A. INTRODUCTION

This chapter examines the potential impacts from the Proposed Project on natural resources on the Project Sites and other directly affected areas (study area) located in the unincorporated hamlet of Elmont, Town of Hempstead, Nassau County, NY.

This chapter describes:

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

PRINCIPAL CONCLUSIONS

This analysis finds that operation of the Proposed Project would not result in significant adverse impacts to natural resources. The Proposed Project would eliminate the man-made water feature on Site A that is fed by the municipal water supply and overflows to the storm sewer system. It is concrete lined on the bottom and the side, does not contain any aquatic vegetation, and does not support fish, amphibians or reptiles.

The majority of the study area consists of low-quality and disturbed ecological communities, including paved parking lots, mowed lawns, and fragmented successional forests, in an urbanized setting that provides limited habitat for birds and other wildlife typical of developed suburban areas.

The Proposed Project would eliminate or modify ecological communities that are of limited value to wildlife (e.g., paved road/path and mowed lawn with trees), and would not result in uses that would further disturb wildlife in the study area. However, the Proposed Project would result in the loss of a number of mature trees that provide habitat for birds and other wildlife typical of developed areas. Landscaping, including the approximately 3.75 acres of landscaped open space on Site B and tree plantings, has the potential to improve habitats for birds and pollinator species, as well as other wildlife within the Project Sites. Therefore, the Proposed Project would not have a significant adverse impact on vegetation and ecological communities. The South Lot, adjacent to the horse stables, would continue to be used for parking as under the existing conditions. The

South Lot would be screened from wildlife in the stables area by the landscaped areas along Gate 5 Road just west of the stables. The proposed buildings, where appropriate, would implement measures to reduce daytime bird collisions, and would not be of a sufficient height to impact nighttime migrations.

The New York State Department of Environmental Conservation (NYSDEC) Environmental Resource Mapper did not identify the potential for state-listed threatened, endangered, or special concern species within a half-mile of the study area. The U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Consultation (IPaC) system identified northern long-eared bat (*Myotis septentrionalis*); three bird species, piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), roseate tern (*Sterna dougallii dougallii*); and two plants, sandplain gerardia (*Agalinis acuta*), and seabeach amaranth (*Amaranthus pumilus*); as federally listed species with the potential to occur within the study area. The study area does not contain suitable habitat for the federally listed bird or plant species. Although the study area possesses limited potential to provide suitable habitat for northern long-eared bats, coordination with USFWS was initiated on October 28, 2018 to determine whether suitable habitat for long-eared bat is present within the Project Sites. A determination of no effect was received from USFWS on March 1, 2019, indicating that no further Endangered Species Act (ESA) coordination or consultation is required (see Appendix E). Therefore, the Proposed Project would not adversely impact northern long-eared bats. Seven state-listed willow oaks (*Quercus phellos*) are within the study area and five of these trees would be removed during construction. Two willow oaks would be preserved. The willow oaks observed were planted within Site B and do not represent a natural population. Because willow oak is a commonly planted tree in Nassau County and the New York City metropolitan area, these trees do not constitute one of the "five or fewer sites or very few remaining individuals" of this species in New York State as is intended by the New York Natural Heritage Program (NYNHP) "S1" rank. Therefore, the removal of these trees would not be considered a significant adverse impact to protected willow oak populations.

B. METHODOLOGY

STUDY AREA

Because the Project Sites are surrounded by developed areas with natural resources that do not have the potential to be affected by the Proposed Project, the study area for natural resources consists of the Project Sites and other directly affected areas—i.e., Site A, Site B, the South Lot, the North Lot, the East Lot, and the location of the proposed Belmont electrical substation (see Figure 1-1). Threatened, endangered, and special concern species were evaluated within a half-mile of the study area.

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

- The IPaC system for federally threatened and endangered species and response from USFWS Endangered Species Program;
- NYSDEC Environmental Resource Mapper;
- 2000–2005 New York State Breeding Bird Atlas results;
- 1990–1999 New York State Herp Atlas; and
- Observations made during site reconnaissance conducted on May 21, 2018, August 30. 2018, and September 27, 2018.

REGULATORY CONTEXT

The following sections identify the federal and state laws and regulatory programs that have potential applicability to the Proposed Project.

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 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.

Removal of Trees and Protected Plants (ECL, Section 9-1503)

Section 9-1503 of the ECL states that "[n]o person shall, in any area designated by such list or lists, knowingly pick, pluck, sever, remove, damage by the application of herbicides or defoliants, or carry away without the consent of the owner thereof, any protected plant."

C. EXISTING CONDITIONS

VEGETATION AND ECOLOGICAL COMMUNITIES

Predominant ecological communities within the study area are best described by Edinger et al. (2014) as Terrestrial Cultural[1] communities (i.e., paved road/path[2] and mowed lawn with trees[3]). Vegetation within these ecological communities is restricted to the edges of the parking lots, cracks in the pavement, and a few planted trees in the parking lot interiors. In addition, successional southern hardwoods[4] are found along the perimeter of some paved areas. The approximately 94-acre study area primarily consists of impervious asphalt-paved and compacted gravel-paved parking lots and roads, and approximately 12 acres of pervious vegetated areas as shown in **Figures 10-1 through 10-5**.

