A. INTRODUCTION

This chapter examines the potential impacts from the ~~Proposed Project~~previously proposed project on natural resources[1] and floodplains within the Project Area and surrounding South Street Seaport neighborhood of Manhattan.[2]

This chapter describes:

- The regulatory programs that protect floodplains and natural resources (e.g., groundwater, wildlife, threatened, endangered and special concern 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~~previously proposed project (the No Action Condition);
- The potential impacts of the ~~Proposed Project~~previously 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~~previously proposed project's potential significant adverse effects on natural resources and floodplains.

PRINCIPAL CONCLUSIONS

The ~~Proposed Project~~previously proposed project would not result in significant adverse impacts to floodplains and natural resources, including threatened or endangered species.

FLOODPLAINS

The ~~Proposed Project~~previously proposed project would partially occur within the 1 percent annual chance (100-year) and 0.2 percent annual chance (500-year) floodplains. Because these coastal floodplains are affected by coastal flooding rather than local or fluvial flooding, the

---

[1] The 2020 *City Environmental Quality Review (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."

[2] Since the publication of the DEIS, the Applicant has withdrawn the application for the previously proposed project and submitted a modified application (Application Number C 210438(A) ZSM; the "A-Application") with proposed changes to the project—this modified version of the project is described and considered in this FEIS as the Reduced Impact Alternative, as outlined in Chapter 18, "Alternatives."

construction and operation of the ~~Proposed Project~~previously proposed project would not exacerbate flooding conditions on or near the Project Area. The ~~Proposed Project~~previously proposed project would also not result in significant adverse impacts to flood levels, flood risk, or the flow of floodwater within the Project Area or the surrounding area.

GROUNDWATER

The permanent placement of the below-grade structures associated with the ~~Proposed Project~~previously proposed project would not adversely affect the overall direction of groundwater flow. Proper handling of hazardous materials would be ensured, including any contaminated groundwater encountered. Any groundwater recovered during dewatering will be treated in accordance with New York City Department of Environmental Protection (DEP) requirements prior to discharge to the sewer system. With these measures in place, construction of the ~~Proposed Project~~previously proposed project would not have the potential to result in significant adverse impacts to groundwater.

AQUATIC RESOURCES

The ~~Proposed Project~~previously proposed project would not result in any in-water work within the East River. The only potential for the With Action condition to affect aquatic resources within the East River is the discharge of combined sewer overflow (CSO). The ~~Proposed Project~~previously proposed project would require site connection from DEP, and sanitary and stormwater source control BMPs would be implemented to reduce sanitary volume and peak stormwater runoff volumes to the combined sewer system. With these measures in place, the ~~Proposed Project~~previously proposed project would not have the potential to result in significant adverse impacts to aquatic resources.

TERRESTRIAL RESOURCES

The Development Site is currently a surface parking lot, and the Museum Site comprises existing buildings and a fenced vacant lot used for vehicle parking and storage. The remainder of the study area is similarly developed. As such, vegetation is limited and there is minimal habitat to support native wildlife. The ~~Proposed Project~~previously proposed project would not displace quality ecological communities. Conditions for wildlife in the future with the ~~Proposed Project~~previously proposed project (the With Action condition) would continue to support the same disturbance-tolerant wildlife species. The new buildings would comply with New York City Building Code requirements for the use "bird-friendly glass," and as such, would not increase the potential for daytime bird collisions. Any removal of street trees would be conducted in accordance with local NYC regulations. Therefore, the ~~Proposed Project~~previously proposed project would not have the potential to result in significant adverse impacts to terrestrial resources.

THREATENED, ENDANGERED, AND SPECIAL CONCERN SPECIES

The peregrine falcon (*Falco peregrinus*, state-listed endangered) is the only listed species that has the potential to occur in the study area. The ~~Proposed Project~~previously proposed project is at least 0.2 miles (1,056 feet) away from the closest known peregrine falcon nesting sites (the buildings at 55 Water Street and 48 Wall Street and on the Williamsburg Bridge) and would not have the potential to affect nesting success at these locations. Similarly, the ~~Proposed Project~~previously proposed project would have no effect on the abundance of pigeons or other birds in the Project Area, and therefore would have no potential to affect the prey base of the peregrine falcons

associated with these nesting territories. Therefore, the ~~Proposed Project~~previously proposed project would not have the potential to result in significant adverse impacts to threatened, endangered, or special concern species.

B. METHODOLOGY

The study area for natural resources is the Project Area, unless otherwise noted. As described in Chapter 1, "Project Description," the Project Area includes the Development Site, the Museum Site, existing museum spaces located outside boundaries of the Museum Site, the Pier 17 Large-Scale General Development, as well as several additional areas that may include streetscape, open space, or other improvements (e.g., planters) under the Proposed Actions. Additionally, the Project Area includes the area of the Pier 17 Large-Scale General Development, containing Pier 17 and the Tin Building, from which development rights would be transferred to the Development Site and where minor improvements would be completed and operational changes to the Pier 17 access drive would occur (see Figure 1-1). There is no in-water work associated with the ~~Proposed Project~~previously proposed project

The Development Site on which the ~~Proposed Project~~previously proposed project would be constructed is located at 250 Water Street (Block 98, Lot 1). The Museum Site occupies a portion of the block located between John Street, South Street, Front Street, and Fulton Street at 89-91 South Street, 2-4 Fulton Street, and 167-175 John Street (Block 74, a portion of Lot 1).

EXISTING CONDITIONS

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

- 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) Information, Planning, and Consultation (IPaC) system for federally threatened and endangered species;
- NYSDEC Environmental Resource Mapper; and
- Field reconnaissance site visits in November 2020.

