

**A. INTRODUCTION**

This chapter examines the potential impacts from the Baseline Scenario for the Proposed Project on natural resources<sup>1</sup> and floodplains within Industry City in the Sunset Park neighborhood in Brooklyn (the Project Area).

This chapter describes:

- The regulatory programs that protect floodplains and natural resources (e.g., groundwater, wildlife, and threatened or endangered species);
- The current condition of the floodplain and natural resources within the natural resources study area (e.g., groundwater, ecological communities, wildlife, and threatened or endangered species and species of special concern);
- The floodplain and natural resources conditions in the future without the Proposed Project (the No Action Condition);
- The potential impacts of the Proposed Project on the floodplain and natural resources (the With Action Condition); and
- The measures that would be developed, as necessary, to mitigate and/or reduce any of the Proposed Project's potential significant adverse effects on natural resources and floodplains.

**PRINCIPAL CONCLUSIONS**

The analysis finds that construction and operation of the Proposed Project would not result in significant adverse impacts to floodplains and natural resources.

The Proposed Project would not adversely affect the floodplain, or increase flooding within or adjacent to the Project Area. Projected development sites would comply with New York City Building Codes for construction within the 1 percent Annual Chance and 0.2 percent Annual Chance floodplains (i.e., 100-year and 500-year floodplains).

The Proposed Project would not result in significant adverse impacts to groundwater resources. Projected development sites would implement measures developed on the basis of further environmental investigation to minimize adverse impacts to the environment, including groundwater. In addition, construction of any subsurface stormwater source control best management practices (BMPs) would not result in significant adverse impacts to the direction of groundwater flow toward Upper New York Bay and Gowanus Bay.

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<sup>1</sup> The *CEQR Technical Manual* defines natural resources as “(1) the City’s biodiversity (plants, wildlife, and other organisms); (2) any aquatic or terrestrial areas capable of providing suitable habitat to sustain the life processes of plants, wildlife, and other organisms; and (3) any areas capable of functioning in support of the ecological systems that maintain the City’s environmental stability.”

The Proposed Project would result in the disturbance of paved road/paths, urban vacant lots and urban structure exterior habitats. These ecological communities provide limited habitats to wildlife other than species common to urban areas. Loss of these habitats may adversely affect individual wildlife unable to find suitable available habitats in the vicinity of the study area. Loss of individuals of these common species would not result in significant adverse impacts to populations of these species within the New York City metropolitan region. Some street trees and other trees may be removed as a result of the projected development; however, rezoning and street tree replacement protocols would result in the replacement and addition of any trees lost due to construction. Landscaping resulting from the Proposed Project has the potential to improve ecological communities and habitats for wildlife during operation of the Proposed Project.

## **B. METHODOLOGY**

### **STUDY AREA**

Because the Project Area is within a developed urban area with limited natural resources, the Proposed Project has limited potential to affect natural resources. Therefore, the study area for natural resources is the same as that for the Project Area for the Baseline Scenario, as described in Chapter 1, “Project Description,” and indicated in Figure 1-1.

Existing conditions of natural resources within the study area were characterized using information such as:

- The Information, Planning, and Consultation (IPaC) system for federally threatened and endangered species;
- The New York State Department of Environmental Conservation (NYSDEC) Nature Explorer for records of federally and state-listed species;
- 2000–2005 New York State Breeding Bird Atlas results;
- 1990–1999 New York State Herp Atlas;
- Federal Emergency Management Agency (FEMA) Preliminary Floodplain Insurance Rate Maps (PFIRMs);
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps;
- NYSDEC wetland maps; and
- NYSDEC Environmental Resource Mapper.

The future without the Proposed Project, or No Action Condition, assumes that natural resources within the study area would remain largely unchanged from existing conditions.

The Proposed Project would result in a series of land use actions within a highly urbanized neighborhood that would have limited potential to adversely affect natural resources. Potential impacts to natural resources resulting from the Proposed Project were assessed by considering the effects at the projected development sites on vegetation, groundwater, and wildlife (including federally and state-listed species) from temporary and permanent land disturbance, tree removal, and disturbances to wildlife due to changes in human activity.