Within Site A (see **Figures 10-3 and 10-4**), crabgrass (*Digitaria* sp.), English plantain (*Plantago lanceolate*), Kentucky bluegrass (*Poa pratensis*), common dandelion (*Taraxacum officinale*), and white clover (*Trifolium repens*) were the dominant plant species in the herb stratum; viburnum (*Viburnum* sp.) and rose (*Rosa* sp.) were the dominant species in the shrub stratum; and Norway maple (*Acer platanoides*), pin oak (*Quercus palustris*), and little leaf linden (*Tilia cordata*) were the dominant species in the tree stratum. Paved road/path and mowed lawn with trees were the dominant ecological communities within Site A. Several mature trees, primarily pin oak, were located within the "Backyard" picnic area. **Appendix E**, Table 10-1 presents a complete list of plant species identified within Site A.

Within Site B (see **Figure 10-3**), crabgrass, path rush (*Juncus tenuis*), English plantain, and common dandelion were the dominant plant species in the herb stratum; Norway maple, tree of heaven (*Ailanthus altissima*), black cherry (*Prunus serotina*), and white mulberry (*Morus alba*) were the dominant species in the tree stratum. Paved road/path and mowed lawn with trees the predominant ecological communities within Site B. Successional southern hardwood forest was found along the perimeter of the paved areas. **Appendix E**, Table 10-2 presents a complete list of plant species identified within Site B.

Within the South Lot (see **Figure 10-2**), crabgrass, English plantain, Kentucky bluegrass, and white clover were the dominant species in the herb stratum; London planetree and little leaf linden were the dominant species in the tree stratum. Paved road/path and mowed lawn with trees were

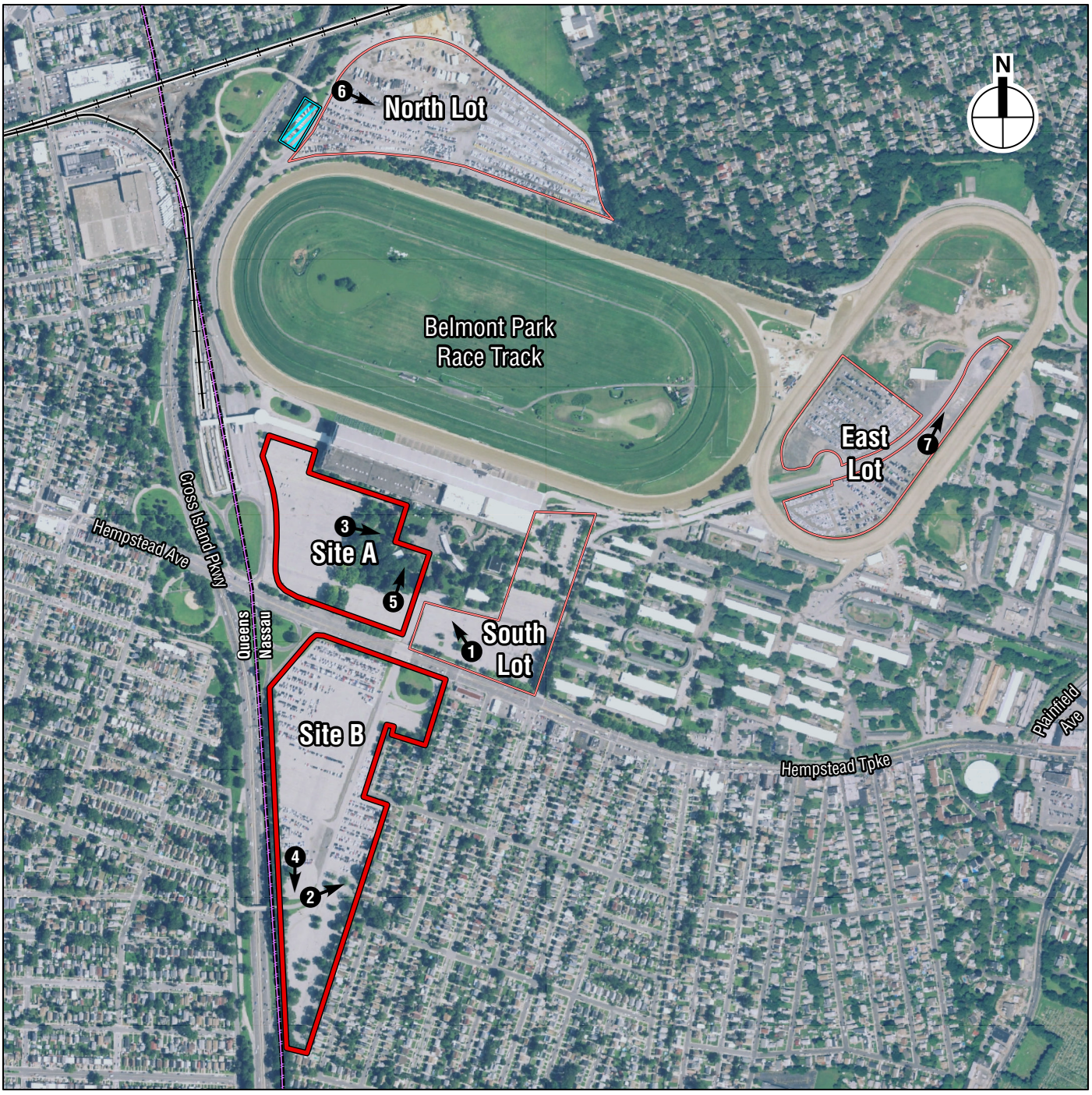
[1] Edinger et al. 2014 defines this subsystem of ecological communities as "communities that are either created and maintained by human activities, or are modified by human influence to such a degree that the physical conformation of the substrate, or the biological composition of the resident community is substantially different from the character of the substrate or community as it existed prior to human influence."

