3.9 NATURAL RESOURCES

INTRODUCTION

As described in this chapter, the proposed action would not result in significant adverse impacts to natural resources. As defined in the *CEQR Technical Manual*, a natural resource is a plant, animal species or any area capable of providing habitat for plant and animal species. An area capable of functioning to support environmental systems and maintain the City's environmental balance may also be considered a natural resource. Such resources include surface and groundwater, soils, drainage systems, wetlands, dunes, beaches, grasslands, woodlands, landscaped areas, gardens, parks and built structures used by wildlife. An assessment of natural resources is appropriate if that natural resource exists on, or near, the site of the proposed action, or if an action involves disturbance of that resource. The proposed action is expected to result in the future redevelopment of portions of the Lower Concourse rezoning area. The potential for the redevelopment to significantly affect natural resources is addressed in this chapter. A primary natural resource in the area is the Harlem River, which borders the area to be rezoned on the west.

The area to be rezoned was selected as the primary study area for this analysis, since this is the area where development would occur as a direct result of the proposed action. A secondary study area has been designated with a radius extending approximately ¼-mile from the proposed rezoning area in order to identify resources at the edge of the rezoning area that may be affected. The primary and secondary study areas together are referred to as the "study area". Figure 3.9-1 shows the study area boundaries.

The Lower Concourse Rezoning area is urbanized and densely developed. The study area does not include any of the following natural resources: state-regulated freshwater wetlands, beaches, dunes, bluffs, thickets, significant grasslands, meadows, woodlands, forests or areas identified in the *CEQR Technical Manual* as having a special natural resource designation. The study area does include tidal wetlands, but these exist in a narrow strip along shoreline on the Harlem River. The study area includes an area within the limits of the designated coastal zone for the Harlem River.

3.9.1 EXISTING CONDITIONS

This section describes existing conditions relative to the natural resources within the Lower Concourse study area. Potential areas of concern as identified by the *CEQR Technical Manual* include surface water, groundwater, floodplains, coastal resources, wildlife, wetlands, upland resources, built resources, and significant, sensitive, or designated resources.

Surface Water

Surface waters in the vicinity of the study area are limited to the Harlem River. The primary study area includes the shoreline of the Harlem River from the West 145th Street Bridge south to Park Avenue. A portion of both Lincoln and Morris Avenues form the

eastern boundary of the primary study area, beginning south at the intersection with the Major Deegan Expressway and then following Morris Avenue to the northeast where it crosses East 149th Street.

The Harlem River is a tidal strait flowing eight miles between the East River and the Hudson River. The Harlem River separates the boroughs of Manhattan and The Bronx. The river course has undergone significant modification to become a shipping channel in the 19th century through realignment, landfilling, and dredging. The edges of the river have also been modified to support roadways and to contain adjacent properties, resulting in a shoreline of bulkheads and revetments. The bulkheaded edges of the Lower Concourse Study area are separated from the Harlem River by the in-water structure of the Oak Point Rail Link.

Title 6 of the New York Code of Rules and Regulations (6 NYCRR) Part 703 includes surface water standards for each use class of New York surface waters. The Harlem River is designated as use classification Class I. Best usages for Class I waters are secondary contact recreation and fishing. Water quality should be suitable for fish survival and propagation.

Groundwater

The study area is located in the southern portion of the borough of the Bronx in New York City. Groundwater in this area tends to be shallow and flows towards the Harlem River. Groundwater is not considered to be a potable source of water within the Bronx. New York City receives potable water from reservoirs within the Croton, Catskill, and Delaware watersheds.

Floodplains

Floodplains are defined as areas low enough in elevation to hold flood waters during significant storm events. The Federal Emergency Management Agency (FEMA) defines regulated floodplains to include areas that flood during storms that have a one percent chance of occurring in any given year. This is equivalent to the likelihood of a storm occurring once every 100 years (100-year storm). FEMA defines 500-year floodplains but these areas are not regulated. New York City's Local Law 33 of 1988 regulates construction in the 100-year floodplain. Regulations require structures to be flood proof or above the 100-year flood elevation.

