Chapter 9: Natural Resources

A. INTRODUCTION

This chapter examines the potential impacts from the Proposed Actions on natural resources and floodplains within an approximately 56-block, 146-acre area of the SoHo and NoHo neighborhoods of Manhattan, Community District 2 (the "Project Area").

This chapter describes the following:

- The regulatory programs that protect floodplains and natural resources (e.g., groundwater, wildlife, and threatened or endangered species);
- The current condition of the floodplains and natural resources within the natural resources study area (e.g., groundwater, ecological communities, wildlife, endangered, threatened, and special concern species, and significant natural communities);
- The floodplains and natural resources conditions in the future without the Proposed Actions (the No Action condition);
- The potential impacts of the Proposed Actions on the floodplains 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 Actions' potential significant adverse effects on floodplains and natural resources.

PRINCIPAL CONCLUSIONS

The analysis finds that the Proposed Actions would not result in significant adverse impacts to natural resources.

Development anticipated under the Proposed Actions would not adversely affect the floodplain, or increase flooding within or adjacent to the Project Area. Projected development on sites within the southwest portion of the Project Area which is in the 1-percent annual chance (100-year) and 0.2-percent annual chance (500-year) floodplain would be required to comply with *Appendix G Flood-Resistant Construction* to the New York City Building Code.

The Proposed Actions would not result in significant adverse impacts to groundwater resources and would implement measures to address any contaminated or hazardous materials conditions at each projected and potential development site.

The study area is located within the urban landscape of the SoHo and NoHo neighborhoods of Manhattan. Vegetation is limited to disturbance tolerant plants, street trees, and the landscaping of urban parks and gardens. These ecological communities provide limited wildlife habitat apart from common urban wildlife and of the loss of this vegetation would not result in significant impacts to populations of these urban wildlife species.

B. METHODOLOGY

STUDY AREA

The study area for natural resources is the same as that for the Project Area, as described in Chapter 1, "Project Description," and indicated in Figure 1-2.

EXISTING CONDITIONS

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

- U.S. Geological Survey (USGS) maps, including groundwater maps;
- Soil Survey Geographic Database (SSURGO) Soils maps;
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, and Information, Planning, and Consultation (IPaC) system for federally threatened and endangered species;
- The New York State Department of Environmental Conservation (DEC) Environmental Resource Mapper, Tidal and Freshwater Wetlands and streams maps, 2000–2005 New York State Breeding Bird Atlas, and 1990–1999 New York State Amphibian & Reptile Atlas Project (Herp Atlas);
- Federal Emergency Management Agency (FEMA) Preliminary Floodplain Insurance Rate Maps (PFIRMs);
- Existing information identified in peer reviewed literature; and
- Results of a site reconnaissance conducted on January 5, 2021 to identify and characterize existing ecological conditions and natural resources within the study area.

FUTURE WITHOUT THE PROPOSED ACTIONS (NO ACTION CONDITION)

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

FUTURE WITH THE PROPOSED ACTIONS (WITH ACTION CONDITION)

Potential impacts to natural resources under the Proposed Actions were evaluated for impacts on terrestrial 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 threatened, endangered, and species of special concern that would apply to the Proposed Actions.

FEDERAL

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.

NEW YORK CITY

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

The new Flood Text zoning encourages renovations and proposed building designs to better comply with FEMA Flood Hazard Area regulations and the New York City Building Code.

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 Section 1402.1 of the New York City Building Code by adding bird friendly building design and construction requirements. The law applies to all projects filed on or after January 10, 2021.

C. EXISTING CONDITIONS

The study area is the urban landscape of the SoHo and NoHo neighborhoods in Manhattan. Natural resource features are limited to primarily street trees and ornamental herbs and shrubs in small

parks and private gardens. There are no DEC-classified surface waters, or DEC or NWI mapped wetlands, in the study area.

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, and 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.

The southwestern portion of the study area south of Spring Street and west of Greene Street falls within the 1-percent annual chance (100-year) floodplain; Zone AE, with a base flood elevation of 10 feet North American Vertical Datum (NAVD88). The southwestern portion of the study area south of Prince Street falls within the 0.2-percent annual chance (500-year) floodplain (Zone X, see **Figure 9-1**). The remainder of the study area is outside the floodplain

GROUNDWATER

As discussed in Chapter 10, "Hazardous Materials," groundwater is anticipated to be approximately five feet or more t below grade and is likely to flow in a general western direction toward the Hudson River. Actual groundwater depth and flow direction at each site may be influenced by other factors, such as subway lines, utilities, and basements. Groundwater in Manhattan is not used as a source of potable water. New York City's system of upstate reservoirs provides drinking water for Manhattan.