THE FUTURE WITHOUT THE ~~PROPOSED PROJECT~~PREVIOUSLY PROPOSED PROJECT

Under the No Action condition, the Development Site will be redeveloped with a new, approximately 120-foot tall as-of-right mixed-use building. It is conservatively assumed that absent the ~~Proposed Project~~previously proposed project, the South Street Seaport Museum will close permanently. As such, there will be no renovated or reopened spaces for the Museum, nor will there be a potential expansion of the Museum. Additionally, no streetscape, open space, or other improvements (e.g., planters) will occur in the remainder of the Project Area, nor would minor improvements to the Pier 17 area or operational changes at the Pier 17 access drive occur.

THE FUTURE WITH THE ~~PROPOSED PROJECT~~PREVIOUSLY PROPOSED PROJECT

Potential impacts to natural resources resulting from the ~~Proposed Project~~previously proposed project were assessed by considering the effects of the ~~Proposed Project~~previously proposed project 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.

Potential impacts to natural resources from the ~~Proposed Project~~previously proposed project were evaluated by considering:

- Potential impacts on groundwater resulting from temporary and permanent land disturbance;
- Indirect impacts to wildlife (including federally and state-listed species) from construction noise and activity; and
- The potential for daytime and nighttime collisions of birds with the proposed structures.

Since operational changes at the Pier 17 access drive would not affect natural resources, the analysis of potential impacts resulting from the ~~Proposed Project~~previously proposed project focuses on actions taking place at the Development Site and the Museum Site.

C. 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~~previously proposed project.

FEDERAL

MAGNUSON-STEVENS ACT (16 USC §§ 1801 TO 1883)

Section 305(b)(2)-(4) of the Magnuson-Stevens Act outlines the process for the NMFS and the Regional Fishery Management Councils (in this case, the Mid-Atlantic Fishery Management Council) to comment on activities proposed by federal agencies (issuing permits or funding projects) that may adversely impact areas designated as Essential Fish Habitat (EFH). EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 USC §1802[10]).

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 intentionally 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.

TIDAL WETLANDS ACT, ARTICLE 25, ECL, IMPLEMENTING REGULATIONS 6 NYCRR PART 661

Tidal wetlands regulations apply anywhere tidal inundation occurs on a daily, monthly, or intermittent basis. In New York, tidal wetlands occur along the tidal waters of the Hudson River up to the salt line and along the saltwater shore, bays, inlets, canals, and estuaries of Long Island, New York City, and Westchester County. NYSDEC administers the tidal wetlands regulatory program and the mapping of the state's tidal wetlands. A permit is required for activities that would alter NYSDEC mapped wetlands or tidal wetland adjacent area (TWAA).

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," and **Appendix B, "Waterfront Revitalization Program Consistency Assessment,"** 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. As part of the City's OneNYC plan, the City Planning Commission certified for public review in October 2020 a proposed citywide zoning amendment titled Zoning for Coastal Flood Resiliency (ZCFR) that would update the Flood Text adopted in 2013. This proposal would allow homeowners, business owners, and others to design resilient buildings that are better protected against flood risk and reduce flood insurance costs.

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.

NEW YORK CITY LOCAL LAW 15 (INT. NO. 1482-B)

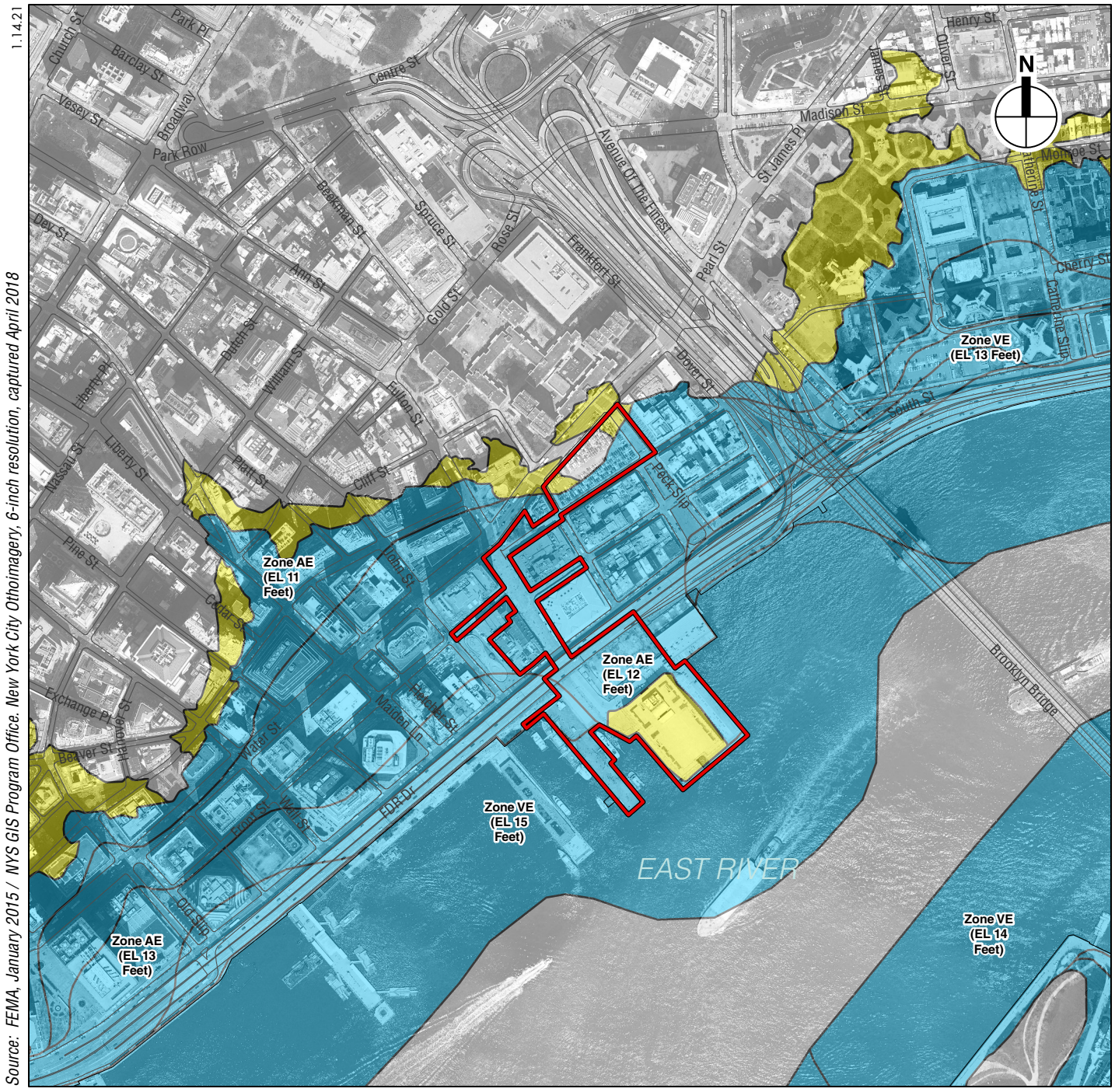
Local Law 15 of 2020 amended Section 28-101.4.3 of the Administrative Code of the City of New York to add a new exception that requires all new construction and renovation projects (where glazing is to be replaced) to use bird friendly materials. Local Law 15 also amends Sections 1402.1 and 1403.8 of the New York City building code by adding bird friendly building design and construction requirements.