[2] Edinger et al. 2014 describes this 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."

[3] Edinger et al. 2014 describes this ecological community as "residential, recreational, or commercial land in which the groundcover is dominated by clipped grasses and forbs (herbaceous flowering plants other than grasses), and it is shaded by at least 30 percent cover 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 describes this ecological community as "a hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed."

11.21.18



0 1,000 FEET

Project Sites

North, South, and East Parking Lots

Proposed Belmont Electrical Substation

Long Island Rail Road (LIRR)

Photograph Reference Number and View Direction

Photograph Key

BELMONT PARK REDEVELOPMENT CIVIC AND LAND USE IMPROVEMENT PROJECT

Figure 10-1

Looking northeast at mowed lawn ecological communities and paved road/path in the South Lot. May 21, 2018. **1**

Looking northeast at paved road/path ecological community in Site B. May 21, 2018. **2**

Looking east at mowed lawn with trees ecological community in Site A. May 21 2018. **3**

Looking south at successional southern hardwood forest ecological community in Site B. May 21, 2018. **4**

Looking north at the man-made water feature in the Backyard area in Site A. May 21, 2018. **5**

Looking east at the paved road/path ecological community in the North Lot. May 21, 2018. **6**

Looking northeast at the paved road/path and mowed lawn ecological communities in the East Lot. September 27, 2018. **7**

the dominant ecological communities in the South Lot. **Appendix E**, Table 10-3 presents a complete list of plant species identified within the South Lot.

Within the North Lot (see **Figure 10-4**) and in the area for the proposed electrical substation, crabgrass, English plantain, Kentucky bluegrass, common dandelion, and white clover were the dominant species in the herb stratum; Norway maple was the dominant species in the tree stratum. Paved road/path and mowed lawn with trees were the predominant ecological communities within the North Lot and in the area for the proposed electrical substation. Successional southern hardwood forest was found along the perimeter of the North Lot and several mature trees were located in this area. **Appendix E**, Table 10-4 provides a complete list of plant species identified within the North Lot and in the area for the proposed electrical substation.

Within the East Lot (see **Figure 10-5**), herb species were most prevalent with common mugwort, crabgrass, English plantain, common plantain, and Kentucky bluegrass being the dominant species. Paved road/path, mowed lawn,[5] and construction/road maintenance spoils[6] were the predominant ecological communities within the East Lot. **Appendix E**, Table 10-5 provides a list of plant species identified within the East Lot**.**

WILDLIFE

The study area consists primarily of asphalt- and compacted gravel-paved parking lots, fragmented forested edge communities, and mature planted trees within the larger context of highly developed surroundings. As such, the habitat available for wildlife is limited to habitat that would support an assemblage of disturbance-tolerant species. Mature trees found throughout the study area, including in the Backyard area, provide the most valuable habitat for wildlife.

BIRDS

The New York State Breeding Bird Atlas documents the distribution of breeding bird species throughout the state and was most recently conducted from 2000 to 2005. The study area is located within census Block 6050A. A total of 32 possible species of breeding birds were documented in these survey blocks (see **Appendix E**, Table 10-6). However, due to the developed nature and the homogeneity of habitat within the study area, primarily disturbance-tolerant generalist species are likely to use the buildings, mowed lawns, and trees within the vicinity of the study area. Bird species with the potential to occur within the study area include American crow (*Corvus brachyrhynchos*), red-tailed hawk (*Buteo jamaicensis*), rock pigeon (*Columbia livia*), American robin (*Turdus migratorius*), turkey vulture (*Cathartes aura*), mourning dove (*Zenaida macroura*), blue jay (*Cyanocitta cristata*), and gray catbird (*Dumetella carolinensis*).

The non-native rock dove, European starling (*Sturnus vulgaris*), and house sparrow (*Passer domesticus*) have the potential to use the habitats within the study area as nesting and roosting sites. House sparrow, mourning dove, European starling, rock dove, and American crow were observed within the study area during the May 21, 2018 and September 27, 2018 reconnaissance.

---

[5] Edinger et al. 2014 describes this ecological community as "a residential, recreational, or commercial land, or unpaved airport runways in which the groundcover is dominated by clipped grasses and there is less than 30 percent cover 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."

[6] Edinger et al. 2014 describes this ecological community as "a site where soil from construction work and/or maintenance materials have been recently deposited. There is little, if any, vegetation."

Two domestic white ducks (*Anas platyrhynchos domesticus*) were observed within the man-made water feature in Site A during the August 30, 2018 reconnaissance.

