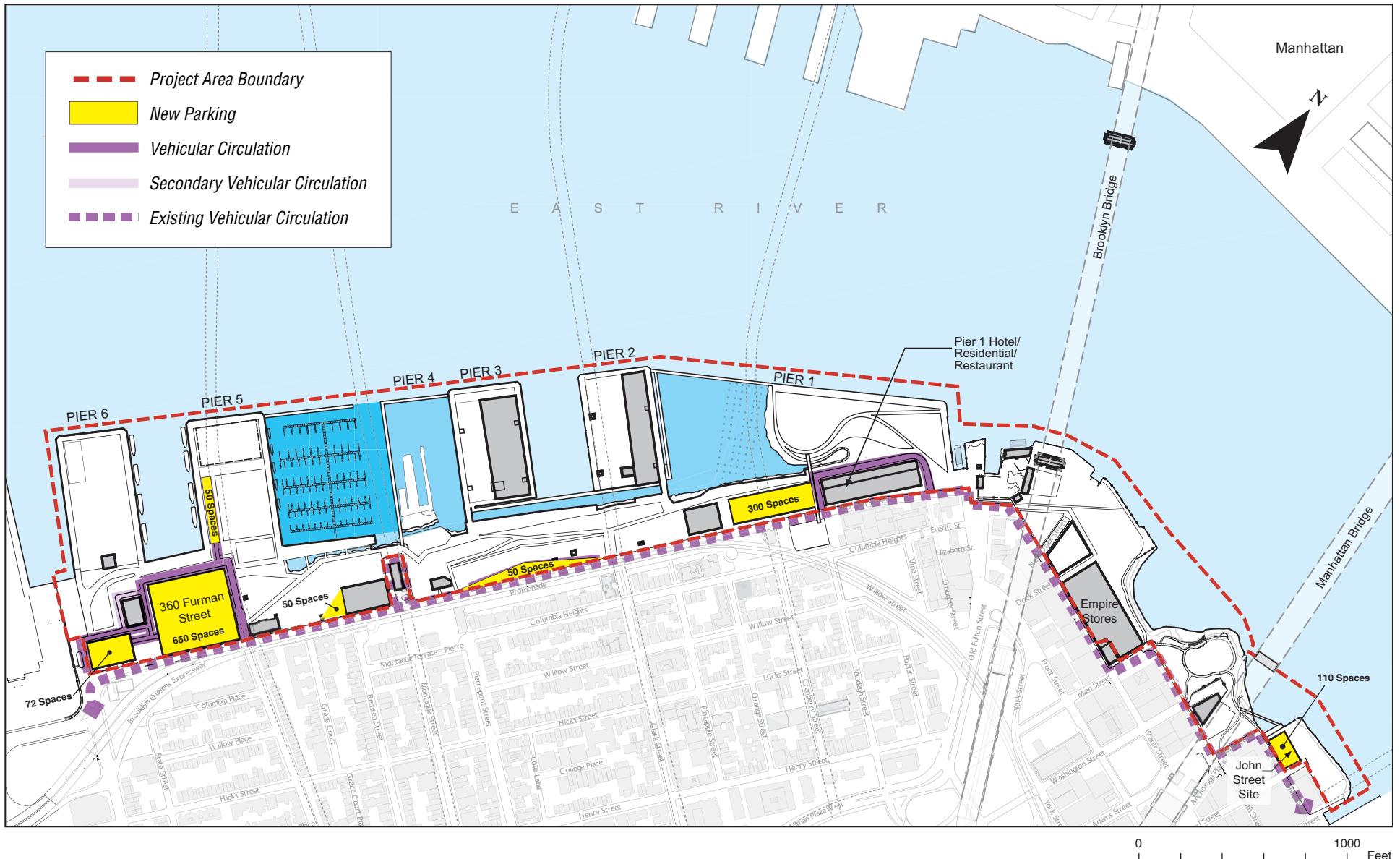
Vehicular Access and Parking

Vehicular access and parking would be needed for both park visitors and for users of commercial and residential buildings on the project site (see Figure S-6). New streets would be created within the park to allow access from Furman Street into the hotel, restaurant and residential uses in the park. These streets, which would be constructed and maintained by



Pedestrian, Bicycle, and Vehicular Circulation

Figure S-5



BBPDC, would provide a clear boundary between park spaces and development parcels. Subject to approval by the City of New York, Joralemon Street would be closed to vehicular traffic at Furman Street to minimize park-generated traffic along Joralemon Street; it would remain open for pedestrians.

In the cold weather months, park users would be permitted to drive onto and park at Pier 5, which would allow field sports teams and their supporters to reach the playing fields directly by vehicle and provide for drop-offs and pick-ups.

Parking would be provided in parking areas to be created within the park boundaries, and in nearby off-street parking facilities (within approximately ¼-mile). Overall, there would be an estimated 1,283 parking spaces within the park boundaries, with approximately 651 spaces in 360 Furman Street (of which 500 would be for public use), approximately 72 spaces on the Pier 6 uplands, approximately 300 spaces for Pier 1 development, approximately 50 spaces at Pier 5, approximately 100 spaces within the park boundary along Furman Street at the eastern edge of the uplands between Piers 2 and 5, and approximately 110 spaces at the John Street Site.

Renewable Energy

The park design would incorporate new technology to provide renewable energy, such as solar energy, to the extent practicable. Photovoltaic cell installations could provide a significant amount of the energy demand of Brooklyn Bridge Park, so consideration is being given to combining photovoltaic cells and possibly hybrid streetlights in the energy budget for the project. The photovoltaic cells would be mounted on the roofs of the remaining piersheds.

Habitat

An important design goal is to establish the maximum number of sustainable, functioning habitats in the Brooklyn Bridge Park. Natural habitats would include dunes on Pier 6; coastal forest on the Pier 1 and its upland, and the uplands of Piers 4 and 5; shrubland on Piers 1, 2, and 3 and on the uplands of Piers 5 and 6; a wildflower meadow on the uplands on Piers 2 and 3; marsh and shallow water habitats on and adjacent to Piers 1 and 4 and between the Brooklyn and Manhattan Bridges; and freshwater swale and wetlands near Piers 2 and 3.

Building and Material Reuse

The proposed plan envisions the reuse of a number of existing buildings located throughout the park site. For example, the existing Port Authority sheds located on Piers 2 and 3 could be structurally modified and transformed into shade structures, or modified to provide areas of sheltered active recreation. The plan would also reuse existing maintenance buildings for park maintenance and operations.

Sound Attenuation

The Brooklyn-Queens Expressway, a busy highway that is cantilevered over Furman Street, and the Brooklyn and Manhattan Bridges—the latter also containing a major subway route—create high noise levels in the project area. The park designers had to work within the constraints created by the high noise levels of this nearby elevated roadway and the bridges. The 20- to 30-foot-high hills in the uplands between Piers 2 and 5, described below, would be designed specifically to create protected pathways through the park in which, at some locations, the noise of the highway would be substantially reduced. Additionally, existing and proposed buildings within the park would buffer some of the roadway noise. Noise levels outside the park, including along the Promenade, would not be noticeably increased by the hills or the new buildings in the park.

Brooklyn Bridge Park FEIS

BROOKLYN BRIDGE PARK SUBAREA PLANS

Atlantic Avenue Gateway and Pier 6

Atlantic Avenue, a major Brooklyn arterial roadway, slopes down a hill towards the water, where it would serve as the southern entrance to the proposed park. The park design calls for this entrance to serve as a gateway to the park, combining spectacular views and convenient recreation. The topography would afford a clear view of the water as one approaches the park. The park itself would be visible in the distance as one passes beneath the Brooklyn-Queens Expressway. The upland area of Pier 6, located at the foot of Atlantic Avenue, would provide all the amenities of a neighborhood park including playgrounds, lawns, access to the waterfront, and recreational opportunities.

Moving farther away from the upland, a “beach barrier” with dunes is proposed on Pier 6 to take advantage of this location’s sunny, windy environment and well-drained structure. Active programming, such as playgrounds and recreation-beach volleyball could be located on Pier 6. Vegetation, including a variety of native shoreline plants, and topographical forms would provide shelter from the wind. An existing concrete masonry building at the edge of the pier that abuts the upland area could be preserved and used as a visitor’s center and comfort station.

Piers 5, 4, 3, and 2 and Related Uplands

Promenade and Uplands. As described above, a waterfront promenade would extend from the Atlantic Avenue entrance all the way to the Fulton Ferry Landing. In the south, the promenade would bridge over a newly created tidal inlet. The promenade would meander slightly, sometimes directing views to the water, at other times directing views to Manhattan. A storm water collection system would criss-cross the promenade and would provide natural irrigation to the overall planting and landscape program. Some of the existing upland buildings would be reused for park maintenance and operations. A shed on Pier 2 or 3 would be used to store non-motorized boats. An existing building on the park uplands could also be used for this activity.

The upland area between Piers 2 and 5 would have an elevated and sloped topography that would reduce noise from the Brooklyn-Queens Expressway and provide views of the harbor from the uplands. These slopes would rise from 20 to 30 feet in height, creating hills that would run parallel to the waterfront and the Brooklyn-Queens Expressway. The slopes would rise gently on the waterfront side of the hills, creating broad open lawns suitable for seating and picnicking. Without obstructing the view from Brooklyn Heights, steeper slopes facing the Brooklyn-Queens Expressway would include denser plantings and would provide scenery that would create a strong image of the park from the roadway. Approximately 100 parking spaces would be created within the park along Furman Street at the eastern edge of the uplands.

Pier 5. The proposed plan includes three outdoor fields on Pier 5, of which any of the following sports could be played: soccer, football, rugby, cricket, lacrosse, or field hockey. In addition, it is contemplated that the field at the western edge of Pier 5 could be housed in an indoor structure. This structure would provide year-round sports courts while maintaining the transparency of a lightweight structure. Pier 5’s perimeter would provide a continuous, water’s edge esplanade from which park patrons might fish or sit or walk along.

Pier 4. A shallow water habitat area would be created in the vicinity of Pier 4 and the adjacent railroad float transfer bridge. This area would be interesting to look at and protected through its physical isolation from the rest of the park. In the area of Pier 4, a new floating boardwalk would be created that would connect to the larger circuit of walkways and provide a place for launching

kayaks and bird-watching. On the upland area adjacent to Pier 4, there could be a new beach that would connect to the larger circuit of walkways. The beach would provide direct access to the water and serve as a launching point for non-motorized boats, but swimming would not be permitted.

Boating Channel. A marine structure that connects Piers 2 and 3 to the upland would be removed and replaced with narrow bridges, thus creating an open water channel through this portion of the park. New floating walkways along this channel would provide a circulation network within the park, and their position below the level of the pier deck would allow park visitors to explore and discover the previously obscured marine infrastructure. Transition walkways would be created to provide ADA access and strong connections from the floating boardwalks back to the existing pier platforms. The boating channel would also connect the safe kayaking zone from the Pier 1 basin to the basin between Piers 3 and 5.

Piers 2 and 3. Portions of the warehouse sheds on Piers 2 and 3 would be reused to house active recreation courts, perhaps including volleyball, basketball, and handball. By modifying the existing building facades and roofs, these sheds would provide essential shading at a fraction of what it would cost to build brand-new shade structures. In addition to conserving park dollars, the reuse of these structures is consistent with the park's commitment to both environmental sustainability and the continuity of the industrial history of the site. In conjunction with planting, these architectural measures may also be used to enhance microclimatic wind shelters. The remainder of the pier area would be transformed into large programmatically flexible civic lawns and waterfront promenades.

Pier 1 and Fulton Ferry Landing

Pier 1. Despite its name, the majority of Pier 1 is a peninsula of solid ground that projects into the East River rather than a pile-supported platform. The depth and weight-bearing capacity of this land offers one of the few opportunities on this site for elevated topography, large trees, and infrastructure-heavy park uses at the water's edge. A hill on Pier 1 would momentarily obscure the large-scale views to the harbor and provide a contrasting moment of enclosure within the park. At the hill's apex, the longer views would again be revealed, but even more so, with views into the park and out towards the harbor, Governor's Island, the Statue of Liberty, Manhattan, and the Brooklyn Bridge. An esplanade would run along the portion of the pier fronting on the East River, and shallow water habitat zones would be established along the southern pier edge. A restaurant would also be on the pier.

By removing the pile-supported deck portion of Pier 1 and providing additional walkways, the project would create a new two-sided waterfront promenade and provide a large basin for kayaking. Some of the exposed piles would remain as historical remnants that would be interesting from the upland and the water.

The removal of the National Cold Storage buildings would allow for a pedestrian bridge over Furman Street that would provide an entrance to the park from the adjoining Brooklyn Heights neighborhood. The pedestrian bridge would link the hill on Pier 1 to Squibb Park. Squibb Park, east of Furman Street between Cranberry and Middagh Streets, is an existing city park just outside the project area. It occupies an isolated terrace between Brooklyn Heights and Furman Street. With only one available entrance, this dead-end park is perceived as dangerous and is currently closed but is expected to be reopened to the public in the future. The use of this park would be enhanced and the urban connections between Brooklyn Bridge Park, and the

Brooklyn Bridge Park FEIS

neighborhoods to the east would be strengthened by building a bridge over Furman Street from Squibb Park to Pier 1.

Fulton Ferry Landing. A large civic plaza is proposed at the base of Fulton Ferry Landing to provide a generous public gathering space at the park entrance. The Fulton Ferry Landing, which would serve as another major gateway to the project area, would retain most of its existing features. Changes envisioned include simplified vehicular access and relocation of some parking.

