A. INTRODUCTION

This chapter reviews the regional and local hydrogeological conditions, examines published plans related to water resources, including *The Long Island Comprehensive Waste Treatment Management Plan* (hereinafter referred to as the "208 Study" based on its origins as a report prepared pursuant to Section 208 of the Federal Water Pollution Control Act Amendments of 1972) and the *Long Island Comprehensive Special Groundwater Protection Area Plan*, and assesses potential impacts to water resources that could result from the Proposed Actions. Depth to groundwater, groundwater flow direction, and groundwater quality are described. Surface water resources and/or wetlands located on or directly adjacent to the Project Sites and other directly affected areas are also identified and described. In addition, this chapter includes existing and projected stormwater runoff volumes from the Project Sites and other directly affected areas.

PRINCIPAL CONCLUSIONS

The Proposed Actions would not result in significant adverse impacts to water resources. The Proposed Project, including the addition of the electrical substation, would adhere to the relevant requirements and recommendations of the 208 Study, the *2016 New York Standards and Specifications for Erosion and Sediment Control* (the "Blue Book"), the *New York State Stormwater Design Manual* (January 2015), and the State Pollutant Discharge Elimination System (SPDES) general permit requirements.

Sanitary waste generated by the Proposed Project would be disposed of via a connection to the Nassau County Department of Public Works (NCDPW) sewer system, and transported to the Bay Park Sewage Treatment Plant (STP), which currently has a SPDES permit that requires nitrogen removal prior to discharge to the ocean. Thus, since there is no sanitary discharge to the ground, there would be no impacts to groundwater from sewage disposal. Furthermore, the components of the Proposed Project would be connected to a municipal water purveyor. Therefore, impacts to groundwater at the Project Sites would be negligible. In addition, Phase I and II Environmental Site Assessments (ESAs) prepared by Roux Associates for the Applicant and a Phase I ESA prepared by O'Brien and Gere for The New York Racing Association (NYRA), found no evidence of significant contamination of groundwater. However, a variety of measures would be incorporated into the Proposed Project to reduce the potential for exposure to any hazardous materials in groundwater that may be present (see Chapter 8, "Hazardous Materials").

While the Proposed Project would modify, disturb, or eliminate the man-made water feature on Site A, there would be no impacts to natural water features or wetlands, as no such features are found on the Project Sites or other directly affected areas. The water feature on Site A is an artificial ornamental pond that is fed by the municipal water supply and overflows to the storm sewer system.

Stormwater management systems would be installed during early stages of construction to manage stormwater runoff, and various types of inlet protection would be employed in order to protect the existing and proposed drainage infiltration systems and off-site recharge basins. As noted above, the proposed stormwater management system would be designed based on discussions with Nassau County, and in accordance with the Blue Book and the *New York State Stormwater Manual*. In addition, a formal Stormwater Pollution Prevention Plan (SWPPP) would be prepared and SPDES requirements (including the SPDES General Permit 0-15-002 for Stormwater Runoff During Construction Activities) would be adhered to. After construction begins, the Applicant's contractor would be responsible for maintaining the SWPPP documents, including the erosion and sediment control plans. Regular inspections of erosion controls would be completed throughout the duration of the construction period.

Implementation of the Proposed Project would result in a decrease in impervious surface on Project Sites A and B, resulting in a slight reduction of volume of stormwater runoff. In addition, the Proposed Project's on-site stormwater management infrastructure for Sites A and B would include installation of water quality treatment units upstream of the connection to the Nassau County infrastructure, per requirements set forth by Nassau County and New York State. For the North and East Lots, a system of drywells would provide storage and infiltration to accommodate any increased runoff due to the Proposed Project. On-site stormwater management structures and connections to a County recharge basin would collect and ultimately recharge stormwater to groundwater such that virtually all stormwater runoff from the Project Sites would be contained and infiltrated/recharged, resulting in an improvement over existing conditions. Overall, there would be no significant adverse stormwater impacts as a result of the Proposed Project.

B. METHODOLOGY

The following resources were used to set forth existing conditions and examine potential impacts associated with implementation of the Proposed Actions:

- United States Geological Survey (USGS) Geospatial Dataset Water-Table and Potentiometric-Surface Altitudes in the Upper Glacial, Magothy, and Lloyd Aquifers beneath Long Island, New York, April-May 2016
- USGS Topographic Survey, Lynbrook Quadrangle, 2013
- *The Long Island Comprehensive Waste Management Plan* (a/k/a the "208 Study")
- *Long Island Comprehensive Special Groundwater Protection Area Plan*
- Phase I Environmental Site Assessment – Belmont Park 2150 Hempstead Turnpike, Elmont, New York (April 2018) prepared by Roux Associates
- Phase II Environmental Site Assessment – Belmont Park Redevelopment Sites A and B 2150 Hempstead Turnpike, Elmont, New York (July 2018) prepared by Roux Associates
- Belmont Park - Phase I Environmental Site Assessment (October 2017) prepared by O'Brien & Gere Engineers Inc. (OBG)
- USGS Long Island Depth to Water Viewer
- New York State Department of Environmental Conservation (NYSDEC) Environmental Resource Mapper
- USGS National Water Information System
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps

- NYSDEC Freshwater and Tidal Wetland maps
- Topographic survey prepared by Lockwood, Kessler and Bartlett, Inc., Consulting Engineers, last updated August 23, 1965
- *Partial Topographic Survey* for Belmont Park prepared by Control Point Associates, Inc. PC, April 2018
- Aerial Photograph Decade Package, 1924-2017, Environmental Data Resources, Inc.
- United States Department of Agriculture, Natural Resources Conservation Services, "Part 630 Hydrology National Engineering Handbook, Chapter 15, Time of Concentration" (May 2010)
- NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity Permit Number GP-0-15-002
- NYSDEC *Reducing the Impacts of Stormwater Runoff from New Development*
- New York State *Stormwater Management Design Manual*, NYSDEC, January 2015
- New York State *Standards and Specifications for Erosion and Sediment Control* (a/k/a the "Blue Book").

A review of existing surveys and plans and a site inspection (including use of ground-penetrating radar [GPR]) was conducted to understand the existing stormwater infrastructure, as well as surface water features on the Project Sites. In addition, consultation was undertaken with the NCDPW regarding stormwater runoff, drainage infrastructure, and preliminary drainage concepts for the Proposed Project. HydroCAD®, stormwater modeling software, was used to evaluate the volume of stormwater runoff, peak flow, and time of concentration for runoff in the existing and proposed "With Action" condition, in order to analyze the impact on downstream County stormwater facilities, for the anticipated stormwater runoff due to implementation of the Proposed Actions.