Portions of the rezoning area along the Harlem River are located in a 100-year and 500-year floodplain (see Figure 3.9-1). Both the 100-year and 500-year flood zones extend out from the shoreline of the Harlem River towards East 144th Street, south of the rail line.

Coastal Resources

As described by the *CEQR Technical Manual*, all of New York City's coastal resources are considered important and are protected by the NYSDOS Coastal Management Program.

In addition, New York City has a Local Waterfront Revitalization Plan (LWRP) that guides utilization and development of the city's shoreline.

The New York State Department of State (NYSDOS) and New York State Department of Environmental Conservation (NYSDEC) worked cooperatively to evaluate and designate coastal habitats as Significant Coastal Fish and Wildlife Habitat. There are no designated Significant Coastal Fish and Wildlife Habitats in the study area.

An analysis of the consistency of the proposed rezoning action with the applicable coastal zone policies is included in Chapter 3.11, Waterfront Revitalization.

Wildlife

Wildlife species within the study area primarily consist of avian species found in and around the Harlem River and vegetated areas in local parks. New York City is part of an important migration corridor and provides stopover habitat for migrating birds. Areas adjacent to the rezoning area (Harlem River) provide habitat for a number of important transient species, including shortnose sturgeon and striped bass. Sampling for fishes in New York Harbor shows that the presence of shortnose sturgeon in the Harbor. Striped bass regularly use the Harlem River for migration from the estuarine portion of the Hudson River and ocean waters.

The New York State Department of Environmental Protection (NYSDEC) was contacted to determine the potential presence of rare species or ecological communities within the study area. The Natural Heritage Report on Rare Species and Ecological Communities indicates the presence of peregrine falcon (*Falco peregrinus*) in the vicinity of the study area. No rare plants or ecological communities are present within the study area.

Wetlands

According to NYSDEC freshwater wetland maps, no state-regulated freshwater wetlands are present within the entire study area. No areas qualifying as wetlands regulated by the US Army Corps of Engineers are known to exist in the upland portion of the rezoning area.

Tidal wetlands, as defined by NYSDEC (classified as littoral zone) exist outside the bulkhead to a depth of six feet at mean low water. There are no recent bathymetric data for the shoreline areas of the study area, but shallow depths are known to occur in this reach. A bathymetric survey would be needed to define the six-foot contour. Because of the bulkheaded and otherwise engineered shoreline structures, the shallow shoreline area does not contain the typical components of tidal wetlands. To the extent that the bulkhead along the boundary of the Harlem River is functional, it terminates the NYSDEC tidal wetland jurisdiction.

Aquatic Biota

The Harlem River is not considered Significant Coastal Fish and Wildlife Habitat by NYSDOS. No federally listed or proposed endangered or threatened species under the jurisdiction of the USFWS are known to be in the project area. However, a Federally listed endangered species has been identified as a possible transient species in the Harlem River. Federally listed and State-listed endangered shortnose sturgeon (Acipenser brevirostrum) is an anadromous bottomfeeding fish can be found throughout the Hudson River system. These fish spawn, develop, and overwinter on the Hudson River upriver of its confluence with the Harlem River, and prefer colder, deeper waters for all lifestages. Although larvae can be found in brackish areas of the river, the juveniles (fish ranging from 2 to 8 years old) are predominately confined to freshwater reaches above the downstream saline area. The primary summer habitat for shortnose sturgeon in the middle section of the Hudson River Estuary (upriver of the Harlem River.