In order to create a scenic Fulton Ferry gateway and improve physical and visual connections within the proposed park, the Purchase Building would be removed. The building, at Water and Dock Streets under the Brooklyn Bridge anchorage, is located at a pivotal point of the project site and currently blocks critical views and the physical circulation corridor planned for the park. Visibility and circulation within the park would be vastly improved by the proposed removal of the Purchase Building. Although it is located within the Fulton Ferry Historic District (State/National Register, New York City Historic District), the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and the New York City Landmarks Preservation Commission (LPC) have determined that the Purchase Building is not a contributing element of their respective historic districts. The notable public benefit to the park with respect to views and programming outweighs the benefits of retaining the building.

This major park entrance demonstrates a powerful sequence of landmark, gateway, and connecting views: the unmistakable form of the Brooklyn Bridge pier beckons from afar, leading to arrival at the Fulton Ferry Landing, at which point further views through the park are revealed to the Manhattan Bridge, the East River, and Fulton Ferry State Park.

Interbridge Area

The area between the Brooklyn and Manhattan Bridges is already largely developed as parkland, containing both Empire-Fulton Ferry State Park and the new Main Street Park at the foot of Main Street, both of which would be incorporated into the proposed project. Nearby, the restored exterior shell of the former Tobacco Warehouse, which may require other improvements, may be used to house a walled garden, café, or space for arts groups. Near these structures, at the water's edge, the existing open water cove would be retained to allow park visitors to reach the shoreline. The existing DEP building adjacent to the Manhattan Bridge at Washington Street may be reused for community, cultural, educational, or other uses.

North of the Manhattan Bridge

The northernmost precinct of Brooklyn Bridge Park is at a bend in the river and is bordered by a large electrical transformer to the east. Given the existing circulation network, it would be necessary to travel city streets to get from this area to the remainder of the park. To form a connection that allows for the internal continuity of the park, a pedestrian bridge across the cove underneath the Manhattan Bridge is proposed. The creation of a hill at this major park entrance would result in one of the most spectacular harbor views within the park, encompassing the Manhattan and Brooklyn Bridges to the south, and the East River to the north. To facilitate river-viewing, the mounded site would feature planting, paved area, site furnishings, and lawn.

DEVELOPMENT COMPONENTS

Requirement that the Park be Financially Self-Sustainable

Under the terms of the 2002 MOU between the state and city that created the project, the park is required to be financially self-sustaining, i.e., the park's annual maintenance and operation budget must be funded through revenue generated from within the park. The annual maintenance and operations costs for the park are preliminarily projected to be approximately \$15.2 million, in 2004 dollars. This budget assumes a park of approximately 85 acres, and is comprehensive, only excluding administration costs for special events, costs for special programming, and costs for major structural repairs, which would be handled through a maintenance reserve.

Identification of Development Parcels

Once the annual maintenance and operation costs of the park were calculated, there were several additional steps necessary to establish a development program. First, the planning team identified possible sites for new buildings. The challenge for locating proposed new development on the site is three-fold:

- The potential locations of new buildings on the project site are severely restricted by the view planes and viewsheds across the site; any new buildings would have to be located so as not to obstruct views of the harbor and the Lower Manhattan skyline from the Brooklyn Heights Promenade and to protect viewsheds from the foot of Atlantic Avenue and Old Fulton Street and from the base of the Manhattan Bridge.
- Development, in order to be successful, must be accessible, and the opportunities for such access in the project site are essentially limited to Atlantic Avenue, Old Fulton Street and D.U.M.B.O. Thus the search for development locations was focused in these three areas.
- Development should maximize parkland while minimizing building footprints. Planning for development in the project area included the reuse of existing structures.

Selection of Appropriate Land Uses

In the next step in the analysis, the team considered a range of land uses and tested them against three major criteria: feasibility, compatibility with park uses, and the ability to maximize parkland while creating the necessary income stream for park maintenance and operation. The initial range of uses analyzed recreational uses, public parking, office, local retail, destination (large format) retail, housing, and hotel. These uses were screened as follows:

- Recreational uses, such as an ice hockey facility or an Olympic-sized swimming pool, would require government subsidy and would not be able to generate any revenue for the park. These uses were eliminated as infeasible.
- An examination of demand for monthly and daily parking within a reasonable distance of the park site found that there would not be enough demand to justify the construction of additional parking structures as a revenue-generating use for the park.
- The project site was found to be infeasible for office use for several reasons: (1) the site is not located near enough to public transportation; (2) since the location is not competitive with more central office locations it could not command rents commensurate with new construction; (3) office uses are only active during business hours, and are therefore not considered to be park compatible; and (4) the footprints of modern office buildings are large, and development of this use would therefore not maximize the area available for parkland.

Brooklyn Bridge Park FEIS

- Local retail, ancillary to other proposed development, could be accommodated in the park; however, this location is too far from population centers to generate the foot traffic necessary to support a significant amount of stand-alone local retail.
- Large format (“big box”) retail, at a size adequate to produce a revenue flow for the park, was found to require substantial acreage including parking, to generate large amounts of automobile and truck traffic, and to be generally incompatible with park use.
- Although big box retail would not be appropriate for the park, a concentration of retail and restaurant uses in the existing Empire Stores buildings was considered suitable, because it would add population to the park entrance and be contained in existing structures.
- Hotel and residential uses were found to be feasible, compatible with park use, and able to maximize parkland. These uses, which could be accommodated in a relatively small area of parkland (including a large existing building), have the advantage of being active seven days a week, even in winter. They would provide patrons for the park and eyes on the park, as well. Finally, there is demand for both of these uses in this location, so that they would be able to produce the revenue flow required for park maintenance and operation. These uses are the most economically effective in terms of meeting the primary goal of having the greatest possible amount of open park space and leaving at least 80 percent of the total area to remain as open public park and recreation space.

The final step in the analysis was to create the smallest program that could prudently support the annual maintenance and operations of the park. The park planners established a revenue budget based on development budgets for each site. Components of the development budget included comparable land sales and construction costs and financing assumptions based upon industry standards. It should be noted that the revenue analysis was completed in late 2004 and all assumptions, including land values, construction costs, and financial assumptions, are based on data available at that time.

Development Program by Park Subarea

Overall, the park’s development components would include approximately 1,210 units of housing, 225 hotel rooms, 151,200 square feet of retail uses, 86,400 square feet of restaurants, cafes and other eateries, 30,000 square feet of meeting space, 36,000 square feet of offices, 128,400 square feet for research and development or educational uses, and 1,183 parking spaces. The uses proposed for each of the park’s subareas are described below. A breakdown of park components is provided in Table S-1.

Uplands of Pier 6. Two new buildings—approximately 95 feet and 315 feet in height—would frame this major entrance to the park. The visibility of the new structures would be diminished from the surrounding area due to changes in elevation. The smaller building, located closer to Furman Street, is expected to include retail use on the ground floor. The new housing units would introduce a critical mass of residents so that the site would benefit from neighborhood “eyes” on the park. An estimated 72 parking spaces would be provided for residents and the public.

Uplands Between Piers 5 and 6. Separated from the park by a new roadway, 360 Furman Street, a former industrial building, would be converted to residential use as part of the proposed project. Up to two stories could be added to the building’s main roof, increasing the main roof height from 146 to 169 feet. The building would accommodate up to 500 residential units, ground floor retail and/or restaurant uses, and an estimated 651 parking spaces for building residents and the public.

Table S-1
Summary of Proposed Park Components

Park Components	Development (sq. ft. or residential units)	Acreage
Sports courts, fields, and playgrounds	==	8.5
Safe water areas	==	12.1
Lawns, plazas, and landscaped areas	==	36.7
Esplanades and paths	==	14.5
Vehicular roads and parking	==	3
Park-related buildings	==	2.2
Development program	==	8.2
TOTAL	==	85.2
Description of Development Program		
Area In Existing Buildings	==	4.9
Area In New Buildings	==	3.3
Residential	1,210 units	
Hotel	225 rooms	
Retail	151,200 sf	
Restaurant/Café	86,400 sf	
Office	36,000 sf	
Other	213,700 sf	
Parking	1,283 spaces	
Notes:	The proposed marina, which is approximately 8 acres, is not included in the 85.2 acre total, nor is it included as part of the safe water area or commercial development.	
Sources:	Brooklyn Bridge Park Development Corporation, Michael Van Valkenburgh Associates.	

Uplands of Pier 1. The deteriorated and long-vacant National Cold Storage buildings would be demolished. That site would accommodate a vibrant mix of development, including a restaurant, 150 residential units and an approximately 225-room hotel in two buildings, one of 55 feet and one of approximately 110 feet in height. This hotel/residential complex could include meeting rooms and a spa, as well as up to 300 parking spaces. Approximately 17,500 square feet of floor area would be occupied by restaurant/café uses. Limited vehicular access would be permitted to the development areas on uplands. The streets would be used to delineate the urban edge and provide services and drop-off zones.

Fulton Ferry Landing and Interbridge Area.

Empire Stores: Under the proposed project, the now-vacant Civil War-era Empire Stores warehouses would be restored as a mixed-use project and would house approximately 50,000 square feet of restaurant uses, approximately 70,000 square feet of retail, 36,000 square feet of office space, and 128,000 square feet of educational or research and development uses. Approximately 3,000 square feet of ground-floor retail space would be included on this site.

North of Manhattan Bridge—John Street Site.

To advance the development of this area as a major point of entry into the park, a parcel along John Street between Adams and Pearl Streets (the John Street Site) would include an approximately 170-foot high residential building with approximately 130 units and up to 110 parking spaces; it could also accommodate ground-floor retail uses.

Revenue Analysis

The proposed development program for the park would provide the necessary revenues and reserves to fund park maintenance and operations. Return to the park would be maximized by combining upfront payments from developers of the revenue-generating uses with park maintenance fees from apartment owners and tenants. The upfront and other one-time payments, including purchase fees from the developers, mortgage recording tax, and payments in lieu of sales taxes (PILOSTs) would form an “endowment”—a reserve and investment fund for the park. Income from investing the endowment plus income from ground rent payments, payments-in-lieu-of-real estate taxes (PILOTs), and other annual fees and taxes would create an annual flow of revenue, which would be used to pay for park maintenance and operation.

In the early years, as the park and the development components are constructed, the annual income flow from the development is not projected to entirely cover the cost of park maintenance and operations. This would occur for at least two reasons: first, the park would be on line before all the development would have been completed; second, tax incentive programs available in the early years would depress the annual revenue during that period. Therefore, it is anticipated that a draw on the capital reserves in the endowment would be necessary to cover that shortfall. However, it is expected that there would be enough money in the reserves to cover that draw.

Once the tax incentives phase out, it is anticipated that endowment investment and revenue flow would become adequate to support the maintenance and operation of the park, with some funds left over to begin replenishing the capital reserves, approximately 20 years after the start of park construction.

In an effort to try to reduce the development program, the park planners considered lower levels of development and the associated cash flows, in particular the program for the Reduced Density alternative presented in Chapter 20, “Alternatives.” As reported in that chapter, under this option, which would reduce the size of residential development on the Pier 6 uplands, the capital reserve could not recover from lack of income in the early years, and the park would run out of money approximately 10 years after it is built.

The development program contained in the proposed plan represents the minimal level of development that is required to prudently support the annual maintenance and operations of the park based on the analysis undertaken in 2004. However, the actual development will emerge as the result of a competitive developer selection process, and therefore development may be smaller, if market conditions permit it, because the value of land and other factors may well be different from those assumed in this analysis. Therefore, for purposes of the EIS studies, the specific development program described herein applies, but it is also understood that the ultimate program may vary somewhat from the proposed plan. Given that the EIS studies establish an “envelope” of maximum impact and the MOU stipulates the development footprint may not exceed 20 percent of the park, it is also understood that the actual program cannot exceed that of the proposed plan without further environmental analysis, and that the ultimate program may be smaller than what is studied in the EIS. The financial information for the maintenance and operations budget and revenue analysis for the proposed project, the Reduced Density Alternative, the Modified Design Alternative, and the Modified Pier 6 Residential Building Alternative is included in Appendix C of this FEIS.

D. THE FUTURE WITH THE PROPOSED PROJECT

LAND USE, ZONING, AND PUBLIC POLICY

LAND USE

Project Site

Overall, there would be no significant adverse impacts on land use on the project site, because the proposed project would replace vacant and underutilized land with recreational facilities and residential and commercial uses. These proposed uses would be compatible with, and in support of, the land uses found in the surrounding area and would represent a dramatic improvement compared to the future without the project.

Study Area

No major changes to land use in the surrounding study area are expected as a result of the proposed project. The proposed project would complement the predominantly residential land uses in the adjacent upland neighborhoods. The proposed project's open spaces would serve the residential neighborhoods of Brooklyn Heights and Cobble Hill and provide needed recreational space for residents. The mixed-use neighborhoods of D.U.M.B.O. and Vinegar Hill, which are expected to continue their recent trend toward increased residential use, would also benefit from new recreational opportunities for residents. In addition, the residential buildings included in the proposed project would be compatible with the residential character of the adjoining neighborhoods. Restaurants and retail uses included in the proposed project would draw residents of the adjacent neighborhoods to the park during both daytime and evening hours. Together, the components of the park would introduce active uses along the waterfront (particularly in the area between Old Fulton Street and Atlantic Avenue) and enliven an area that is now underutilized and largely inaccessible. Overall, the proposed project would serve to connect surrounding communities to the waterfront and to each other while enhancing the overall area, and there would be no significant adverse impacts on land use in the study area.

LAND USE REGULATIONS: ZONING AND CITY MAP

Aspects of the proposed project would not conform to the project site's M2-1 and M3-1 zoning with respect to land use, since the proposed park, residential, and hotel uses would not be permitted under these zoning districts. However, the proposed project would not involve changes to zoning on the project site because ESDC anticipates an override of local zoning with consent by the City. The proposed project would comply with the Special Scenic View District mapped across much of the project site by ensuring that views of the Manhattan skyline from the Brooklyn Heights Promenade would not be obstructed.