C. EXISTING CONDITIONS

GROUNDWATER RESOURCES

Long Island is considered a Sole Source Aquifer region, which means that groundwater is the single water supply source. Therefore, land uses have the potential to impact the quality of the water supply. According to NYSDEC, "the aquifers underlying Long Island are among the most prolific in the country. Almost all of Long Island's drinking water is from groundwater with surface water an insignificant contributor… The three most important Long Island aquifers are the Upper Glacial Aquifer, the Lloyd Aquifer, and the Magothy Aquifer." The Magothy aquifer is the largest of all these aquifers, and is the source of most of Nassau County's drinking water (approximately 90 percent) and approximately half of Suffolk County's drinking water. It is characterized by deep recharge with vertical flow.[1]

Groundwater flow on Long Island is characterized by a groundwater divide, extending east-west along its length. To the north of the groundwater divide, horizontal groundwater flow is generally to the north; in areas south of the divide, it is toward the south. The Project Sites basically sit on

[1] According to the *Long Island Comprehensive Waste Treatment Management Plan*, groundwater near the groundwater divide (where the Project Sites are located) is subject to the slope of the water table that generally carries water vertically downward to the deepest part of the Magothy aquifer.

this divide. As obtained from the *April-May 2016 USGS Geospatial Dataset of Water-Table and Potentiometric-Surface Altitudes in the Upper Glacial, Magothy, and Lloyd Aquifers beneath Long Island, New York*, ("2016 Geospatial Dataset") regional groundwater beneath the Project Sites and the other directly affected areas generally flows to the northeast to southwest.

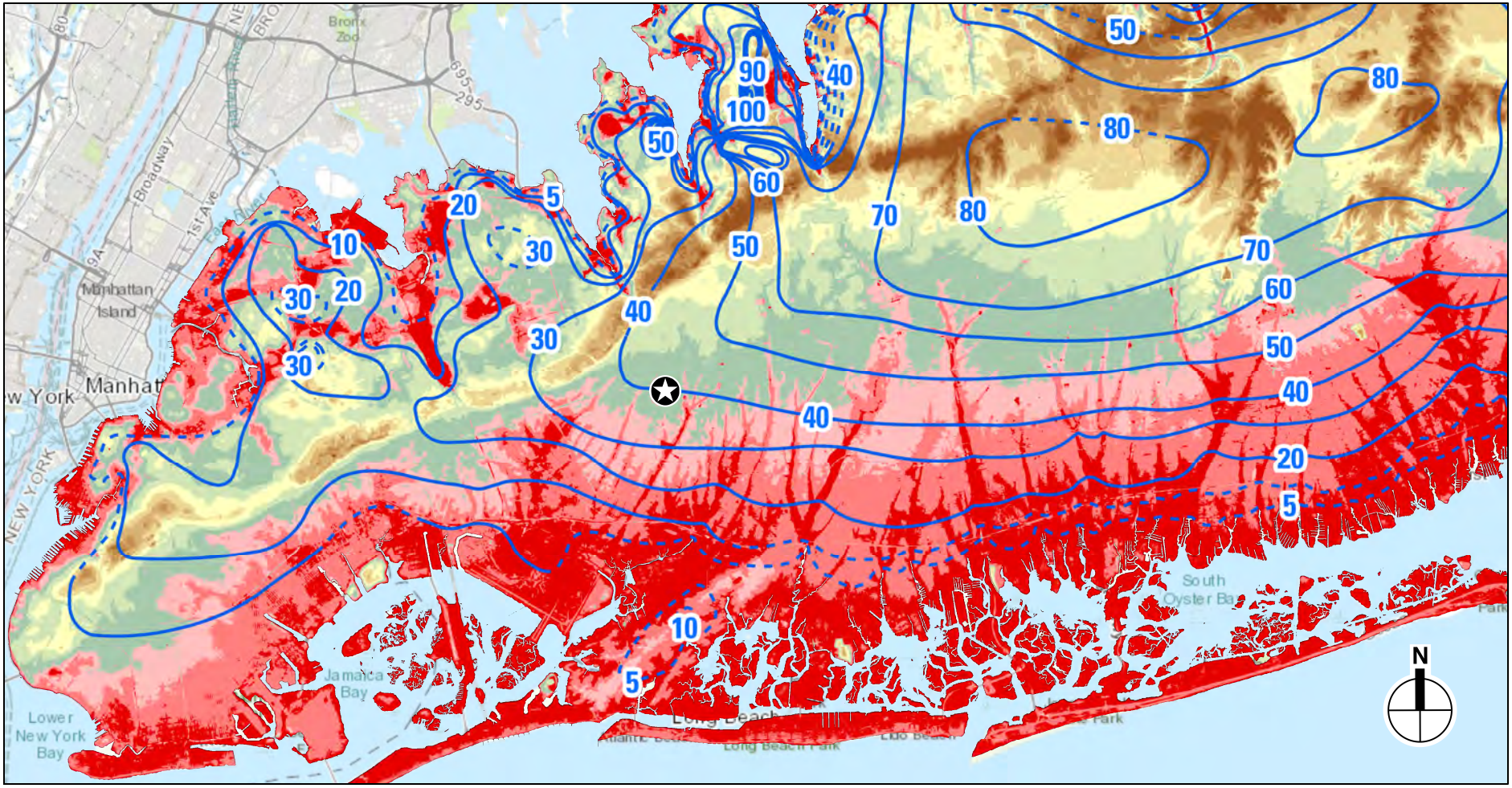
The USGS publication indicates that depth to groundwater in the vicinity of the Project Sites and other directly affected areas is between approximately 35 to 40 feet (see **Figure 9-1**). This was confirmed by on-site data gathered as part of the Phase II ESA prepared by Roux Associates where the soil borings conducted for Sites A and B indicate a depth to groundwater of approximately 40 feet for Site A and approximately 35 feet for Site B. No specific depth to groundwater is noted for the North Lot, South Lot, or East Lot; however, based on the 2016 Geospatial Dataset, the depth to groundwater is estimated to be 42 feet below grade surface (bgs) in the North Lot, 35 feet in the South Lot, and 32 feet bgs in the East Lot.