REPTILES AND AMPHIBIANS

The NYSDEC Amphibian and Reptile Atlas Project (Herp Atlas) conducted a survey between 1990 and 1999 documenting the geographic distribution of New York's reptiles and amphibians. Table 10-7 (see **Appendix E**) lists the 14 species of reptiles and amphibians documented by the Atlas that occur in the *Lynbrook* USGS Quadrangle. Many of these species require access to both aquatic and terrestrial habitats for breeding and foraging. Thus, due to the lack of natural freshwater resources, the highly developed nature of the study area, only Italian wall lizard (*Podarcis sicula*), northern brown snake (*Storeria dekayi*), and common garter snake (*Thamnophis sirtalis*) are likely to occur within the study area (indicated by boldface type in **Appendix E**, Table 10-7). No amphibians and reptiles were observed within the study area during the May 21, August 30, and September 27, 2018 site reconnaissance.

MAMMALS

Habitats for mammals are limited within the study area, and are likely to be used by disturbance-tolerant species. These include the raccoon (*Procyon lotor*), Norway rat (*Rattus norvegicus*), gray squirrel (*Sciurus carolinensis*), domestic cat (*Felis catus*), eastern cottontail (*Sylvilagus floridanus*), opossum (*Didelphis virginiana*), groundhog (*Marmota monax*), and white-footed mouse (*Peromyscus leucopus*). In addition, Belmont Park is home to a major thoroughbred racing facility with training facilities and stables for horses.

AQUATIC BIOTA

No fish, aquatic reptiles or amphibians occur within the study area. The man-made water feature located in the Backyard area on Site A is fed by the municipal water supply and overflows to the storm sewer system. It is concrete lined on the bottom and the side with a substantial amount of organic detritus (leaves and sticks) but does not contain any aquatic vegetation or shoreline vegetation, and does not support fish, amphibians or reptiles. Adult dragonflies and damselflies were observed over and around the water feature during the August 30, 2018 reconnaissance, suggesting some insect reproduction, including aquatic life stages, is occurring within the water feature.

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

The NYSDEC Environmental Resource Mapper (2018) did not identify the potential for state-listed threatened, endangered, or special concern species within a half-mile of the study area (see **Appendix E**). The USFWS IPaC system (2018) identified northern long-eared bat (*Myotis septentrionalis*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), roseate tern (*Sterna dougallii dougallii*), sandplain gerardia (*Agalinis acuta*), and seabeach amaranth (*Amaranthus pumilus*) as federally listed species with the potential to occur within the study area (see **Appendix E**). Willow oak, a state-listed species, was observed within the study area during the May 21, 2018 and September 27, 2018 reconnaissance investigation. A total of seven individual willow oaks were documented in the December 2017 Tree Inventory and Assessment Report, within Site B. Northern long-eared bat, piping plover, red knot, roseate tern, sandplain gerardia, seabeach amaranth, and willow oak are discussed below.

NORTHERN LONG-EARED BAT

The northern long-eared bat (*Myotis septentrionalis*) is a federally listed and state-listed threatened species. The northern long-eared bat is a temperate, insectivorous bat that hibernates in caves or mines during winter and then emerges in early spring, with males dispersing and remaining solitary until mating season at the end of the summer, and pregnant females forming maternity colonies in which to rear young. Outside of the winter hibernation period, northern long-eared bats generally inhabit mature, closed-canopy, deciduous or mixed forest within heavily forested landscapes (Owen et al. 2003, Carter and Feldhammer 2005, Ford et al. 2005), usually within 60 miles of their hibernaculum[7] (Caceres and Barclay 2000, USFWS 2014). Unlike many other bats of the Northeast, northern long-eared bats will glean prey from leaves and other surfaces rather than strictly hawking flying insects in the air, and are thereby well-adapted to foraging in cluttered, structurally complex, forest interior habitat (Owen et al. 2003, Lacki et al. 2007). Most foraging occurs above the understory and below the canopy of forested hillsides and ridges (Brack and Whitaker 2001, Harvey et al. 2011, USFWS 2014). Foraging activity is greatest in interior areas with a tall and closed canopy (Owen et al. 2003, Patriquin and Barclay 2003, Adams 2013). In contrast to strictly aerial-foraging bat species, northern long-eared bats do not frequently concentrate along riparian corridors or other linear landscape features (Owen et al. 2003, Ford et al. 2005, Harvey et al. 2011, USFWS 2014), and most radio-telemetry and acoustic studies have found that they typically avoid roads and other sharp forest edges (Owen et al. 2003, Patriquin and Barclay 2003, Carter and Feldhammer 2005, Morris et al. 2010).

The northern long-eared bat is associated with mature, interior, upland forest within heavily forested landscapes. It is sensitive to forest fragmentation and urbanization, and typically avoids roads and other sharp forest edges (Owen et al. 2003, Broders et al. 2006, Henderson et al. 2008, and Johnson et al. 2008). The study area is heavily developed and lacks any large tracts of forest that would be capable of supporting northern long-eared bats. There are no documented hibernacula within 40 miles of the study area. There are no known roosting locations within 40 miles of the study area. The study area has limited potential to provide suitable habitat for northern long-eared bats. No bats were observed during the site reconnaissance.

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), nor were they observed during the site reconnaissance. The study area lacks the required habitat for piping plovers and this species is not considered to have the potential to occur within the study area except as an occasional flyover.

[7] Shelter occupied during the winter.

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 study area lacks the appropriate coastal habitat for red knots, and this species is not considered to have the potential to occur within the study area except as an occasional flyover. Red knots were not observed during the site reconnaissance.

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 study area lacks the required unvegetated beach habitat for roseate tern and this species is not considered to have the potential to occur within the study area except as an occasional flyover. Roseate terns were not observed during the site reconnaissance.