### **REGULATORY CONTEXT**

The following sections identify the federal, state, and city legislation and regulatory programs that pertain to activities in floodplains, groundwater, wildlife, and the protection of rare species that would apply to the Proposed Project.

*FEDERAL*

*Clean Water Act (33 USC §§ 1251 to 1387)*

The objective of the Clean Water Act, also known as the Federal Water Pollution Control Act, is to restore and maintain the chemical, physical, and biological integrity of the waters of the United States. It regulates point sources of water pollution, such as discharges of municipal sewage, industrial wastewater, and stormwater runoff; the discharge of dredged or fill material into navigable waters and other waters; and non-point source pollution (e.g., runoff from streets, construction sites, etc.) that enter water bodies from sources other than the end of a pipe. Applicants for discharges to navigable waters in New York must obtain a Water Quality Certificate from NYSDEC.

*Endangered Species Act of 1973 (16 USC §§ 1531 to 1544)*

The Endangered Species Act of 1973 recognizes that endangered species of wildlife and plants are of aesthetic, ecological, educational, historical, recreational, and scientific value to the nation and its people. The Act prohibits the importation, exportation, taking, possession, and other activities involving illegally taken species covered under the Act, and interstate or foreign commercial activities. The Act also provides for the protection of critical habitats on which endangered or threatened species depend for survival.

*Migratory Bird Treaty Act (50 CFR 10, 20, 21, EO 13186)*

The Migratory Bird Treaty Act (MBTA) of 1918 was implemented following the 1916 convention between the U.S. and Great Britain (on behalf of Canada) for the protection of birds migrating between the U.S. and Canada. Subsequent amendments implemented treaties between the U.S. and Mexico, Japan, and the former Soviet Union. The MBTA makes it unlawful to pursue, hunt, take, capture, kill or sell birds listed therein. Over 800 species are currently protected under the Act. The statute applies equally to both live and dead birds, and grants full protection to any bird parts, including feathers, eggs, and nests.

*NEW YORK STATE*

*Endangered and Threatened Species of Fish and Wildlife; Species of Special Concern (ECL, Sections 11-0535[1]-[2], 11-0536[2], [4], Implementing Regulations 6 NYCRR Part 182)*

The Endangered and Threatened Species of Fish and Wildlife, Species of Special Concern Regulations prohibit the taking, import, transport, possession, or selling of any endangered or threatened species of fish or wildlife, or any hide, or other part of these species as listed in 6 NYCRR §182.6.

*State Pollutant Discharge Elimination System (ECL Article 3, Title 3; Article 15; Article 17, Titles 3, 5, 7, 8; Article 21; Article 70, Title 1; Article 71, Title 19; Implementing Regulations 6 NYCRR Articles 2, 3).*

Title 8 of Article 17, Environmental Conservation Law (ECL), Water Pollution Control, authorized the creation of SPDES to regulate discharges to New York State's waters pursuant to a delegation by the U.S. Environmental Protection Agency (EPA) to New York State of permitting authority pursuant to the Clean Water Act. Activities requiring a State Pollutant Discharge Elimination System (SPDES) permit include point source discharges of wastewater into surface or groundwater of the state, constructing or operating a disposal system (sewage treatment plant), discharge of stormwater, and construction activities that disturb one or more acres.

*NEW YORK CITY*

*Flood Resilience Zoning Text, Article VI, Chapter 4 of the Zoning Resolution*

The Flood Text adopted by City Council on October 9, 2013 enables and encourages flood resilient building construction throughout the 100-year floodplain. The Flood Text modified zoning to remove regulatory barriers that hindered or prevented the reconstruction of storm-damaged properties by enabling new and existing buildings to comply with new, higher flood elevations issued by FEMA, and to comply with new requirements in the New York City Building Code. It also introduced regulations to mitigate potential negative effects of flood resilient construction in the public realm. Policy 6.2 of the City’s Waterfront Revitalization Program, discussed in Chapter 2, “Land Use, Zoning and Public Policy,” requires that projects integrate consideration of the latest New York City projections of climate change and sea level rise (as published in New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms) into the planning and design of projects in the city’s Coastal Zone.