Groundwater depth is further confirmed by monitoring well data available through the USGS National Water Information System. A groundwater monitoring well located at the northwest corner of Site B at Hempstead Turnpike and the Cross Island Parkway began operation in 1964 and is used to observe the depth to groundwater within this area of the Northern Atlantic Coastal Plain aquifer system. The land surface altitude at the well site is 75 feet above mean sea level (amsl) and the depth of the well was completed at 353 feet within the Magothy aquifer. For the most recently reported data (July 2018), the groundwater level was approximately 35 feet. Another USGS well established in 1982 is located between Site B and Wellington Road, just south of Hempstead Turnpike. Here, land surface elevation is 71 feet, the well and hole depth is 95 feet, and its most recent reading in July 2018 was also just over 35 feet. These levels are similar to those found during the site-specific geotechnical evaluation, also performed in July 2018.

As detailed in Chapter 8, "Hazardous Materials," groundwater was sampled from wells in Sites A and B, and samples were monitored for potentially hazardous materials. Results of the monitoring were analyzed for NYSDEC 6 NYCRR Part 375 Environmental Remediation parameters, and groundwater sampling results were compared to the NYSDEC Ambient Water Quality Standards and Guidance Values (AWQSGVs). Volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs) were not detected at concentrations exceeding the AWQSGVs in any of the groundwater samples. One semi-volatile organic compound (SVOC) and several naturally occurring metals (iron, manganese, and sodium) were detected at concentrations exceeding the AWQSGVs at six of the nine wells. As iron, manganese, antimony, and sodium are naturally occurring inorganic compounds in Long Island groundwater, the exceedances in groundwater samples were not considered to be an environmental concern. The SVOC, (benzo(a)anthracene) was not detected in any of the soil sampling. Pesticides (P, P'-DDT) were detected at one sampling location in Site A, which is likely related to historical agricultural use in the area. Overall, the Site Environmental Assessments performed for the Project Sites found no evidence of significant contamination of groundwater resources.

THE LONG ISLAND COMPREHENSIVE WASTE TREATMENT MANAGEMENT PLAN (208 STUDY)

In the 208 Study, Long Island was divided into eight hydrogeologic zones to address wastewater treatment and to prevent water pollution in Long Island's aquifers due to the expected substantial growth in population and building. The Project Sites are located in Hydrogeologic Zone I, according to the 208 Study (see **Figure 9-2**); therefore, the recommendations for Zone I would apply (Page 45, Volume I).



Project Sites and Parking Lots

Line of equal water-table altitude (contour interval 10 feet)

- Solid where approximately known
- Dashed where inferred

Estimated depth to water below land surface, in feet

- < 11
- 11 - 20
- 21 - 30
- 31 - 50
- 51 - 75
- 76 - 100
- 101 - 125
- 126 - 150
- 151 - 175
- 176 - 200
- >201