SANDPLAIN GERARDIA

Sandplain gerardia (*Agalinis acuta*) is a state-listed and federally listed endangered species. Sandplain gerardia grows primarily within maritime grasslands, Hempstead plains grasslands, and other open grasslands (NYNHP 2013). The study area lacks suitable open grassland habitat to support sandplain gerardia, and therefore is not considered to have the potential to occur within the study area. Sandplain gerardia was not observed during the site reconnaissance.

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 study area lacks suitable sandy beach habitat to support seabeach amaranth, and therefore is not considered to have the potential to occur within the study area. Seabeach amaranth was not observed during the site reconnaissance.

WILLOW OAK

Willow oak is a state-listed endangered tree species. While naturally occurring willow oak is ranked as "S1" by NYNHP, willow oak is a commonly planted tree in New York City and Nassau County. For naturally occurring trees, the "S1" rank indicates that they are critically imperiled in the state because of extreme rarity (i.e., five or fewer sites or very few remaining individuals) (NYNHP 2017). However, planted willow oak trees do not constitute one of the five or fewer sites or very few remaining individuals of this species in New York State as is intended by the NYNHP "S1" rank. Thus, the seven willow oak individuals, documented within the study area are not considered part of a critically imperiled population. Habitat for this species is mostly on the coastal plain in moist soils or swamps (Gleason and Cronquist 1963). Except as planted trees, due to the urbanized nature and absence of moist soils, this species would not occur within the study area.

D. THE FUTURE WITHOUT THE PROPOSED ACTIONS

In the No Action condition, existing conditions and use in the study area would remain unchanged. As described in Chapter 2, "Land Use and Community Character," Sites A and B would continue to be used for occasional parking related to Belmont Park Racetrack and its associated activities and events. The North, South, and East Lots and area for the proposed electrical substation would also continue to be used for occasional parking and vehicle storage. There are no developments in the study area that are anticipated to be completed by the 2021 analysis year. New York Racing Association's (NYRA's) future renovations at Belmont Park fall outside of the study area and would occur separately from the Proposed Project. Its renovations would be expected to result in some benefits to natural resources in the vicinity of the study area through landscaping that would be expected to be incorporated into future renovations.

E. POTENTIAL IMPACTS OF THE PROPOSED ACTIONS

VEGETATION AND ECOLOGICAL COMMUNITIES

Operation of the Proposed Project would not result in significant adverse impacts to vegetation or ecological communities. As discussed under "Existing Conditions," ecological communities within the study area are limited to mowed lawns with trees, paved road/path communities, and successional southern hardwood forests. 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. Mature trees found throughout the study area, including in the Backyard area, provide the most valuable habitat for wildlife.

The Proposed Project would result in the removal of approximately 124 mature trees from Site A and 66 trees from Site B. No trees would be removed from the East Lot. A minimal number of trees would be removed from the North Lot, South Lot, and proposed electrical substation area. A tree protection plan has been prepared to minimize impacts to trees to be retained within the Project Sites located within the vicinity of areas that will be disturbed. In addition, landscaping installed as a result of the Proposed Project would improve the diversity of ecological communities within the study area. Approximately 3.75 acres of landscaped open space is proposed for Site B and approximately 2.0 acres of hard- and soft-scape plazas are proposed for Site A. Trees would be planted within the Project Sites in conjunction with the planned landscaping. Approximately 109 trees, 108 shrubs, and other vegetation would be planted on Site A. It is anticipated that the landscaping would provide habitats for wildlife, including pollinator species and nesting birds. Where design allows, native plant species would be used in the anticipated landscaping.

Therefore, operation of the Proposed Project would not have a significant adverse impact on vegetation and ecological communities.

WILDLIFE

Operation of the Proposed Project would not result in significant adverse impacts to wildlife. The limited habitats found within the study area support urban-adapted, generalist species. Terrestrial wildlife habitats within the study area are presently limited to mowed lawns with trees, paved road/path communities, and successional southern hardwood forest 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 study area. Loss of individuals of these common species found within developed areas would not result in significant adverse impact to populations of these species within the region. Therefore, the Proposed Project would not eliminate any high quality or valuable habitats for wildlife, and would not adversely affect wildlife within the area.

The South Lot, adjacent to the horse stables, would continue to be used for parking as under the existing condition, albeit with more frequent use, and wildlife utilizing the landscaped areas within the stables would be screened from the Proposed Project by vegetation. New parking field illumination in the North, South and East Lots would be controlled by time clock and daylight sensors to operate from dusk to dawn. A lighting control system would provide the ability to lower light levels after events on site to limit unwanted lighting late at night, but still provide sufficient safety and security lighting. Overall, the Proposed Project's lighting strategy incorporates best-practices principles related to duration and usage, brightness, orientation, directionality, form, and fixtures that would minimize light pollution. With these measures, the incremental change in lighting will not have the potential to result in significant adverse impacts to wildlife.

The disturbance of the man-made water feature in Site A would not eliminate habitat for fish, aquatic reptiles or amphibians. The loss of this habitat would not result in significant adverse impacts to regional populations of insects with aquatic life stages.