Because the Harlem River is a tidal strait connecting to the Hudson and East Rivers, the aquatic community is similar. The hydrodynamic and estuarine character of the river system, coupled with the numerous municipal and industrial discharges that have occurred over many years, make it a physically harsh environment. Therefore, many of the species using the area are tolerant of highly variable conditions. Aquatic biota within the study area generally include:

Primary Producers Phytoplankton. Phytoplankton are microscopic plants whose movements within the system are largely governed by prevailing tides and currents. Several species can obtain larger sizes as chains or in colonial forms. Light penetration, turbidity, and nutrient concentrations are important factors in determining phytoplankton productivity and biomass. While nutrient concentrations in most areas of the Harbor Estuary are very high, low light penetration has often precluded the occurrence of phytoplankton blooms. Resident times of phytoplankton species within New York Harbor are short and species move quickly through the system.

Submerged Aquatic Vegetation (SAV) and Benthic Algae. Submerged aquatic vegetation are rooted aquatic plants that are often found in shallow areas of estuaries. They are important because they provide nursery and refuge habitat for fish. Benthic algae are large multicellular algae that occur on rocks, jetties, pilings, and sandy or muddy bottoms. Since these organisms require sunlight as their primary source of energy, the limited light penetration in waters of the Harbor Estuary limits their distribution to shallow areas. No SAV is present within the project site.

Zooplankton. Zooplankton (early life stages of fish, decapods and barnacles; copepods, rotifers, cumaceaons, mysid shrimp, and amphipods) are another integral component of the aquatic food web. They are primary grazers on phytoplankton and detritus material, and are themselves consumed by forage fish.

Benthic Invertebrates. Invertebrate organisms that inhabit river bottom sediments as well as surfaces of submerged objects (such as rocks, pilings, or debris) are commonly

referred to as benthic invertebrates. These organisms are important to an ecosystem's energy flow because they convert detrital and 10-7 suspended organic material into biomass, and are also integral components of the diets of ecologically and commercially important fish and waterfowl species. Benthic invertebrates also promote the exchange of nutrients between the sediment and water column Substrate type (rocks, pilings, sediment grain size, etc.), salinity, and DO levels are the primary factors influencing benthic invertebrate communities. Currents, wave action, predation, succession, and disturbance also influence the benthic community.

Within the portion of the Harbor Estuary comprising the Hudson River, East River and Upper New York Harbor, common infaunal macroinvertebrates collected within the Harbor Estuary system include aquatic earthworms, segmented worms, snails, bivalves and soft shell clams, barnacles, cumaceans, amphipods, isopods, crabs and shrimp.

Epifauna includehydrozoans, sea anemones, flatworms, oligochaete worms, polychaetes, bivalve, barnacles, gammaridean and caprellid amphipods, isopods, sea squirts, hermit crabs, rock crabs, grass shrimp, sand shrimp, blue crabs, mud dog whelks, mud crabs, horseshoe crabs, blue mussels, softshell clams, and sea slugs

Fish
New York City is located at the convergence of several major river systems, all of which connect to the New York Bight portion of the Atlantic Ocean. This convergence has resulted in a mixture of habitats in the East River that supports marine fish, estuarine fish, anadromous fish (fish that migrate up rivers from the sea to breed in freshwater), and catadromous fish (fish that live in freshwater but migrate to marine waters to breed).

Upland Resources

Upland resources include naturalized areas that are not water or wetland resources. The Lower Concourse Rezoning area is urbanized and densely developed, and there are no original natural upland areas in the study area. Parks represent the only open space with significant vegetation. While no parks are located within the rezoning (primary) study area, parks are located within the secondary study area and adjacent to the primary study area. These include Saint Mary's Park, Franz Sigel Park, Ranaqua Park, Railroad Park, and Joyce Kilmer Park (see Figure 3.9-1).