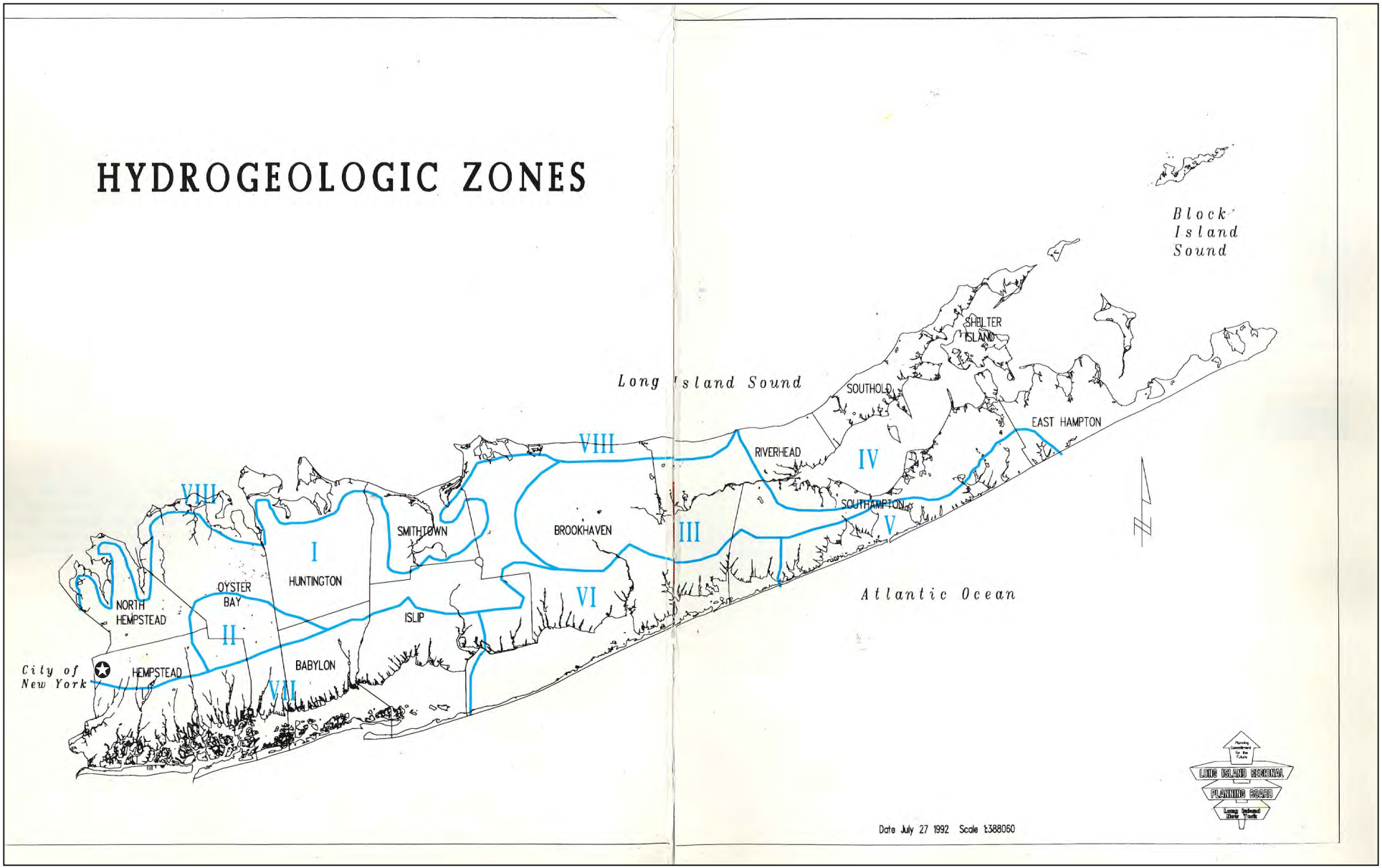
0 5 MILES

Depth to Groundwater and Water Table Elevations

BELMONT PARK REDEVELOPMENT CIVIC AND LAND USE IMPROVEMENT PROJECT

Figure 9-1

11.21.18



Source: Long Island Regional Planning Board, July 1992

✪ *Project Location*

Hydrogeologic Zones

BELMONT PARK REDEVELOPMENT CIVIC AND LAND USE IMPROVEMENT PROJECT

Figure 9-2

Hydrogeologic Zone I is a deep recharge zone, which encompasses much of the residential, transport and commercial, and industrial activity areas of Nassau and Suffolk Counties. The major environmental characteristic of Zone I is that materials released at the surface move downward into the Magothy aquifer. Since materials in the deep recharge zone infiltrate into the ground and ultimately to the Magothy aquifer (the aquifer from where most of Long Island's drinking water is derived), the land uses that occur on the surface, and the discharge associated with them, need to be properly managed. This includes the management of sewage and stormwater runoff, as well as the application of fertilizers, pesticides, herbicides, etc.

The 208 Study lists structural and non-structural management recommendations, and from these recommendations defines the Highest Priority Area-wide alternatives to manage potential impacts to groundwater in each Hydrogeologic Zone. For Zone I, the Highest Priority Area-wide alternatives relevant to the subject property and its use are as follows:

- Restrict the use of inorganic, fast-acting fertilizers. Promote the use of low-maintenance lawns; and
- Control stormwater runoff to minimize the transport of sediments, nutrients, metals, organic chemicals and bacteria to surface waters and groundwater.

The other recommendations refer to residential density, use of low-maintenance lawns, landfills and industrial waste disposal, chemical cleaners and on-site disposal systems, which are not germane to the Project Sites or their use. The Proposed Action's consistency with the relevant recommendations of the 208 Study is discussed below.

THE LONG ISLAND COMPREHENSIVE SPECIAL GROUNDWATER PROTECTION AREA PLAN (SGPA PLAN)

As indicated in the *Long Island Comprehensive Groundwater Protection Area Plan*,[2] dated July 27, 1992, Special Groundwater Protection Areas (SGPAs) are largely undeveloped or sparsely developed geographic areas of Long Island that provide recharge to portions of the deep flow (Magothy) aquifer system. They represent a unique opportunity for comprehensive, preventative management to preclude or minimize land use activities that can have a deleterious impact on groundwater. Nine SGPAs are located on Long Island; however, the Project Sites are not situated within or adjacent to the boundaries of an SGPA. Article X of the Nassau County Public Health Ordinance (NCPHO) is entitled "Groundwater Protection and Regulation of Sewage and Industrial Wastewater." The intent and purpose of Article X is to "preserve the quality of the aquifers receiving recharge from areas which have been designated as Special Groundwater Protection Areas (SGPAs)." As the Project Sites are not within an SGPA, the provisions of Article X are not applicable.

SURFACE WATERS AND WETLANDS

Based on review of the NYSDEC Environmental Resource Mapper database and the NYSDEC Freshwater and Tidal Wetland Maps, there are no NYSDEC-regulated surface waters or wetlands located within Site A, Site B, or the other directly affected areas.

[2] *The Long Island Comprehensive Special Groundwater Protection Area Plan*, Long Island Regional Planning Board (Hauppauge, NY: Long Island Regional Planning Board, 1992).

The USFWS NWI Maps are non-regulatory maps created as a guidance resource to provide information on the abundance, characteristics and distribution of the Nation's surface waters and wetlands.[3] According to the NWI, an approximately 0.12-acre artificial pond (referred to elsewhere in the DEIS as "man-made water feature") located within the Backyard area of Site A is classified as a PUBHX (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated) surface water (see **Figure 9-3**). As defined by the NWI, the latter "Excavated" modifier is indicative of basins or channels that were "excavated by humans."[4] It is also noted that while mapped as PUBHX, the artificial pond is actually concrete-lined and does not have a natural bottom condition. No other NWI surface waters or wetlands occur at Site A, Site B, or the other directly affected areas.

The following provides a summary description of the artificial pond, based upon field observations on August 30, 2018, review of historical aerial photographs, the 1965 topographic survey and consultations with NCDPW.

The pond is an artificial structure constructed between 1924 and 1951 within the area immediately to the south of the Grandstand. The pond is concrete-lined and surrounded by a brick paving stone path, with lawns and ornamental landscaping located beyond the path. Water depths within the structure are variable and range from approximately 8 to 18 inches. The primary hydrological source for the pond is municipal water, via a ¾" copper pipe located at the west side of the structure. An overflow at the eastern side of the artificial pond discharges via subgrade piping to a storm drain located approximately 100 feet to the east of the structure. The storm drain is part of a series of connected area drains that comprise the existing stormwater management system at Site A. According to NCDPW, the area drains are located within the tributary area for Nassau County Groundwater Recharge Basin No. 122, located approximately one mile to the south. As such, municipal water that overflows from the pond ultimately discharges to the underlying groundwater table, rather than to other surface waters or wetlands.

Due to the concrete liner, there is no hydrological connection between the pond and subsurface soils, and no submerged or emergent vegetation grows within the pond. The concrete liner and paving stone perimeter path preclude the existence of pond edge vegetation or bordering wetland communities around the structure. Organic detritus (i.e., leaves and woody debris) was observed within the pond; however, no fish or amphibians were noted within the structure at the time of the field inspection. The observed fauna within the pond was limited to a pair of domestic white ducks (*Anas platyrhynchos domesticus*) and various aquatic and semi-aquatic insects.

Based on the foregoing observations, the approximately 0.12-acre pond is an isolated, artificial structure with no hydrological or biochemical connection to the subsurface, other surface waters, or wetlands. As the pond is concrete-lined, unvegetated, and supports a very limited wildlife fauna (see Chapter 10, "Natural Resources"), the structure does not function as a natural aquatic community, nor does it represent a significant wildlife habitat or source of native plant diversity.

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[3] United States Fish and Wildlife Service National Wetlands Inventory. Available online at https://www.fws.gov/wetlands/Data/Mapper.html. Accessed February 22, 2018.

[4] United States Fish and Wildlife Service – National Wetlands Inventory. 2017. Wetland Classification Codes. Available online at: https://www.fws.gov/wetlands/data/wetland-codes.html. Accessed May 16, 2017.