Approximately 124 mature trees would be removed from Site A and 66 trees from Site B. No trees would be removed from the East Lot. A minimal number of trees would be removed from the North Lot, South Lot, and proposed electrical substation area. Urban tolerant wildlife utilizing these trees are species tolerant of developed conditions and would be expected to move to similar habitats near the study area. However, landscaping, including the proposed 2.0 acres of hard- and soft-scaped plaza spaces on Site A and approximately 3.75 acres of naturally landscaped areas on Site B, would increase the diversity of wildlife habitats within the study area. Therefore, operation of the Proposed Project has the potential to improve conditions for wildlife in the study area.

BIRD COLLISIONS

Nighttime Collisions with Buildings

The maximum height of the arena would be 125 feet and the maximum height of the hotel would be 150 feet. The main retail buildings on Site B would be approximately one or two stories tall; however, additional architectural elements on these buildings (e.g. a clock tower) would be taller. Therefore, structures constructed under the Proposed Project would be well below the altitudes at which birds typically migrate (650 to 2,500 feet) and the heights of structures with which nighttime collisions of birds can sometimes occur (Able 1970, Kerlinger 2000, Longcore et al. 2008, Mabee and Cooper 2004, Mabee et al. 2006).

Single structures with artificial lighting, such as communications towers and buildings, can create disorienting conditions for night-migrants and result in collisions mainly when that structure is in an otherwise dark landscape and stands out as the only or one of few sources of artificial light in the area. Disorientation of night-migrating birds is particularly more common 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). In contrast, the Proposed Project is located within an urbanized landscape that is full of artificial light sources. Therefore, within this heavily light-polluted landscape, the Proposed Project does not have the potential to stand out as a source of lighting that on its own will attract and create the potential for collisions of migrating birds. In addition, the Proposed Project lighting strategy incorporates best-practices principles (e.g., lighting control systems allowing lighting to be dimmed during low-use periods, time clock and daylight sensors, and pathway lightning) that would minimize nighttime bird collisions.

Daytime Collisions with Buildings

It is estimated that up to 1 billion birds are killed by building collisions every year in the United States (Loss et al. 2014). Despite popular opinion that most building collisions occur at the tops of tall buildings during nocturnal migration, the reality is that the overwhelming majority of building collisions, including in New York City (Gelb and Delacretaz 2006, 2009; Klem et al. 2009), occur during the daytime and near ground level when lower-story windows reflect images of nearby trees and other vegetation (Loss et al. 2014). The potential for daytime window collisions at the proposed buildings would depend on the architecture, and the amount, location and orientation of reflective glass, as well as the location of landscaping adjacent to any reflective glass surfaces (Hager et al. 2008; Gelb and Delacretaz 2009; Klem et al. 2009, Sheppard and Philips 2015). To reduce the likelihood of daytime bird collisions, the Proposed Project would incorporate measures, where appropriate, that include: reducing the proportion of reflective glass to other building materials within the first two stories of the ground surface; and for all vertically oriented glass, using low reflectivity glass that is fritted or patterned with dots or other shapes to further reduce reflectivity and transparency (to enable birds to recognize glass as a solid object). Given the low quality habitat present within the study area, non-native European starlings, house sparrows, and rock pigeons are expected to be the most abundant birds in the area and these species seldom collide with windows relative to native bird species (O'Connell 2001, Sloan 2007). However, it should be noted that even minimal amounts of vegetation can attract migrating birds and create conditions under which collisions with reflective glass can occur (Gelb and Delacretaz 2006, 2009; Klem et al. 2009). Therefore, where glass materials that could reflect landscaping vegetation are present within the first two stories above the ground surface, vegetation would be located far enough away from buildings to not be clearly reflected by glass, or within three feet[8] of buildings such that birds would not be capable of attaining sufficient momentum to result in harmful collisions if they were to fly towards the buildings from that vegetation (Klem et al. 2004). These measures are specified in the Proposed Project's Design Guidelines, which would be made a condition of the lease.

With these measures in place, operation of the Proposed Project would not represent a significant collision hazard to resident or migratory birds.

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

[8] http://www.nycaudubon.org/pdf/BirdSafeBuildingGuidelines.pdf

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

The Project Sites do not provide habitat for the federally listed piping plover, red knot, roseate tern, sandplain gerardia, and seabeach amaranth. The listed bird species would only have the potential to occur as an occasional flyover. Therefore, the Proposed Project would have no effect on these species.

Willow oaks were observed within the study area during the May 21, 2018 reconnaissance investigation. A total of seven willow oaks were observed within Site B and five would be removed during construction. Two willow oaks would be preserved. The willow oaks observed were planted within Site B and do not represent a natural population. Because willow oak is a commonly planted tree in New York City and Nassau County, these trees do not constitute one of the "five or fewer sites or very few remaining individuals" of this species in New York State as is intended by the NYNHP "S1" rank. Therefore, the removal of these trees would not be considered a significant adverse impact to protected willow oak populations.

The USFWS's 4(d) rule identifies Endangered Species Act protections that focus on protecting the northern long-eared bat's sensitive life stages, minimizing incidental take[9] in areas affected by white-nose syndrome.[10] Although the study area possesses limited potential to provide suitable habitat for northern long-eared bats, coordination with USFWS was initiated on October 28, 2018 to determine whether suitable habitat for long-eared bat is present within the Project Sites and whether the 4(d) rules applies. A determination of no effect was received from USFWS on March 1, 2019, indicating that no further Endangered Species Act (ESA) coordination or consultation is required (see **Appendix E**). Therefore, the Proposed Project would not adversely impact northern long-eared bats.