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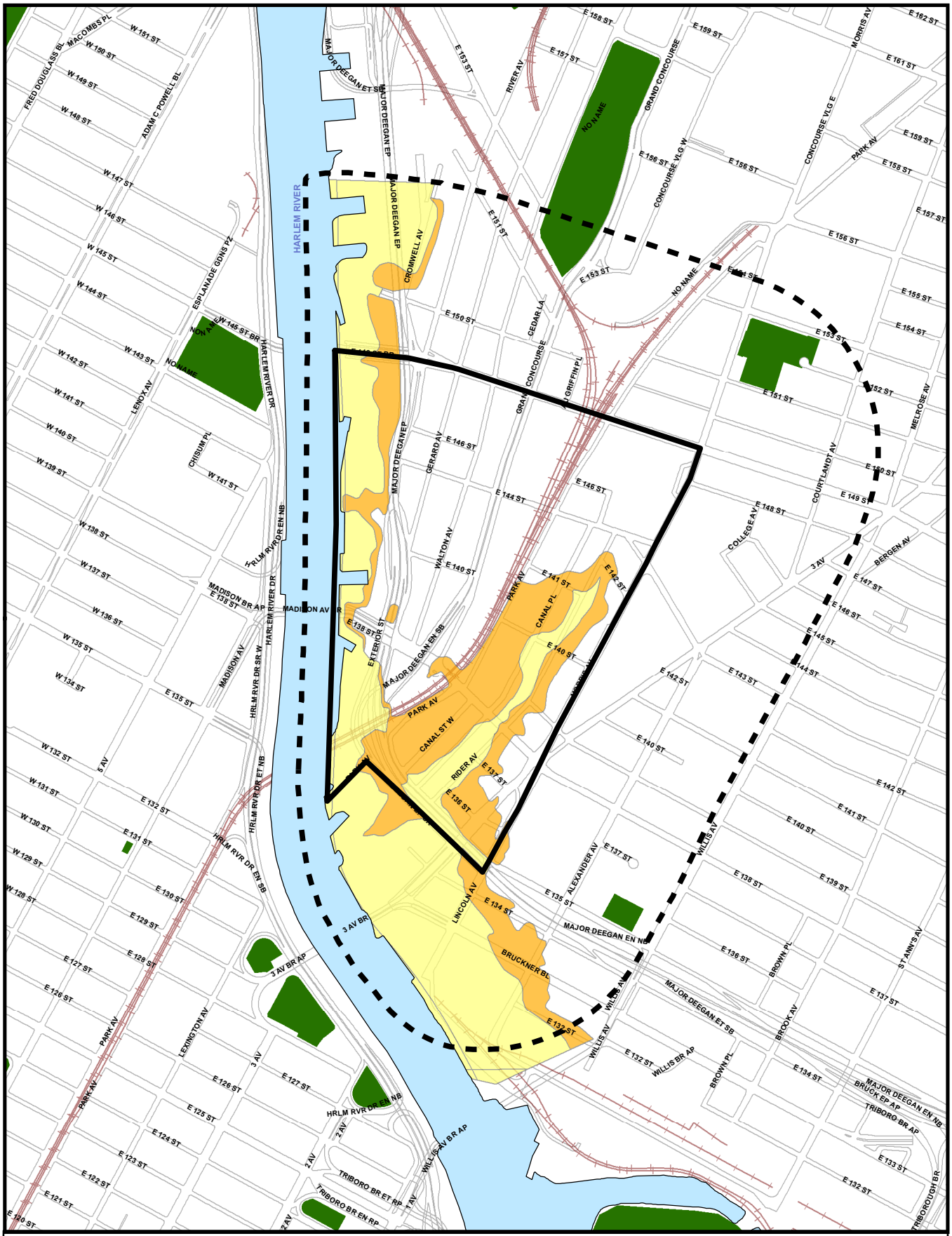
HARLEM RIVER
MAJOR DEEGAN ET SB
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Built Resources

The Harlem River shoreline serves as the western boundary of the study area. The Harlem River is edged with riprap, debris, timber-pile supported low-level concrete relieving platforms, timber cribbing, and steel sheet pile bulkhead. A recent (2008) inspection survey completed by Halcrow Engineers, P.C., found that much of the structure supporting the shoreline is in poor to critical condition.