D. EXISTING CONDITIONS

The Project Area is located in the South Street Seaport neighborhood in Lower Manhattan, which contains mostly a mix of residential, commercial, and community facility uses. The Development Site is a surface parking lot, and the Museum Site is composed of existing buildings and a fenced lot used for vehicle parking and storage. As such, vegetation is limited and there is minimal habitat to support native wildlife. The resources assessed below include floodplains, groundwater, aquatic resources in the nearby East River, terrestrial ecological communities and wildlife, and threatened or endangered species and species of special concern.

FLOODPLAINS

FEMA released revised preliminary Flood Insurance Rate Maps (FIRMs) in January 2015 that precede the future publication of new, duly adopted, final FIRMs. The preliminary maps represent the Best Available Flood Hazard Data at this time. FEMA encourages communities to use the preliminary maps when making decisions about floodplain management and post-Hurricane Sandy recovery efforts. As shown in **Figure 8-1**, based on the preliminary FIRMs, the Museum Site is within Zone AE, the area that is subject to inundation by the one percent annual-chance flood event (i.e., the 100-year floodplain). The base flood elevation (BFE) in this area is +12 feet North American Vertical Datum 1988 (NAVD88). The northeast and northwest corners of the Development Site are within the FEMA 0.2 percent annual chance (500-year) floodplain.



FEMA Preliminary FIRM 2015

250 WATER STREET

Figure 8-1

GROUNDWATER

Groundwater is not used as a potable water supply in New York City. An evaluation of site subsurface conditions at the Development Site conducted on October 11 and 12, 2020 found that groundwater levels range from approximately 7 to 15.5 feet below ground surface. Tidal influence on groundwater at this location is expected to be minimal, and groundwater is expected to flow toward the East River.

AQUATIC RESOURCES

The Project Area is located near the East River, a tidal strait connecting western Long Island Sound with upper New York Harbor. The East River provides a variety of habitats that support a diverse and productive aquatic community that is similar in composition to other parts of New York Harbor (DEP 2007). Aquatic organisms include phytoplankton, submerged aquatic vegetation, benthic macroalgae, zooplankton, benthic invertebrates, and fish. On very rare occasions, marine mammals and sea turtles have also been documented in the East River. The East River near the Project Area is also mapped by NYSDEC as littoral zone tidal wetlands. Littoral zone wetlands are tidal wetlands with no more than six feet of water at mean low water (MLW) that are not included under another tidal wetland category. Most coastal areas of the city lack a true, vegetated littoral zone due to shoreline engineering (DEP 2012).

According to the NOAA Fisheries Section 7 website,[3] federally listed aquatic species that could occur in the waters of the East River near the Project Area include: Atlantic sturgeon (*Acipenser oxyrhinchus*; endangered), shortnose sturgeon (*Acipenser brevirostrum*; endangered), and green (*Chelonia mydas*; threatened), loggerhead (*Caretta caretta*; threatened), Kemp's ridley (*Lepidochelys kempii*; endangered), and leatherback (*Dermochelys coriacea*; endangered) sea turtles. The federally endangered Atlantic sturgeon adults and subadults are expected to migrate and opportunistically forage in the waters of the East River year-round, as they connect the Hudson River to marine waters in the Atlantic Ocean and Long Island Sound (Savoy and Pacileo 2003; Tomichek et al. 2014). While they are expected to only rarely occur as far south as the southern tip of Manhattan, transient shortnose sturgeon adults may travel through the East River between spawning and overwintering grounds in the Connecticut and Hudson Rivers. They are most likely to be found in the East River between April and November (SSSRT 2010). While sea turtles have the potential to occur near the Project Area, they neither nest in the East River nor reside there year-round and would only occur there as occasional transients

As described above in under "Regulatory Context," EFH is defined by NMFS as waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. NMFS designates EFH within marine waters. **Table 8-1** lists the species and life stages of fish NMFS has identified as having EFH in the portion of the lower East River where the Project Area is located.