11.21.18

Data source: http://www.fws.gov/wetlands/Data/State-Downloads.html

Project Sites

North, South, and East Parking Lots

Proposed Belmont Electrical Substation

Long Island Rail Road (LIRR)

Wetland Type

Freshwater Pond (PUB, PAB)

Riverine (R)

Note: No NYSDEC freshwater or tidal wetlands were found.

0 1,000 FEET

U.S. Fish and Wildlife Service
National Wetlands Inventory

BELMONT PARK REDEVELOPMENT CIVIC AND LAND USE IMPROVEMENT PROJECT

Figure 9-3

Accordingly, the pond is best-suited for the ornamental purposes for which it was originally created and for which it is currently used.

Based on the isolated status of the artificial pond and legal precedents regarding isolated waters described above, it appears that the pond would not be subject to regulation as a water of the United States, pending confirmation by the USACE. The USACE currently makes jurisdictional determinations (JDs) for potential waters of the United States on a case-by case basis. Accordingly, a JD request application was submitted to the USACE on September 18, 2018, and a site inspection was conducted by representatives of the USACE and VHB on October 30, 2018. An Approved Jurisdictional Determination (AJD) is pending (see **Appendix D**).

STORMWATER

STORMWATER RUNOFF

Stormwater runoff is rainwater or melted snow that flows over land, including pavement, roofs, lawns and other landscaping, and does not directly soak into the ground. As noted by the USDA, there are four potential paths of stormwater runoff—some of the flow will be intercepted by vegetation and evaporate into the atmosphere, some of it will fall onto the ground surface and evaporate, some will infiltrate into the soil, and some will run directly off from the ground surface. According to the EPA, "when stormwater is absorbed into soil, it is filtered and ultimately replenishes aquifers or flows into streams and rivers."[5] The analysis below explains the type of flow that currently occurs (e.g., sheet flow, piping) and evaluates the volume of stormwater runoff, peak flow, and time of concentration for runoff in the existing condition. A HydroCAD® analysis was conducted by Bohler Engineering to compare the site runoff discharge characteristics for the pre-development (existing) conditions and the post-development (With Action) conditions over Sites A and B (**Appendix D**).

The pre-development analysis is based on the amount of pervious and impervious cover on the sites in their existing condition, to which a theoretical rainstorm is applied, and the peak flow that occurs at a theoretical discharge point downstream is estimated. As noted above, the existing Sites A and B are mostly comprised of paved surfaces, with an impervious cover of about 85 percent. Based on a 24-hour, 100-year design storm, where rainfall equals 8.25 inches, in the existing condition the volume of stormwater runoff from Sites A and B combined is 24.653 acre-feet (AF),[6] and the peak stormwater flow at the discharge point is approximately 253.37 cubic feet per second (cfs).

In the pre-development condition, the North Lot consists of mostly gravel parking areas (approximately 22.2 acres) with some grass areas (approximately 3 acres), which currently flows to a pipe system that discharges at the existing pond in the infield of the Racetrack. There are no existing drywells or other control structures apparent in the North Lot. In the pre-development condition, the approximately 17-acre East Lot is largely paved with no apparent stormwater

[5] https://www.epa.gov/greeningepa/epa-facility-stormwater-management (accessed November 19, 2018)

[6] Site A generates 5.683 AF of runoff and Site B generates 11.853 AF of runoff.

controls; approximately 2.6 acres are unimproved. The majority of stormwater runoff is sheet flow (or overland flow) with some shallow concentrated flow[7] (**Appendix D**).

EXISTING STORMWATER INFRASTRUCTURE CHARACTERISTICS

Stormwater runoff from Site A is currently served by an existing gravity flow system, which feeds into an 18-inch diameter pipe in the vicinity of Red Road and the LIRR Belmont Park Station. The 18-inch diameter pipe extends beneath the train station and connects to a 66-inch diameter storm sewer located within the right-of-way of the Cross Island Parkway. The storm sewer discharges to a Nassau County recharge basin (NC Basin #122) located approximately one mile south of the Project Sites on Dutch Broadway, several blocks east of the Cross Island Parkway in Elmont. NCDPW is not aware of any issues with the current function of the recharge basin, including its capacity.

Stormwater runoff from Site B is currently served by an existing gravity flow system, which converges into two 15-inch diameter pipes along the western boundary of the parcel. The 15-inch diameter pipes then connects to the above mentioned 66-inch diameter storm sewer within the right-of-way of the Cross Island Parkway. The storm sewer is under the jurisdiction of Nassau County as it discharges to the previously mentioned County recharge basin to the south.

There is a third connection into the 66-inch diameter storm sewer in the Cross Island Parkway from the North Lot. Specifically, the existing pond in the infield of the Racetrack overflows into the storm sewer in the Cross Island Parkway, which ultimately discharges into NC Basin #122.

NEW YORK STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) PROGRAM

The U.S. Environmental Protection Agency (EPA) Phase I Rule was issued in 1990, and regulates stormwater discharges associated with industrial activities. As defined at 40 CFR 122.26(b)(14), industrial activities include construction activities (e.g., clearing, grading, excavation activities) that result in the disturbance of five acres or more of land area. The Phase I Rule requires such activities to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for stormwater discharges (or coverage under an NPDES-approved State permit [SPDES]). It is noted that the EPA Phase II stormwater rule was implemented to regulate (among other things) construction activities disturbing less than five acres, but greater than one acre of land. NYSDEC administers New York's NPDES-approved SPDES program, which includes a General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002 - current version). This General Permit applies to the following construction activities when stormwater runoff may discharge to Waters of New York State (including Waters of the United States):

- Construction activities involving soil disturbances of one or more acres; including disturbances of less than one acre that are part of a larger common plan of development or sale that will ultimately disturb one or more acres of land.
- Construction activities involving soil disturbances of less than one acre where NYSDEC has determined that a SPDES permit is required for stormwater discharges based on the potential

[7] According to HydroCAD®, after a maximum of 300 feet, sheet flow usually becomes shallow concentrated flow (e.g., flow into a natural or manmade swale), depending upon the topographic conditions.

for contribution to a violation of a water quality standard or for significant contribution of pollutants to surface waters of the State.

Projects covered under the SPDES GP-0-15-002 are required to develop and implement a SWPPP that meets criteria set forth by NYSDEC. All SWPPPs must include practices consistent with the Blue Book.[8] Many construction sites must also comply with the NYS Stormwater Manual to address post-construction stormwater discharges.