Significant, Sensitive, or Designated Resources

According to the *CEQR Technical Manual*, there are no Significant, Sensitive, or Designated Resources within the Lower Concourse Rezoning project area.

The estuary as a whole has been identified as an essential fish habitat (EFH) for 15 species of fish. Essential Fish Habitats are designated by Regional Fishery Management Councils that are required by the federal Sustainable Fisheries Act of 1996 to identify these EFHs within their jurisdiction to better manage and conserve each species. The shoreline in the project area would provide a limited amount of habitat for some of the species for which EFH has been designated.

The peregrine falcon and shortnose sturgeon are the only state or federally listed endangered species that may occur in the area as transients. The study area does not contain critical habitat for these species.

3.9.2 FUTURE WITHOUT THE PROPOSED ACTION

As the upland areas of the study area are generally urbanized and largely devoid of natural resources, future No-Action conditions within the study area would not result in significant adverse impacts on the condition of natural resources in the study area. Chapter 3.1, "Land Use, Zoning and Public Policy," provides a description of developments expected to occur by the 2018 analysis year.

Surface Water

Surface waters in the vicinity of the study area are limited to the Harlem River. In the future without the proposed rezoning, no substantial change in the Harlem River is expected to occur. Failing bulkheads in the study area are likely to undergo in-kind replacement or repair.

Groundwater

Groundwater within the study area tends to be shallow and flows towards the Harlem River. In the future without the proposed rezoning, groundwater conditions are not expected to change from existing conditions.

Floodplains

In the future without the proposed action, no change in the status of floodplains is expected to occur.

Coastal Resources

In the future without the proposed action, no change in the status of coastal resources is expected to occur in the proposed rezoning area. According to the *Final Environmental Impact Statement (FEIS) for the Gateway Center at Bronx Terminal Market* (New York City Office of the Deputy Mayor for Economic Development and Rebuilding, December 7, 2005, CEQR #04DME017X), development in the Coastal Zone associated with the Gateway Center at Bronx Terminal Market project and its associated off-site waterfront open space north of East 149th Street is expected to be consistent with the City's ten Waterfront Revitalization Program (WRP) coastal policies and the WRP's guiding principles of maximizing benefits derived from economic development, environmental preservation, and the public use of the waterfront while minimizing conflicts among these objectives.

Wildlife

In the future without the proposed action, no change in the status of site utilization by wildlife is expected to occur. The occasional utilization of the rezoning area by transient avian species and the function of the Harlem River as a passage for aquatic species are expected to continue under future conditions without the proposed rezoning.

Potential Effects of Tall Structures on Migratory Birds

In the future without the proposed action, no tall structures are anticipated to be developed within the study area. Changes in how the rezoning area interacts with migratory bird species are therefore not expected in the future without the proposed action.

Wetlands

In the future without the proposed action, no development within wetland areas is expected to occur. Tidal wetland adjacent area disturbance is anticipated as a result of development of public open space to be developed on the waterfront north of East 149th Street related to the Gateway Center at Bronx Terminal Market retail development. According to the *Final Environmental Impact Statement (FEIS) for the Gateway Center at Bronx Terminal Market*, this off-site disturbance would include replacement of existing-disturbed sparsely vegetated adjacent area with landscaped public open space, which would not be expected to have significant impacts, and may have a beneficial ecological effect on the adjacent area. No changes to existing site conditions within the rezoning area as they relate to wetlands would therefore occur under future conditions without the proposed rezoning.

Aquatic Biota

In the future without the proposed rezoning conditions in the Harlem River are not anticipated to change substantially from the existing condition. Localized project such as the Gateway Center at the Bronx Terminal Market, and the New Yankee Stadium are not expected to have a significant effect on the aquatic biota of the Harlem River. Several on-going regional projects to improve aquatic resources within the New York/New Jersey Harbor estuary such as the New York/New Jersey Estuary Program, and the Hudson-Raritan Estuary Ecosystem Restoration Project, have the potential to result in aquatic habitat improvements in the Harlem River. However, these would likely materialize after the analysis year for the rezoning action.