F. REFERENCES

Able, Kenneth P. 1970. "A Radar Study of the Altitude of Nocturnal Passerine Migration." Bird-Banding 41 (4): 282–90. doi:10.2307/4511688.

Adams, A.M. 2013. Assessing and analyzing bat activity with acoustic monitoring: challenges and interpretations. Ph.D. Dissertation, University of Western Ontario, London, Canada. Available from: http://ir.lib.uwo.ca/cgi/viewcontent.cgi?article=2679&context=etd

Baker, A.J., P.M. González, T. Piersma, L.J. Niles, I.L.S. do Nascimento, P.W. Atkinson, N.A. Clark, C.D.T. Minton, M.K. Peck, and G. Aarts. 2004. Rapid population decline in red knot: Fitness consequences of decreased refueling rates and late arrival in Delaware Bay. Proceedings of the Royal Society B 25: 125–129.

Boretti, T, E. Fetridge, and A. Brash. 2007. The piping plover colony at Rockaway Beach within a regional context. Transactions of the Linnaean Society of New York 10:213-228

[9] "Incidental take" is defined by the Endangered Species Act as take ("to harass, harm, pursue, hunt, shoot, wound kill trap, capture, or collect" any endangered species) that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." For example, harvesting trees can kill bats that are roosting in the trees, but the purpose of the activity is not to kill the bats.

[10] https://www.fws.gov/midwest/endangered/mammals/nleb/pdf/FAQsFinal4dRuleNLEB.pdf

Brack, V., Jr.; Whitaker, J.O., Jr. 2001. Foods of the northern myotis, Myotis septentrionalis, from Missouri and Indiana, with notes on foraging. Acta Chiropterologica. 3(2): 203-210.

Broders, H.G., G.J. Forbes, S. Woodley and I.D. Thompson. 2006. Range extent and stand selection for roosting and foraging in forest-dwelling northern long-eared bats and little brown bats in the Greater Fundy Ecosystem, New Brunswick. Journal of Wildlife Management 70:1174-1184.

Burger, J., L.J. Niles, R.R. Porter, A.D. Dey, S. Koch and C. Gordon. 2012. Migration and over-wintering of Red Knots (*Calidris canutus rufa*) along the Atlantic Coast of the United States. Condor 114: 302-313.

Caceres, M. and R.M.R. Barclay. 2000. *Myotis septentrionalis*. Mammal Species 634:1-4.

Carter, T.C., and G.A. Feldhamer. 2005. Roost tree use by maternity colonies of Indiana bats and northern long-eared bats in southern Illinois. Forest Ecology and Management 219:259-268.

Elliott-Smith, E. and S.M. Haig. 2004. Piping Plover (Charadrius melodus). In: The Birds of North America Online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, NY. Retrieved from http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/002doi:10.2173/bna.2

Ford, W.M., M.A. Menzel, J.L. Rodrigue, J.M. Menzel, and J.B. Johnson. 2005. Relating bat species presence to simple habitat measures in a central Appalachian forest. Biological Conservation 126: 528-539.

Fowle, M. and P. Kerlinger. 2001. The New York City Audubon guide to finding birds in the metropolitan area. Cornell University Press, Ithaca, NY.

Gauthreaux, S., Jr., and C. Belser. 2006. Effects of artificial night lighting on migrating birds. In: C. Rich and T. Longcore (eds.). Ecological consequences of artificial night lighting, pp. 67-93. Island Press, Washington, D.C., USA.

Gehring, J.L., P. Kerlinger, and A.M. Manville, II. 2009. Communication towers, lights, and birds: successful methods of reducing the frequency of avian collisions. Ecological Applications 19: 505-514.

Gelb, Yigal, and Nicole Delacretaz. 2006. "Avian Window Strike Mortality at an Urban Office Building." The Kingbird 56 (3): 190–98.

Gelb, Yigal, and Nicole Delacretaz. 2009. "Windows and Vegetation: Primary Factors in Manhattan Bird Collisions." Northeastern Naturalist 16 (3): 455–70.

Gleason, Henry A. and A. Cronquist. 1963. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. D. Van Nostrand Company, New York.

Hager, Stephen B., Heidi Trudell, Kelly J. McKay, Stephanie M. Crandall, and Lance Mayer. 2008. "Bird Density and Mortality at Windows." The Wilson Journal of Ornithology 120 (3): 550–64.

Harrington, B.A., S. Loch, L.K. Niles, and K. Kalasz. 2010. Red knots with different wintering destinations: differential use of an autumn stopover site. Waterbirds 33:357-363.

Harvey, M.J., J.S. Altenbach, and T.L. Best. 2011. Bats of the United States and Canada. Johns Hopkins University Press, Baltimore.

Henderson, L.E., L.J. Farrow, and H.G. Broders. 2008. Intra-specific effects of forest loss on the distribution of the forest-dependent northern long-eared bat (*Myotis septentrionalis*). Biological Conservation 141:1819–1828.

Johnson, J.B., J. Gates, and W. Ford. 2008. Distribution and activity of bats at local and landscape scales within a rural–urban gradient. Urban Ecosystems 11: 227-242.