TERRESTRIAL RESOURCES

ECOLOGICAL COMMUNITIES

The study area is the urban landscape of the SoHo and NoHo neighborhoods of Manhattan and the ecological communities consist of paved city streets, exteriors of urban buildings, street trees, and small parks that would all fall under the "Terrestrial Cultural" communities defined by Edinger et al. (2014), including paved road/paths,[1] urban structure exteriors,[2] mowed lawns with trees,[3] and flower/herb garden.[4]

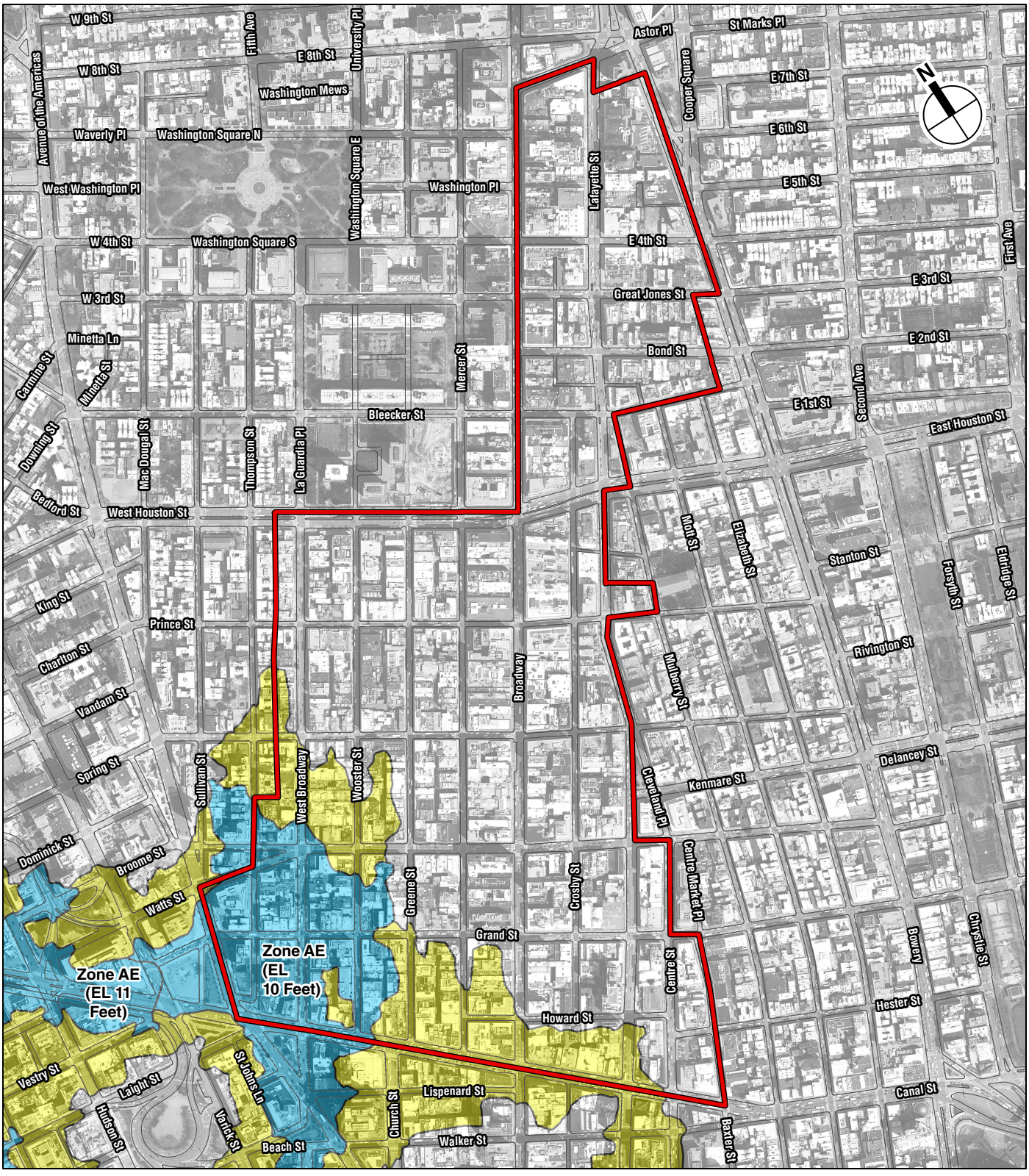
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[1] Edinger et al. (2014) define the paved road/paths ecological community as "a road or pathway that is paved with asphalt, concrete, brick, stone, etc. There may be sparse vegetation rooted in cracks in the paved surface."