Upland Resources

The Lower Concourse Rezoning area is urbanized and densely developed, and there are no natural upland areas in the study area. No-Action conditions within the study area would not be expected to result in any change to upland resources in the study area.

Built Resources

Because the shoreline in the study area is composed of structural components that includes segments in poor to critical condition, it is likely that some of these areas will need to be rehabilitated in order to maintain the existing adjacent land uses. Thus, with or without rezoning there would likely be actions that could temporarily disturb a very small area of shoreline aquatic habitat.

3.9.3 FUTURE WITH THE PROPOSED ACTION

The proposed action would establish higher density zoning within the Lower Concourse study area. The proposed zoning is anticipated to provide an incentive for the redevelopment of a number of parcels within this area. In general, the development is predicted to occur on previously developed sites within an area of low natural resource sensitivity. Development that may result from the rezoning action, would introduce taller buildings which would increase shadows on the Harlem River during the morning hours. Significant impacts to the natural environment are not anticipated to occur. The following indicates the anticipated effects of the proposed rezoning on Natural Resources in the vicinity of the rezoning area.

Surface Water

The proposed zoning amendments would result in the expected development of 31 projected development sites within the rezoning area. The development is predicted to occur on previously developed sites within a former industrial area having low natural resource sensitivity.

As indicated in Chapter 3.12, Infrastructure, the development of these sites would not substantially change the permeability of the area, and would therefore neither increase storm water discharges to the river, nor increase the frequency or duration of Combined

Sewer Overflow (CSO) events. The sanitary flows that would be associated with the projected and potential development would be within the capacity of the existing treatment plant serving the area. The proposed action would not result in significant adverse impacts on surface water resources in the study area.

Groundwater

The proposed zoning amendments would result in the redevelopment of a number of sites within the area proposed for rezoning. Impacts to groundwater may result from the disturbance of contaminated soils, as new foundations are established. The rezoning would be accompanied by "E" designation restrictions for future development. Property developers within this area will be required to address site contamination issues prior to being issued a work permit from the Department of Buildings (DOB). With these provisions in place, no significant impacts to groundwater are anticipated to occur.

Floodplains

Significant adverse impacts related to developing within the floodplain would not occur as a result of the proposed zoning amendments. Development that may result from the proposed zoning amendments is unlikely to affect the floodplain characteristics of the substantial Hudson/Harlem/East River system. Construction in the floodplain would be dictated by the New York City Building Code, and as such would not be expected to pose significant risks to occupants.

Coastal Resources

There are no designated Significant Coastal Fish and Wildlife Habitats in the study area. The proposed action would therefore not result in significant adverse impacts on the condition of coastal resources in the study area. Future redevelopment along the shoreline would require a coastal zone consistency determination as part of project review and permitting (see Chapter 3.11, Waterfront Revitalization).

Wildlife

Significant adverse impacts to wildlife would not occur as a result of the proposed zoning amendments. The proposed action would result in new taller development within the study area than would otherwise be developed without the proposed action. The RWCDS indicates that structures with a height of 400 feet are likely to be built. Although tall buildings have been associated with bird mortality, the proximity of the project area to the lights and tall buildings of Manhattan would deter birds and moderate this potential effect.

The potential for future development in the rezoning area to adversely affect peregrine falcons was determined by the NYSDEC not to be significant. Additionally, significant adverse impacts to aquatic species would not occur as a result of the proposed action

since only short term disturbance of bulkhead is anticipated and species that utilize the area are transient.