[3] www.fisheries.noaa.gov/resource/map/greater-atlantic-region-esa-section-7-mapper

Table 8-1
List of Essential Fish Habitat Designated Species in the East River

Species	Eggs	Larvae	Juveniles	Adults
Winter flounder (*Pseudopleuronectes americanus*)	X	X	X	X
Windowpane flounder (*Scopthalmus aquosus*)	X	X	X	X
Little skate (*Leucoraja erinacea*)			X	X
Atlantic herring (*Clupea harengus*)		X	X	X
Red hake (*Urophycis chuss*)	X	X	X	X
Bluefish (*Pomatomus saltatrix*)			X	X
Atlantic butterfish (*Peprilus triacanthus*)		X		
Summer flounder (*Paralicthys dentatus*)[1]		X	X	X
Longfin inshore squid (*Doryteuthis pealeii*)	X			
Winter skate (*Leucoraja ocellata*)			X	X
Clearnose skate (*Raja eglanteria*)			X	X

Note: [1] Indicates that this area is also designated as Habitat Area of Particular Concern for the species.
Source: NMFS EFH Mapper at https://www.habitat.noaa.gov/application/efhmapper/index.html#

TERRESTRIAL RESOURCES

The Development Site is currently a surface parking lot and the Museum Site comprises existing buildings and a fenced vacant lot used for vehicle parking and storage. The remainder of the study area is similarly developed. As such, vegetation is limited and there is minimal habitat to support native wildlife. **Figures ~~8-2a through 8-2f~~** provides photographs of the Project Area.

ECOLOGICAL COMMUNITIES

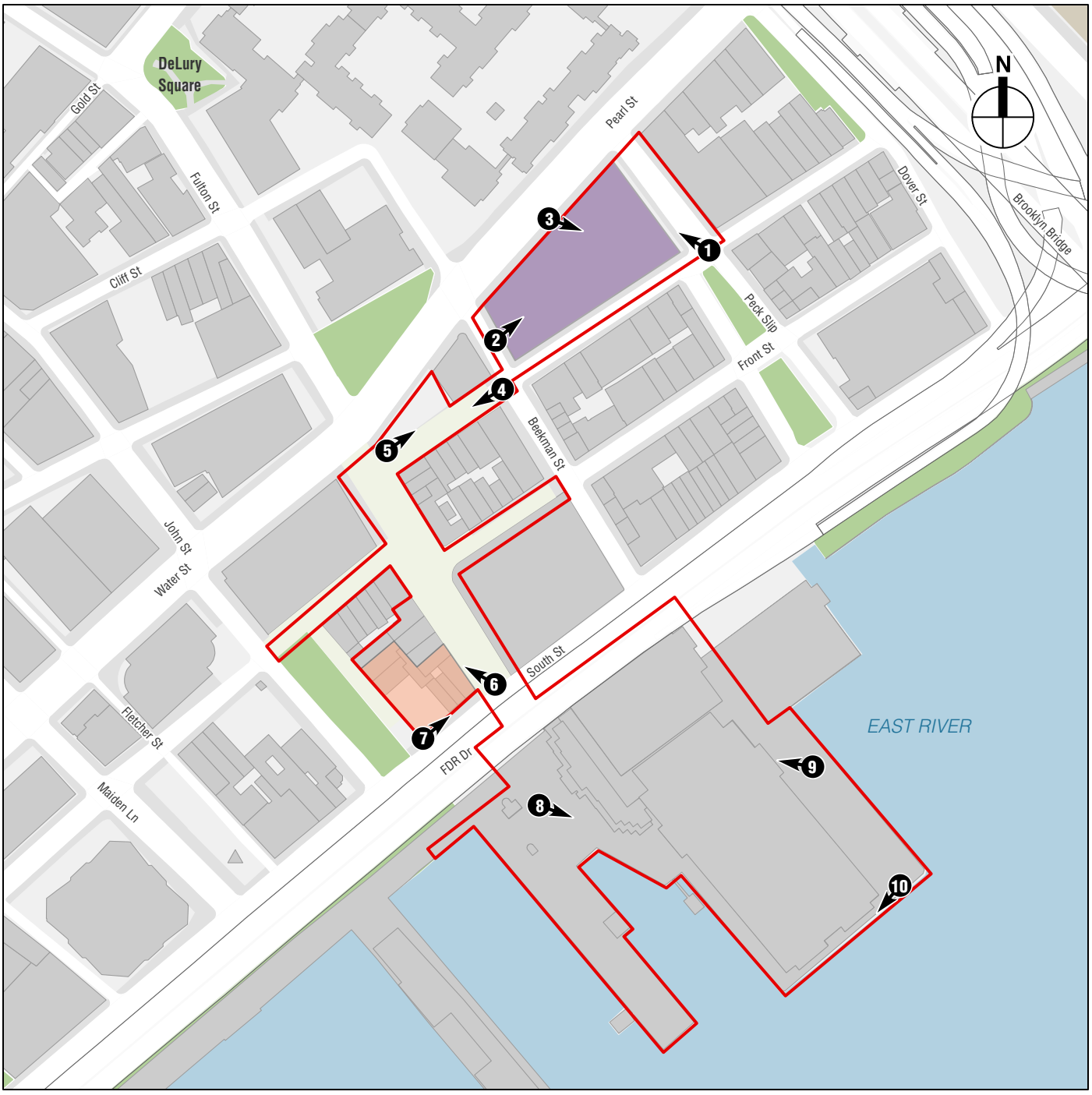
Ecological communities in the study area consist of paved city streets, parking lots, and exteriors of urban buildings that would fall under the "Terrestrial Cultural" communities defined by Edinger et al. (2014), including paved road/paths,[4] urban structure exteriors,[5] and flower/herb garden.[6] Vegetation is sparse except for species growing in cracks in the pavement, plants and vines growing on the exteriors of buildings, street trees growing in tree pits within the sidewalks, and the flowers and/or herbs growing at Titanic Memorial Park. **Table 8-2** lists the plant species observed within the study area during field reconnaissance on November 11, 2020.