The land uses included in the proposed project are consistent with uses and underlying zoning in the adjacent upland neighborhoods. The recreational, commercial, residential, and other proposed uses would be more compatible with the adjacent residential neighborhoods than are the light industrial uses in the future without the proposed project. Although new buildings on the project site would increase bulk in certain parts of the park and create a building that would not conform to underlying zoning regulations, the total floor area across the entire project site would be within that permitted by the M2-1 and M3-1 zoning districts' maximum FAR of 2.0. Overall, there would be no significant adverse impacts with respect to zoning in the project site or the study area.

Brooklyn Bridge Park FEIS

To facilitate park use, ESDC and BBPDC expect to override requirements regarding the City Map for portions of the following streets that lie within the project site: Washington Street, New Dock Street, Atlantic Avenue, Joralemon Street, and Montague Street. The portions of Washington Street, New Dock Street, and Atlantic Avenue within the project site would be incorporated into park entrances. The portions of Joralemon and Montague Streets that are within the project site would be part of the circulation system of the proposed park. The override of the City Map for these streets would not alter traffic circulation in the neighborhood and therefore would not cause a significant adverse impact or affect operation of neighboring roadways.

PUBLIC POLICY

The proposed project would be consistent with the public policies that apply to the site. It would fulfill the mandate from Governor Pataki and Mayor Bloomberg, as embodied in the MOU, to create a financially self-sustaining waterfront park. The residential and hotel uses are proposed to meet this requirement; they would generate the funds necessary to support the annual maintenance and operations of the park, while also meeting the condition in the MOU that no less than 80 percent of the project area be reserved as open space and dedicated as parkland; the plan as proposed would use approximately 10 percent of the park area for this development use. Because the proposed park would be financially self-sustaining, it would not have to compete with other parks for scarce governmental resources.

In addition, the proposed project is consistent with the city's policies focused on improving public access to the waterfront. With the exception of two open spaces between the Brooklyn and Manhattan Bridges, all of the waterfront area within the project site is currently inaccessible to the public. The proposed project would result in continuous public waterfront access from Atlantic Avenue to Jay Street. Therefore, the proposed project would be consistent with public policies relating to the project site.

SOCIOECONOMIC CONDITIONS

The proposed project would result in no significant adverse socioeconomic impacts on residents or businesses in the study area. Because there is no residential population or housing located on the project site, the proposed project would not result in any direct residential displacement. The proposed project would directly displace three businesses and an estimated 221 workers that are currently located on the project site. However, these businesses represent less than 1 percent of total study area employment, do not offer products or services that are unique or critical to the local or regional economy, and could likely relocate elsewhere in New York City.

The proposed project would also not result in significant adverse indirect residential displacement in any of the three subareas. In general, household incomes, housing values, and rental rates are already high compared to Brooklyn and New York City, and a trend towards development of market-rate and luxury housing is evident. This indicates that the study area does not contain a substantial population at risk of indirect residential displacement, and that the housing that would be introduced by the proposed project would represent a continuation of an existing trend rather than the introduction of a new one. That there are some low-income households living in the study area despite a strong trend towards market-rate housing and high-income households indicates that most of these low-income households are living in housing units such as public housing or rent protected units, which are shielded from market pressures and therefore would not be affected by the proposed project. Any potential indirect residential

displacement would not lead to a change in neighborhood character and therefore would not result in a significant adverse impact.

The proposed action would not result in significant adverse indirect business displacement. According to the *CEQR Technical Manual*, projects that introduce less than 200,000 square feet of commercial development or less than 200 residential units would not have the potential to cause indirect business displacement. The proposed project would introduce less than 200,000 square feet of commercial development in each of the three subareas (which conform more closely to the $\frac{1}{4}$ -mile to $\frac{1}{2}$ -mile study areas recommended in the *CEQR Technical Manual* than the larger Brooklyn Bridge Park study area does) and therefore would not have the potential to cause indirect business displacement in this regard. The proposed project would introduce more than 200 residential units in the Brooklyn Heights subarea. However, the additional residential units would not jeopardize existing commercial properties in the subarea. Brooklyn Heights is already a well-established residential area with high commercial rents; the residential units would reflect, rather than alter or accelerate, the trend of residential development in the study area.

Finally, the proposed project would not adversely affect the operation or viability of any specific industry. The commercial and industrial uses along Piers 1–6 consist of active warehousing, storage, vacant structures and areas, surface parking, and a building occupied by DEP. The proposed project would not affect any particular category of business and has no potential for significant adverse impacts.

The proposed project would have a positive economic effect on New York City and State, generating jobs, employee compensation, economic output, and tax revenues for the City and State. It is estimated that the ongoing operation of the proposed project would generate 1,469 permanent full- and part-time jobs on the project site. As a result of that economic activity, another 922 jobs would be created indirectly in New York State, with approximately 552 of those jobs located in New York City. Total employee compensation and economic output generated in New York State as a result of the proposed project (including direct, indirect, and induced) is estimated at \$101.4 million and \$260.4 million, respectively. Of those amounts, \$76.3 million in employee compensation and \$224.2 million in economic output would occur within New York City. In addition, operation of the proposed project is estimated to generate approximately \$18.1 million annually in non-property related tax revenues for New York City, the Metropolitan Transportation Authority, and New York State.

COMMUNITY FACILITIES

SCHOOLS

The proposed project would introduce 1,210 market-rate housing units to Region 2 of Community School District (CSD) 13. This number of units would introduce an estimated 327 elementary and 121 intermediate school students into this region of the school district by 2012. Elementary schools in CSD 13 as a whole would operate at 70 percent capacity in 2012, with 4,525 available seats and a total enrollment of 10,290. Therefore, increased enrollment attributable to the proposed project is not expected to result in significant adverse impacts to public elementary schools. Total intermediate/middle school enrollment in the region would therefore rise to 1,760, with a surplus of 792 seats (69 percent capacity). Intermediate/middle schools in CSD 13 as a whole would operate at 80 percent in 2012, with 986 available seats and a total enrollment of 4,033. Therefore, increased enrollment attributable to the proposed project

Brooklyn Bridge Park FEIS

is not expected to result in significant adverse impacts to public intermediate schools. In addition, the provision of the nearby park as an educational resource would be a beneficial aspect of the proposed project for the intermediate/middle school population.

PARK SECURITY

Because the park would not directly affect a police facility, detailed impact studies of municipal police service are not called for. However, with respect to current security plans, the park is expected to be open to the public between 6 and 1 AM and most likely will be policed by dedicated Brooklyn Bridge Park security personnel, including police officers and park rangers. The number of officers and rangers will fluctuate based on the season and day of the week; preliminary planning calls for a daily staffing level ranging from 5 to 11 persons.

Park patrols would be done on foot, by bicycle or by vehicle depending upon the time of day and season. Security staff would be supplemented by recreation, gardening, and maintenance staff, who would be in radio communication, as needed, with police personnel. In addition to park patrols, security surveillance would be provided via installation of security camera at key public facilities.

In the event of an emergency or a major event it is expected that park security would call on the New York Police Department (NYPD) for support.

OPEN SPACE AND RECREATIONAL FACILITIES

The proposed project would provide approximately 77 acres of open space and dramatically increase the recreational opportunities along and adjacent to the waterfront. Although the project would add new worker and residential populations to the area, the amount and character of new open space created would result in substantial beneficial effects to open space conditions and would not result in significant adverse open space impacts.

SHADOWS

There would be no significant adverse shadow impacts as a result of the proposed project. The proposed Brooklyn Bridge Park's new buildings at the uplands of Piers 1 and 6 and on the John Street Site would cast new shadows on some nearby public open spaces (including existing open spaces and the proposed park) and historic resources in the study area. However, according to the assessment criteria of incremental shadows outlined in the *CEQR Technical Manual*, none of the shadows cast by the proposed project would have a significant adverse impact on any of these open spaces or historic resources because of their short durations, limited occurrences in certain periods of the year, and small coverage areas.

The largest shadow increments from the proposed project on an open space resource would occur during the winter, when shadows are longest because of the sun's position in the sky. On the December analysis day, the shadow from the building on the John Street Site would cover a portion of the waterfront open space to the north. The landscape design for this portion of the park would account for these conditions. Since this open space would be created as part of the proposed project, the shadows that would be cast on the open space are not considered a significant adverse impact.

HISTORIC RESOURCES

ARCHAEOLOGICAL RESOURCES

The project area has been determined to be sensitive for historic-period archaeological resources including landfilling devices, and former building foundations. Since construction of the proposed park could affect potential archaeological resources, subsurface archaeological investigations would be undertaken to determine the presence or lack of presence of archaeological resources. Any testing measures, and, if appropriate, mitigation measures, would be developed and implemented in consultation with OPRHP. The consultation process respecting archaeological resources would occur in accordance with a Letter of Resolution among the New York State Empire State Development Corporation (ESDC), Brooklyn Bridge Park Development Corporation (BBPDC), OPRHP, and the developer of the Empire Stores.

ARCHITECTURAL RESOURCES

The project area contains several prominent architectural resources, including the Brooklyn Bridge, Manhattan Bridge, and portions of the Fulton Ferry and D.U.M.B.O. historic districts. The proposed project would positively affect these historic resources by improving their visibility and context and by rehabilitating and adapting for reuse the Civil War-era Empire Stores located within the Fulton Ferry Historic District. The conversion of this vacant storehouse to mixed commercial use is being undertaken in consultation with OPRHP, with the rehabilitation being undertaken in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

Another proposed improvement includes opening view corridors to the Brooklyn and Manhattan Bridges. This is achieved in two locations. First, the proposed demolition of the Purchase Building would remove a powerful barrier between the north and south portions of the proposed park. In comments dated June 21, 2005, OPRHP determined that the Purchase Building is not a contributing element of the Fulton Ferry Historic District since it post-dates the historic district's period of significance. OPRHP also determined it is not individually eligible as a result of alterations. A study of the Purchase Building prepared by Beyer Blinder Belle in 1999 further asserts that the building is inconsistent with the historic commercial character of the Fulton Ferry area, composed of 19th and early 20th century buildings, and that there are better examples of buildings designed in the International and Art Deco styles. The 1977 New York City Landmarks Preservation Commission (LPC) designation report for the Fulton Ferry Historic describes all the properties within the boundaries of the district but does not distinguish between contributing and non-contributing buildings. Even if it were assumed that the Purchase Building was a contributing element to the historic district, its removal would not constitute a significant adverse impact to historic resources, for the same reasons OPRHP determined the Purchase Building to be non-contributing and not eligible for the Registers. Nevertheless, due to concerns raised regarding the potential architectural significance of this building, the demolition would be treated in the same manner as is if it were to have a significant adverse impact and therefore, mitigation in the form Historic American Buildings Survey (HABS) documentation would be undertaken and submitted to an appropriate public repository.

Second, the former National Cold Storage buildings, located in the Pier 1 upland, would be demolished, opening up views across the project site. These buildings, which are badly deteriorated, have been determined to be S/NR-eligible by OPRHP. Although it has been determined that a revenue-producing development program cannot be accommodated in these

Brooklyn Bridge Park FEIS

buildings, and that an attempt to adapt the buildings to new uses would result in significant adverse impacts to these historic structures, the demolition of these buildings would constitute a significant adverse impact on architectural resources. OPRHP has determined that the overall plan for the park, which otherwise positively affects architectural resources, would to a large extent mitigate the demolition of this historic resource. Additional mitigation measures would be developed in consultation with OPRHP, as stipulated in the Letter of Resolution, described above.

In addition, to avoid inadvertent damage to surrounding historic buildings in the project area and study area during park construction, a construction protection plan would be developed and implemented in consultation with OPRHP. This plan would provide for protective measures for historic buildings located within 90 feet of project construction.

URBAN DESIGN AND VISUAL RESOURCES

PROJECT SITE

In general, the proposed park would be a dramatic improvement to the Brooklyn waterfront compared to the future without the proposed project, and is expected to greatly enhance the visual character of the project site. Vacant land and buildings, industrial uses, and parking lots on the project site would be replaced with a major new waterfront park with passive and active recreational facilities and residential, retail, and hotel uses. The area south of Old Fulton Street would be converted from an underutilized, industrial waterfront into a vibrant waterfront that is more accessible and varied. Views from the project site of visual resources, including the Manhattan skyline and the Brooklyn and Manhattan Bridges would be enhanced.

The proposed project would involve considerable changes to building types and forms as well as their arrangement and use on the project site. The residential building to be constructed on the John Street Site would be similar in height to existing buildings in D.U.M.B.O. and would be smaller than the 23-story residential building to be constructed in the neighborhood by 2012 in the future without the proposed project. At approximately 315 feet in height, the residential building to be constructed on the upland area of Pier 6 would be taller than other buildings on and near the project site. However, the 146-foot-high building at 360 Furman Street, the tower of which reaches a height of approximately 224 feet, would be immediately adjacent to the proposed building and sets a context for taller buildings in the area.

The massive industrial scale of the piersheds would be reduced and replaced with attractive open spaces and recreational uses. The proposed hotel, retail, and restaurant uses are expected to complement the existing residential uses in the study area and those proposed for the project site. Overall, there would be no significant adverse impacts to the urban design of the project site, as the proposed uses would represent a dramatic improvement compared to the future without the project.

The proposed project would enhance the project site's views to visual resources, and would highlight the visual resources existing within the project site itself. Views north along Furman Street to the Brooklyn pier of the Brooklyn Bridge would be improved by the removal of deteriorating buildings along this street; views south along the street would now include the new pedestrian bridge from Squibb Park to the Pier 1 hill, the hills between Piers 2 and 5, the new residential buildings behind 360 Furman Street, and the hotel/residential complex on Pier 1. Views to Lower Manhattan would be opened up in the area south of Old Fulton Street and west of the newly-created hills, through the removal of the majority of the piersheds. Views to and around the Brooklyn Bridge would be improved by the removal of the Purchase Building. The

removal of the vacant National Cold Storage buildings would allow for the creation of a pedestrian bridge over Furman Street linking the park to the Brooklyn Heights neighborhood.