*New York City Local Law 3 (NYCRR Chapter 5)*

Local Law 3 of 2010 amended Section 18-107 of the Administrative Code of the City of New York and codifies the New York City Department of Parks and Recreation’s (NYC Parks) ability to regulate the replacement of trees on or within jurisdiction of NYC Parks, which includes all trees growing in the public right-of-way and on land mapped as City parkland. The law requires permits from NYC Parks for the removal of trees within NYC Parks jurisdiction and requires replacement of trees that are removed. The law protects against the unauthorized removal, destruction, irreparable damage, and injury to trees under the jurisdiction of NYC Parks.

**C. EXISTING CONDITIONS**

The natural resources study area is located within the urban landscape of the Sunset Park neighborhood in Brooklyn. Natural resources are limited throughout the study area, and consist primarily of street trees and vegetation in vacant lots. On the basis of the NYSDEC tidal and freshwater maps and NWI maps, there are no NYSDEC-classified surface waters, no NYSDEC-regulated wetlands, and no wetlands mapped by the NWI within the study area. Therefore, these resources are not characterized and potential impacts to these resources are not assessed below.

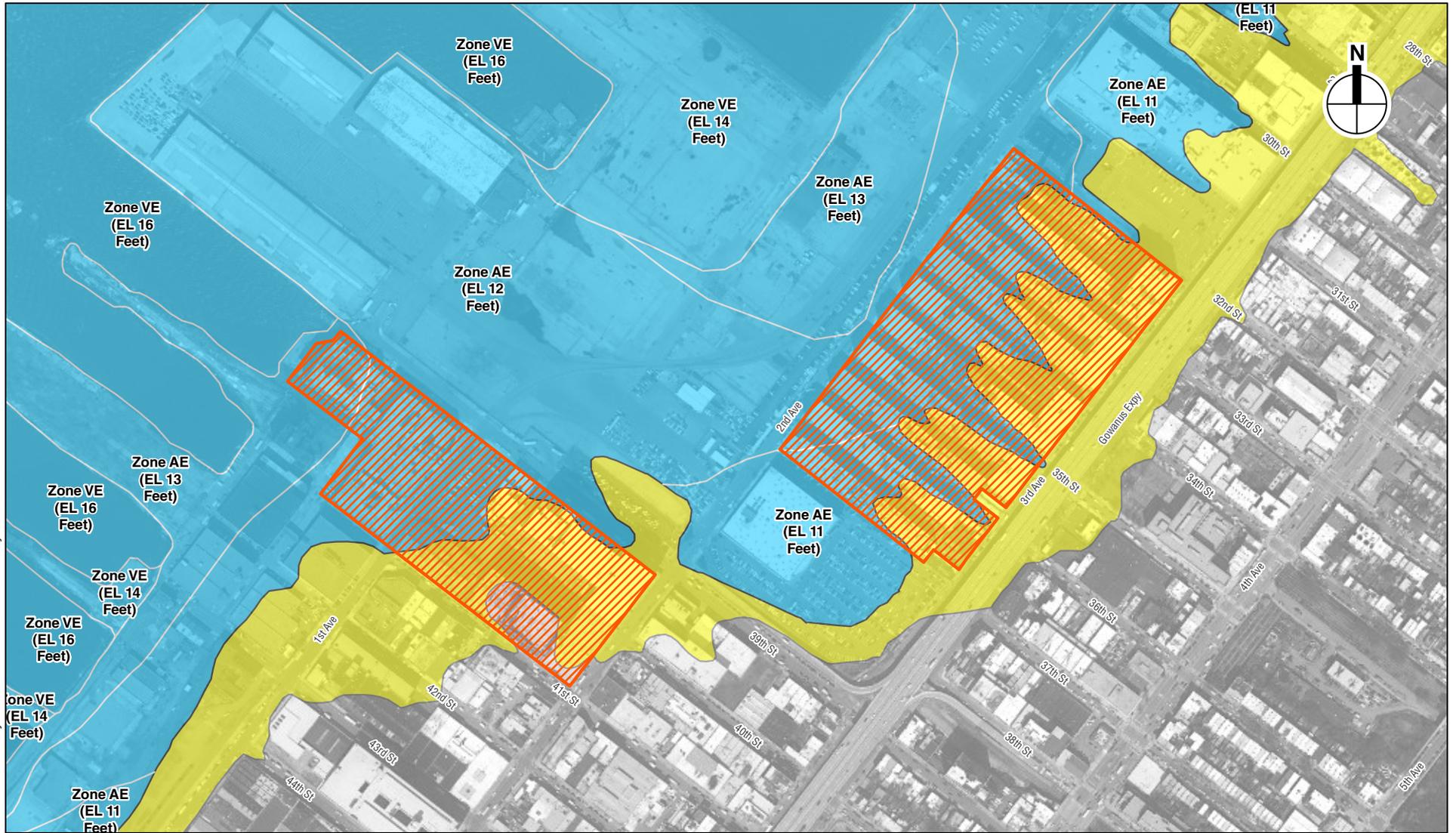
**FLOODPLAINS**

FEMA released preliminary FIRMs on December 5, 2013 and revised preliminary FIRMS on January 30, 2015 that precede the future publication of new, duly adopted, final FIRMs. The preliminary FIRMs represent the Best Available Flood Hazard Data at this time. FEMA encourages communities to use the preliminary FIRMs when making decisions about floodplain management until final maps are available.

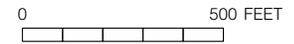
Approximately half of the Finger Buildings fall within the 1 percent Annual Chance of floodplain (100-year floodplain, Zone AE), with Base Flood Elevation (BFE) of +11 to +12 feet North American Vertical Datum of 1988 [NAVD88 (see **Figure 12-1**). The other half of the Finger Buildings fall within the 0.2 percent Annual Chance floodplain (500-year). Building 11 would fall within both the 1 percent Annual Chance (12 feet NAVD88) and 0.2 percent Annual Chance floodplains, while Building 21 would be located only within the 0.2 percent Annual Chance floodplains.