In addition, the EPA Phase II rule requires permits be obtained for stormwater discharges from Municipal Separate Storm Sewer Systems (MS4s) in New York State-designated urbanized areas. The SPDES General Permit for Stormwater Discharge from MS4s (GP-0-15-003) requires that permittees meet a variety of requirements that are generally designed to encourage municipalities and/or public agencies to actively seek to reduce the amount of contaminants that reach waters of the State through stormwater runoff, including:

- To inventory and analyze stormwater runoff generated within the MS4 jurisdiction;
- To engage in public education and outreach efforts that disseminate information on the sources of stormwater runoff, potential causes of contamination of stormwater runoff, and the impacts of same on surface water quality; and
- To implement and enforce stormwater management regulations for land development activities within the MS4 jurisdiction that are at least as stringent as SPDES General Permit requirements.[9]

D. FUTURE WITHOUT THE PROPOSED ACTIONS

Without the Proposed Actions, the existing drainage system on the Project Sites and other directly affected areas would continue to function as it does today, with routine maintenance by NYRA staff to keep it functional. NYRA, with or without the Proposed Actions, intends to rebuild the outer dirt track and existing turf tracks to improve drainage and irrigation within the existing Racetrack.

E. POTENTIAL IMPACTS OF THE PROPOSED ACTIONS

GROUNDWATER RESOURCES

The Proposed Project would not have a significant adverse impact on the aquifers. As indicated below, the proposed uses on the Project Sites are not ones that have a high potential to contaminate the soil and groundwater. In addition, as noted in the review of the 208 Study and discussed above, the control of stormwater is a critical element in ensuring that impacts to groundwater resources are minimized. Installation of the proposed stormwater management system, as described in more detail below, would manage runoff to either directly infiltrate the ground or to ultimately infiltrate

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[8] New York State Department of Environmental Conservation. *New York State Standards and Specifications for Erosion and Sediment Control*. July 2016. Available online at: http://www.dec.ny.gov/chemical/29066.html.

[9] New York State Department of Environmental Conservation. New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Municipal Separate Sewer Systems (MS4s). Effective May 1, 2015. Available online at: http://www.dec.ny.gov/docs/water_pdf/ms4permit.pdf.

the ground through discharge at NC Basin #122. The on-site stormwater management infrastructure for Sites A and B would include installation of water quality treatment units upstream of the connection to the Nassau County infrastructure, which would assist in minimizing water quality impacts to the aquifer. The use of drywells in the Proposed Project would allow for the safe management of runoff while also allowing for on-site infiltration. Since contamination was not found at the site during the environmental site assessment (see below), the influent into the drywells is not expected to be contaminated. In addition, as required, there would be an appropriate separation distance (at least two feet) between the bottom of the drywells and the groundwater.

The Proposed Project would be supplied water by the WAWNC, for which well fields are located off-site. Further, sewage disposal would occur through connection to Nassau County's municipal sewer system. Therefore, the depth to groundwater at the site would not be impacted by either water withdrawal or sewage disposal. However, as described throughout this Chapter, stormwater runoff from the Proposed Project would infiltrate either on-site or ultimately at NC Basin #122. Therefore, the stormwater runoff from the Proposed Project would assist in replenishing the aquifer.

As identified in Chapter 8, "Hazardous Materials," groundwater samples were analyzed in comparison to the NYSDEC AWQSGVs in which no exceedances for VOCs or PCBs were identified. Though, six out of nine samples had traces of SVOCs, metals, and/or pesticides that exceed AWQSGVs. However, these findings were not considered to be a significant environmental concern as metals are most likely naturally occurring and pesticides reflect historical agricultural use that did not appear to be related to soil contamination originating at the Project Sites. Therefore, the Proposed Actions would not impact existing contaminated groundwater. Furthermore, the Proposed Project does not include land uses that would have a significant adverse impact on groundwater resources, with respect to the potential to contaminate this resource.

THE LONG ISLAND COMPREHENSIVE WASTE TREATMENT MANAGEMENT PLAN (208 STUDY)

As indicated above, the Project Sites are located within Hydrogeologic Zone I. Among the Highest Priority Area-wide Alternatives recommended in the 208 Study for Zone I, the most applicable to the Proposed Project are to:

- Restrict the use of inorganic, fast-acting fertilizers. Promote the use of low maintenance lawns; and
- Control stormwater runoff to minimize the transport of sediments, nutrients, metals, organic chemicals and bacteria to surface waters and groundwater.

With regard to the recommendations, inorganic, fast-acting fertilizers would not be used as part of the landscape maintenance program for the Proposed Project. Furthermore, the amount of lawn area proposed on the Project Sites is limited. The potential impacts of the Proposed Actions with respect to stormwater runoff are discussed below. As discussed in detail in that section, the Proposed Project includes slightly reducing the amount of impervious surface on the Project Sites, and installing a stormwater management system designed to control flow, improve quality, and be protective of groundwater and surface waters in accordance with New York State and Nassau County requirements. As such, the Proposed Actions are consistent with the relevant portion of the 208 Study.

Overall, implementation of the Proposed Actions is not expected to have a significant adverse environmental impact on groundwater resources.

SURFACE WATERS AND WETLANDS

The Proposed Project would not result in adverse impacts to natural surface waters or wetlands. The Proposed Project would eliminate the existing approximately 0.12-acre artificial pond on Site A. However, as described in Existing Conditions, this water feature is an isolated, artificial structure with no hydrological or biochemical connection to the subsurface, other surface waters or wetlands. As the pond is concrete-lined, unvegetated, and supports a very limited wildlife fauna, the structure does not function as a natural aquatic community, nor does it represent a significant wildlife habitat or source of native plant diversity. Accordingly, no significant adverse impacts would result from the elimination of the pond.

As indicated above, based on the observed isolated status of the pond and legal precedents regarding isolated waters described in Existing Conditions, it appears that the pond would not be subject to regulation as a water of the United States, subject to confirmation by the USACE. The USACE currently makes jurisdictional determinations (JDs) for potential waters of the United States on a case-by case basis. Accordingly, a JD request application was submitted to the USACE on September 18, 2018, and an agency response is pending.