[2] Edinger et al. (2014) define the urban structure exteriors ecological 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."

[3] Edinger et al. (2014) define the mowed lawn with trees ecological community as "residential, recreational, or commercial land in which the groundcover is dominated by clipped grasses and forbs, and is shaded by at least 30 percent of trees. Ornamental and/or native shrubs may be present, usually with less than 50 percent cover. The groundcover is maintained by mowing and broadleaf herbicide application."

[4] Edinger et al. (2014) define the flower/herb garden ecological community as "residential, commercial, or horticultural land cultivated for the production of ornamental herbs and shrubs. This community includes



Project Area / Rezoning Area

1% Annual Chance of Flooding

0.2% Annual Chance of Flooding

Data source: NYC Department of City Planning; FEMA, January 2015 / NYS GIS Program Office. New York City Orthoimagery, 6-inch resolution, captured April 2018

2.10.21

FEMA Preliminary FIRM 2015

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 ornamental herbs and shrubs in small parks and private gardens. Common urban-adapted plant species such as Japanese zelkova (*Zelkova serrata*), London planetree (*Platanus acerifolia*), sawtooth oak (*Quercus acutissima*), northern pin oak (*Quercus palustris*), honey locust (*Gleditsia triacanthos*), English ivy (*Hedera helix*), common mugwort (*Artemisia vulgaris*), and Canada yew (*Taxus canadensis*) characterize these ecological communities.

WILDLIFE

Natural habitat available to terrestrial wildlife in the study area is limited. The majority of the study area comprises developed areas including buildings, asphalt, and street trees. 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 11 species as confirmed or probable/possible breeders in the survey blocks in which the study area is located (Blocks 5850A and 5750B) (see **Table 9-1**). The two 3-square-mile survey blocks span different habitat types and larger, less disturbed habitats than what is present within the study area, including Liberty State Park, the Hudson River, and East River. As such, only a small subset of these species is likely to breed in the urban habitats comprising the study area. The bird species considered most likely to breed within the study area are the European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*), and rock dove (*Columba livia*).

Table 9-1
Birds Documented during the 2000–2005 New York State Breeding Bird Atlas in Blocks 5850A and 5750B

Common Name	Scientific Name
Northern Cardinal	*Cardinalis cardinalis*
Chimney Swift	*Chaetura pelagica*
Rock Pigeon	*Columba livia*
Peregrine Falcon*	***Falco peregrinus***
American Kestrel	*Falco sparverius*
Northern Mockingbird	*Mimus polyglottos*
House Sparrow	*Passer domesticus*
Downy Woodpecker	*Picoides pubescens*
European Starling	*Sturnus vulgaris*
American Robin	*Turdus migratorius*
Mourning Dove	*Zenaida macroura*

Note: Boldface denotes state-listed endangered species.
* State status has been proposed to be changed to "special concern" as per the DEC Draft List Under Part 182.5 Pre-proposal—October 2019.
Source: 2000–2005 New York State Breeding Bird Atlas Blocks 5850A and 5750B.

gardens cultivated for the production of culinary herbs."

Mammals

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

Reptiles and Amphibians

Because the study area is a built urban setting it does not provide habitat for reptiles and amphibians.

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

The USFWS IPaC system (2020) does not identify any federally listed species with the potential to occur within the study area. The DEC Environmental Resource Mapper (2020) does not identify any state-listed species with the potential to occur or significant natural communities within the study area. The 2000–2005 New York State Breeding Bird Atlas identified peregrine falcon (*Falco peregrinus*), a state-listed endangered species, within the survey blocks that includes the study area. The 1990–1999 New York State Herp Atlas identified eastern box turtle (*Terrapene c. carolina*), a state-listed species of special concern, within the Brooklyn USGS quadrangle that includes the study area. However, as stated above the study area does not have habitats suitable for reptiles and the DEC Environmental Resource Mapper (2020) does not identify eastern box turtle in the study area.

