9 Natural Resources

Introduction

This chapter assesses the possible effects of the Proposed Actions on natural resources. According to the 2014 *CEQR Technical Manual*, a natural resource is defined as the City's biodiversity (plants, wildlife, and other organisms); any aquatic or terrestrial areas capable of providing suitable habitat to sustain the life processes of plants, wildlife, and other organisms; and any areas capable of functioning in support of the ecological systems that maintain the City's environmental stability. Such resources include groundwater, soils, and geologic features; numerous types of natural and human-created aquatic and terrestrial habitats (including wetlands, dunes, beaches, grasslands, woodlands, landscaped areas, gardens, parks, and built structures); and any areas used by wildlife.

An action can directly alter the condition of a natural resources (a direct effect) or result in changes to resources found on or nearby the site after construction of the proposed action is complete (an indirect effect). Direct effects may include but are not limited to: removal of vegetation; hydrology alteration; habitat modifications; filling, draining, dewatering, or dredging a waterbody or wetland; and development on previously vegetated or unpaved surfaces. Indirect effects may include, but are not limited to, activities or changes that would: alter surface or groundwater flow from an action to a nearby natural resource; increase disturbance to on-site or nearby natural resources; introduce or facilitate invasive nonnative plant or animal species that could displace existing species; increase scouring, erosion, or sediment deposition; and impact movement of animals between or within habitats.

Principal Conclusions

Water Resources

The Proposed Actions would have no effect on state or federal regulations requiring approval from NYSDEC or USACE for proposed development or other regulated activity in regulated areas. Any proposed development within or affecting a NYSDEC- or USACE-regulated surface

waterbody would require a permit at these agencies' discretion. The permitting process would ensure that the proposed development would not result in adverse effects on water resources, and compliance with regulatory programs would preserve and protect the present and potential values and benefits these resources provide.

The Proposed Actions would have no impact on surface waterbodies that are resources for shipping and boating, recreational resources, or water supply. The Proposed Actions include more protective requirements to minimize impacts on water resources and protect and enhance buffer areas. Therefore, the Proposed Actions' effects on water resources would be beneficial.

Wetland Resources

Similar to water resources, the Proposed Actions would have no effect on state or federal regulations requiring approval from NYSDEC or USACE for proposed development or other regulated activity in regulated areas. Any proposed development within NYSDEC- or USACE-regulated areas would require a permit at these agencies' discretion. Construction activities within or adjacent to NYSDEC wetlands would be regulated by the NYSDEC Freshwater or Tidal Wetlands Permit Program to avoid or minimize impairment of wetlands functions. Implementation of the individual activities in regulated areas would be conditioned upon issuance of applicable federal and state permits, and such projects would be constructed in accordance with the conditions of these permits.

The Proposed Actions include zoning changes that would strengthen protections that minimize the extent of hard surface areas, avoid or minimize impacts on wetlands and adjacent areas, and protect and enhance buffer areas. These requirements would help wetlands perform their functions of conveying, storing, and filtering surface water hydrology runoff by minimizing the number and size of hard surfaces in the landscape surrounding wetland resources. Therefore, the Proposed Actions' effects on wetland resources would be considered beneficial.

Upland Resources

Upland natural areas are present in the study area. Because of their relative scarcity on private properties in the study area, the Proposed Action would not significantly affect these upland natural areas. The Proposed Actions would have no effect on upland resources that are present outside private property limits.

Potential impacts on upland forest habitat adjacent to private lots would be minimized by focusing development on forest edges and designing cluster developments that minimize the spatial extent of the development. Zoning requirements call for avoiding the removal or disturbance of large trees or plants with known ecological value. The mostly likely impacts on

upland resources would be related to tree removal for proposed development. NYC Parks has jurisdiction over all trees growing in the public right-of-way, including trees along streets, parkways, and in city parks. The Proposed Actions would comply with Title 18 of the Administrative Code of the City of New York and Chapter 5 of Title 56 of the Rules of the City of New York, which detail the requirements and rules for applying for permission to remove trees under NYC Parks jurisdiction and for determining tree replacement values.

Terrestrial cultural upland resources, such as gardens, mowed lawns, paved parking lots, and the exteriors of structures found on private lots would be affected. Zoning changes encourage increased biodiversity, tree preservation, and the appropriate design of landscape elements. The Proposed Actions would generally have a beneficial effect on upland resources. Upland resources on smaller lots within the Base Protection Area where lot coverage and tree removal would be permitted at a higher rate than under the existing regulations may result in higher levels of clearing compared to current regulations where CPC discretionary review may minimize disturbance.

Built Resources

The Proposed Actions would have no impact on built resources because the private properties that the Proposed Actions would affect are not likely to contain structures that would serve as habitat or function as flood control. The Proposed Actions would have no effect on built resources that are present in the study area but outside private property limits.

Significant, Sensitive, or Designated Resources

Despite the high degree of urbanization and resultant fragmentation of natural habitats in the study area, natural areas remain intact and play an important role in regional habitat connectivity and species conservation. Significant coastal fish and wildlife habitats, special natural waterfront areas, wildlife refuges and sanctuaries, and significant natural communities are present in the study area. For proposed development projects where private lots are adjacent to these resources, the Proposed Actions would minimize disturbance to existing habitat and avoid habitat fragmentation by maintaining or enhancing buffers surrounding designated resources.

On prototypical analysis sites, direct impacts on special-status species identified as potentially occurring in the study area, or adverse modification of occupied habitat of special-status species, are not anticipated because of the small size (less than 1 acre) and developed nature of the sites. Developed, or partially developed, private lots typically do not support optimal habitat for state or federally listed species, which are more likely to occur in larger, mostly undisturbed sites, such as parks, preserves, and large private parcels with intact habitats. The Proposed

Actions are not likely to affect significant, sensitive, or designated resources that are present in the study area; however, in a few instances, as-of-right development on small properties may result in detrimental effects on special-status species.