Potential Effects of Tall Structures on Migratory Birds

Avian collisions with buildings and towers are a concern where tall structures can interfere with the flight paths of migrating birds. Nighttime collisions are more common than daytime collisions. Most species of migratory birds use the stars to navigate at night, and brightly illuminated buildings and broadcast towers attract birds, particularly when poor weather conditions cause birds to fly at lower altitudes. The altitude of migration is an important factor in the determination of the potential for collisions with structures. Migration altitudes vary depending on species, location, geographic features, season, time of day, and weather. According to published reports, approximately 75 percent of neotropical migratory birds fly at altitudes between 500 and 6,000 feet during migration. Shorebirds generally migrate at altitudes of between 1,000 and 13,000 feet.[10]

The Lower Concourse rezoning would likely increase the height of buildings within the study area. This maximum height is anticipated to be 400 feet. This is not expected to result in significant impacts related to tall structures and migratory birds because this height is not within the altitude at which birds generally migrate.

Wetlands

The existing poor condition of the bulkhead and the desire to create a shoreline public walkway that raises pedestrians to a level at or above the Oak Point Link makes it likely that future development would require modification/or replacement of the bulkhead along shoreline segments bordering developing sites. These bulkhead repairs would be subject to NYSDEC tidal wetland regulations and US Army Corps of Engineers permit requirements under the Clean Water Act.

Significant adverse impacts to the tidal wetlands associated with modifications to the shoreline edge of the rezoning area would not occur. Although the proposed action would provide an incentive for the redevelopment of property in the area proposed to be rezoned, it would not remove the existing permitting safeguards that are in place to prevent impacts to natural resources. Any future redevelopment of a waterfront site that is advanced as a result of the proposed action would require the approval of NYSDEC, and the US Army Corps of Engineers if the bulkhead were to be modified. During the permit review process, measures for protecting wetland resources will be stipulated as a condition of the permit.

Aquatic Biota

Potential development identified in the RWCDS would result an increase in shadows cast on the Harlem River during the morning hours. The extent to which the shadows would increase has been assessed in detail within the shadows chapter of this DEIS. Shadows cast by buildings would be short-lived, transitory and diffuse. Diffuse

shadows are not considered a significant change to habitat conditions, as they are temporary and unlikely to change the habitat condition. In addition, the aquatic life of the river is continuously carried by strong and tidal currents and would be exposed to these shadows for short periods of time. The building shadows on the river would not create adverse impacts on transient fish and wildlife species within the river.

Upland Resources

Significant adverse impacts to the natural resources in the upland areas would not occur as a result of the proposed zoning amendments, since there were no identified existing or future resources within the area of the proposed rezoning. As part of the proposed rezoning, an approximately 2.26-acre waterfront park and a 2.03 acre landscaped public walkway would be developed. Creation of these new open spaces, depending on the landscape plan, would likely provide some additional upland habitat, and may enhance aquatic habitat at the shoreline.

Built Resources

Significant adverse impacts to natural resources would not occur as a result of the proposed zoning amendments. The built resources of concern within the area to be rezoned consist of bulkheads that may be replaced as waterfront sites are redeveloped. Similar to the predicted effect on wetlands, the modifications to bulkheads would not occur as-of-right, and would require the approval of NYSDEC, and the US Army Corps of Engineers. During the permit review process, measures for protecting wetland resources will be stipulated as a condition of the permit.

Threatened and Endangered Species

As noted in Section 3.9.1, Existing Conditions, the peregrine falcon and the shortnose sturgeon are the only endangered species that have been identified in the vicinity of the study area. NYSDEC has determined that the falcons are not in close proximity to the development area and that the proposed rezoning and associated development would not result in a significant adverse impact to the falcons. The New York State Department of Environmental Conservation does not view the proposed Lower Concourse Rezoning and Related Actions as a significant threat to peregrine falcon nesting. Additionally, significant adverse impacts to the shortnose sturgeon would not occur as a result of the proposed action, because the physical improvements associated with the development that may result from the rezoning action would be limited to short term disturbances for replacement of bulkhead segments. This activity would be regulated by permits issued by the US Army Corps of Engineers and NYSDEC. Furthermore, the shortnose sturgeon is a transient species in the Harlem River and does not rely on the bulkhead for habitat.