STUDY AREA

The uses proposed for the project site would be consistent or compatible with existing uses in the study area, and the residential uses proposed at the park's edges would serve to lessen the barrier that the Brooklyn-Queens Expressway creates around the area south of Old Fulton Street. The new uses would greatly increase the level of streetlife in this area during both daytime and evening hours. The two new residential buildings to be constructed adjacent to 360 Furman Street are outside of the area protected by the Brooklyn Heights Scenic View District. The smaller building, at 8 stories, would be considerably shorter than 360 Furman Street and therefore would not stand out. Although the 30-story building would be taller than other buildings in the immediate area, the building at 360 Furman Street, a portion of which reaches a height of 224 feet, sets a context for taller buildings. Views from the Brooklyn Heights Promenade are expected to be enhanced by the proposed project. Views within D.U.M.B.O. would not change as considerably as views within, and to, the area south of Old Fulton Street. Views west along Water and Plymouth Streets to the Brooklyn pier of the Brooklyn Bridge would be improved with the removal of the Purchase Building.

Views from the Brooklyn and Manhattan Bridges and the East River Esplanade would be greatly improved with the project. Instead of a mostly industrial view of piersheds and parking fields, views would now be of landscaped open spaces interspersed with structures. The new buildings adjacent to 360 Furman Street and on Pier 1 and the John Street site would be visible in these views; however, the taller buildings of D.U.M.B.O. and Downtown Brooklyn are also present in these views, and from these perspectives the new buildings would blend in with the larger Brooklyn skyline. The change in views would be most notable from south of the South Street Seaport, where currently views toward the project site focus on the massive scale of the piersheds on Piers 1 through 6. Overall, the proposed project would not have significant adverse impacts on visual resources or significant views, as the project would represent a dramatic improvement in the visual character of the project site.

NEIGHBORHOOD CHARACTER

As described above, the proposed project would have beneficial impacts on land use, open space, and visual resources, and it would not create significant adverse impacts on community facilities. With the exception of the proposed demolition of the former National Cold Storage buildings, the proposed project would positively affect architectural historic resources, in part by opening up greater views of the Brooklyn Bridge and Manhattan Bridges. The proposed project would also retain the Tobacco Inspection Warehouses in Empire-Fulton Ferry State Park and rehabilitate the Civil War-era Empire Stores into a mixed-use development, restoring an historic building that has been vacant for approximately 50 years. The removal of the former National Cold Storage buildings would allow better physical access to the proposed park and would create new views of the East River and the Manhattan skyline from the Brooklyn Heights neighborhood to the east of the project site. Furthermore, removal of the buildings would allow for a pedestrian bridge over Furman Street that would provide an access point to the park from Squibb Park in the adjoining Brooklyn Heights neighborhood. Measures to mitigate the adverse impact resulting from the demolition of the buildings would be developed in consultation with OPRHP, and their removal would not adversely affect neighborhood character.

Brooklyn Bridge Park FEIS

The vehicle trips generated by users of the park and its associated retail, hotel, and residential buildings would result in significant traffic impacts requiring mitigation at a number of intersections. While two of the impacts would remain unmitigated, both would occur at locations that are already heavily trafficked, so overall changes in traffic conditions would not substantially alter the area's character.

If approved by the City of New York, the proposed project would include the closing of Joralemon Street to vehicular traffic at Furman Street, but would remain open for pedestrians. This closure would minimize park-generated traffic along Joralemon Street. To support the proposed closure, the scenario with Joralemon Street remaining open to vehicular traffic at Furman Street was also examined. Although this scenario would increase vehicle trips along Joralemon Street, it would not result in significant adverse traffic impacts. Whether Joralemon Street remains open or is closed, there would not be a significant adverse impact on neighborhood character by reason of traffic impacts.

The proposed project would draw a large number of pedestrians to the area, the greatest concentrations of which would likely occur in the vicinity of park entrance locations along Old Fulton Street, Atlantic Avenue, Joralemon Street and Columbia Street. The increased pedestrian activity would not result in significant adverse impacts and would enliven areas of the project site that are lacking in street life.

While noise levels in the park would be above the 55 dBA L₁₀₍₁₎ CEQR criterion for "acceptable" noise conditions, they would be comparable to noise levels in a number of existing parks in New York City that are also located adjacent to heavily trafficked roadways, including Prospect Park, Riverside Park, Hudson River Park, and Empire-Fulton Ferry State Park. The proposed project would include hills on the uplands between Piers 2 and 5, which would provide notable noise abatement within this section of the park. The hills would not cause any increases in noise levels along the Brooklyn Heights Promenade and nearby residences due to reflected sound. Increases in noise levels at the other locations analyzed would not be perceptible.

WATER QUALITY AND NATURAL RESOURCES

The proposed project is not expected to result in any significant adverse impacts on water quality or natural resources. Specifically:

- Passive recreation areas in the flood plain, such as the waterfront promenade, shallow water habitat and new landscaped areas would not affect flooding in or near the project area. The increase in vegetated area in the upland portion of the park between Piers 1 and 6 would benefit the floodplain by promoting absorption of rainfall and decreasing the amount of surface runoff in the project area. Design of new structures on the uplands of Piers 1 and 6 would minimize potential floodplain impacts and losses due to flooding.
- The fixed-pile-supported walkways proposed across littoral zone tidal wetlands in the cove under the Manhattan Bridge would not impede movement of tidal waters and so would not result in significant adverse impacts on tidal wetlands. The proposed shoreline improvements from modifications to the relieving platforms would actually benefit wetland resources by creating intertidal wetland habitat along the newly exposed shoreline between Piers 1 and 5.
- The proposed project would institute a Stormwater Pollution Prevention Plan (SWPPP) during construction and operation, an Integrated Pest Management (IPM) strategy, and stormwater management to minimize impacts on water quality and aquatic biota from discharge of stormwater during construction and operation of the park.

- Operation of the proposed marina and use of wave fences would not result in significant adverse impacts on water quality, fish, or macroinvertebrates within the project area. The wave fences would be designed to minimize disturbance to circulation and sedimentation processes, and water depths in the marina would be sufficient to minimize the potential for increased suspended sediment from boat activity. Contaminants accidentally released as a result of marina operation would be flushed rapidly. Implementation of best management practices to minimize environmental impacts of marinas presented in the 2003 NYSDEC publication, “Environmental Compliance, Pollution Prevention, and Self-Assessment Guide for the Marina Industry,” would further reduce the potential for marina-related impacts.
- Dredging (5,000 to 8,000 cubic yards) would be limited to certain areas in the safe water zone and the marina. Impacts from this minimal dredging activity would be temporary, localized, and not significant.
- The proposed project would meet the objective of the proposed plan in resulting in no net increase in overwater coverage. The formation of a pile field through removal of a portion of the Pier 1 platform, the creation of new shallow-water habitats, and the replacement of existing bulkhead and relieving platforms with riprap would increase the diversity of aquatic habitats in the project area, benefiting both fish and macroinvertebrates and Essential Fish Habitat (EFH)—those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity (16 USC § 1802(10)). In addition, the endangered shortnose sturgeon (*Acipenser brevirostrum*), which would only be expected to occur as occasional transients in the project area, would not be adversely affected by the proposed project.
- Marine turtles and aquatic mammals (e.g., seals) would only be expected to occur within the project area as occasional transient individuals. The floating walkways would contain barriers to limit the opportunity for seals to haul out and interact with park visitors or their pets. Therefore, the proposed project would not result in a significant adverse environmental impact on these fauna.
- The proposed project has the potential to benefit the state-endangered peregrine falcon by increasing prey availability through the creation of natural habitats that would attract additional birds to the project area. The project would not affect the availability of a nesting location that is occasionally used within the project area, nor would construction activities affect nesting success.
- The proposed project would create a diverse complex of terrestrial habitats throughout the site which would significantly benefit birds and other wildlife—particularly grassland species, whose habitat is currently limited within the New York metropolitan region. The creation of shall-water habitats has the potential to increase foraging habitat for waterfowl, wading birds, and shorebirds.

HAZARDOUS MATERIALS

Development of the Brooklyn Bridge Park would involve excavation and disturbance of the existing on-site soil. Groundwater may be encountered as part of construction activities. These activities could temporarily increase exposure pathways for construction workers and workers on nearby sites to contaminants in the subsurface. A Phase I Environmental Site Assessment revealed that most of the park site has historically been used for shipping and warehousing, primarily of food products, with some manufacturing and light industrial operations in the upland areas and on the adjacent blocks to the east.

Brooklyn Bridge Park FEIS

Subsurface sampling found that most of the soil throughout the site contains above-background concentrations of contaminants that are associated with the importation of poor quality urban fill material containing ash or other wastes for past grading and site development activities. Known petroleum underground storage tanks were identified at the maintenance garages on the project site and on the property north of the Manhattan Bridge. Soil exhibiting elevated concentrations of petroleum-related contaminants above recommended cleanup guidelines was found at some of these locations. Other localized areas of soil contamination from former on-site operations not identified by the subsurface investigations already conducted at the site may also be present.

The analyses of the groundwater samples collected did not indicate the presence of significant wide-spread contamination. However, trace levels of contaminants were identified in localized areas near underground storage tanks or former maintenance facilities where the use of petroleum and/or solvents was common.

Based on the age of the existing buildings on the site, it is likely that asbestos-containing materials, PCB-containing electrical equipment, and lead-based paints might be present. Such materials at the subject property that may be disturbed by renovation/demolition activities will be managed in accordance with proper regulatory protocols prior to commencing such activities. Any identified asbestos remaining at the property will be regularly inspected and maintained under a site-specific Operation and Maintenance (O&M) Plan to prevent deterioration.

The environmental conditions identified at the project site during the environmental investigations would be remediated prior to initiating operation of the proposed park and providing public access to the project area. Localized areas of contaminated soil would be delineated, excavated, and properly disposed of off-site as part of site development. Identified spills would be reported to the proper regulatory agencies and remedial measures would be implemented as required to close such spills. All soil excavated as part of soil remedial activities would be managed and disposed of in accordance with all applicable federal, state and local regulations. If construction and development activities at the park that extend below the water table expose localized areas of contaminated groundwater, corrective action in accordance with regulatory protocols would be followed, including notification of the proper regulatory agencies and clean-up under regulatory guidance.

Potential impacts during construction and development activities would be avoided by implementing a construction health and safety plan (CHASP). Such a plan would insure that the construction workers, the surrounding community, and the environment are not adversely affected by environmental conditions exposed by or encountered during the construction activities. The implementation of these remedial actions would remove all environmental conditions that could affect the health and safety of the visiting public once the park is in operation. With these measures, no significant adverse impacts related to hazardous materials would be expected to occur as a result of the construction activities of the proposed project and subsequent public use of the park.

WATERFRONT REVITALIZATION PROGRAM

The project site is located in the coastal zone designated by New York State and New York City. Therefore, the proposed project is subject to the city and state's coastal zone management policies. The proposed project would be consistent with the city's 10 Local Waterfront Revitalization Program policies.

Specifically, the proposed project's development of an approximately 85-acre public park on the project site would be consistent with goals in Brooklyn and throughout New York City to create and improve public access to the waterfront. The proposed project would also support the coastal zone policies by dramatically increasing recreational uses along the East River.

INFRASTRUCTURE

The proposed project would increase infrastructure demands by adding residential, hotel, commercial, and community facilities uses, as well as restaurants, park space, a marina, and other facilities to the project site. The estimated levels of water, sanitary sewage, solid waste, and energy demand for the project would not have significant adverse impacts on the infrastructure that provides these services.

TRAFFIC AND PARKING

The proposed project would result in new trips to and from the project site. Based on an analysis of the weekday midday, weekday PM, and Sunday peak hours, there would be significant impacts at 16 of the 49 intersections analyzed, all but two of which would be mitigated. Significant adverse impacts would not be expected with respect to parking in the area.

The new demand would result in 12 intersections with one or more potential significantly impacted movements in the midday peak hour, 15 intersections in the PM peak hour, and 7 in the Sunday midday peak hour (see Table S-2). These impacts would occur along intersections in the main access corridors such Cadman Plaza West/Old Fulton, Atlantic Avenue, and Tillary Street. The unmitigated locations would be at Tillary and Adams Streets and Cadman Plaza West at the Brooklyn Bridge off ramp.

The proposed project would generate new parking demand and also would provide 1,283 new accessory parking spaces. The projected parking demand would be slightly higher than the number of new spaces provided in the weekday and Sunday midday hours. However, the off-site parking system has more than sufficient available spaces in the weekday midday and on Sunday. As such, any project-generated overflow can readily be accommodated and no parking impacts are expected.

An analysis was prepared to determine the potential traffic impacts associated with the proposed project, assuming that the NYCDOT initiative of changing the traffic operation of Furman Street from one-way to two-way is not implemented by 2012. This analysis concludes that 16 intersections would be impacted in one or more analysis peak hours, the same as with the two-way Furman Street scenario.

To support the proposed closure of Joralemon Street to vehicular traffic at Furman Street, an analysis was prepared of the proposed project's traffic impacts with Joralemon Street remaining open. Such an analysis affords a comparative basis for assessing the impact of the street's closure. The closure is subject to approval by the City of New York. This analysis showed that the addition of a low level of project-generated traffic to a westbound one-way Joralemon Street would not result in any significant traffic impacts on Joralemon Street. Further, it is not expected that this scenario would affect the mitigation for the proposed project's significant adverse traffic impacts, or that any of the previously identified traffic impacts on either Atlantic Avenue or Old Fulton Street would be eliminated. This would be the case if Furman Street were two-way or remained one-way.