Methodology

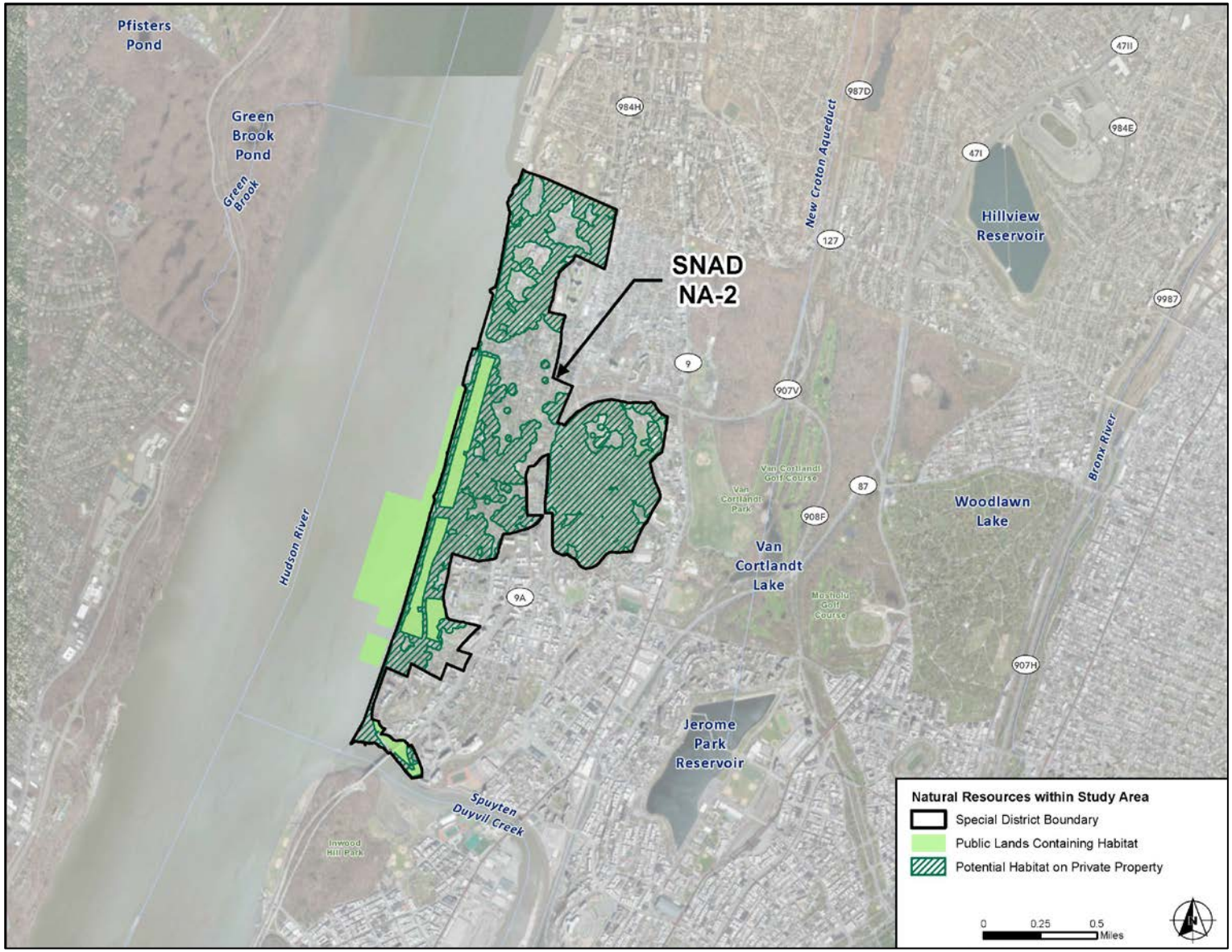
To produce a reasonable analysis of likely effects of the Proposed Actions, water resources; wetland resources; upland resources; built resources; and significant, sensitive, or designated resources for the No Action and With Action scenarios were assessed.

Potential direct and indirect impacts on natural resources were analyzed based on an inventory of existing natural resource features within the boundaries of the existing special district (NA-2 [the study area]). An information and background search was conducted to review sources that identify existing natural resources in the study area. Mapping and data reviewed includes: U.S. Geological Survey topographic maps; SSURGO Soils Map and database; NYSDEC Tidal and Freshwater Wetlands and streams maps; USFWS, National Wetlands Inventory (NWI) maps; Federal Emergency Management Agency Preliminary Digital Flood Insurance Rate Map Flood maps; NYSDEC Environmental Mapper and NY Nature Explorer databases and mapping of rare plants and animals and significant natural communities; USFWS Information, Planning, and Conservation System (IPaC) Trust Resource data; and National Marine Fisheries Service records of fishery resources and endangered and threatened marine species.

Existing Conditions

Figure 9-1 depicts mapped natural resources within the study area as designated by USACE, USFWS, NYSDEC, NYC Parks, DCP, and the Natural Area Conservancy. Private lots in the study area that contain natural resources within their property boundaries, as well as natural resources on publicly protected land and public parks and open space, are shown. **Figure 9-1** is presented for illustrative purposes. The figure will be refined further and included in the zoning text amendment. Specific natural resources in the study area are described in the following section.

Figure 9-1. Natural Resources in Existing Special Natural Area District (NA-2)



Water Resources

Waterbodies

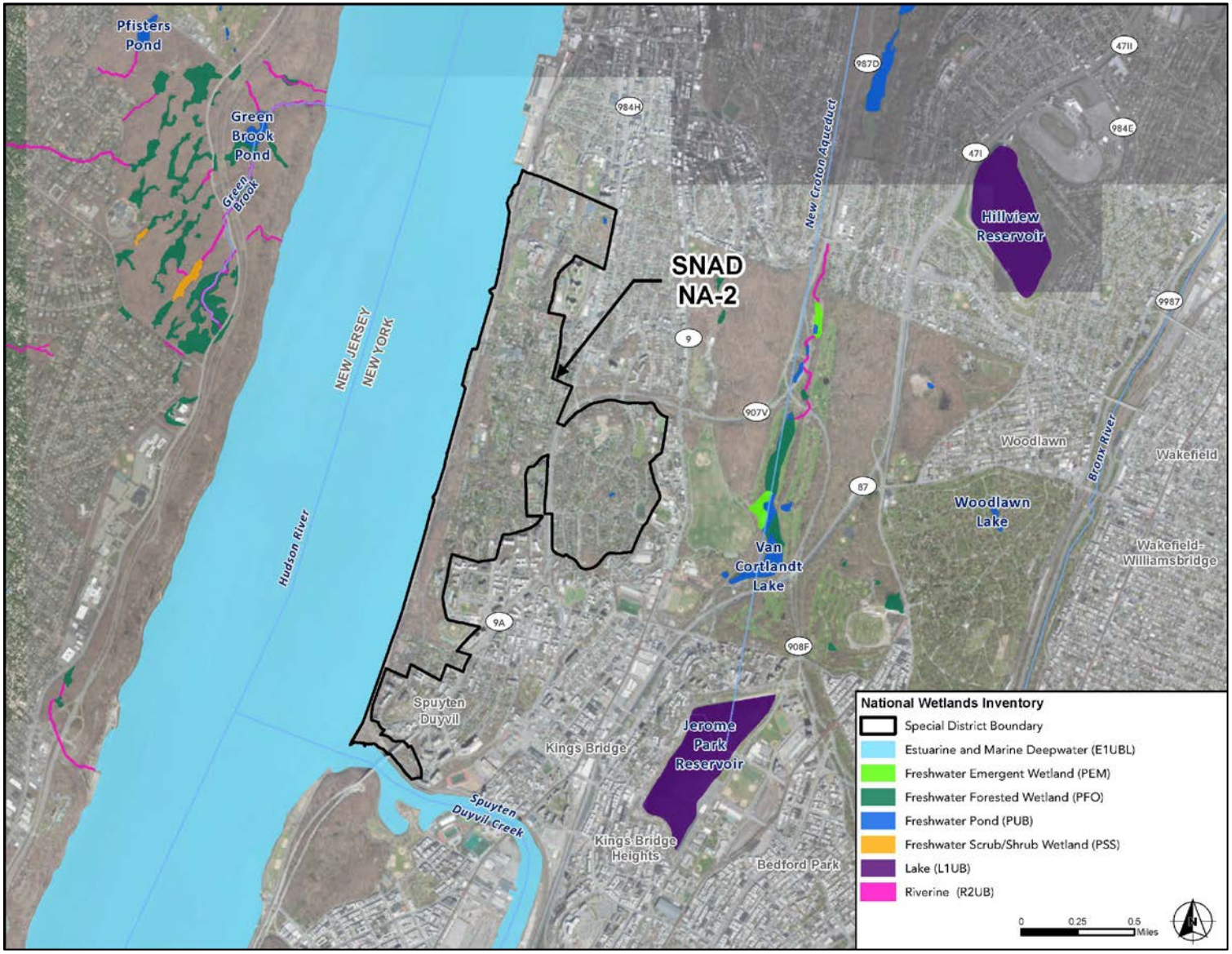
Surface waterbodies serve as habitat for aquatic life, resources for shipping and boating, recreational resources; and in limited cases, water supply. As **Figure 9-2** shows, there are no major surface waterbodies within NA-2; however, the Hudson River is a major waterbody that forms the western boundary of the district, and the Spuyten Duyvil Creek, which connects the Hudson River to the Harlem River, is adjacent to the southern boundary. Alder Brook, a small, unmapped stream, is located in Riverdale Park Reserve.