The northwestern portion of the 39th Street Buildings fall within the 1 percent Annual Chance floodplain (elevations +12 to +16 feet NAVD88). Much of the rest of the 39th Street Building

Source: Preliminary FEMA flood hazard data: January 2015



-  Project Area
-  Zone AE (EL 12 Feet) 1% Annual Chance Flood Hazard (100-year floodplain)
-  Zone AE (EL 11 Feet) 0.2% Annual Chance Flood Hazard (500-year floodplain)



Flood Hazard Areas – Preliminary FIRM  
**Figure 12-1**

falls within the 0.2 percent Annual Chance floodplain. The Gateway Building would be located within the 1 percent Annual Chance floodplain (elevation +12 feet NAVD88) and the 0.2 percent Annual Chance floodplain. Only a small southeastern portion of the 39th Street Buildings along 41st Street does not fall into either floodplain.

## **GROUNDWATER**

As discussed in Chapter 8, “Hazardous Materials,” groundwater is anticipated to be approximately 6 to 13.5 feet below-grade and likely flows in a generally westerly to northwesterly direction toward the Upper New York Bay and Gowanus Bay. Actual groundwater depth and flow direction may be influenced by tides, past or present pumping, subsurface openings or obstructions, and other factors. The Project Area is within the Brooklyn-Queens sole source aquifer. Groundwater in Brooklyn is not used as a source of potable water (the municipal water supply uses upstate reservoirs).

## **TERRESTRIAL RESOURCES**

### *ECOLOGICAL COMMUNITIES*

The natural resources study area is located within the urban landscape of Sunset Park, Brooklyn. As such, the ecological communities consist of manicured lawns, paved city streets, and exteriors of urban buildings that would fall under the “Terrestrial Cultural” communities defined by Edinger et al. (2014), including paved road/paths,<sup>2</sup> urban structure exteriors,<sup>3</sup> and urban vacant lots.<sup>4</sup> Vegetation would be sparse except for species growing in cracks in the pavement, plants and vines growing on the exteriors of buildings, and street trees growing in tree pits within the sidewalks.

### *WILDLIFE*

Natural habitat available to terrestrial wildlife within the study area is limited. The majority of the study area comprises developed areas including buildings and asphalt. As such, only the most urban-adapted, generalist species that can tolerate highly degraded environments and high levels of human activity currently have the potential to occur within the study area.