STORMWATER

Based on the existing and proposed land coverages on Sites A and B, there would be an overall decrease in impervious surface of 0.06 percent (0.03 acre) across both sites, which represents essentially no change with respect to stormwater runoff. The South Lot, and portions of the North, and East Lots are currently used as surface parking for Belmont Park, and they would continue to function in the same capacity with the Proposed Project. The South Lot is currently paved and used on a regular basis for event parking; therefore, there would be no change in runoff from the South Lot. As noted in Chapter 1, "Project Description," it is expected that the North and East Lots would be resurfaced, and, as such, there would be a change in runoff from the existing to the proposed condition. Regarding the North and East Lots, in the pre-development condition, the North Lot consists of mostly gravel parking areas (approximately 22.2 acres) with some grass areas (approximately 3 acres). In the post-development condition, the North Lot is expected to be paved (approximately 23.6 acres), with some grass areas (approximately 3.7 acres).[10] The majority of the East Lot is currently paved, and will continue to be paved in the future with the Proposed Project. Currently there are approximately 2.6 acres of unimproved parking area that would be paved with the Proposed Project.

STORMWATER RUNOFF INFRASTRUCTURE AND MANAGEMENT

In the NYSDEC manual, *Reducing the Impacts of Stormwater Runoff from New Development*, the concept of stormwater management is such that there is qualitative control, as a system of vegetative and structural measures can be used "to control the increased volume and rate of surface runoff caused by man-made changes to the land" and "to control or treat pollutants carried by surface runoff" (page 5). The goal of stormwater management is to prevent deterioration of the

[10] The difference in surface coverages is mostly due to regrading of the parking area.

quantity and quality of stormwater run-off from proposed development versus the existing condition.

As indicated in the New York State Stormwater Management Design Manual (NYS Stormwater Manual), stormwater management planning consists of a calculation of the stormwater volume for a site, incorporating any runoff reduction features or techniques in place, and use of standard stormwater management practices (SMPs) and control practices, as applicable given site-specific considerations. Acceptable SMPs for stormwater treatment can capture and treat the full stormwater volume and meet performance standards designed in the NYS Stormwater Manual, including the removal of pollutants before stormwater reaches groundwater. Broad categories of acceptable practices include stormwater wetlands, infiltration practices (capturing and temporarily storing stormwater before allowing it to infiltrate into the soil), filtering practices (capturing, temporarily storing stormwater and passing it through a filter bed of treatment media), and open channel practices (capturing and treating stormwater within designed dry or wet cells).

The Proposed Project would include installation of a comprehensive stormwater management system to accommodate stormwater runoff. The Proposed Project includes new drainage infrastructure to collect stormwater throughout Sites A and B and convey it to the existing 66-inch diameter pipe within the Cross Island Parkway right-of-way, which ultimately discharges to NC Basin #122, south of Site B.

On Site A, the Project Project would maintain and reuse the existing 18-inch diameter connection to the storm sewer in conjunction with the installation of an upstream water quality treatment unit, meeting requirements set forth by Nassau County and New York State. On-site drainage structures are proposed to be removed and/or replaced, as required, to accommodate the Proposed Project. Building roof drains would be piped into the drainage system via underground pipe connections.

On Site B, the Proposed Project would maintain and reuse the existing 15-inch diameter connections to the storm sewer in conjunction with the installation of upstream water quality treatment units per requirements set forth by Nassau County and New York State. As on Site A, on-site drainage structures would be removed in order to accommodate the Proposed Project. Building roof drains would be piped into the drainage system via underground pipe connections.

The third connection to the 66-inch diameter storm sewer in the Cross Island Parkway from the North Lot is proposed to be maintained as an overflow for the proposed on-site leaching structures that would infiltrate the stormwater runoff into the ground. This system would be designed to infiltrate up to and including the 10-year storm event, with overflow directed via existing conveyances to an on-site detention pond in the infield of the Racetrack. The overflow peak volume is substantially lower than the existing runoff being directed to this pond. The pond's outlet ultimately connects into the Cross Island Parkway sewer.

Although there would be no overall increase in impervious surface at Sites A and B, NCDPW was concerned that the new collection system would change the runoff characteristics that would deliver a higher peak flow to County drainage system, including recharge basin #122. Therefore, NCDPW requested an analysis for the proposed conditions versus the existing condition to confirm that the new condition would not negatively impact the 66-inch pipe (volume/capacity), recharge basin (capacity), or the Town of Hempstead property adjacent to the basin (overflow). In response to NCDPW's request, Bohler Engineering prepared a HydroCAD® analysis to compare the site runoff discharge characteristics for pre-development and post-development conditions at the Project Sites. The HydroCAD® analysis uses time of concentration (among other factors) to calculate the timing and magnitude of the peak flow in the post-development conditions to

compare it to the pre-development conditions. The results indicate that overall, there would be a slight decrease in the total volume of runoff generated in the post-development condition, due to the slight decrease in impervious surfaces resulting from the Proposed Project's replacement of some paved areas with landscaping—24.575 AF in the post-development condition versus 24.653 AF in the existing condition, when considering the combined effect of Sites A and B at the downstream discharge point where it joins the County system. Furthermore, based on a 24-hour, 100-year event where rainfall equals 8.25 inches, the peak stormwater discharge under the post-development conditions at the combined discharge point would be 245.75 cfs, compared to 253.37 cfs in the pre-development condition.[11]

The change in both overall stormwater volume and peak flow of runoff from the pre-development to the post-development condition for Sites A and B combined is nominal and considered negligible with respect to potential impacts on the stormwater infrastructure.

HydroCAD® analyses were also conducted for the North and East Lots, which are proposed to function as separate, self-contained catchment areas. For these areas, a system of drywells is being provided to capture and recharge the runoff generated within each lot. For each drywell system, the HydroCAD® model determines the inflow into the drywells system (based on the theoretical rainstorm and amount of pervious and impervious cover) as well as the outflow due to exfiltration through the drywells (based on an infiltration rate determined by the soil type). The model then calculates the elevation to which the drywell system would fill up as a result of the different storm frequency scenarios (up to and including the 100-year storm) by comparing the volume of runoff being collected to the volume of runoff being exfiltrated into the soil for the duration of the storm.