NA-2 lies within the Lower Hudson Watershed (NYSDEC n.d.). The Lower Hudson Watershed is one of 17 major watersheds in New York and extends from the Battery at the southern end of Manhattan to the Troy Dam at the confluence of the Mohawk River. The southern and eastern extents of NA-2 are part of the Harlem River Watershed as mapped in the *Draft Harlem River Watershed and Natural Resources Management Plan for the Bronx* (NYC Parks 2018). The Harlem River Watershed encompasses lands in the Bronx that drain to the Harlem River and Bronx Kill. The majority of NA-2 is within U.S. Geological Survey Hydrologic Unit Code 020301010404 (Sparkill Creek-Hudson River), while the southern extent is within Hydrologic Unit Code 020301010405 (East River-Hudson River) (NYSSWCC 2019).

Groundwater

Groundwater serves as source of water supply for drinking water and domestic and industrial applications; provides a source of water recharge for surface waterbodies and wetlands; performs geotechnical functions related to structural load bearing capacity; and serves as a barrier to salt-water intrusion. Groundwater is primarily freshwater recharged through rainfall that percolates into the soil. Along the coast, harbor, and river waterfronts within the study area, the tides influence groundwater, which can be saline or brackish in those areas (*CEQR Manual*).

Figure 9-2. National Wetlands Inventory Wetlands in Existing Special Natural Area District (NA-2)



Wetland Resources

Wetlands are areas that are inundated or saturated by surface or groundwater with frequency and duration sufficient to support a prevalence of vegetation or aquatic life typically adapted for those soil conditions. USACE has jurisdiction over the majority of the freshwater and tidal wetlands in the study area. NYSDEC has jurisdiction over all tidal wetlands and freshwater wetlands larger than 12.4 acres, although smaller freshwater wetlands of unusual local importance may also fall under NYSDEC jurisdiction, which also extends to the adjacent area of wetlands. In New York City, the adjacent area is within 150 feet of a tidal wetland or 100 feet of a freshwater wetland.

USFWS prepared the NWI, which maps approximate wetland limits and classifies mapped wetlands to type. **Figure 9-2** depicts NWI mapped wetlands in the study area. **Figures 9-3** and **9-4** show NYSDEC-mapped state-regulated freshwater and tidal wetlands in the study area, respectively. Each NYSDEC-regulated wetland is assigned a unique alphanumeric wetland identification number. Regulated wetlands are classified based on functions the wetlands provide, such as storing flood water and providing wildlife habitat, from Class I (which provide the most benefits) to Class IV (which provide fewer benefits). **Table 9-1** lists NWI- and NYSDEC-mapped wetland resources in the study area, which are further described below. Because USACE and NYSDEC wetlands may extend outside the mapped wetland boundaries, on-site field inspections per the respective USACE and NYSDEC methods would be required to verify wetland limits. **Figure 9-5** depicts a 250-foot buffer area around the location where un-mapped potential aquatic resources may occur in the study area according to DCP.

Freshwater Wetlands

As **Figure 9-3** shows, NYSDEC-regulated freshwater wetlands are not mapped within NA-2. NWI has also mapped freshwater wetlands in the study area (see Figure 9-2). Classes of freshwater NWI wetlands within NA-2, based on The Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979), include only PUB wetlands.

Figure 9-3. NYSDEC Freshwater Wetlands in Existing Speical Natural Area District (NA-2)