Table S-2
Summary of Impacted Locations

Impacted Intersections	Peak Period		
	MD	PM	SUN
Old Fulton Street (N-S) @ Prospect Street (EB)		X	
Old Fulton Street (N-S) @ Hicks Street/BQE (WB)		X	X
Old Fulton Street (E-W) @ Front Street (N-S)		X	
Old Fulton Street (E-W) @ Water Street/Furman Street (N-S)	X	X	X
Tillary Street (E-W) @ Flatbush Avenue (N-S)	X	X	X
Tillary Street (E-W) @ Jay Street (N-S)	<u>X</u>	X	
Tillary Street (E-W) @ Adams Street (N-S)	X	X	X
Tillary Street/Clinton Street (E-W) @ Cadman Plaza West (N-S)	X	X	
Atlantic Avenue (E-W) @ Columbia Street (N-S)		X	
Atlantic Avenue (E-W) @ Hicks Street (NB)	X		
Atlantic Avenue (E-W) @ Henry Street (SB)	<u>X</u>	<u>X</u>	
Atlantic Avenue (E-W) @ Clinton Street (NB)	<u>X</u>	X	
Atlantic Avenue (E-W) @ Court Street (SB)	X	X	<u>X</u>
Atlantic Avenue (E-W) @ Boerum Place (N-S)	X	X	X
Columbia Street (N-S) @ BQE Ramp (E-W)	X	X	
Cadman Plaza W (N-S) @ Brooklyn Bridge Off-Ramp RT (E-W)	X	X	X

TRANSIT AND PEDESTRIANS

No unmitigated significant adverse impacts related to transit and pedestrians are expected as a result of the proposed project. The project would result in a net increase of subway trips in all time periods studied, but would result in no significant adverse impacts at any stairways or fare arrays. Significant adverse pedestrian impacts are also not expected to occur at sidewalks, corner areas, and crosswalks along the principal pedestrian access corridors serving the proposed project. However, in the future with the proposed project, the B25, B61 and B63 local bus routes would be significantly adversely impacted in their peak directions in the weekday PM peak hour. As standard practice, New York City Transit (NYCT) monitors bus ridership and increases service where operationally warranted and fiscally feasible. As such, the capacity shortfall on these routes would be addressed by NYCT, and no project-initiated mitigation is required for the proposed project.

The analysis identifies the need for the provision of improved pedestrian conditions and measures to address safety concerns along the pedestrian corridors to the project site. As project

planning advances, a set of coordinated steps will be undertaken to ensure safe pedestrian pathways for park visitors. Specifically, BBPDC would coordinate with other agencies to ensure that the park's design and user needs are addressed through the implementation of any off-site improvements or other measures that may be determined to be necessary. Once the park is constructed, park staff would be specifically responsible for monitoring pedestrian safety within the park and the surrounding area, and would coordinate with NYCDOT and relevant initiatives to address any safety concerns that may emerge.

AIR QUALITY

No significant adverse air quality impacts are expected to result from the proposed project. The proposed project would result in emissions generated by stationary sources associated with the proposed developments, such as emissions from fuel burned on site for heating, ventilation, and air conditioning (HVAC) systems, and from motor vehicles ("mobile sources") traveling to and from the project. The proposed project would also include parking facilities; ventilation of air from the garages could potentially result in increases in carbon monoxide (CO) concentrations in the immediate vicinity of the ventilation outlets.

The results of the air quality analyses demonstrated that the maximum predicted CO and particulate matter (PM_{2.5}) concentrations from project-generated mobile sources would not result in any significant adverse air quality impacts, with Furman Street operating as either a two-way or one-way street and with Joralemon Street open or closed. The parking garage analysis determined that CO emissions from the parking facility with the greatest vehicle capacity would not cause any significant adverse air quality impacts. At proposed development sites in close proximity to elevated roadways, the maximum predicted CO and PM₁₀ impacts were below the ambient air standards. (PM_{2.5} impacts were not analyzed in this case, since it is assessed as an increment, and in the No Build condition, no development would occur. Therefore, it is impossible to assess what the incremental impacts of PM_{2.5} would be.) Thus, the proposed project would not have significant adverse air quality impacts from mobile source emissions.

A stationary source screening analysis and subsequent detailed dispersion modeling was conducted for the HVAC systems of the proposed development site at 360 Furman Street and the lower building at Pier 6, and from the proposed Empire Stores development site. With proper exhaust placement, there would be no potential significant adverse air quality impacts from the proposed development's HVAC systems.

With respect to the initial industrial source analysis, the maximum 1-hour particulate matter concentration at receptor locations within the project site was predicted to be 111.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). This concentration is well below the guideline concentration SGC of 380 $\mu\text{g}/\text{m}^3$ established by the New York State Department of Environmental Conservation (NYSDEC). Therefore, there would be no significant adverse air quality impacts from industrial facilities on the proposed project.

The conclusion that the proposed project would not result in significant adverse air quality impacts would not be altered with or without the closure of Joralemon Street.

NOISE

High noise levels exist in much of the study area today, and the same is expected in the future. Depending on location, noise levels in the project area are due to a combination of sources: traffic on nearby streets, the Brooklyn-Queens Expressway, and the Brooklyn Bridge; traffic and

Brooklyn Bridge Park FEIS

trains on the Manhattan Bridge; aircraft flyovers; and boat traffic on the East River. The proposed Brooklyn Bridge Park would add new traffic to nearby streets and roadways and thereby increase surrounding noise levels. In addition, the proposed project would increase noise as a result of boating activities associated with the park, and people using the park. The noise analysis examines the cumulative effect of noise from all of these sources on future noise levels with the proposed project.

Regarding off-site locations, the proposed project would not result in any significant adverse noise impacts.

In terms of on-site locations, noise levels both with and without the proposed project would be high. They are high in the western portion of the project site, even with the hills planned as part of the park design, principally due to noise generated by traffic on the Brooklyn-Queens Expressway and along the eastern portion of the project site principally due to noise generated by vehicular traffic and trains on the Manhattan Bridge. The project site was an industrial area at the time the Brooklyn-Queens Expressway and Manhattan Bridge were built, and noise from these facilities was not a significant concern. While noise at the proposed park would be similar to noise at other New York City parks which are adjacent to heavily trafficked roadways, based upon CEQR noise criteria, ambient noise levels would have a potentially significant noise impact on users of the new park. There are no feasible and practicable mitigation measures that could be implemented to eliminate the potential significant adverse impacts within the proposed park. Buildings on-site would be designed with sufficient attenuation measures to comply with all applicable CEQR guidelines. Similarly, mechanical systems would be designed to meet all applicable noise codes and regulations.

The conclusions of the assessment of potential noise impacts would not be altered with or without the closure of Joralemon Street or with Furman Street operating one-way or two-way.

CONSTRUCTION IMPACTS

As with most construction projects, construction activities would cause increases in traffic, fugitive dust, emissions from equipment and vehicles, and noise. Although these construction impacts may be a source of annoyance, they would be temporary and are not considered significant. Construction activities could also result in temporary increases in potential exposure pathways to hazardous materials. A site-specific CHASP would be developed for the site to protect construction workers and the public from adverse environmental conditions during construction. Construction activities that disturb sediment, disturb terrestrial habitat, and increase runoff also have the potential to disturb water quality and natural resources on the project site. However, it is not expected that significant adverse impacts to these resources would result. Through tie-ins, existing utilities are anticipated to be able to accommodate new service needs. In addition, during construction of the project, appropriate measures would be closely followed to minimize fugitive dust emissions, control noise and vibration levels, control the rodent population, and thus reduce impacts to the surrounding area.

MITIGATION

HISTORIC RESOURCES

Since the proposed project area may be sensitive for archaeological resources, measures by which the presence of such resources would be evaluated, and any subsequent mitigation measures implemented, would be developed in consultation with OPRHP as specified in a Letter of

Resolution among ESDC, BBPDC, OPRHP, and the developer of Empire Stores. The proposed project would demolish the former National Cold Storage buildings to allow for the development of a new mixed-use residential and hotel development. The demolition of this historic structure would result in a significant adverse impact to that historic resource.

However, SHPO has determined that the overall proposed park design would, with the exception of the demolition of the former National Cold Storage buildings, positively affect historic resources and would substantially mitigate the significant adverse impact from the demolition of the former National Cold Storage buildings. The park design incorporates a number of existing waterfront elements that reflect the development history of the Brooklyn waterfront. These include the planned rehabilitation and adaptive reuse of the historic Empire Stores; retention and reuse of several existing buildings in the project area built by the New York Dock Company; retention of Piers 1, 2, 3, 5, and 6 and the reuse of portions of the piershed structures on Piers 2 and 3 as shade canopies; retention of a float transfer bridge on Pier 4, and design elements such as walkways that allow for views of the pier infrastructure. Additional mitigation measures would be developed in consultation with OPRHP, as stipulated in the Letter of Resolution, described above.

To avoid any inadvertent construction-related damage to historic resources, historic structures located within 90 feet of project construction would be included in a construction protection plan to be developed in consultation with OPRHP.

TRAFFIC AND PARKING

The proposed project would result in significant adverse impacts at 16 different intersections in one or more peak hours over the 2005-2012 period. Five of the impacted intersections are located on the Old Fulton/Cadman Plaza West corridor, four would be on Tillary Street, six on Atlantic Avenue, and one at Columbia Street at the BQE Ramps. Mitigation measures would be required, consisting of a combination of signal timing or signal phasing changes to the study area, re-striping of intersection approaches, and parking regulation changes. Nonetheless, two locations would have unmitigated impacts (Tillary Street at Adams Street and Cadman Plaza West at the Brooklyn Bridge off-ramp) in all peak periods (see Tables S-3 and S-4). A third unmitigated impact at Atlantic Avenue and Boerum Place would be added if Furman Street is assumed to continue with one-way operation.

These mitigation measures are standard traffic management measures, which would be implemented by NYCDOT over time, as field conditions warrant. With these measures in place by 2012, significant traffic impacts at fourteen (thirteen with Furman Street one-way) of the sixteen impacted intersections would be eliminated.

With the proposed project, impacts on CO and inhalable particulate matter (PM₁₀ and PM_{2.5}) would be well below ambient air quality standards and New York City's *de minimis* and interim guidance criteria. The proposed traffic mitigation measures were evaluated to determine the potential effects on air quality in the study area. Because the proposed mitigation measures seek to avoid or reduce the levels of congestion and delays at an intersection, an overall improvement in traffic conditions would occur for the study area as compared to the Build condition. Based on the traffic mitigation analysis presented above, the proposed changes in levels of service and delays through the network would result in similar, if not lower, predicted CO vehicular pollutant concentrations under the Build with mitigation condition. Similarly, the Build with mitigation scenario would not alter the conclusion of no significant impact on inhalable particulate levels.

TABLE S-3**Proposed Traffic Mitigation Measures - Proposed Project (Two-way Furman Street)**

This table has been revised for the FEIS

Intersection	Approach	Period	Current/No-Build Signal Timing (Seconds) (1)	Brooklyn Bridge Park Proposed Mitigation Measures	
				Mitigation Signal Timing (Seconds) (1)	Description of Mitigation
Old Fulton Street (N-S) @ Prospect Street (EB)	NB/SB SBL	PM	54/54/54 36/36/36	54/56/54 36/34/36	Transfer 2 sec. of green time from SB-L phase to NB/SB approach in the PM peak hour.
Old Fulton Street (N-S) @ Hicks Street / BQE (WB)	NB/SBRT SBT WB	PM/SUN	41/73/73 17/14/14 32/33/33	41/73/73 17/17/18 32/30/29	Reallocate green time to the Old Fulton St., SB thru phase in PM and SUN peak hours.
Old Fulton Street (E-W) @ Front Street (N-S)	EB/WB NB/SB	PM	59/59/59 31/31/31	59/56/59 31/34/31	Transfer 3 sec. of green time from Old Fulton St (E-W) to Front Street (NB/SB).
Old Fulton Street (E-W) @ Water St / Furman St(N-S)	WB EB/WB NB/SB	ALL	14/14/14 49/49/49 27/27/27	14/16/14 49/47/49 27/27/27	Re-stripe NB approach to one thru lane and one right turn lane. Transfer 2 sec. from the EB/WB phase to WB phase in the PM peak hour.
Tillary Street (E-W) @ Flatbush Avenue (N-S)	EB/WB EBL/WBL NB/SB NB/(NB/EBRT)	ALL	38/38/38 24/24/24 41/41/41 17/17/17	38/39/38 24/24/24 39/41/39 19/16/19	Extend the EBRT phase to the NB only phase. Transfer 2 sec from NB/SB phase to NB only in the MD and SUN peak hours. Transfer 1 sec form NB only to EB/WB in the PM peak hour.
Tillary Street (E-W) @ Jay Street (N-S)	EB/WB EBL/WBL/NBRT NB/SB	ALL	56/56/56 18/18/18 46/46/46	56/58/56 21/18/18 43/44/46	Transfer 3 sec. of green time from NB/SB phase to EBL/WBL/NBRT phase in the MD peak hour. Transfer 2 sec. of green time from NB/SB phase to EB/WB phase in the PM peak hour.
Tillary Street (E-W) @ Adams Street (N-S)	EB NB/SB	ALL			No mitigation improvements proposed.
Tillary St / Clinton St. (E-W) @ Cadman Plaza West (N-S)	EB WB NB/SB	MD/PM	36/36/36 36/36/36 48/48/48	34/34/36 37/38/36 49/48/48	Re-stripe NB approach to 2 thru and 1 right turn lane. Reduce 2 sec. from EB in MD/PM. Transfer 1 sec. of green time to NB/SB and 1 sec to WB in the MD. 2 sec to the WB in the PM. Re-stripe WB approach to one L lane, one LR lane and one R lane.
Atlantic Avenue (E-W) @ Columbia Street (N-S)	EB/WB WB NB	ALL	60/70/78 30/50/42	49/34/67 11/36/11 30/50/42	Introduce WB advance green phase to facilitate WB left turn.
Atlantic Avenue (E-W) @ Hicks Street (NB)	EB/WB NB	ALL	45/78/78 45/42/42	48/78/78 42/42/42	Transfer 3 sec. from NB to EB/WB in the MD peak hour. Change parking regulation to No Standing from 7AM-7PM on the WB approach to facilitate right turn movement.
Atlantic Avenue (E-W) @ Henry Street (SB)	EB/WB SB	ALL	50/74/78 40/46/42	36/52/67 14/25/11 40/43/42	Introduce WB advance green phase to facilitate WB left turn. Transfer 3 sec. of green time from SB phase to new WB phase in the PM.
Atlantic Avenue (E-W) @ Clinton Street (N-S)	EB/WB NB PED	MD/PM	46/57/70 36/55/42 8/8/8	48/60/70 34/52/42 8/8/8	Implement no standing 7AM-4PM for 100' on the NB approach to facilitate right turn movement. Implement no standing 4PM-7PM for 100' on the WB approach. Transfer 2 and 3 sec. from NB to EB/WB approaches in the MD and PM peak hours, respectively.
Atlantic Avenue (E-W) @ Court Street (N-S)	EB/WB WB SB	ALL	48/65/78 10/13/10 32/42/32	48/64/78 10/14/10 32/42/32	Re-stripe WB approach to one LT lane and one T lane. Implement no standing 7AM-7PM for 100' on the EB approach to facilitate right-turn movement. Transfer 1 sec from EB/WB phase to WB only phase in th PM peak hour
Atlantic Avenue (E-W) @ Boerum Place (N-S)	EB/WB EB SB	ALL	34/47/42 13/19/18 43/54/60	37/50/46 13/20/18 40/50/56	Transfer 3 sec. of green time from SB phase to EB/WB phase in MD, 4 sec from SB and 3 sec to EB/WB, 1 sec. to EB in the PM and 4 sec to EB/WB in Sunday peak hour.
Columbia Street (N-S) BQE Ramp (E-W)	NB/SB SB WB	MD/PM	36/36/36 24/24/24	20/22/25 16/14/11 24/24/24	Introduce SB advance green phase to facilitate SB left turn.
Cadman Plaza West (N-S) @ Brooklyn Br. Off-Ramp Rt (WB)	NB/SB EB	ALL			No mitigation improvements proposed.