#### *Birds*

The Breeding Bird Atlas is a periodic census of the distribution of breeding birds across New York State. The most recent census was conducted from 2000 to 2005 and documented 43 species as confirmed or probable/possible breeders in the survey block in which the study area is located (Block 5750D) (see **Appendix E**, “Natural Resources”). The three square miles of survey blocks span different habitat types and larger, less disturbed habitats than what is present within the study area, including Green-Wood Cemetery and Sunset Park. As such, only a subset of these species is

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<sup>2</sup> Edinger et al. (2014) define this community as “a road or pathway that is paved with asphalt, concrete, brick, stone, etc. There may be sparse vegetation rooted in cracks in the paved surface.”

<sup>3</sup> Edinger et al. (2014) define this community as “the exterior surfaces of metal, wood, or concrete structures (such as commercial buildings, apartment buildings, houses, bridges) or any structural surface composed of inorganic materials (glass, plastics, etc.) in an urban or densely populated suburban area. These sites may be sparsely vegetated with lichens, mosses, and terrestrial algae; occasionally vascular plants may grow in cracks. Nooks and crannies may provide nesting habitats for birds and insects, and roosting sites for bats.”

<sup>4</sup> Edinger et al. (2014) define this community as “an open site in a developed urban area that has been cleared either for construction or following the demolition of a building. Vegetation may be sparse, with large areas of exposed soil, and often with rubble or other debris.”

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considered to have the potential to breed in the study area, which contains habitat that is suitable for mostly urban-adapted birds. The bird species considered most likely to breed within the study area are the non-native European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and rock dove (*Columba livia*). These are disturbance-tolerant, generalist species that can thrive in heavily developed, urban environments.

### *Mammals*

Habitats for mammals are limited within the study area, and are likely to be used by urban-adapted species. These include the raccoon (*Procyon lotor*), Norway rat (*Rattus norvegicus*), gray squirrel (*Sciurus carolinensis*), and domestic cat (*Felis catus*).

### *Reptiles and Amphibians*

The study area comprises lots covered by buildings and asphalt in a heavily urbanized and institutional/residential/commercial setting and does not provide habitat for reptiles and amphibians.

## **THREATENED, ENDANGERED, AND SPECIAL CONCERN SPECIES AND SIGNIFICANT NATURAL COMMUNITIES**

The NYSDEC Environmental Resource Mapper (2017) did not identify records of state-listed species or significant natural communities within the Project Area. The USFWS IPaC system (2016) identified piping plover (*Charadrius melodus*; federally listed threatened), red knot (*Calidris canutus rufa*; federally listed threatened), roseate tern (*Sterna dougallii*; federally listed endangered), and seabeach amaranth (*Amaranthus pumilus*; federally listed threatened) as federally listed species with the potential to occur within the Project Area. These species and habitats are discussed below.

### *PIPING PLOVER*

Piping plover is a federally listed threatened and state-listed endangered shorebird. Piping plovers use wide, open expanses of unvegetated, coastal beach for habitats (Elliot-Smith and Haig 2004). Nesting of piping plovers within New York City is limited to a colony on Rockaway Peninsula in Queens County (Boretti et al. 2007, NYC Parks 2013) and a few individual pairs that have sporadically nested within the Jamaica Bay Unit of the Gateway National Recreational Area in Queens and Kings Counties on isolated occasions (Wells 1996, Wasilco 2008). Piping plovers were not documented during the most recent New York State Breeding Bird Atlas (2000–2005). The Project Area lacks the required habitat for piping plovers and this species is not considered to have the potential to occur within the Project Area except as an occasional flyover.

