9

Natural Resources

This chapter assesses the potential for a proposed action to result in significant adverse impacts to natural resources, which are 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.

Introduction

Pursuant to Chapter 11 of the *2021 CEQR Technical Manual*, a natural resources assessment considers species in the context of the surrounding environment, habitat, or ecosystem, and examines the potential for a project to affect the species and/or any supporting resources, which include the City's water, wetland, upland, and built resources. The determination of whether a natural resources assessment is appropriate should consider whether a natural resource(s) occurs on or near the site of a project and if the project would result in disturbance of the identified resource(s). As defined in Chapter 11 of the *CEQR Technical Manual*, disturbance to natural resources can include both direct and indirect effects. Direct effects on natural resources are defined as: "activities that directly alter the condition of a resource." Indirect effects occur when: "…the changes on a site alter conditions to adjacent or nearby resources or on the site itself after construction has ended."

Based on review of existing ecological conditions, the Project Area is highly urbanized and developed with buildings, pavement, and other impervious surfaces. As a consequence, with the exception of scattered street trees, the Project Area is largely unvegetated and therefore does not represent a significant source of native plant diversity, vegetated ecological communities, or wildlife habitat. As such, the Project Area is essentially devoid of natural resources that might otherwise be subject to potential direct effects from the Proposed Actions.

However, as the Project Area is located proximate to nearby natural resources, including the Fresh Creek Nature Preserve (located approximately 390 feet west of the site) and Jamaica Bay (located approximately 1.25 miles to the south of the site), the Proposed Actions have the potential to result in indirect effects to these resources and their resident flora and fauna. Accordingly, this assessment examines the potential for the Proposed Project to result in indirect effects to these nearby natural resources. As listed in the *CEQR Technical Manual*, the potentially relevant indirect impacts of the Proposed Actions to nearby natural resources include:

- A change in on-site conditions that would alter the amount of light that reaches natural resources on or near the site.
- A change that would decrease the quality of surface or groundwater that currently supports a natural resource.
- A change such as…introduction of impervious surfaces, or any other change in drainage patterns, that would alter the way in which surface or groundwater flows from the project site to a nearby natural resource or vice versa.

Accordingly, this natural resources assessment examines the potential for the Proposed Actions to result in the indirect effects to the identified natural resources of the Fresh Creek Nature Preserve and Jamaica Bay.

Principal Conclusions

As the Project Area does not support natural resources, the Proposed Actions do not have the potential to result in direct effects to same. As defined in Chapter 11 of the *CEQR Technical Manual*, the potentially relevant indirect effects of the Proposed Actions to nearby natural resources (i.e., the Fresh Creek Nature Preserve and Jamaica Bay) include potential impacts due to shadows, decreases in water quality, or introduction of impervious surfaces that alter drainage patterns. Based on the analyses present in this chapter and supported by analyses from **Chapter 6, Shadows** and **Chapter 11, Water and Sewer Infrastructure**, the identified potential impacts would not occur, were determined to be *de minimis*, or would be avoided through regulatory agency requirements and implementation of best management practices (BMPs).

Specifically, the very limited temporal and areal extent of incremental shading that would occur within Fresh Creek Nature Preserve would be limited to ecologically degraded, upland portions of the preserve, and would not affect Fresh Creek Basin. Therefore, shading impacts to natural resources would be *de minimis* and do not warrant further analysis. Based on implementation of BMPs and conformance with the NYC Department of Environmental Protection (DEP), New York State Department of Environmental Conservation (NYSDEC) and other regulatory agency regulations and permitting requirements, the Proposed Actions are

consistent with the applicable DEP Water Quality and Stormwater Objectives for Jamaica Bay included in the *Jamaica Bay Watershed Protection Plan Volume II*. Therefore, no significant adverse impacts to natural resources are anticipated due to implementation of the Proposed Actions, and no further analyses are warranted.

Methodology

This assessment of natural resources follows the methods set forth in Chapter 11 of the *2021 CEQR Technical Manual* for identifying and characterizing natural resources, evaluating the potential for a project to result in direct or indirect effects to natural resources, performing the appropriate analyses to the determine the degree of any recognized effects, and identifying potential avoidance, minimization, and/or mitigation measures for any potential adverse effects, as applicable.

Existing Conditions

The Project Area is highly urbanized and developed with buildings, pavement, and other impervious surfaces. With the exception of scattered street trees, the Project Area is largely unvegetated and therefore does not represent a significant source of native plant diversity, vegetated ecological communities, or wildlife habitat. As such, the Project Area is essentially devoid of natural resources.

Natural resources in the vicinity of the Project Area include the Fresh Creek Nature Preserve and Jamaica Bay. A description of these natural resources is provided below.