[4] 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."

[5] 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."

[6] Edinger et al. (2014) define this community as "residential, commercial, or horticultural land cultivated for the production of ornamental herbs and shrubs."

1.14.21



0 400 FEET

Project Area

Development Site

Museum Site

Photograph View Direction and Reference Number

Key to Photographs

250 WATER STREET

Figure 8-2a

1

2

3

4

Photographs

Figure 8-2c

5

6

Photographs

Figure 8-2d

7

8

Photographs
Figure 8-2e

9

10

Photographs

Figure 8-2f

Table 8-2
Plant Species Observed within the Project Area

Common Name	Species Name	Plant Type
Chrysanthemum	*Chrysanthemum morifolium*	Herbaceous
Crabgrass	*Digitaria sp.*	Herbaceous
Common dandelion	*Taraxacum officinale*	Herbaceous
Japanese pachysandra	*Pachysandra terminalis*	Herbaceous
Creeping lilyturf	*Liriope spicata*	Herbaceous
Coneflower	*Rudbeckia sp.*	Herbaceous
English plantain	*Plantago lanceolata*	Herbaceous
Goldenrod	*Solidago sp.*	Herbaceous
Velvetleaf	*Abutilon theophrasti*	Herbaceous
Boxwood	*Buxus sp.*	Shrub
Rose species	*Rosa sp.*	Shrub
Chinese juniper	*Juniperus chinensis*	Shrub
Yew	*Taxus sp.*	Shrub
Hinoki cypress	*Chamaecyparis obtusa*	Shrub
Northern pin oak	*Quercus palustris*	Tree
Japanese zelkova	*Zelkova serrata*	Tree
London planetree	*Platanus x acerifolia*	Tree
Kentucky coffeetree	*Gymnocladus dioicus*	Tree
Swamp white oak	*Quercus bicolor*	Tree
Kwanzan cherry	*Prunus serrulata 'Kwanzan'*	Tree
Ginkgo	*Ginkgo biloba*	Tree
Callery pear	*Pyrus calleryana*	Tree
River birch	*Betula nigra*	Tree
Virginia creeper	*Parthenocissus quinquefolia*	Vine

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 two species as confirmed or probable/possible breeders in the survey block in which the study area is located (Block 5750B). The two bird species listed as breeding in Atlas Block 5750B are the American kestrel (*Falco sparverius*) and the peregrine falcon (*Falco peregrinus*, state-listed endangered). The peregrine falcon is a state-endangered bird that is known to nest near the study area on the Williamsburg Bridge, the building at 55 Water Street, and 48 Wall Street, the latter two of which are in Block 5750B and likely account for those documented by the Breeding Bird Atlas. American kestrels have become increasingly common in New York City, breeding in cracked facades and cornices of lowrise city buildings. Other birds that are expected to breed within the study area include non-native house sparrows (*Passer domesticus*), European starlings (*Sturnus vulgaris*), and rock pigeons (*Columbia livia*). Landscaping and clusters of street trees on the west side of Pearl Street, opposite the Development Site, may support some additional, highly urban-adapted breeding birds such as American robin (*Turdus migratorius*), blue jay (*Cyanocitta cristata*), and

red-bellied woodpecker (*Melanerpes carolinus*). Species observed during field reconnaissance conducted on November 11, 2020 include rock pigeon, house sparrows, mourning dove (*Zenaida macroura*), and laughing gull (*Leucophaeus atricilla*).

The bird community in the study area during winter is expected to be composed of these same potential breeding species in addition to some common waterbirds that can be frequently found in the East River, such as Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), double-crested cormorant (*Phalacrocorax auritus*), and herring gull (*Larus argentatus*). During spring and fall migration, many species of migratory songbirds pass through New York City and stopover in the city's parks or other large green spaces in order to rest and refuel before continuing their migration (Seewagen et al. 2011). Some birds will also utilize extremely small areas of vegetation, such as community gardens, courtyards, and pocket parks (e.g., Seewagen 2008, Gelb and Delecretaz 2009). Examples include the American redstart (*Setophaga ruticilla*), black and white warbler (*Mniotilta varia*), northern parula (*Parula americana*), red-eyed vireo (*Vireo olivaceus*), yellow-rumped warbler (*Setophaga coronata*), common yellowthroat (*Geothlypis trichas*), dark-eyed junco (*Junco hyemalis*), and white-throated sparrow (*Zonotrichia albicollis*). However, the study area is overwhelmingly dominated by buildings and other impervious surfaces, and lacks habitat to attract concentrations of migrating birds. Vegetation within the study area is limited to low numbers of street trees planted within sidewalks. Minimal numbers of migrating birds have the potential to occur in these small patches of habitat during spring and fall.

Mammals

The only mammals considered to have the potential to occur in the study area are the Norway rat and eastern gray squirrel. Both species are extremely urban-adapted and ubiquitous throughout the city.

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 (2021) did not identify records of state-listed species or significant natural communities within the study area. NYNHP (2021) indicated that the state-listed endangered peregrine falcon (*Falco peregrinus*) has the potential to occur within a half-mile of the study area. Additionally, the USFWS IPaC system indicated no federally listed species as occurring within a 0.5-mile radius of the study area.