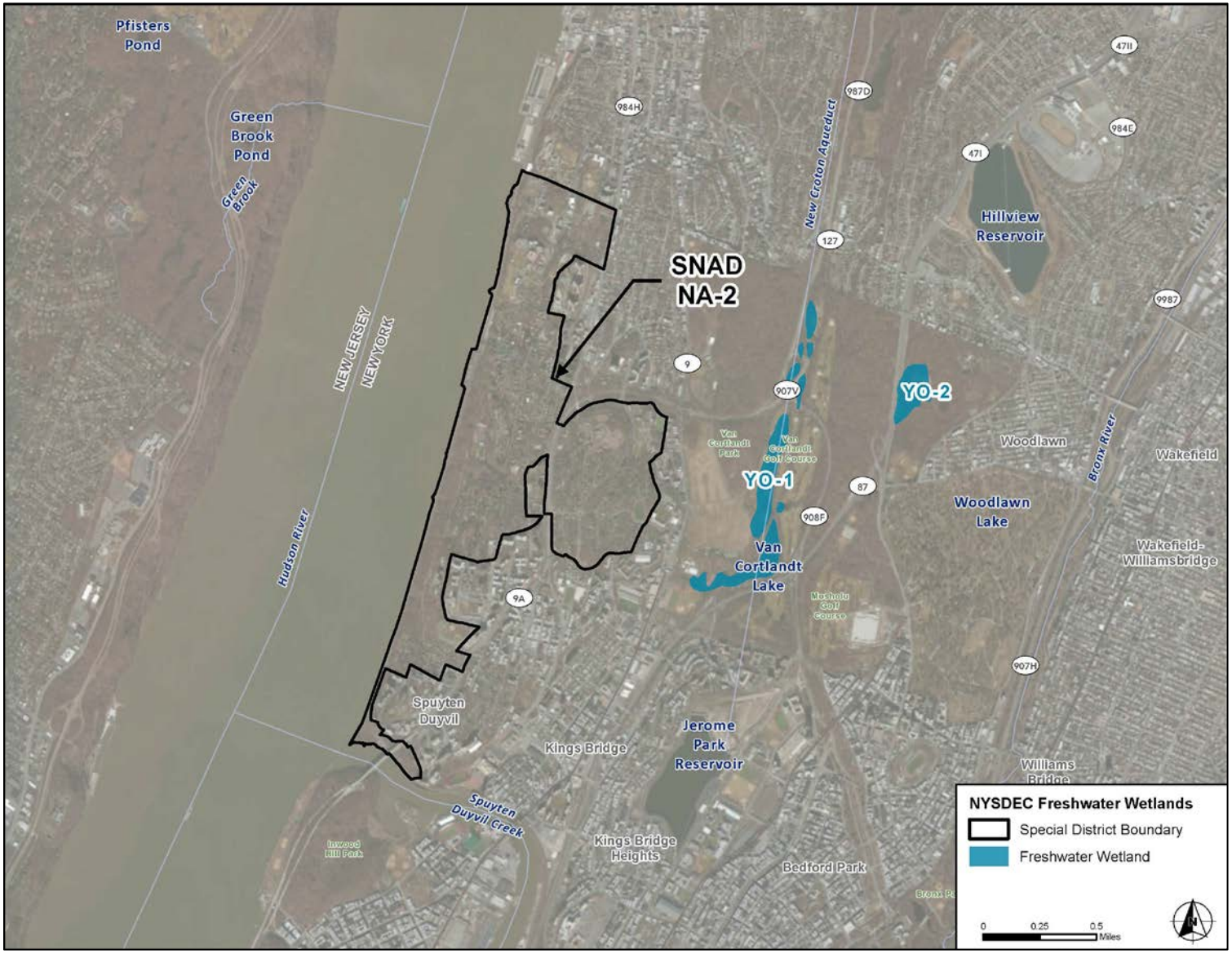


Figure 9-4. NYSDEC Tidal Wetlands in Existing Special Natural Area District (NA-2)

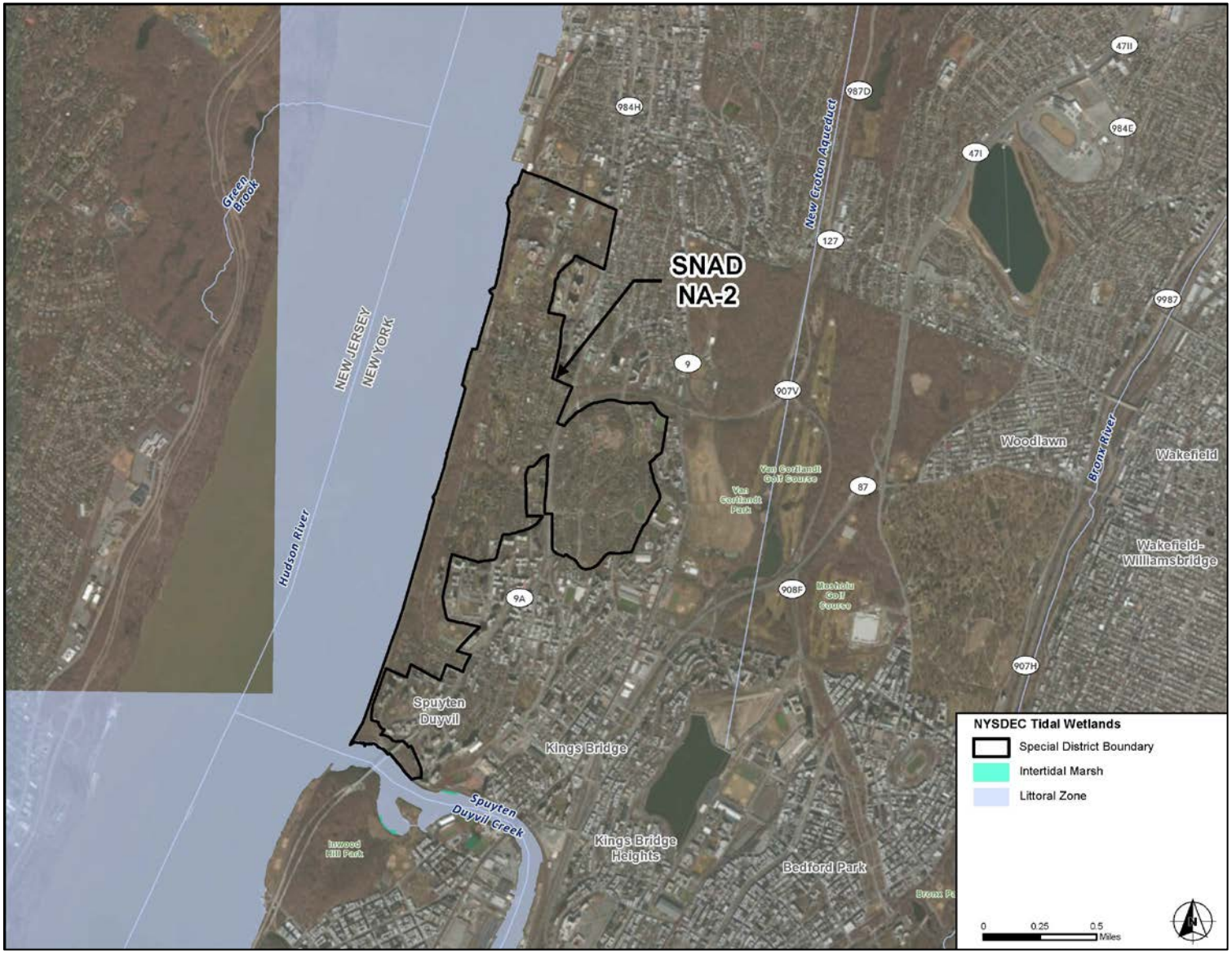


Figure 9-5. Potential Aquatic Resources in Existing Special Natural Area District (NA-2)