Notes:

(1) Signal timings shown indicate green plus yellow (including all-red) for each phase.

(2) xx/xx/xx denotes signal timing for MD/PM/SUN MD peak hours

EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound

L-Left, T-Through, R-Right.

Ped. - all pedestrian phase.

Table S-4
Build Traffic Mitigation
Two-way Furman Street

THIS TABLE HAS BEEN REVISED FOR THE FEIS

SIGNALIZED INTERSECTIONS	LANE GROUP	NO-BUILD		BUILD		BUILD w/ Mitigation		NO-BUILD		BUILD		BUILD w/ Mitigation		NO-BUILD		BUILD		BUILD w/ Mitigation				
		MD Peak Hour		MD Peak Hour		MD Peak Hour		PM Peak Hour		PM Peak Hour		PM Peak Hour		SUNDAY Peak Hour		SUNDAY Peak Hour		V/C Delay LOS Ratio (sec.)				
		V/C Delay LOS Ratio (sec.)	Delay LOS Ratio (sec.)	V/C Delay LOS Ratio (sec.)	Delay LOS Ratio (sec.)	V/C Delay LOS Ratio (sec.)	Delay LOS Ratio (sec.)	V/C Delay LOS Ratio (sec.)	Delay LOS Ratio (sec.)	V/C Delay LOS Ratio (sec.)	Delay LOS Ratio (sec.)	V/C Delay LOS Ratio (sec.)	Delay LOS Ratio (sec.)	V/C Delay LOS Ratio (sec.)	Delay LOS Ratio (sec.)	V/C Delay LOS Ratio (sec.)	Delay LOS Ratio (sec.)	V/C Delay LOS Ratio (sec.)	Delay LOS Ratio (sec.)			
Old Fulton Street (N-S) Prospect Street (EB)	NB-T	0.83	21.9 C		0.87	23.5 C		0.87	23.5 C	1.09	69.4 E	1.11	80.4 F	**	1.07	61.8 E		0.98	35.5 D			
	SB-L	0.45	24.4 C		0.51	25.4 C		0.51	25.4 C	0.43	24.1 C	0.50	25.2 C		0.54	27.2 C		0.34	23.0 C			
	SB-T	0.25	11.7 B		0.29	12.1 B		0.29	12.1 B	0.32	12.3 B	0.34	12.6 B		0.33	11.4 B		0.27	11.8 B			
Old Fulton Street (N-S) @ Hicks Street/BQE (WB)	WB-L	0.27	25.4 C		0.27	25.4 C		0.27	25.4 C	0.28	39.4 D	0.28	39.4 D		0.32	42.2 D		0.30	39.6 D			
	NB-L	1.09	88.2 F		1.09	88.2 F		1.09	88.2 F	1.00	55.2 E	1.00	55.2 E		1.00	55.2 E		0.96	45.5 D			
	NB-LT	0.72	24.9 C		0.77	26.4 C		0.77	26.4 C	0.66	14.3 B	0.69	14.9 B		0.69	14.9 B		0.54	12.3 B			
Front Street (N-S) @ Old Fulton Street (E-W)	SB-TR	0.20	1.3 A		0.26	1.5 A		0.16	1.2 A	0.21	1.3 A	0.20	1.2 A		0.13	1.2 A		0.18	1.3 A			
	SB-T	0.33	33.6 C		0.53	37.1 D		1.03	115.7 F	1.36	235.8 F	**	1.02	102.1 F		0.70	64.5 E	**	1.09	134.7 F	**	
	EB-LT	0.46	12.1 B		0.81	23.2 C		0.81	23.2 C	0.45	11.9 B	0.82	24.6 C		0.89	33.5 C		0.38	10.9 B			
Old Fulton Street (E-W)	WB-T	0.11	8.2 A		0.14	8.4 A		0.14	8.4 A	0.24	9.1 A	0.28	9.4 A		0.29	10.9 B		0.08	8.0 A			
	SB-LR	0.54	32.3 C		0.69	38.2 D		1.06	88.7 F	1.15	119.6 F	**	1.03	76.7 E		0.49	30.8 C		0.60	34.1 C		
	EB-T	0.04	12.5 B		0.04	12.5 B		0.04	12.5 B	0.03	12.4 B	0.03	12.4 B	**	0.04	13.5 B		0.02	12.3 B			
Water Street/Furman Street (N-S) @ Old Fulton Street (E-W)	WB-LT	0.32	8.2 A		0.46	10.0 A		0.46	10.0 A	0.89	27.1 C	1.00	47.4 D	**	0.99	44.6 D		0.26	7.7 A			
	WB-R	0.04	6.0 A		0.04	6.0 A		0.04	6.0 A	0.05	6.1 A	0.05	6.1 A		0.05	6.1 A		0.01	5.9 A			
	NB-T	0.16	27.9 C		0.69	41.5 D		0.02	26.2 C	0.28	29.6 C	0.68	40.9 D		0.02	26.2 C		0.13	27.5 C			
Flatbush Avenue (N-S) @ Tillary Street (E-W)	SB-L	0.54	37.2 D		1.30	211.3 F	**	0.67	42.6 D	0.39	33.0 C	0.96	97.3 F	**	0.05	35.5 D		0.50	35.7 D			
	SB-TR	0.11	27.3 C		0.23	29.0 C		0.31	30.4 C	0.45	33.4 C	0.45	33.4 C		0.45	33.4 C		0.04	26.4 C			
	EB-L	0.49	50.7 D		0.50	51.0 D		0.50	51.0 D	0.56	53.5 D	0.58	53.9 D	**	0.58	53.9 D		0.19	43.7 D			
Flatbush Avenue (E-W) @ Tillary Street (E-W)	EB-TR	0.80	43.8 D		0.82	45.0 D	**	0.71	40.6 D	1.01	68.9 E	1.03	73.4 E	**	0.90	49.3 D		0.55	36.8 D			
	EB-R	0.99	90.0 F		1.05	108.2 F	**	0.81	51.9 D	0.93	77.0 E	0.98	89.3 F	**	0.87	49.9 D		0.51	42.3 D			
	WB-L	0.62	62.9 E		0.84	62.9 E		0.71	62.9 E	1.22	165.6 F	1.22	165.6 F		1.22	165.6 F		1.03	97.5 F			
Flatbush Avenue (E-W) @ Tillary Street (E-W)	WB-T	0.63	39.6 D		0.67	40.7 D		0.64	40.7 D	1.10	103.3 F	1.12	111.6 F	**	1.06	99.1 F		0.54	37.4 D			
	WB-R	0.58	56.9 E		0.81	58.9 E		0.88	58.9 E	0.58	44.4 D	0.58	44.4 D		0.56	42.8 D		0.34	37.4 D			
	NB-L	0.41	37.7 F		1.10	110.2 F	**	1.03	82.2 F	0.71	47.1 D	0.80	49.1 D		0.77	50.2 D		1.03	110.2 F			
Jay Street (N-S) @ Tillary Street (E-W)	NB-T	0.44	22.2 C		0.42	22.2 C		0.43	22.2 C	0.48	22.9 C	0.48	22.9 C		0.49	23.6 C		0.44	22.2 C			
	SB-T	0.56	35.1 D		0.56	35.1 D		0.58	37.1 D	1.11	98.8 F	1.11	98.8 F		1.11	98.8 F		0.48	33.6 C			
	SB-R	0.53	40.4 D		0.54	41.0 D		0.57	44.0 D	0.56	40.8 D	0.59	41.7 D		0.59	41.7 D		0.23	32.8 C			
Jay Street (E-W) @ Tillary Street (E-W)	EB-L	0.13	19.9 B		0.13	21.3 C		0.12	20.0 B	0.23	34.5 C	0.24	35.7 D		0.24	34.4 C		0.05	19.8 B			
	EB-TR	0.72	29.8 C		0.74	30.4 F	**	0.74	30.4 C	0.78	32.1 C	0.79	32.1 C		0.76	29.8 C		0.47	24.2 C			
	WB-L	0.94	81.5 F		0.96	85.8 F	**	0.89	69.7 E	1.26	190.1 F	1.27	194.4 F	**	1.25	184.0 F		0.53	32.2 C			
Jay Street (E-W) @ Tillary Street (E-W)	WB-TR	0.61	26.9 C		0.65	27.9 C		0.65	27.9 C	0.94	44.2 D	0.98	50.6 D	**	0.94	42.9 D		0.59	26.4 C			
	WB-R	0.22	31.4 C		0.36	33.3 C		0.43	33.4 C	0.43	33.4 C	0.43	33.4 C		0.46	35.7 D		0.26	27.5 C			
	NB-T	0.21	28.3 C		0.21	28.3 C		0.22	28.3 C	0.45	32.5 C	0.45	32.5 C		0.48	34.5 C		0.10	24.8 C			
Jay Street (E-W) @ Tillary Street (E-W)	NB-R	0.63	28.5 C		0.63	28.5 C		0.63	28.6 C	0.68	29.4 C	0.68	29.4 C		0.70	31.7 C		0.24	19.3 B			
	SB-L	0.22	28.9 C		0.28	30.1 C		0.29	31.9 C	0.28	30.0 C	0.33	31.0 C		0.35	33.0 C		0.06	24.3 C			
	SB-TR	0.15	27.2 C		0.16	28.6 C		0.26	27.9 C	0.26	27.9 C	0.27	29.4 C		0.27	29.4 C		0.10	24.6 C			
Adams Street (N-S) @ Tillary Street (E-W)	EB-L	0.86	77.6 E		0.89	80.9 F		0.89	80.9 F	1.09	130.2 F	1.15	149.1 F	**	1.15	149.1 F	**	0.94	91.0 F			
	EB-TR	0.59	34.5 C		0.62	35.4 D		0.62	35.4 D	0.64	36.0 D	0.67	36.7 D		0.67	36.7 D		0.21	27.4 C			
	WB-L	1.23	201.7 F		1.40	268.6 F	**	1.4	268.6 F	1.09	142.4 F	1.15	162.6 F	**	1.15	162.6 F	**	0.81	75.6 E			
Adams Street (E-W) @ Tillary Street (E-W)	WB-TR	0.69	52.5 D		0.81	59.1 E	**	0.81	59.1 E	0.78	55.9 E	0.86	62.0 E	**	0.86	62.0 E	**	0.37	44.5 D			
	WB-R	1.01	94.6 F		1.01	94.6 F		1.01	94.6 F	1.19	150.3 F	1.19	150.3 F		1.19	150.3 F		1.03	92.9 F			
	NB-L (Main)	0.47	59.7 E		0.49	60.7 E		0.49	60.7 E	0.41	56.1 E	0.42	56.5 E		0.42	56.5 E		0.35	54.5 D			
Adams Street (E-W) @ Tillary Street (E-W)	NB-T (Main)	0.58	30.5 C		0.58	30.6 C		0.58	30.6 C	0.72	34.0 C	0.72	34.1 C		0.72	34.1 C		0.59	30.6 C			
	SB-L (Main)	1.21	161.2 F		1.21	161.2 F		1.21	161.2 F	1.12	125.2 F	1.12	125.2 F		1.12	125.2 F		0.76	56.1 E			
	SB-T (Main)	1.09	93.6 F		1.11	100.6 F	**	1.11	100.6 F	1.35	198.1 F	1.36	204.1 F	**	1.36	204.1 F	**	0.98	60.8 E			
Adams Street (E-W) @ Tillary Street (E-W)	NB-T (Svc)	0.57	30.9 C		0.58	31.1 C		0.58	31.1 C	0.51	29.6 C	0.52	29.7 C		0.52	29.7 C		0.32	26.1 C			
	SB-TR (Svc)	0.30	22.1 C		0.31	22.4 C		0.31	22.4 C	1.10	99.6 F	1.13	109.5 F	**	1.13	109.5 F	**	0.13	19.4 B			
	EB-LTR	0.58	42.7 D		0.60	43.2 D		EB-LTR	0.64	45.9 D	0.53	41.5 D	0.55	42.8 D		EB-LTR	0.59	44.4 D		0.38	38.7 D	
Cadman Plaza West (N-S) @ Clinton Street/Tillary Street	WB-L	0.50	41.6 D		0.53	42.2 D		WB-L	0.51	44.8 D	0.51	41.7 D	0.55	42.8 D		WB-L	0.54	43.9 D		0.24	36.9 D	
	WB-R	0.48	42.9 D		0.65	49.1 D	**	WB-R	0.56	44.8 D	1.01	96.0 F	1.11	126.6 F	**	WB-R	0.94	76.4 E		0.47	42.5 D	
	NB-T	0.29	29.2 C		0.29	29.2 C		NB-T	0.09	25.7 C	0.34	30.0 C	0.34	30.0 C		NB-T	0.10	26.4 C		0.22	28.1 C	
Cadman Plaza West (N-S) @ Clinton Street/Tillary Street	SB-DefL	0.75	49.5 D		0.86	62.3 E	**	SB-DefL	0.76	48.1 D	0.87	64.9 E	0.97	84.4 F	**	SB-DefL	0.84	57.1 E		0.41	39.2 D	
	SB-T	0.40	32.1 C		0.40	32.1 C		SB-T	0.39	31.2 C	0.55	35.9 D	0.55	35.9 D		SB-T	0.55	35.9 D		0.29	29.7 C	
	WB-L	0.30	39.2 D		0.30	39.2 D		WB-L	0													