PEREGRINE FALCON

The peregrine falcon is a state-listed endangered species. Peregrine falcon populations in New York have grown dramatically since the 1980s (Loucks 2008). The New York State status of the peregrine falcon has been proposed to be changed to "Special Concern" as per the *DEC Draft List Under Part 182.5 Pre-proposal—October 2019* (DEC 2019). Peregrine falcon nest on cliff ledges, man-made platforms, bridges, and other tall, artificial structures. In New York City, nesting is almost exclusively atop bridge towers and buildings (DEC 2011). Peregrine falcons primarily feed on birds, particularly waterfowl (White et al. 2002). The study area falls within the survey blocks (5850A and 5750B) that include skyscrapers in the Financial District to the south of the study area and the Brooklyn, Manhattan, and Williamsburg Bridges, potential nesting sites for peregrine falcons. These potential nesting sites are located between 0.5 and 1.5 miles from the study area. The DEC Environmental Resource Mapper (2020) did not identify peregrine falcon as occurring within the study area. The study area does not provide suitable nesting habitat, but peregrine falcons nesting elsewhere may hunt for aerial prey in the study area.

D. THE FUTURE WITHOUT THE PROPOSED ACTIONS

In the No Action condition, the projected and potential development sites are 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 southwestern corner of the study area is within either the 1-percent or 0.2-percent annual chance floodplain.

Development on sites in this area would therefore have to comply with *Appendix G Flood-Resistant Construction* to the New York City Building Codes to minimize flooding impacts.

GROUNDWATER

With the measures discussed in Chapter 10, "Hazardous Materials," in connection with the placement of an (E) Designation for hazardous materials on development sites, the Proposed Actions would not result in adverse impacts to groundwater resources.

TERRESTRIAL RESOURCES

ECOLOGICAL COMMUNITIES

As stated above the urban ecological communities of the study area have limited habitat value. Development of these sites would disturb only ecological communities common to the urban environment. To the extent that a development requires removal of a street tree, all tree protection, clearing, and replacement must be performed in compliance with Local Law 3 of 2010 and NYC Parks' Tree Protection Protocol and Chapter 5 of Title 56 of the Rules of the City of New York.

Therefore, it is concluded that the Proposed Actions would not result in significant adverse impacts to ecological communities.

WILDLIFE

As stated above, the study area only provides habitat for urban-adapted, generalist species tolerant of human presence and activity. Loss of some of this habitat or individuals of these common species would not result in significant adverse impact to populations of these species within the New York City. Therefore, it is concluded that the proposed project would not result in any significant adverse impacts on wildlife.

Similarly, any construction period impacts to wildlife would be minimal and insignificant.as disturbance from construction activities would be temporary, any displaced individuals would be expected to easily move to an alternative habitat.

In addition to lighting and weather conditions, bird collision risk is highly dependent on structure height. For example, several studies have found bird mortality at communication towers taller than 300 meters (984 feet) to be significantly greater than mortality at towers that are less than 150 meters (492 feet) tall (Longcore et al. 2008). Most birds migrate at altitudes of 200–750 meters (656–2,461 feet; Able 1970; Mabee et al. 2006; Cabrera-Cruz et al. 2019), while, in the northeastern United States, most nocturnally migrating birds were found to migrate at altitudes of 500–2000 meters (1640–6562 feet; LaSorte et al. 2015). Furthermore, migrating birds uncommonly fly below 90 meters (295 feet) during clear weather (Mabee and Cooper 2004). As described in Chapter 2, "Land Use, Zoning, and Public Policy," the zoning changes under the Proposed Actions would encourage a range of heights and building forms; however, the maximum analyzed building height is not expected to exceed 270 feet, which is considerably lower than the

altitudes at which birds migrate through the metropolitan region (well above 656 feet, LaSorte et al. 2015, Van Doren et al. 2017; Cabrera-Cruz et a. 2019). Nighttime collisions with buildings developed due to the Proposed Actions are expected to be extremely infrequent and rare given their relatively low heights.

Any buildings expected under the Proposed Actions would also need to comply 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, would 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.[5] For these reasons the Proposed Actions would not result in significant nighttime or daytime bird collisions.

Based on the above, it is concluded that the Proposed Actions would not have significant adverse impacts to wildlife at either the individual or population level.

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

As discussed under "Existing Conditions," there are no federally listed 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 study area. Therefore, the Proposed Actions would have not result in any significant adverse impacts to threatened, endangered, and special concern species or significant natural communities.

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

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