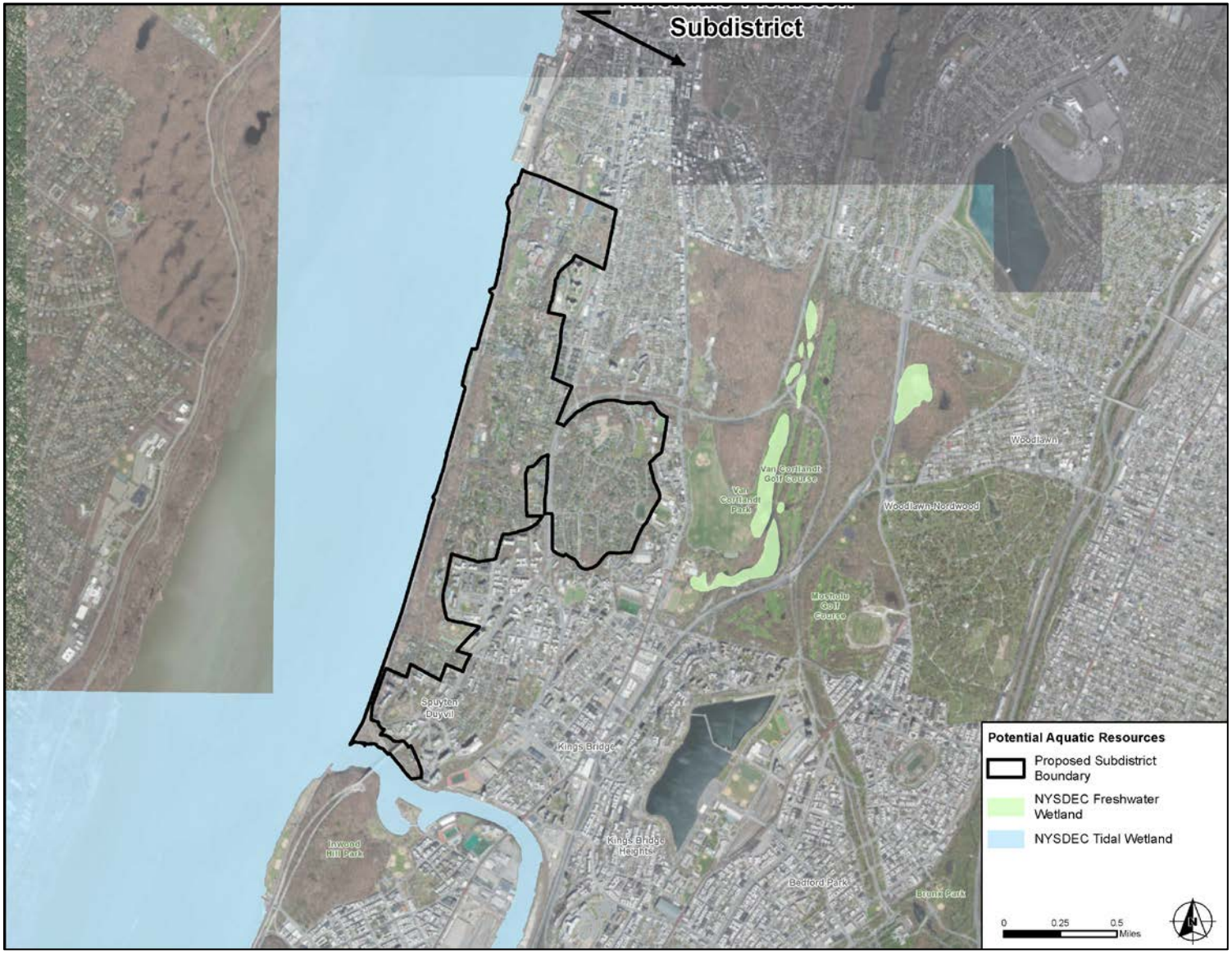


Table 9-1. Mapped Wetland Resources in the Study Area

District	NYSDEC Freshwater Wetlands	NWI Freshwater Wetlands	NYSDEC Tidal Wetlands	NWI Estuarine Wetlands
NA-2		PUB		

Notes: PUB – Palustrine Unconsolidated Bottom (ponds);

*** This table has been modified for the FEIS.**

Tidal Wetlands

As **Figure 9-4** shows, no NYSDEC tidal wetlands are mapped within NA-2. NYSDEC adjacent areas are present in the study area.

NA-2 does not contain mapped NWI tidal wetlands within the district boundaries, although they are all adjacent to E1UBL wetlands.

Surface Water Hydrology

Surface water hydrology addresses how precipitation runoff from hard land surfaces contributes to nearby wetlands and waterbodies. As described above, wetlands and waterbodies are present throughout the study area. As shown on **Figures 9-2**, **9-3**, and **9-4**, private lots that would be subject to the Proposed Actions are adjacent to wetlands, waterbodies, or their adjacent areas. Surface water hydrology runoff can contain pollutants that could negatively affect water quality of nearby waterbodies and wetlands.

Upland Resources

Upland resources include all natural areas that are not water resources or wetlands. Upland forests are scattered throughout the study area, including some designated as Forever Wild Nature Preserves like the Raoul Wallenberg Forest Preserve.

Terrestrial cultural upland resources, which are created and maintained by human activities, are present in the study area. These resources are found on residential properties in the form of vegetable and flower/herb gardens, mowed lawns, and the exteriors of urban structures. Other terrestrial cultural resources found throughout the study area include mowed roadside/pathway, paved and unpaved paths, paved roads, railroads, urban vacant lots, and rip-rap.

Built Resources

Built resources include piers, bridges, buildings, and other built structures that may be used by wildlife as habitat or shelter; beach protection structures such as groins, jetties, and breakwaters; and flood and erosion controls such as tide gates, weirs, and pumps. Taller buildings and bridges in the study area are located predominantly on public lands that would not be affected by the Proposed Actions.

Significant, Sensitive, or Designated Resources

Natural resources designated as significant or sensitive include Significant Coastal Fish and Wildlife Habitats and Critical Environmental Areas. Under CEQR, species are considered in the context of the surrounding environment, habitat, or ecosystem, and an action's potential to affect those resources is examined. Those species classified as sensitive, vulnerable, rare, of special concern, threatened, endangered, or otherwise worthy of protection are given individual consideration within the context of New York City's environment.

All of the water resources in New York City, including groundwaters, tidal and freshwater wetlands, and coastal estuarine waters, are considered important resources and are regulated by the state. Additionally, all coastal resources are considered important and are protected by the state's CMP. Any area within New York City's coastal zone boundary, as defined under New York City's WRP, is considered an important coastal resource (CEQR). See **Chapter 2**, *Land Use, Zoning, and Public Policy*, for further discussion of the WRP.

Significant Coastal Fish and Wildlife Habitats

Significant coastal fish and wildlife habitats are habitats that are essential to the survival of a large portion of a particular fish and wildlife population; support populations of protected species; support fish and wildlife populations that have significant commercial, recreational, or educational value; and/or are types not commonly found in the state or region (CEQR). Significant coastal fish and wildlife habitats are designated by NYSDOS following a recommendation by NYSDEC. The following designated significant coastal fish and wildlife habitat falls in the study area:

- **Lower Hudson Reach**: A small portion of NA-2 falls within the Lower Hudson Reach significant coastal fish and wildlife habitat. This habitat includes deep water, shallows, piers, and interpier basins that sustain a diverse community of benthic, planktonic, and pelagic species, and provide important wintering habitat for large numbers of striped bass.

Special Natural Waterfront Areas

New York City WRP has designated large areas with significant open spaces and concentrations of natural resources as Special Natural Waterfront Areas. No such areas are located in NA-2.

Wildlife Refuges and Sanctuaries

There are no wildlife refuges, sanctuaries, or preserves in the study area.

Critical Environmental Areas

Critical environmental areas are designated as such by the state or local agency within which they occur based on having an exceptional or unique character with respect to one or more of the following: a benefit or threat to human health; a natural setting; agricultural, social, cultural, historic, archaeological, recreational, or educational values; or an inherent ecological, geological, or hydrological sensitivity to change that may be adversely affected by any change (NYSDEC 2019a). There are no critical environmental areas in the study area. The Hudson River Critical Environmental Area begins just north of NA-2.

Special-Status Species

Because of the size of the study area, a request regarding significant, sensitive, or designated resources within the individual districts was not submitted to New York Natural Heritage Program. Instead, the NY Nature Explorer was used to generate a list of the animals, plants, and significant natural communities that have been found in the study area, as documented in NYSDEC databases. Appendix 6 presents the lists generated by NY Nature Explorer. State-listed species are not expected to be found on developed or partially developed private lots that would be impacted by the Proposed Actions; instead they are typically found within larger preserves, parks, protected natural habitats. Suitable habitat may occur on large, undeveloped private lots (or contiguous smaller lots) with intact habitat. If a group of contiguous private lots is undeveloped, then the potential for state-listed species to occur on the lots would increase.