Table S-4
Build Traffic Mitigation
Two-way Furman Street

SIGNALIZED INTERSECTIONS	LANE GROUP	NO-BUILD		BUILD		BUILD w/ Mitigation		NO-BUILD		BUILD		BUILD w/ Mitigation		NO-BUILD		BUILD		BUILD w/ Mitigation		
		MD Peak Hour		MD Peak Hour		MD Peak Hour		PM Peak Hour		Peak Hour		PM Peak Hour		SUNDAY Peak Hour		SUNDAY Peak Hour		V/C Delay LOS		
		V/C Ratio	Delay (sec.)	V/C Ratio	Delay (sec.)	V/C Ratio	Delay (sec.)	V/C Ratio	Delay (sec.)	V/C Ratio	Delay (sec.)	V/C Ratio	Delay (sec.)	V/C Ratio	Delay (sec.)	V/C Ratio	Delay (sec.)	V/C Ratio	Delay (sec.)	
Atlantic Avenue (E-W) @ Columbia Street (N-S)	EB-T	0.04	7.0 A	0.12	7.5 A	0.15	12.9 A	0.14	13.8 B	0.22	14.6 B	0.22	14.6 B	0.50	42.1 D	0.03	9.4 A	0.13	10.1 B	
	WB-L	0.52	12.8 B	0.63	16.1 B	0.57	14.7 B	1.03	73.5 E	1.25	158.2 F	1.25	158.2 F	0.93	56.4 E	0.36	13.2 B	0.45	15.0 B	
	WB-LT	0.47	12.0 B	0.79	22.2 C	0.74	18.8 C	0.79	31.9 C	1.16	118.3 F	1.16	118.3 F	0.92	45.0 D	0.33	12.8 B	0.63	18.7 B	
	NB-LR	0.42	29.6 C	0.64	35.3 D	0.64	35.3 D	0.23	26.6 C	0.35	28.7 C	0.35	28.7 C	0.23	26.7 C	0.18	31.2 C	0.36	34.2 C	
	NB-R	0.42	29.6 C	0.42	29.6 C	0.42	29.6 C	0.23	26.7 C	0.23	26.7 C	0.23	26.7 C	0.19	31.3 C	0.19	31.3 C	0.19	31.3 C	
Atlantic Avenue (E-W) @ Hicks Street (N-S)	EB-LT	0.92	40.6 D	1.12	95.6 F	**	EB-LT	0.95	43.0 D	0.58	16.2 B	0.68	18.8 B	0.66	18.0 B	0.29	11.7 B	0.37	12.6 B	
	WB-TR	0.67	22.4 C	0.79	26.0 C	WB-T	0.67	20.4 C	0.63	16.6 B	0.72	18.8 B	0.69	18.1 B	0.34	12.0 B	0.41	12.9 B		
	NB-L	0.45	20.2 C	0.52	21.7 C	NB-L	0.45	20.2 C	0.57	25.5 C	0.71	49.2 D	0.76	52.6 D	0.76	52.6 D	0.71	48.8 D	0.77	53.4 D
	NB-LT	0.25	16.5 B	0.25	16.5 B	NB-LT	0.27	16.6 B	0.56	39.6 D	0.57	40.0 D	0.57	40.0 D	0.42	36.0 D	0.58	40.5 D	0.60	41.1 D
	NB-R	0.32	17.6 B	0.32	17.6 B	WB-R	0.35	19.9 B	0.42	36.0 D	0.42	36.0 D	0.42	36.0 D	0.38	35.0 C	0.38	35.0 C	0.38	35.0 C
Atlantic Avenue (E-W) @ Henry Street (N-S)	EB-TR	0.55	17.0 B	0.62	18.2 B	**	0.58	15.2 B	0.51	16.4 B	0.56	17.4 B	0.83	39.9 D	0.29	11.5 B	0.35	12.2 B		
	WB-LT	0.91	33.8 C	1.07	72.8 E	**	0.99	44.8 D	1.01	53.0 D	1.14	98.0 F	**	0.98	44.9 D	0.38	12.6 B	0.46	13.8 B	
	SB-L	0.32	18.3 B	0.36	18.7 B	SB-L	0.36	18.7 B	0.51	33.4 C	0.56	34.6 C	0.61	37.9 D	0.67	43.7 D	0.72	46.4 D	0.72	46.4 D
	NB-LTR	0.83	29.6 C	0.98	48.4 D	**	NB-LTR	0.91	35.6 D	1.45	244.5 F	1.64	329.3 F	**	EB-LT	1.43	233.9 F	0.46	18.1 B	
	NB-LTR	0.74	24.2 C	0.83	27.9 C	NB-LTR	0.79	24.6 C	1.03	68.8 E	1.12	98.9 F	**	WB-TR	0.87	36.9 D	0.48	18.1 B		
Atlantic Ave (E-W) @ Clinton Street (N-S)	EB-LT	0.85	42.2 D	0.89	0.0 D	NB-R	0.76	38.0 D	0.69	34.2 C	0.71	35.1 D	WB-R	0.21	20.2 C	0.78	48.9 D	0.81	51.7 D	
	WB-TR	0.83	29.9 D	0.89	0.0 D	NB-R	0.29	24.3 C	0.75	39.5 D	WB-LTR	0.75	39.5 D	EB-R	0.69	27.0 C	0.41	13.5 B	0.47	14.4 B
	WB-L	0.76	42.2 D	0.80	49.2 D	**	EB-TR	0.68	21.7 C	0.60	30.4 C	0.65	33.8 C	EB-R	0.24	19.4 B	0.23	10.8 B	0.25	11.9 B
	WB-T	0.84	24.7 C	0.95	36.0 D	WB-LT	0.99	42.9 D	1.13	95.9 F	1.22	132.8 F	WB-LT	1.13	95.2 F	0.59	10.8 B	0.74	16.8 B	
	SB-LT	0.62	31.0 C	0.62	31.0 C	SB-LT	0.62	31.0 C	1.00	73.6 E	1.00	73.6 E	SB-LT	1.00	73.6 E	0.66	48.1 D	0.66	48.1 D	
Atlantic Ave (E-W) @ Boerum Place (N-S)	EB-R	0.72	44.4 D	0.74	46.7 D	SB-R	0.62	36.6 D	0.72	52.7 D	0.80	60.3 E	**	EB-R	0.67	47.4 D	0.67	100.6 F	1.01	119.5 F
	EB-TR	1.17	133.1 F	1.18	137.3 F	**	1.13	116.8 F	1.19	163.9 F	1.22	174.9 F	**	1.17	154.3 F	-----	-----	-----	-----	
	WB-LT	0.45	16.8 B	0.49	17.4 B	**	0.46	15.2 B	0.55	21.2 C	0.59	21.9 C	**	1.04	22.4 C	0.52	23.8 C	0.48	20.8 C	
	WB-R	1.04	73.1 E	1.12	102.3 F	**	1.02	63.8 E	1.21	142.4 F	1.28	172.4 F	**	1.19	134.1 F	0.87	51.5 D	0.96	65.1 E	
	SB-L	0.95	52.2 D	0.95	52.2 D	SB-L	0.87	37.1 D	0.44	5.4 A	0.44	5.4 A	SB-L	0.44	5.7 A	0.25	3.5 A	0.25	3.4 A	
Columbus Street (N-S) @ BQE Ramp (E-W)	SB-L	0.33	18.1 B	0.33	18.1 B	SB-L	0.35	20.4 C	0.72	33.6 C	0.72	33.6 C	SB-L	0.79	39.0 D	0.37	22.0 C	0.40	24.9 C	
	SB-TR	0.40	19.2 B	0.44	19.8 B	SB-TR	0.48	22.4 C	0.70	33.4 C	0.73	34.4 C	SB-TR	0.80	40.4 D	0.20	19.7 B	0.23	20.1 C	
	WB-L	0.33	16.6 B	0.33	16.6 B	WB-L	0.33	16.6 B	0.17	14.9 B	0.17	14.9 B	WB-L	0.21	15.3 B	0.21	15.3 B	0.21	15.3 B	
	NB-T	0.25	8.3 A	0.32	8.8 A	**	0.65	26.3 C	0.14	7.5 A	0.16	7.7 A	NB-T	0.32	17.5 B	0.14	7.8 A	0.30	15.7 B	
	SB-L	0.59	48.9 D	1.16	107.3 F	**	0.96	47.2 D	1.07	69.3 E	1.19	115.8 F	**	1.06	67.7 E	0.63	14.5 B	0.77	20.4 C	
Cadman Plaza W (N-S) @ Brooklyn Bridge Off Ramp RT (E-W)	SB-T	0.16	7.4 A	0.18	7.6 A	SB-T	0.18	7.6 A	0.46	9.6 A	0.48	9.7 A	SB-T	0.48	9.7 A	0.13	7.3 A	0.15	7.4 A	
	WB-T	1.18	372.5 F	1.39	738.7 F	**	1.39	738.7 F	1.11	247.2 F	1.17	341.6 F	**	1.17	341.6 F	1.02	120.4 F	1.09	218.9 F	
	WB-R	0.99	82.1 F	1.12	261.5 F	**	1.12	261.5 F	1.19	365.0 F	1.23	437.3 F	**	1.23	437.3 F	1.11	238.0 F	1.16	324.5 F	
	WB-T	1.18	372.5 F	1.39	738.7 F	**	1.39	738.7 F	1.11	247.2 F	1.17	341.6 F	**	1.17	341.6 F	1.02	120.4 F	1.09	218.9 F	
	WB-R	0.99	82.1 F	1.12	261.5 F	**	1.12	261.5 F	1.19	365.0 F	1.23	437.3 F	**	1.23	437.3 F	1.11	238.0 F	1.16	324.5 F	

NOTES:
 EB-Eastbound, WB-Westbound, NB-Northbound, SB-Southbound
 L-Left, T-Through, R-Right, DIL=Analysis considers a Defacto Left Lane on this approach.
 V/C Ratio - Volume to Capacity Ratio, SEC/VEH - Seconds per vehicle
 LOS - Level of service
 ** - Denotes Impaired Intersections
 Analysis is based on the 2000 Highway Capacity Manual Methodology (HCS 2000).

BUS SERVICE

According to current NYCT guidelines, increases in bus load levels to above their capacities at any load point is defined as a significant adverse impact, necessitating the addition of more bus service along the route. With the proposed project, all three analyzed bus routes would experience PM peak direction load levels at their maximum load points exceeding their capacities. As standard practice, NYCT monitors bus ridership and increases service where operationally warranted and fiscally feasible. As such, the capacity shortfalls on the B25, B61, and B63 routes would be addressed by NYCT over the build-out period for the project, and no project-initiated mitigation would be required.

NOISE

The proposed project would result in no significant adverse noise impacts at any off-site locations.

However, because of noise generated independent of the proposed project (principally due to traffic on the Brooklyn-Queens Expressway and traffic and trains on the Manhattan Bridge) ambient noise levels in the proposed Brooklyn Bridge Park would exceed the 55 dBA L₁₀₍₁₎ CEQR criterion for public open spaces and would thus constitute a significant adverse noise impact.

ALTERNATIVES

Six alternatives to the proposed project are considered in this EIS: a No Action Alternative, which assumes that Brooklyn Bridge Park would not be built; a Reduced Density Alternative, in which a building approximately the same height as 360 Furman is constructed on the uplands of Pier 6 and no 8-story building is constructed on the pier uplands; a Modified Design Alternative in which 30 additional residential units are constructed along Furman Street, the park may have fewer parking spaces, with no parking at the Pier 6 uplands or the John Street Site, and a different development mix occurs at the Empire Stores site; an alternative with modified height and massing of the Pier 6 residential buildings; an alternative that utilizes wind turbines to generate energy; and an alternative that avoids any unmitigated adverse impacts. The impacts from these alternatives are compared with those of the proposed project.

NO ACTION ALTERNATIVE

Rather than becoming an important public open space resource, the project area would remain primarily a mix of storage, parking, and commercial uses, with public access only at the northern end at Empire-Fulton Ferry State Park and Main Street Park. The substantial public benefits and transformation of the shoreline associated with provision of a major new waterfront park along Brooklyn's waterfront would not occur.

This alternative would not be consistent with public policies concerning the waterfront. Like the proposed project, this alternative would not significantly adversely impact socioeconomic conditions, open space, community facilities, shadows, infrastructure, or parking, subways, pedestrians, or air quality.