For the North Lot, the HydroCAD® analysis for the 10-year storm event demonstrates that the storage volume provided in the drywells is sufficient to contain the difference between the inflow volume of 9.495 AF and the peak outflow of 9.476 AF, resulting in no overflow from the system. Therefore, all design storms up to and including the 10-year storm event are fully contained within the drywell system with no discharge to the surrounding site or infrastructure. However, the 100-year storm analysis demonstrates that the available storage volume in the drywell system is insufficient to contain the difference between the inflow volume of 15.4 AF and the outflow volume of 15.2 AF. The post-development analysis shows a discharge from the system of 0.27 AF, discharged at a peak rate of 22.4 cfs to the pipe system that currently discharges under the track to the existing detention pond in the infield of the Racetrack. This is a significant reduction in the projected volume and rate of runoff from the pre-development condition, and thus the corresponding impact on the surrounding infrastructure would be significantly reduced.

For the East Lot, the HydroCAD® analyses for the 100-year storm event demonstrates that the storage volume provided in the drywells is sufficient to contain the difference between the inflow volume of 5.68 AF and the peak outflow of 5.66 AF, resulting in no overflow from the system. Therefore, all design storms up to and including the 100-year storm event are fully contained within the drywell system with no discharge to the surrounding site or infrastructure. As there are currently no stormwater controls on the North and East Lots, implementation of the proposed measures would have a positive effect on the stormwater runoff in these areas.

Based on the HydroCAD® analyses performed for the pre-development and post-development conditions, implementation of the Proposed Project would not have a significant adverse impact

[11] The HydroCAD® analysis does not account for the future NYRA improvements to drainage within the existing Racetrack.

on on-site of off-site stormwater management facilities or stormwater runoff on surrounding communities.

As the proposed redevelopment contemplates maintaining the existing connection to a municipal stormwater system, NCDPW requires stormwater BMP's to reduce/eliminate negative impacts, such as floatables, sediments and petroleum, on the County's system. The Applicant would comply with this requirement through implementation of the SWPPP, as described below.

NEW YORK STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) PROGRAM

As the proposed improvements to the Project Sites involve soil disturbances of one or more acres, coverage under SPDES GP-0-15-002 (or current version of general permit) would be obtained.

Specifically, based in part on a soil erosion and sediment control plan, a SWPPP would be developed at the time the site plan is finalized, in accordance with the requirements of the GP-0-15-002 and Nassau County DPW requirements. The SWPPP is a construction management document that includes a detailed erosion and sediment control plan to manage stormwater generated on-site during construction activities, an analysis of the post construction stormwater management system for compliance with the GP-0-15-002, and describes construction inspections and long-term drainage maintenance requirements. Additionally, because construction activities at the Project Sites and other directly affected areas could require disturbance of greater than five acres at one time, the SWPPP may require a detailed phasing plan that defines the maximum disturbed area per phase and include measures for temporary and/or permanent soil stabilization to be implemented within seven days from the date the soil disturbance activity is ceased.

All erosion and sedimentation control measures would be installed and maintained in accordance with the a soil erosion and sediment control plan and the SWPPP and/or as indicated within the Blue Book, which provides standards, specifications and criteria on minimizing erosion and sediment impacts from construction activity involving soil disturbance. In addition, the NYS Stormwater Manual, which provides standards and specifications for selection and design of stormwater management practices to comply with State stormwater management performance standards, would also be used in preparing the SWPPP.

NYSDEC will review the SWPPP, as required for projects disturbing 5 acres or more at one time. No Nassau County review is required for coverage under SPDES permit GP-0-15-002 for Stormwater Discharges under Construction Activity.

Once the SWPPP review is completed by NYSDEC and construction begins, the site operator would be responsible for compliance with the SWPPP, ensuring that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times. Pursuant to GP-0-15-002 requirements, inspections of construction activity and erosion controls/stormwater management practices are required to be conducted by a qualified inspector at a minimum frequency of once every seven calendar days and within 24 hours of any storm event producing 0.5 inch of precipitation or more. The site operator is obligated to maintain the record of all inspection reports on the site and address necessary corrective actions identified by the qualified inspector.

Implementation of erosion and sedimentation control measures, as described in the two manuals noted above, the erosion and sediment control plans, as well as the use of best management practices (BMPs), as also discussed in these publications, would assist in ensuring that the proposed development would minimize impact to groundwater and surface water resources. Specifically, general soil erosion and sediment control measures such as stabilized construction

entrance and exits, silt fencing around construction sites, and tree protection for preservation would be utilized. All grading and excavation would be conducted such that associated stormwater run-off is directed to temporary sediment traps by implementing temporary diversion and infiltration swales and using temporary sediment basins or other sediment traps. All measures listed above would be installed prior to construction and would remain until the limits of disturbed areas are stabilized.

Pursuant to the requirements of GP-0-15-002, routine maintenance of post-construction stormwater management practices is required to ensure continuous and effective operation of each practice. The SWPPP must include a maintenance schedule for the various stormwater management practices.

As indicated above, the proposed improvements to the Project Sites and other directly affected areas would comply with the requirements set forth by the NCDPW for stormwater management. The proposed improvements would, in the construction phase, provide stormwater runoff controls, and in the development phase, continue to employ an integrated stormwater management system that would collect and recharge all stormwater runoff on-site, as described above. This stormwater management system would minimize the amount of pollutants entering the soil and groundwater from runoff generated on the sites, and stormwater facilities would be routinely cleaned and maintained in order to avoid any potential public health impacts.

The on-site drainage systems would include a system of catch basins, drywells, trench drains, and infiltration. The Proposed Project would incorporate low impact design (LID) and green infrastructure, resulting in a slight increase in pervious surface on the Project Sites over the existing condition. Numerous trees are proposed to be retained on Site A between the proposed hotel and arena, and pervious pavement would be installed around the trees to increase the amount of infiltration associated with these features. In addition, where existing vegetation around the perimeter of Site B would be removed, it would be replaced and supplemented as part of the design of the vegetated buffer. The retention and addition of vegetation would increase evapotranspiration, a process by which water is transferred to the atmosphere by evaporation from soil and by transpiration from plants. This would assist in reducing stormwater runoff. Furthermore, the Proposed Project incorporates new stormwater management features such as drywells to capture and infiltrate the ground as opposed to the overland flow that currently occurs on portions of the Project Sites and other directly affected areas. Prior to discharge into the Nassau County recharge basin, as noted above, the Proposed Project's on-site stormwater management infrastructure for Sites A and B would include installation of water quality treatment units upstream of the connection to the County infrastructure. Therefore, stormwater runoff from the Proposed Project would be managed through evapotranspiration, pre-treatment, and infiltration. With these systems in place, significant adverse stormwater runoff impacts are not anticipated to result from the Proposed Project due to proper drainage system design, site grading, and implementation of erosion and sedimentation control measures. ✷