USFWS' IPaC was accessed to determine the potential presence of species under USFWS jurisdiction within the study area. The IPaC indicates that two threatened and endangered species, piping plover and bog turtle, may occur within NA-2. The study area does not include any critical habitats for these or any other species. Descriptions of these species and their habitats, as well as the likelihood that they would occur in the study area, are summarized below from NYSDEC fact sheets (NYSDEC 2019b) and USFWS species profiles (USFWS 2019) unless otherwise referenced.

The piping plover is a small shorebird that is listed as federally threatened and state endangered. Habitat is only found at the shore and on barrier islands, sandy beaches, and dredged material disposal islands. The piping plover diet consists principally of marine worms, insect larvae, beetles, crustaceans, and mollusks, which are obtained by foraging on beaches, dunes, and in tidal wrack. In New York, this species breeds on Long Island's sandy beaches, from Queens to the Hamptons, including on the nearby Rockaway peninsula and in the eastern bays and in the harbors of northern Suffolk County. Piping plovers nest on the oceanfront beaches of Long Island's barrier islands, not on the bayside or mainland beaches. Their home range commonly includes bayside flats and back-

barrier storm overwash areas, which are important foraging habitats for adults and fledglings (Elias et al. 2000, McIntyre and Heath 2011). Piping plovers arrive to the New York area in early to mid-March and establish nesting territories by early April. Nests are usually placed well above the high tide line on open sandy beaches or in areas that have been filled with dredged sand, often near dunes in areas with little or no beach grass. By early September, most have departed for their wintering areas.

Piping plovers nest on open, sandy, ocean beaches; therefore, breeding habitat for these species is not present in the study area. Piping plovers are not expected to be found in NA-2 because of lack of suitable foraging habitat.

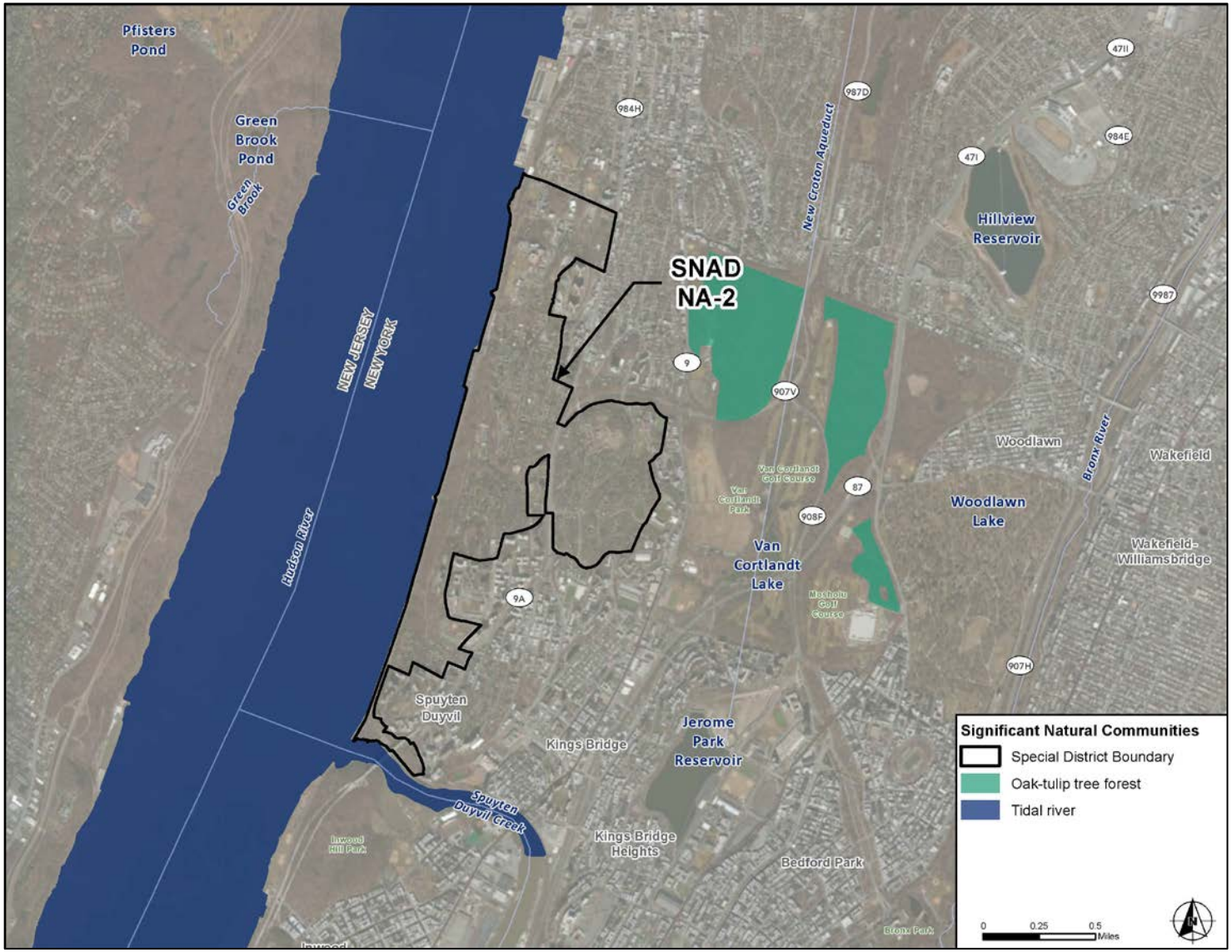
The bog turtle is one of the smallest turtles in North America and is listed as federally threatened and state endangered. The bog turtle is a semi-aquatic species, preferring habitat with cool, shallow, slow-moving water; deep soft muck soils; and tussock-forming herbaceous vegetation. In New York, the bog turtle is generally found in open, early successional habitats such as wet meadows or open calcareous boggy areas generally dominated by sedges or sphagnum moss. Open areas are required for basking and nesting. In New York, the bog turtle emerges from hibernation by mid-April. Mating occurs primarily in the spring, and eggs hatch around mid-September. Adult bog turtles enter hibernation in late October.

There are no known recent occurrences of bog turtle in the study area.

Significant Natural Communities

Figure 9-6 shows significant natural communities in the study area. Significant natural communities are designated by NYSDEC and are considered rare or high-quality wetlands, forests, grasslands, ponds, streams, and other types of habitats, ecosystems, and ecological areas. It should be noted that smaller patches of these natural communities may occur in the study area but are not designated by NYSDEC as significant natural communities. Therefore, they are not depicted on **Figure 9-6**. NYSDEC-designated significant natural communities in the study area are described below based on information provided in the New York Natural Heritage Program Online Conservation Guides, unless otherwise referenced.