The 2000–2005 Breeding Bird Atlas documented the peregrine falcon in the census block in which the study area is located. As noted above, peregrine falcons are known to nest on the buildings at 55 Water Street and 48 Wall Street, which are both within the same census block as the study area. Peregrine falcons are globally widespread and common in many areas (White et al. 2002), and populations in New York State have grown dramatically since the 1980s. The species has been proposed by NYSDEC for down-listing from endangered to special concern during the next revision of the state's species listings. Peregrine falcons have become increasingly common in urban areas, demonstrating a tolerance of human disturbance and an ability to exploit resources in human-modified environments (Cade et al. 1996, White et al. 2002). It has been stated that

peregrine falcons will tolerate almost any level of human activity taking place below their nest provided that the nest is inaccessible to humans (Ratcliffe 1972). Urban peregrine falcons appear to have particularly high tolerance thresholds compared with those in more remote areas (White et al. 2002). In several cities within New York State, including New York City, peregrine falcons nest in bridges and high-rise buildings among high levels of noise and human activity associated with the urban environment (Frank 1994, Cade et al. 1996, Loucks and Nadaraski 2005).

E. THE FUTURE WITHOUT THE ~~PROPOSED PROJECT~~PREVIOUSLY PROPOSED PROJECT

In the No Action condition, the applicant will redevelop the Development Site with a new, approximately 120-foot tall, as-of-right mixed-use building. As stated in Chapter 1, "Project Description," it is conservatively assumed that absent the ~~Proposed Project~~previously proposed project, the Museum will close permanently. As such, there will be no renovated or reopened spaces for the Museum, nor will there be a potential expansion of the Museum. Other projects that are expected to be completed by 2026 will not otherwise affect the condition of floodplain or natural resources in the study area, unless otherwise noted.

Development in the No Action condition will not adversely affect floodplains. Development of the new as-of-right building will not result in significant adverse impacts to flood levels, flood risk, or the flow of floodwater within the Project Area or the surrounding area. Coastal floodplains are influenced by astronomic tide and meteorological forces (e.g., northeasters and hurricanes) rather than fluvial flooding, and are therefore not affected by the placement of obstructions (e.g., buildings) within the floodplain.

Although the below-grade building foundation of the new as-of-right building will have the potential to modify groundwater flow patterns, groundwater would be expected to flow around it and continue to flow toward the East River. The permanent placement of this below-grade structure will not adversely affect the overall direction of groundwater flow. As discussed in Chapter 9, "Hazardous Materials," contaminated groundwater that may be encountered at the Development Site and recovered during dewatering will be handled pursuant to applicable regulatory requirements. Groundwater testing will be performed to ensure that recovered groundwater will be treated, as necessary, in accordance with DEP requirements prior to discharge to the city sewer. With these measures in place, the No Action condition would not result in significant adverse impacts to groundwater.

Construction of the new as-of-right building will likely result in the removal of street trees. Any development requiring the removal of street trees will be performed in compliance with Local Law 3 of 2010 and the NYC Parks Tree Protection Protocol. Any required replacement and/or restitution will be provided in compliance with Local Law 3 and Chapter 5 of Title 56 of the Rules of the City of New York.

Construction and operation of the new as-of-right building will not adversely affect ecological communities or wildlife. The No Action condition will result in the conversion of the paved road/paths ecological community currently present at the Development Site to the urban structure exteriors ecological community and will not displace quality ecological communities or habitat. Construction activity will have the potential to displace some wildlife into immediately adjacent areas of the same habitat types, but any such movements by wildlife will be temporary and incapable of having material effects at the individual or population level. Other development projects anticipated to be completed by 2026 may include landscaped open space that could

improve habitat for wildlife currently found within and adjacent to the study area. Therefore, the No Action condition will not result in significant adverse impacts to vegetation, ecological communities, or wildlife within the study area.

The new as-of-right building will be built in compliance with New York City Building Code requirements for the use of "bird-friendly glass," and as such, would not increase the potential for daytime bird collisions. Specifically, the exterior wall envelope, and any associated openings, will be constructed with bird friendly materials up to 75 feet above grade. Materials other than bird friendly materials will not exceed an aggregate of 10 square feet within any 10 feet by 10 feet square area of exterior wall below 75 feet above grade.[7] The approximately 120-foot tall as-of-right building is considerably lower than the altitudes at which birds migrate through the metropolitan region (LaSorte et al. 2015, Van Doren et al. 2017, Cabrera-Cruz et al. 2019). Nighttime collisions with the proposed building are expected to be extremely infrequent and rare given the low height of the building and the abundance of much taller buildings in the surrounding area. For these reasons, the No Action condition will not result in significant daytime or nighttime bird collisions.

The peregrine falcon is the only federal or state-listed species of wildlife known to occur in the vicinity of the study area. The closest peregrine falcon nesting sites to the Development Site are on the buildings at 55 Water Street and 48 Wall Street, and on the Williamsburg Bridge. These locations are 0.3 miles, 0.2 miles and about 1.5 miles away from the Development Site. At these distances there is no potential for the construction or operation of the No Action condition to impact peregrine falcons. Similarly, the No Action condition will have no effect on the abundance of pigeons or other birds in the Project Area, and therefore will have no potential to impact the prey base of the peregrine falcons associated with these nesting territories.