With this alternative, the increased public access to and views of the riverfront throughout the project area would not occur, nor would the improvements in visual character associated with park development. With this alternative, the conversion of almost 18 acres to a landscaped area

would not occur, nor would shoreline improvements that would create intertidal wetland habitat along the shoreline or the creation of additional littoral zone.

This alternative has no potential to disturb archaeological resources, but would result in the same historic resources impact related to demolition of the former National Cold Storage buildings as would the proposed project. This alternative would generate less traffic than the proposed project, especially during the weekend, and the traffic impacts associated with the park would not occur. However, the major pedestrian amenity associated with the park esplanade would also not be provided. Unlike the proposed project, this alternative would not create the impact associated with drawing people into a park setting characterized by high background noise levels.

With this alternative, the project's removal of potentially contaminated soils would not occur, nor would clean soil fill be placed in areas not covered by paving or other impervious materials. Unlike the proposed project, this alternative would not be consistent with all applicable Waterfront Revitalization Program policies, particularly those encouraging public access to the water's edge. Because there would be no construction of a park with this alternative, there would also be none of the temporary impacts associated with its construction. The city and state would also not obtain the economic benefits associated with the construction.

REDUCED DENSITY ALTERNATIVE

The Reduced Density Alternative considers a development program with less residential and hotel use than the proposed project. Under this alternative, the residential program in new construction on the uplands of Pier 6 would be reduced from 430 under the proposed project to 163 units. These units would be housed in a single 15-story building approximately the same height as the existing 360 Furman building. This is compared to the 30-story and 8-story buildings presented under the proposed project. To potentially compensate for this loss of units, the program on the uplands of Pier 1 would be modified under this alternative to yield 180 residential units (compared to 150 under the proposed project); at the same time, the hotel would be reduced to 170 rooms, compared to 225 rooms under the proposed project.

Like the proposed project, the existing building at 360 Furman Street would be renovated for residential use under this alternative and 130 new units would be constructed on the John Street Site. The program for the Empire Stores would be the same under this alternative as in the proposed project. Overall, the Reduced Density Alternative would result in 1,237 fewer residential units and 55 fewer hotel rooms than the proposed project. As with the proposed project, hills would be constructed along Furman Street to reduce noise levels within the park.

The cash flow analysis for the Reduced Density Alternative found that the capital reserve could not recover from lack of income in the early years, and the park would run out of money approximately 10 years after its completion. Under this Alternative, the park could not be self-sustaining, but would need public funding to make up the difference between anticipated revenue from development and the requirement for park maintenance and operation. Thus, this alternative would not meet one of the essential requirements of the proposed project.

Because the Reduced Density Alternative would contain essentially the same park and project area as the proposed project, it would have equivalent impacts in the following technical areas: socioeconomic conditions, open space, historic resources, natural resources, hazardous materials, waterfront revitalization program, and construction. With the exception of historic resources, there would be no significant adverse impacts in any of these subject areas.

As with the proposed project, this alternative would replace existing uses on the site with a new park use and provide increased public access to and views of the waterfront throughout the project area and improve the visual character of the project area. As with the proposed project, the transformation of Brooklyn's waterfront would be accomplished. Compared to the proposed project there would be fewer residences, and thus fewer school-aged children attending public schools. There would also be fewer residents and hotel guests utilizing the area's infrastructure. Shadows cast from Pier 6 would be less than with the proposed project, but new shadows would be cast from the residential buildings along Furman Street. These new shadows would fall on the project-generated parkland and no shadows would fall on the neighboring Brooklyn Heights Promenade.

Like the proposed project, this alternative would result in no significant adverse land use, zoning and public policy, community facilities, shadows, urban design and visual resources, neighborhood character, parking, subways, pedestrians, or air quality impacts.

The minimal reduction in travel demand from decreased development would not result in different traffic or bus impacts than those under the proposed project. As with the proposed project, implementation of mitigation measures could address project traffic and bus impacts; however the same unmitigated vehicular impacts would still occur as with the proposed project. Like the proposed project, there would be an unmitigated noise impact within the park due to high background noise levels from traffic bordering the park.

MODIFIED DESIGN ALTERNATIVE

Given that the development program for the proposed project could evolve as it is addressed in greater detail, the Modified Design Alternative considers several possible changes that could occur, as follows:

- Changes to the residential and hotel programs on Pier 1, as in the Reduced Density Alternative. There would be 180 residential units, instead of 150 under the proposed project, and 170 hotel rooms, instead of 225 under the proposed project.
- The possibility of a reduction in on-site parking spaces by eliminating parking on Pier 6 (72 spaces) and at the John Street Site (110 spaces); or the parking supply could remain the same as described in Chapter 1, "Project Description."
- Increase in the commercial program at the Empire Stores. Under this alternative, the space for educational or research and development uses would be replaced by additional office, retail and restaurant space and the introduction of showroom space. With a more intensive use of the existing building, the total program for the Empire Stores would rise from 289,298 square feet to 398,760 square feet.

The Modified Design Alternative would, like the proposed project, be financially self-sustaining, with enough revenue stream to pay for ongoing park operations and maintenance. It would have the same impacts as the proposed project with regard to socioeconomic conditions, open space, shadows, historic resources, natural resources, hazardous materials, waterfront revitalization program, and construction.

As with the proposed project, this alternative would replace existing uses on the site with a new park use and provide increased public access to and views of the waterfront throughout the project area and improve the visual character of the project area. As with the proposed project, the transformation of Brooklyn's waterfront would be accomplished. There would be a different variety of development uses than with the proposed project (addition of showroom space and elimination of educational or research or development space) but the primary mix of land uses

within the park would not change. Compared to the proposed project there would be more residences, and thus more school-aged children attending public schools. There would also be more residents utilizing the area's infrastructure. These new shadows would fall on the project-generated parkland and no shadows would fall on the neighboring Brooklyn Heights Promenade. Like the proposed project, this alternative would result in no significant adverse land use, zoning and public policy, community facilities, shadows, urban design and visual resources, neighborhood character, air quality impacts, infrastructure, subways, parking, or pedestrians impacts.

The increase in development programs with this alternative would result in an increase in both pedestrian and vehicular trips. Under this alternative it is expected that 16 intersections would have one or more impacted movements in any of the peak hours for the two-way Furman Street scenario and 17 intersections for the one-way Furman Street scenario. Like with the proposed project, standard traffic measures, which would be implemented by NYCDOT, would be available to mitigate impacts at these locations. There would be no increase in unmitigated impacts from the proposed project under the two-way Furman Street scenario, but there would be three unmitigated locations for the one-way Furman Street scenario. The impact on the three analyzed bus routes identified with the proposed project would worsen with this alternative. NYCT would be expected to adjust bus service to accommodate any increased demand. The significant adverse noise impacts would not differ from the proposed project.

E. MODIFIED PIER 6 RESIDENTIAL BUILDING DESIGN ALTERNATIVE

The Modified Pier 6 Residential Building Design Alternative was developed in response to public comments on the DEIS and to provide flexibility in the design of the Atlantic Avenue gateway. It considers two designs that modify the mass and/or height of the two residential buildings proposed for that area; the overall development program and floor area for Pier 6 would be unchanged. This alternative has two variants: In Option 1, the height of the taller building would be unchanged, while the smaller of the two buildings would be taller and more slender, increasing in height from 8 to 14 stories and decreasing in floor plate size from 18,800 square feet to 9,880 square feet; in Option 2, the height of the 30-story building would be reduced to 20 stories and the height of the 8-story building would be increased to 20 stories. The existing Building 50 at the northwest corner of Joralemon and Furman Streets would be expanded and would also be increased in height by one floor from 43 feet to 54 feet in order to maintain approximately the same revenue as the proposed project. Because the total development program would be unchanged, the only areas of analysis in which these options would have the potential for different impacts than those of the proposed project would be Shadows and Urban Design and Visual Resources.

The two Pier 6 buildings proposed under both Option 1 and Option 2 would cast shadows on the Park in the morning on each of the analysis days as would the proposed two buildings under the proposed project. These alternatives would result in increased shadows on the Brooklyn Heights Historic District and the Palmetto Playground. However, given their short durations, the shadow increments would not be considered a significant adverse impact. Similar to the proposed project, this alternative would not result in significant adverse shadow impacts.

Similarly, as with the proposed project, this alternative would not result in significant adverse impacts related to urban design and visual resources.

WIND TURBINE ALTERNATIVE

The park design has as a goal the use of renewable energy technology in meeting the park's energy needs. Photovoltaic cells are included in the proposed project, and these would be integrated into a number of park structures. Other technologies, such as wind turbines, are also being considered for inclusion in the park program. The turbines, which are essentially modern, more slender versions of the windmill, would have to be designed and sited so as not to intrude into the Brooklyn Heights scenic view district. They would also be integrated into the park lighting system. Any consideration of the wind turbines would require a design that would avoid any potential impact on birds and would minimize noise emissions.

NO UNMITIGATED SIGNIFICANT ADVERSE IMPACTS ALTERNATIVE

With the proposed project, unmitigated adverse impacts could occur in three areas: historic resources, traffic and noise. In order to avoid the partially mitigated adverse impact to the former National Cold Storage buildings that would occur with the proposed project, the vacant building would have to remain in-place. In this way, no resulting adverse historic resources impact related to its demolition would occur. However, retention of the buildings does not meet the park's design objectives related to preservation of viewplanes from the Brooklyn Heights Promenade and financial self-sufficiency. In addition, it would impede providing a pedestrian connection into the park from Squibb Park.

In order to eliminate all unmitigated significant adverse vehicular traffic impacts, the project would have to generate 95 percent fewer total vehicular trips than are generated with the proposed project. Given the existing high traffic volumes in the area, any park project of this size—even without associated residential, commercial, or institutional development—would result in some unmitigated significant adverse traffic impacts. A significantly smaller park would have to be developed to avoid generating any unmitigated vehicular traffic impacts.

Noise impacts resulting from the proposed project are attached to the park itself: by developing any park in a high noise area there would be unmitigated noise impacts. No practicable mitigation measures are available to completely mitigate all significant adverse noise impacts at the proposed park from existing adjacent roadways, primarily the Brooklyn Queens Expressway and the Manhattan Bridge. In order to avoid adverse impacts related to noise on park users along Furman Street, a tall (over 45 feet high) noise wall would have to be constructed to block noise from the Brooklyn-Queens Expressway. This wall would result in significant adverse visual impacts and would not be compatible with the park design. As the wall would have to be designed to avoid any impacts of reflective sound onto the Brooklyn Heights Promenade and adjacent areas, it is likely that a wall that would entirely eliminate noise impacts at the park would not be feasible or practicable. There would also be no practicable means of mitigating the high noise levels on park users from the Manhattan Bridge.

Thus, there is no feasible park design that could completely eliminate all unmitigated adverse impacts.

UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

Unavoidable significant adverse impacts are defined as those that meet the following two criteria: 1) no reasonably practicable mitigation measures to eliminate the impacts; and 2) no reasonable alternatives to the proposed project that would meet the purpose and need of the action, eliminate the impact, and not cause other or similar significant adverse impacts.

Brooklyn Bridge Park FEIS

For the Brooklyn Bridge Park project, unavoidable significant adverse impacts were identified for archaeological resources, traffic, transit, and noise.

HISTORIC RESOURCES

As the former National Cold Storage buildings have been determined by OPRHP to meet eligibility criteria for listing on the S/NR, their demolition would result in a significant adverse impact to that historic resource that cannot be fully mitigated. Retention of the National Cold Storage buildings and adapting them for residential/hotel use is not feasible due to a number of constraints. Their demolition would remove a building that violates the Brooklyn Heights Promenade protected view plane, and also allow for a connection to be made from the Pier 1 upland area to Squibb Park, which would in turn connect Brooklyn Heights to the new park.

While there would be an unavoidable adverse impact on historic resources, SHPO has determined that the overall proposed park design would, with the exception of the demolition of the former National Cold Storage buildings, positively affect historic resources and would substantially mitigate the significant adverse impact from the demolition of the former National Cold Storage buildings. Furthermore, the park design incorporates a number of existing waterfront elements that reflect the development history of the Brooklyn waterfront. Further mitigation measures may be developed in consultation with OPRHP as stipulated in a Letter of Resolution between ESDC, BBPDC, and OPRHP.

TRAFFIC

With Furman Street two-way, the proposed project would result in unmitigated traffic impacts at two intersections—Tillary Street at Adams Street and Cadman Plaza West at the Brooklyn Bridge off-ramp. With Furman Street remaining one-way, there would be one additional unmitigated significant adverse impact at Atlantic Avenue and Boerum Place.

NOISE

Due to noise generated independent of the proposed project (principally due to traffic on the Brooklyn-Queens Expressway and traffic and trains on the Manhattan Bridge) ambient noise levels in the proposed Brooklyn Bridge Park would exceed the 55 dBA L₁₀₍₁₎ CEQR criterion for public open spaces and would thus constitute a significant adverse noise impact. The park design contains earth hills on the project site, along Furman Street between Pier 2 and Pier 5. These hills would not cause increases in noise levels along the Brooklyn Heights Promenade and nearby residences due to reflected sound. Acoustically, these earth hills were designed and located to shield park areas from Furman Street and Brooklyn-Queens Expressway noise. As a result, within this section of the park the Build condition is significantly quieter (2 to 10 dBA) than the No Build condition. However, even with this notable mitigation built into the project, noise levels at many locations in the park would still be above the 55 dBA L₁₀₍₁₎ CEQR criterion. No other feasible and practicable mitigation measures have been identified that could be implemented to reduce and eliminate these impacts. There are also no practicable mitigation measures to reduce the noise contribution from the Manhattan Bridge on the eastern portion of the park. Since there are no practicable measures identified at this time to fully mitigate the noise conditions, the high noise levels in the park would be considered an unmitigated significant adverse impact.

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