Figure 9-6. Significant Natural Communities in Existing Special Natural Area District (NA-2)



No NYSDEC-designated significant natural communities are mapped in NA-2; however, oak-hickory/oak-tulip forest habitat are present in Riverdale Park and Raoul Wallenberg Forest. Oak-tulip tree forest is mapped west of the NA-2 boundary.

Oak-tulip tree forest is a mesophytic hardwood forest community that occurs on moist, well-drained sites in southeastern New York. The dominant trees include a mixture of oaks, tulip tree (*Liriodendron tulipifera*), American beech, black birch (*Betula lenta*), and red maple. Most existing oak-tulip tree forests within New York are fragmented and disturbed.

Geologic and Topographic Features. Geologic and topographic features, as defined in the New York City ZR, include rock outcrops, geologic deposits (i.e., erratic boulders), steep slopes, existing natural topography, and topsoil.

No Action Scenario

This section analyzes the likely future conditions in NA-2 without the Proposed Actions (the No Action scenario).

Natural Resources

As discussed in **Chapter 1**, under the No Action scenario, existing land use trends and development patterns are expected to continue. New development on vacant land would result in the loss of vegetated habitats, loss of trees, reduction in buffers to adjoining open space, and an increase in hard surface area to the extent allowed under current zoning requirements and state and federal regulations.

The zoning and public policy framework within each of the special districts under the No Action scenario is expected to remain unchanged; therefore, natural resources are expected to receive the same level of protection and change over time as currently exists.

Prototypical Analysis Sites

Under the No Action scenario, new as-of-right developments or enlargements are anticipated to occur on three of the four prototypical analysis sites. **Table 9-2** provides a summary of the prototypical analysis sites, and Appendix 2 provides illustrative renderings.

As shown in **Chapter 2**, depending on the district and site assumptions, development of residential prototypical analysis sites would result in some tree removals, disturbance of between 25 and 30 percent of the site area, and an increase in hard surface area between 48 and 68 percent of the site area.

Prototypical analysis site 3 would remain undeveloped and vacant because this site requires discretionary approval involving a CPC authorization under current special district regulations to undergo any development.

Because the existing special district includes various discretionary actions required to alter or modify natural features outside construction for each building, any amenities located outside the construction zone that would require CPC authorization are not assumed to be granted in the as-of-right No Action scenario. However, the No Action scenario assumes that ministerial CPC Chair or CPC certifications would be granted.

New buildings and enlargements on the prototypical analysis sites would be constructed to comply with all relevant federal and state regulations regarding wetlands, adjacent areas, threatened and endangered species, stormwater management, and soil erosion control.

With Action Scenario

As detailed in **Chapter 1**, *Project Description*, the Proposed Actions include zoning text and map amendments that would establish regulations that create a hierarchy of natural resource preservation rules based on the proximity of a private property to the most ecologically sensitive areas. These new ecological area designations would include Resource Adjacent Areas and Base Protection Areas.

Although the existing special districts require CPC approval based on a variety of factors, including proposed removal of individual trees or modification of slopes, the only properties that would require CPC review in the proposed SNRD would be:

- 1 acre or larger in size where a new building, enlargement, subdivision, or site alteration is proposed; or

- if smaller than 1 acre:
    - where a private road is proposed to be extended or created;
    - if located in a Resource Adjacent Area, where four or more buildings, or eight or more dwelling units are proposed;
    - subdivisions resulting in four or more zoning lots; or
    - if located in a historic district and a new building or subdivision is proposed.

The Proposed Actions would not have a significant, direct or indirect effect on natural resources in the study area. Lots with limited natural resource protections under existing regulations would be subject to more protective natural resource regulations under the Proposed Actions, while lots in the Base Protection Area may be allowed an increase in lot

coverage and tree removal. Likewise, the proposed change to the CPC review procedures outlined above would not result in a significant impact on natural resources in the study area because as-of-right site development would still be required to meet zoning requirements aimed at preserving natural resources before submission for building permits issued by DOB. For example, all construction within NYSDEC-regulated areas would continue to be subject to NYSDEC approval, and the proposed regulations would not affect NYSDEC's ability to review and approve or deny construction within regulated wetland and adjacent areas.

Modification of the zoning rules related to natural resources protection and the anticipated impact of each modification on natural resources are discussed in the following section.

Zoning Text Amendments

Tree Regulations (Section 105-13 – Canopy Requirement). The Proposed Actions would modify how tree credits are calculated, with the goal of encouraging preservation of old growth trees and providing flexibility for development by creating as-of-right requirements for tree planting based on the lot area and type of development. While some prototypical analysis sites would result in more tree removal under the With Action scenario, overall the Proposed Actions would allow for development of parcels while preserving the larger (old growth) trees. The proposed modifications are described in detail in **Chapter 2**, *Land Use, Zoning, and Public Policy*. These changes are anticipated to have beneficial, direct effects on upland resources, wetland resources, and water resources because mature trees provide greater ecosystem services than newly planted trees and are anticipated to have a long-term, beneficial effect in the study area.

Critical Root Zone (Section 105-125 – Controls during construction). The Proposed Actions would modify how the critical root zone is calculated. Although the proposed calculations would be similar to existing regulations (1 radial foot for every caliper inch), the upper limit of 22 feet would be removed, which would expand the critical root zone for larger trees. Existing regulations do not allow any impacts on critical root zones of trees. The proposed regulations would allow a portion of the critical root zone to be disturbed by construction, thus encouraging the preservation of existing large trees instead of removal. The modification is anticipated to have a beneficial, direct effect on upland resources, wetland resources, and water resources as noted above by providing for additional flexibility that would allow for the preservation of additional large trees.

Biodiversity Regulations (Section 105 – 141). The Proposed Actions would introduce a point system to achieve biodiversity planting

requirements. The proposed regulations would limit the square footage of natural vegetation that could be removed on an existing property if the area of remaining vegetation is between 5 to 15 percent of the lot area, depending on the ecological area in which the property is located. Resource Adjacent Areas would have the highest planting requirement, including a buffer planting area along the lot line that abuts the designated natural resource, which would buffer, protect, and enhance the core habitat and its ability to support higher levels of biodiversity across the network or natural areas. Lower density residential districts in the Base Protection Area would have a moderate planting requirement, resulting in planting on about 10 percent of the lot (not including lawn). All other areas would have a planting requirement generally resulting in planting on about 5 percent of the lot, a 1 percent reduction of the existing requirement of 6 percent in these areas.

Overall, the proposed changes would have a direct, beneficial effect by providing additional protection to sensitive habitats by preserving more natural vegetation; maintaining and enhancing buffers to wetland and upland resources; and introducing more biodiversity, especially in Resource Adjacent Areas.

Topographic and Geologic Resources (Section 105-121 – Grading standards). The Proposed Actions would modify topographic and geologic resource regulations to limit disturbance of steep slopes and reduce hillside erosion; incentivize new development on flat land; and require more stringent planting, lot coverage, and hard surface area requirements. Rock outcrops and erratic boulders would be protected by rules that would function on an as-of-right basis. The proposed modifications would minimize disturbance to areas of existing slopes greater than 25 percent, as well as natural geologic features. The changes would have a direct, beneficial effect to upland resources, wetland resources, and water resources by reducing the allowable area of disturbance within a lot with steep slopes and reducing the potential for erosion and sedimentation in wetlands and waterbodies.