### *RED KNOT*

The *rufa* subspecies of the red knot is a federally listed threatened shorebird. The *rufa* subspecies of the red knot migrates up to 30,000 miles round trip between primary wintering grounds in South America and breeding grounds in the high Arctic, with conditions for refueling at staging areas along the Atlantic coast being critical determinants of migration and reproductive success and overall survival (Baker et al. 2004, Morrison et al. 2007). Red knots use beaches, bays, or estuaries as staging areas. Their primary staging areas are in Delaware Bay and Cape Cod, but migrating red knots may commonly stage, albeit in much lower densities, elsewhere along the Atlantic coast (Harrington 2010, Burger et al. 2012). Although migrating red knots are known to occur along Long Island, including within the Jamaica Bay complex (Tanacredi and Badger 1995:104, Fowle and Kerlinger 2001:81), none of its beaches, bays, or estuaries are known to be high-use staging

areas that support large concentrations of individuals. Red knots were not documented during the most recent New York State Breeding Bird Atlas (2000–2005). The Project Area lacks the appropriate coastal habitat for red knots, and this species is not considered to have the potential to occur within the Project Area except as an occasional flyover.

#### *ROSEATE TERN*

Roseate tern is a federally and state-listed (endangered) species of beach-nesting waterbird. Breeding and migrating roseate terns use unvegetated, sandy beach for habitat. Nests typically consist of a simple depression in sand, shell, or gravel, lined with bits of grass and other debris, situated in dense grass clumps, under boulders, or in rip-rap. Roseate terns have sporadically nested towards the western end of Long Island in the past (e.g., two pairs in Jamaica Bay in 1996; Wells 1996), but during the most recent New York State Breeding Bird Atlas (2000–2005), they were not documented anywhere west of Suffolk County (Mitra 2008). The Project Area lacks the required unvegetated beach habitat for roseate tern and this species is not considered to have the potential to occur within the Project Area except as an occasional flyover.

#### *SEABEACH AMARANTH*

Seabeach amaranth (*Amaranthus pumilus*) is a federally listed threatened and state-listed endangered annual herbaceous plant. It grows along sandy beaches of the Atlantic coast in areas of accreting shoreline, upper beach, foredune, or overwash flat, as well as beach nourishment sites (USFWS 2012). The Project Area lacks suitable sandy beach habitat to support seabeach amaranth, and therefore is not considered to have the potential to occur within the Project Area.

### **D. THE FUTURE WITHOUT THE PROPOSED ACTIONS**

In the No Action condition, the Project Area is assumed to either remain unchanged from existing conditions, or become occupied by uses that are as-of-right under existing zoning. No significant changes to natural resources are anticipated.

### **E. THE FUTURE WITH THE PROPOSED ACTIONS**

#### **FLOODPLAINS**

As discussed under “Existing Conditions,” the majority of the Project Area is within either the 1 percent Annual Chance or 0.2 percent Annual Chance floodplain. Construction of the Proposed Project would comply with applicable New York City Building Codes and FEMA requirements regarding non-residential structures within the 1 percent Annual Chance floodplain and would incorporate sea level rise resilience measures into the design of building structures in order to minimize losses due to flooding. Based on anticipated flood depths, buildings will be either dry or wet flood proofed as required. Such work shall be incorporated at time of substantial improvements and in accordance with all current codes. No vulnerable, critical, or potentially hazardous features within the site would be below Mean Higher High Water under any sea level rise projection scenario (see Chapter 2, “Land Use, Zoning, and Public Policy). New York City is affected by local flooding (e.g., flooding of inland portions of the City from short-term, high-intensity rain events in areas with poor drainage), and coastal flooding (e.g., long and short wave surges that affect the City’s shorelines along the Atlantic Ocean and tidally influenced rivers and straights such as the Hudson River, Harlem River, and East River). Because coastal flooding is controlled by astronomic tides and meteorological forces (e.g., nor’easters and hurricanes) and is unaffected by occupancy of the floodplain, the Proposed Project would not adversely affect the

floodplain and would not result in increased coastal flooding within or adjacent to the Project Area.

## **GROUNDWATER**

As discussed under “Existing Conditions,” because groundwater in Brooklyn is not used as a source of potable water, development would not have the potential to affect drinking water supplies. A hazardous materials assessment identified potential historical and present sources of contamination on projected development sites within the study area (see Chapter 8, “Hazardous Materials”). Further environmental investigation would be required prior to development by placing (E) Designations on all privately owned development site lots where soil disturbing activities are anticipated under the Proposed Project. The development lots which would have soil disturbance under the Proposed Project are Building 11, Building 21, and the Gateway Building. Additionally, construction-phase health and safety plans are required to address known concerns and contingencies should unexpected contamination be encountered.