F. THE FUTURE WITH THE ~~PROPOSED PROJECT~~PREVIOUSLY PROPOSED PROJECT

FLOODPLAINS

As discussed under "Existing Conditions," the Museum Site is within the 100-year floodplain (Zone AE) and portions of the Development Site are within the 0.2 percent annual chance (500-year) floodplain. Construction of the ~~Proposed Project~~previously proposed project would comply with applicable New York City Building Code provisions and FEMA requirements regarding non-residential and residential structures within the floodplain and would incorporate sea level rise resilience measures into the design of building structures in order to minimize losses due to flooding. 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 these floodplains are affected by coastal flooding rather than local or fluvial flooding, the construction and operation of the ~~Proposed Project~~previously proposed project would not exacerbate flooding conditions on or near the Project Area. Development of the ~~Proposed Project~~previously proposed project would not result in significant adverse impacts to flood levels, flood risk, or the flow of floodwater within the Project Area or the surrounding area. As noted above, coastal floodplains are influenced by astronomic tide and meteorological forces (e.g.,

[7] https://www1.nyc.gov/assets/buildings/bldgs_bulletins/bird_friendly_guidance_document.pdf

northeasters and hurricanes) rather than fluvial flooding, and are therefore not affected by the placement of obstructions (e.g., buildings) within the floodplain. Therefore, the ~~Proposed Project~~previously proposed project would not have a significant adverse impact on floodplains as compared with the No Action condition.

GROUNDWATER

As described in Chapter 9, "Hazardous Materials," a Remedial Action Work Plan (RAWP), which would include a site-specific Construction Health and Safety Plan (CHASP), would be prepared for implementation during the subsurface disturbance at the Development Site. The RAWP would likely include requirements for addressing: any required soil and groundwater remediation as well as contingency measures should unanticipated underground petroleum storage tanks or soil/groundwater contamination be encountered; and any required post-remedial monitoring of groundwater and engineering controls. Should construction require dewatering, groundwater testing would be performed to ensure that recovered groundwater would be treated, as necessary, in accordance with DEP requirements prior to discharge to the city sewer. With these measures in place, construction of the ~~Proposed Project~~previously proposed project would not have the potential to result in significant adverse impacts to groundwater as compared with the No Action condition.

Although the below-grade building foundations at both the Development Site and the Museum Site would have the potential to modify groundwater flow patterns, groundwater would be expected to flow around these structures and continue to flow toward the East River. The permanent placement of the below-grade structures associated with the ~~Proposed Project~~previously proposed project would not adversely affect the overall direction of groundwater flow. Therefore, permanent operation of the ~~Proposed Project~~previously proposed project would not have the potential to result in adverse impacts to groundwater as compared with the No Action condition.

AQUATIC RESOURCES

The With Action condition would not result in any in-water work within the East River. The only potential for the With Action condition to affect aquatic resources is from the combined sewer system. The Development and Museum Sites are located within two CSO drainage areas, NCM-078 and NMC-067, located along the East River. As described in Chapter 10, "Water and Sewer," the With Action condition would result in increased rainfall and sanitary sewage volumes as compared with the No Action condition. However, this increase would not result in an exceedance of the Newtown Creek Wastewater Treatment Plant's (WWTP's) permitted capacity of 310 million gallons per day (mgd). Additionally, through DEP's site connection approval process, sanitary and stormwater source control BMPs would be implemented to reduce sanitary volume and peak stormwater runoff volumes to the combined sewer system. With these measures in place, the With Action condition would not result in a significant increase in combined sewer overflows to the East River that could adversely impact aquatic resources, including tidal wetlands, essential fish habitat, and threatened and endangered aquatic species.

TERRESTRIAL RESOURCES

ECOLOGICAL COMMUNITIES

Similar to the No Action condition, the ~~Proposed Project~~previously proposed project would likely result in the removal of street trees, which would be performed in compliance with Local Law 3 of 2010 and the NYC Parks Tree Protection Protocol. Any required replacement and/or restitution would be provided in compliance with Local Law 3 and Chapter 5 of Title 56 of the Rules of the City of New York. As discussed above in "Existing Conditions," ecological communities within the study area are limited to Terrestrial Cultural communities that are regionally common and sparsely vegetated. The ~~Proposed Project~~previously proposed project, like the No Action condition, would not displace any quality vegetated ecological communities or habitat. Furthermore, the vegetation at Titanic Memorial Park, comprising the flower/herb garden community, is unlikely to be affected the ~~Proposed Project~~previously proposed project. The permanent operation of the ~~Proposed Project~~previously proposed project would not adversely affect existing or future ecological communities and the habitat provided to wildlife within the study area. Therefore, operation of the ~~Proposed Project~~previously proposed project would not result in adverse impacts to quality habitat or terrestrial ecological communities as compared with the No Action condition.

WILDLIFE

The ~~Proposed Project~~previously proposed project would not result in significant adverse impacts to wildlife. Only urban-adapted, generalist species can tolerate the highly degraded environments and high levels of human activity currently present within the study area. The study area is dominated by buildings and other impervious surfaces, with vegetation limited to street trees and small clusters of trees in landscaped areas surrounding buildings and in small pocket parks. The wildlife community consists of urban-adapted species that are ubiquitous throughout Manhattan along with the potential, seasonal presence of some migrating songbirds briefly passing through the area during spring and fall. Same as the under the No Action condition, construction activity would have the potential to displace some wildlife into immediately adjacent areas of the same habitat types, but any such movements by wildlife would be temporary and incapable of having material effects at the individual or population level. Conditions for wildlife in the With Action condition would not differ from the No Action condition, and would continue to support the same disturbance-tolerant wildlife species.