Aquatic Resources (Section 105-126 – Aquatic Resource Protections). The Proposed Actions would introduce as-of-right rules for the proposed special district to strengthen the preservation of aquatic resources. All construction within NYSDEC-regulated areas would continue to be subject to NYSDEC approval, and the proposed regulations would not affect NYSDEC's ability to review and approve or deny construction within regulated wetland and adjacent areas. The proposed regulations for all properties, including small properties that are not Plan Review Sites, would aim to preserve the quality of NYSDEC-regulated wetlands by requiring a planted buffer area of natural vegetation, limiting the amount of lot coverage and hard surface area, and restricting disturbance to upland buffers. The proposed regulations would

have a direct, beneficial effect to wetland resources; upland resources; water resources; and significant, sensitive, or designated resources by restricting development within important upland buffers adjoining these resource areas. The proposed regulations also promote the enhancement of these buffers through planting, which would increase their effectiveness in providing ecological services.

Controls during Construction. The Proposed Actions would expand construction controls throughout the entire proposed special district. The proposed regulations would require construction fencing around the critical root zone of trees and any vegetation being preserved, as well as slopes over 25 percent beyond 20 feet of a building. A construction plan, which is currently a required submission material for CPC authorization in the special districts, including details such as locating equipment access roads, staging areas, construction fences, and preserved areas, would be required as part of applications to DOB. Each of these elements is anticipated to have a direct, beneficial effect on natural resources because they would provide added protection to these resources during the planning, approval review, and construction phase of a project.

Habitat Preservation. The Proposed Actions would introduce specific regulations to preserve habitat, including the requirement that properties of 1 acre or more in size preserve existing habitat area on-site if the habitat is 0.25 acre or more in size. These sites would require ecological assessment of habitat before a development is designed so that the requirement could be met by preservation of the most valuable ecological areas that may also provide connectivity to larger protected natural areas. Large community facility campuses, such as schools, medical facilities, or houses of worship, would be required to preserve 35 percent of the site as natural habitat. For all other properties, the maximum required amount of habitat preservation area would be 25 percent. The proposed changes to zoning regulations would have an overall direct, beneficial effect to natural resources by increasing the amount of habitat preservation within a site than is currently required and providing an opportunity for better planning of the on-site habitat preservation so the most valuable areas are preserved.

Prototypical Analysis Sites

Table 9-2 compares the prototypical analysis sites under the No Action and With Action scenarios. The percent of hard surface area and percent lot coverage columns provide a measure of the potential site impacts on natural resources. As **Table 9-2** shows, for prototypical analysis site 3, the percent of hard surface cover and percent lot coverage would increase under the Proposed Actions. Under the Proposed Actions, prototypical analysis sites 1 and 2 would either not experience a change in percent of hard surface area and percent lot coverage, or would experience a small decrease in these measures, compared to the No Action scenario.

Although the number of trees would decrease on some sites because of the increased tree grouping points under the Proposed Actions, preservation of larger, old growth trees would be higher than under the current regulations. The proposed rules would also offer more credit for trees that are native to the ecosystem to incentivize planting target species. Native species and mature trees provide greater ecosystem services than invasive species or newly planted trees. Additionally, biodiversity planting areas would increase at most sites. As **Table 9-2** shows, the size of the biodiversity planting area would generally correspond to the size of the lot, and planting areas would range in size from 450 to 1,200 square feet.

Overall, the prototypical analysis site analysis indicates that the Proposed Actions would provide some direct, beneficial effects to natural resources by decreasing the footprint of disturbance and the amount of hard surface area as well as requiring a portion of the sites to be dedicated to a biodiversity garden. The Proposed Actions would increase the amount of natural area preservation within a site and preserve the most ecologically valuable areas. The Proposed Actions would also limit the amount of lot coverage and hard surface area and restrict disturbance of upland buffers. The proposed regulations would promote the enhancement of upland buffers through native plantings, which would increase their effectiveness in providing ecological services. While the total number of trees would decrease on some sites, the preservation of mature trees would be higher than under the current regulations. The proposed regulations would encourage planting native target species and plantings stands of trees that have greater ecological value and resilience than individual trees. In some instances, new development on lots in the Base Protection Area would have a greater potential for direct, negative impacts on natural resources than under the No Action scenario, although these sites would still be required to mitigate these impacts with more tree replacements and a biodiversity garden.

Table 9-2. Comparison of Prototypical Analysis Site Buildout Under Existing and Proposed Zoning Requirements

Site	Lot Area (Square Feet)	With Action Ecological Area	No Action Scenario	With Action Scenario	No Action % Hard Surface Area	With Action % Hard Surface Area	No Action % Lot Coverage	With Action % Lot Coverage	No Action Trees	With Action Trees	No Action Biodiversity Garden Square Feet	With Action Biodiversity Garden Square Feet
1	6,000	Base Protection	2-story 1-family detached home enlargement	Enlargement of 2-story, 1-family detached home	50	50	25	25	Removed: 1; Preserved: 3; New: 3 **Total: 6**	Removed: 2; Preserved: 2; New: 6 **Total: 8**	0	604
2	4,500	Base Protection	2-story 1-family detached home	2-story, 1-family, detached	68	65	25	30	Removed: 4; Preserved: 5; New: 4 **Total: 9**	Removed: 5; Preserved: 4 New: 2 **Total:6**	0	450
3	12,000	Base Protection	Existing conditions to remain	2-story, 1-family detached	0	50	0	25	Removed: 0; Preserved: 9; New: 0 **Total: 9**	Removed: 3; Preserved: 6 New: 9; **Total: 15**	0	1,200
4	8,000	Resource Adjacent	2-story 1-family detached home	3-story, 1-family, detached	48	44	30	15	Removed: 6; Preserved: 2; New: 11 **Total: 13**	Removed: 2; Preserved: 6 New: 5 **Total: 11**	0	1,000

*** This table has been modified for the FEIS.**

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Conclusion

No significant, adverse impacts on natural resources are anticipated in the 2029 analysis year because of the Proposed Actions. The Proposed Actions would not directly displace any water resources; wetland resources; upland resources; built resources; or significant, sensitive, or designated resources in any of the affected zoning districts such that adjoining natural resources would be adversely affected. The Proposed Actions would not result in land uses that would be incompatible with existing land use, zoning, or public policy. Because the Proposed Actions would not change the existing protections of natural resources provided by federal and state regulations affecting the coastal zone, freshwater and tidal wetlands and waterbodies, water quality, and threatened and endangered species, the existing natural resources would generally not receive less protection under the Proposed Actions. In some instances, as-of-right development on prototypical analysis sites (where CPC review would not be required) may result in negative impacts on some natural resources; however, significant natural features would still be preserved to the greater extent possible while allowing the owner sufficient flexibility of design. Overall, the Proposed Actions would create a framework for guiding new development in areas with significant natural features that is more protective of those resources than the No Action scenario.