If dewatering is required for construction of the Proposed Project, treatment of the groundwater may be required before discharge to the municipal sanitary or storm sewer in accordance with New York City Department of Environmental Protection (DEP) and NYSDEC requirements.

As discussed in Chapter 9, “Water and Sewer Infrastructure,” increases in impervious surfaces from the proposed development sites would increase stormwater runoff to the combined sewer system serving the study area. Increased development would result in increased sanitary sewage to the combined sewer system. These increased flows could be discharged as a combined sewer overflow (CSO) to the Upper New York Bay and Gowanus Bay during heavy rainfall. In order to prevent a CSO, the applicant would incorporate BMPs to limit stormwater from the site to the sewer system. BMPs include subsurface detention infiltration, which retain stormwater belowground. Subsurface detention systems would have the potential to modify groundwater flow patterns in the immediate vicinity of the system, but groundwater discharge to the Upper New York Bay and Gowanus Bay would not be adversely affected. Groundwater would be expected to flow around the outside of the system and continue on the original direction of flow thereafter.

Therefore, the Proposed Project would not have the potential to adversely affect groundwater.

## **TERRESTRIAL RESOURCES**

### *ECOLOGICAL COMMUNITIES*

As discussed under “Existing Conditions,” ecological communities within the Project Area are limited to urban structure exteriors, urban vacant lots, and paved road/path communities. These ecological communities, in addition to being common throughout the region, are defined by human disturbance and provide limited habitat value to wildlife in the area. Construction of the Proposed Project would result in disturbance to vegetated ecological communities common to the urban environment. In addition, some street trees and other trees may be removed as a result of the projected development. Rezoning and street tree replacement protocols would result in the replacement and addition of any trees lost due to construction. All work would be performed in compliance with Local Law 3 of 2010 and NYC Parks’ Tree Protection Protocol, to minimize potential adverse impacts. All required replacement and/or restitution for removed trees would be provided in compliance with Local Law 3 and Chapter 5 of Title 56 of the Rules of the City of New York. Post-construction landscaping and green infrastructure would improve the condition of ecological communities within the Project Area. It is anticipated that the landscaping and green

infrastructure that would be incorporated into the development plans would provide habitats for wildlife, including pollinator species and nesting birds.

Therefore, the construction and operation of the Proposed Project would not result in significant adverse impacts to ecological communities.

#### *WILDLIFE*

Construction of the Proposed Project would not have significant adverse impacts to wildlife at either the individual or population level. Only urban-adapted, generalist species can tolerate the highly degraded environments and high levels of human activity currently present within the Project Area. Terrestrial wildlife habitats within the Project Area are presently limited to urban structure exteriors, urban vacant lots, and paved road/path communities in a highly urbanized setting. Loss of this habitat may adversely affect individual wildlife unable to find suitable available habitats in the vicinity of the Project Area. Loss of individuals of these common species would not result in significant adverse impact to populations of these species within the New York City metropolitan region. Therefore, construction activities would not eliminate any high quality or valuable habitats for wildlife, and would not adversely affect wildlife within the area.

Indirect impacts to wildlife due to noise from construction would be minimal as urban tolerant species are acclimated to the increased noise of an urban environment. As disturbance from construction activities would be temporary, any wildlife individuals that may be displaced from the site during project construction would be expected to easily move to an alternative habitat.

Post-construction landscaping and green infrastructure would improve the condition of ecological communities within the Project Area. It is anticipated that the landscaping and green infrastructure that would be incorporated into the development plans would provide habitats for wildlife, including pollinator species and nesting birds.

Overall, construction and operation of the Proposed Project would not have significant adverse impacts to wildlife at the individual or population level.

#### **THREATENED, ENDANGERED, AND SPECIAL CONCERN SPECIES AND SIGNIFICANT NATURAL COMMUNITIES**

As discussed under “Existing Conditions,” there are no federal- or state-listed endangered, threatened, and special concern species, or significant natural communities considered to have the potential to occur or are known to occur within the Project Area. Therefore, the Proposed Project would have no significant adverse impacts to threatened, endangered, and special concern species or significant natural communities.

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