The ~~Proposed Project~~previously proposed project, just like the No Action condition, would be built in compliance with New York City building code requirements for the use "bird friendly glass" for the portion of the exterior wall envelope, and any associated openings, up to 75 feet above grade and as such, would not increase the potential for daytime bird collisions. Nighttime collisions with the proposed buildings would be expected to be extremely infrequent and rare given the low heights of the proposed buildings and the abundance of much taller buildings in the surrounding area. The ~~Proposed Project~~previously proposed project includes development of an up to 395-foot-tall building at the Development Site, which would be higher than the building proposed under the No Action condition, and the potential expansion of the existing Museum on the Museum Site to include a building with a height of 62 feet. These building heights are considerably lower than the altitudes at which birds migrate through the metropolitan region (LaSorte et al. 2015, Van Doren et al. 2017, Cabrera-Cruz et al. 2019). Further, as noted above, both buildings would be surrounded by much taller buildings, making it even less likely that birds would strike the proposed buildings during cruising flight.

Artificial lighting can disorient night-migrating birds and result in collisions with tall structures, particularly in foggy conditions and during low cloud cover when birds migrate at lower altitudes (Gauthreaux and Belser 2006; Longcore et al. 2008; Gehring et al. 2011). Thus, light emitted from the ~~Proposed Project~~previously proposed project could impact birds migrating at night (primarily songbirds). Nighttime collisions of migratory birds with illuminated city skyscrapers have been well publicized, but collisions with buildings at night are relatively rare and are largely limited to sporadic episodes of mass mortality that can occur with the right mix of extremely poor weather conditions and particularly disorienting lighting characteristics (DeCandido and Allen 2006). Nighttime collisions with the ~~Proposed Project~~previously proposed project would likely be a similarly rare occurrence and the ~~Proposed Project~~previously proposed project would have no significant impact on migratory birds.

For all of these reasons, the ~~Proposed Project~~previously proposed project would not result in significant daytime or nighttime bird collisions relative to the No Action condition.

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

The peregrine falcon is the only federal or state-listed species of wildlife known to occur in the vicinity of the study area. The closest peregrine falcon nesting sites to the ~~Proposed Project~~previously proposed project are on the buildings at 55 Water Street and 48 Wall Street, and on the Williamsburg Bridge. These locations are 0.3 miles, 0.2 miles, and about 1.5 miles away from the Development Site. At the distances to these nesting sites, there is no potential for the construction or operation of the ~~Proposed Project~~previously proposed project to impact peregrine falcons. Similarly, the ~~Proposed Project~~previously proposed project would have no effect on the abundance of pigeons or other birds in the Project Area, and therefore would have no potential to impact the prey base of the peregrine falcons associated with these nesting territories. Overall, the ~~Proposed Project~~previously proposed project would have no impacts to the peregrine falcon at the individual or population level.

G. REFERENCES

Cade, T.J., M. Martell, P. Redig, G. Septon, H. Tordoff. Peregrine Falcons in Urban North America. 1996. In: Ed. Bird, D.M., D.E. Varland, J.J. Negro. Raptors in Human Landscapes: Adaptation to Built and Cultivated Environments. Academic Press. San Diego, CA. pp. 3-14.

Cabrera-Cruz SA, Smolinsky JA, McCarthy KP, Buler JJ. 2019. Urban areas affect flight altitudes of nocturnally migrating birds. Journal of Animal Ecology 88(12):1873-87.

DeCandido, R. and D. Allen. 2006. Nocturnal hunting by Peregrine Falcons at the Empire State Building, New York City. The Wilson Journal of Ornithology 118(1): 53-58.

Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero. 2014. Ecological Communities of New York State, Second Edition. New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.

Frank, S. 1994. City peregrines: a ten year saga of New York City falcons. Hancock House Publishers, Blaine, Washington, USA.

Gauthreaux, S.A. Jr. and C.G. Belser. 2006. Effects of Artificial Night Lighting on Migrating Birds. In Ecological Consequences of Artificial Night Lighting (C. Rich and T. Longcore, eds.). Island Press, Washington, DC. pp. 67-93.

Gehring, Joelle, Paul Kerlinger, and Albert M. Manville. 2011. "The Role of Tower Height and Guy Wires on Avian Collisions with Communication Towers." The Journal of Wildlife Management 75 (4): 848–55. doi:10.1002/jwmg.99.

La Sorte FA, et al. 2015. Seasonal changes in the altitudinal distribution of nocturnally migrating birds during autumn migration. Royal Society Open Science 2(12):150347.

Longcore, T. C. Rich, S.A. Gauthreaux, Jr. 2008. Height, guy wires, and steady-burning lights increase hazard of communication towers to nocturnal migrants: A review and meta-analysis. The Auk 125(2): 485-492.

New York City Department of Environmental Protection (DEP). 2012. The State of the Harbor 2012. Available from: http://www.nyc.gov/html/dep/pdf/hwqs2012.pdf.

Savoy, T. and D. Pacileo. 2003. Movements and important habitats of subadult Atlantic sturgeon in Connecticut waters. Transactions of the American Fisheries Society 132:1-8.

Shortnose Sturgeon Status Review Team (SSSRT). 2010. A Biological Assessment of shortnose sturgeon (*Acipenser brevirostrum*). Report to National Marine Fisheries Service, Northeast Regional Office. November 1, 2010.

Tomichek, C., J. Colby, M.A. Adonizio, M. Frisk, K. Dunton, D. Fox, and A. Jordaan. 2014. Tagged species detection: approach to monitoring marine species at marine hydrokinetic projects. Proceedings of the 2nd Marine Energy Technology Symposium.Van Doren BM, Horton KG, Dokter AM, Klinck H, Elbin SB, Farnsworth A. 2017. High-intensity urban light installation dramatically alters nocturnal bird migration. Proceedings of the National Academy of Sciences 114(42):11175-80.

White, C.M, N.J. Clum, T.J. Cade, and W.G. Hunt. 2002. Peregrine Falcon (Falco peregrinus). In The Birds of North America, No. 660 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA. ✷