Klem Jr, D, Keck DC, Marty KL, MILLER BALL AJ, Niciu EE, Platt CT. 2004. Effects of window angling, feeder placement, and scavengers on avian mortality at plate glass. Wilson Bulletin 116:69-73.

Klem Jr, D., C. J. Farmer, N. Delacretaz, Y. Gelb, and P.G. Saenger. 2009. "Architectural and Landscape Risk Factors Associated with Bird–glass Collisions in an Urban Environment." The Wilson Journal of Ornithology 121 (1): 126–34.

Krulikas, R.K. 1989. Hydrogeology of the southwestern part of the Town of Hempstead, Nassau County, New York. Water Resources Investigation Report 85-4288, U.S. Geological Survey, Syosset, NY. 21 pp.

Lacki, M.J., S.K. Amelon, and M.D. Baker. 2007. Foraging ecology of bats in forests. Pp. 83-127 in: Bats in forests: conservation and management (M.J. Lacki, J.P. Hayes, and A. Kurta, eds.). Johns Hopkins Press, Baltimore, MD.

Longcore, Travis, Catherine Rich, and Sidney A. Gauthreaux. 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): 485–92. doi:10.1525/auk.2008.06253.

Loss, Scott R., Tom Will, Sara S. Loss, and Peter P. Marra. 2014. "Bird–building Collisions in the United States: Estimates of Annual Mortality and Species Vulnerability." The Condor 116 (1): 8–23. doi:10.1650/CONDOR-13-090.1.

Mabee, Todd J., and Brian A. Cooper. 2004. "Nocturnal Bird Migration in Northeastern Oregon and Southeastern Washington." Northwestern Naturalist 85 (2): 39–47.

Mabee, Todd J., Brian A. Cooper, Jonathan H. Plissner, and David P. Young. 2006. "Nocturnal Bird Migration over an Appalachian Ridge at a Proposed Wind Power Project." Wildlife Society Bulletin (1973–2006) 34 (3): 682–90.

Mitra, S.S. 2008. Roseate tern. Pp. 268-269 in: The second atlas of breeding birds in New York State (K.J. McGowan and K. Corwin, Eds.). Cornell University Press, Ithaca, NY.

Morris, A.D., D.A. Miller, and M.C. Kalcounis-Reuppell. Use of forest edges by bats in a managed pine forest landscape. Journal of Wildlife Management 74: 26-34.

Morrison, R.I.G., N.C. Davidson, and J.R. Wilson. 2007. Survival of the fattest: Body stores on migration and survival in red knots, *Calidris canutus islandica*. Journal of Avian Biology 38: 479-487.

Monti Jr., Jack, and Ronald J. Busciolano. 2009. "Water-Table and Potentiometric-Surface Altitudes in the Upper Glacial, Magothy, and Lloyd Aquifers beneath Long Island, New York, March-April 2006." USGS Numbered Series 3066. Scientific Investigations Map. U.S. Geological Survey. http://pubs.er.usgs.gov/publication/sim3066

New York City Department of Parks and Recreation (NYC Parks). 2013. Rockaway Beach Endangered Species Nesting Area (RESNA). Available from: http://www.nycgovparks.org/programs/rangers/wildlife-management/rbesna

New York Natural Heritage Program. 2013. Conservation guide for *Agalinis acuta*. Available from: http://acris.nynhp.org/guide.php?id=9350Owen, S.F., M.A. Menzel, W.M. Ford, B.R. Chapman, K.V. Miller, J.W. Edwards, and P.B. Wood. 2003. Home-range size and habitat used by the northern myotis (*Myotis septentrionalis*). American Midland Naturalist 150:352-359.

New York Natural Heritage Program. 2017. Online Conservation Guide for *Quercus phellos*. Available from: http://www.acris.nynhp.org/guide.php?id=9078. Accessed July 23rd, 2018.

Patriquin, K.J. and R.M.R. Barclay. 2003. Foraging by bats in cleared, thinned and unharvested boreal forest. Journal of Applied Ecology 40:646-657

Sheppard, C. and G. Phillips. 2015. Bird-Friendly Building Design, 2nd Ed. American Bird Conservancy, The Plains, VA.

Tanacredi, J.T. and C.J. Badger. 1995. Gateway: A visitor's companion. Stackpole Books, Mechanicsville, PA.

Town of Hempstead. 2013. Water Department home page. Available from: http://toh.li/waterdepartment

U.S. Environmental Protection Agency (USEPA). 1975. Nassau-Suffolk Aquifer System. USEPA Region 2, Available from: http://www.epa.gov/region02/water/aquifer/nasssuff/nassau.htm#I22

U.S. Fish and Wildlife Service (USFWS). 2012. Seabeach amaranth. Available from: http://www.fws.gov/raleigh/species/es_seabeach_amaranth.html

U.S. Fish and Wildlife Service (USFWS). 2014. Northern long-eared bat interim conference and planning guidance. Available from: http://www.fws.gov/midwest/endangered/mammals/nlba/pdf/NLEBinterimGuidance6Jan2014.pdf

Wasilco, M.R. 2008. Piping plover. Pp. 232-233 in: The Second Atlas of Breeding Birds in New York State (K.J. McGowan and K. Corwin, Eds.). Cornell University Press, Ithaca, NY

Wells, J.V. 1996. Important Bird Areas in New York State. National Audubon Society, Albany, NY ✶