Fresh Creek Nature Preserve/Fish Creek Basin

The Fresh Creek Nature Preserve is a 42-acre New York City Park located to the southwest of the Project Area, beyond Flatlands Avenue and Louisiana Avenue. In contrast to the dense urban development that occurs within the surrounding area (including the Project Area), the Preserve contains undeveloped upland and wetland habitats, including ecologically valuable surface water and tidal wetland communities that comprise Fish Creek Basin.[1] As a result of a diversity of intertidal marsh, high marsh, mudflats, and other tidal wetland communities, the Fresh Creek Nature Preserve supports a diverse species assemblage of vegetation, birds, butterflies, finfish, shellfish, crustaceans, and other aquatic organisms. The tidal wetland communities of the Fresh Creek Nature Preserve provide a number of important ecological functions, including erosion and flood control, sequestration of nutrients and pollutants, and valuable wildlife habitat benefits for many species, as noted above. Along with the adjoining habitats at Spring Creek Park, the tidal waters, wetlands, and upland communities of the Fresh Creek Nature Preserve are connected to and are part of part of the watershed of the extensive Jamaica Bay estuarine complex.

Water quality degradation and colonization by non-native/invasive plant species are among the chief threats to Fresh Creek Nature Preserve and Fish Creek Basin. In particular, the high marsh wetlands and much of the upland areas at the Fresh Creek Nature Preserve have been

[1] New York City Parks. Fresh Creek Nature Preserve. Available at: https://www.nycgovparks.org/parks/fresh-creek-park/ Accessed September 2021.

colonized and are dominated by the non/native/invasive species Common Reed (*Phragmites australis*). Additionally, although some notable native plants are known to occur within upland areas, the non-native/invasive herbaceous plant Mugwort (*Artemesia vulgaris*) and deciduous tree Tree-of-Heaven (*Ailanthus altissima*) cover much of the upland portions of the preserve.[2] The presence of invasive vegetation degrades the overall habitat quality of an ecosystem by outcompeting and replacing native plants, reducing overall vegetative species diversity, and lowering wildlife habitat value.

Jamaica Bay

Jamaica Bay is located approximately 1.25 miles to the south of the Project Area and includes extensive areas of terrestrial lands, underwaters lands, and surface waters, much of which are managed by the National Park Service as the Jamaica Bay Wildlife Refuge section of the larger Gateway National Recreation Area. Jamaica Bay is an extensive estuarine complex that includes over 12,600 acres of surface waters, vegetated saltmarsh habitats, mudflats, islands, tidal creeks, freshwater and brackish ponds, upland fields, shrublands, and woodlands.[3] Jamaica Bay drains a surrounding watershed of approximately 142 square-miles that includes the Project Area and other portions of Queens, Brooklyn, and Nassau County.[4] In addition to representing an important recreational and open space resource, the largely undeveloped ecological communities comprising Jamaica Bay represent habitat for extensive inventories of birds, mammals, amphibians, reptiles, insects, finfish, shellfish, and other marine invertebrates. Over 325 species of birds, 50 species of butterflies, and 100 species of finfish have been documented within the various habitats of Jamaica Bay.

According to DEP's *Jamaica Bay Watershed Protection Plan Volume II,* among the chief issues facing Jamaica Bay is the degradation of water quality due to increasing human population and development within the surrounding watershed, resulting in increased impervious surfaces within the Jamaica Bay Watershed and increased sewage discharge, solid waste, and stormwater runoff to the bay.[5] The resulting increased loading of pollutants and nutrients and lowered dissolved oxygen levels have had multiple negative impacts on water quality and resident aquatic and terrestrial species within Jamaica Bay. Accordingly, DEP has identified the following Water Quality and Stormwater Objectives for Jamaica Bay:

- Objective 1a: Reduce nitrogen loading to the tributary basins and Jamaica Bay.
- Objective 1b: Reduce CSO and other discharges into the tributary basins to improve pathogen and DO levels.
- Objective 1c: Increase dissolved oxygen levels in tributary basin areas of chronic hypoxia to improve ecological productivity.
- Objective 1d: Develop a robust and coordinated scientific monitoring program.

[2] New York City Parks. Fresh Creek Nature Preserve. Available at: https://www.nycgovparks.org/parks/fresh-creek-park/ Accessed September 2021.

[3] National Park Service. Gateway National Recreation Area. Available at: https://www.nps.gov/gate/learn/historyculture/jamaica-bay-wildlife-refuge.htm Accessed September 2021.

[4] New York City Department of Environmental Protection. DEP begins Dredging at Hendrix Creek. Available at: https://www1.nyc.gov/html/dep/html/press_releases/10-79pr.shtml#.YUD7cMuSlPY Accessed September 2021.

[5] New York City Department of Environmental Protection. Jamaica Bay Watershed Protection Plan – Volume II. Available at: https://www.esf.edu/glrc/documents/Jamaica%20Bay%20Watershed%20Protection%20Plan%20volume%202.pdf Accessed September 2021.

- Objective 3a: Promote the use of on-site BMPs in new and existing development.
- Objective 3b: Promote the use of off-site stormwater BMPs.

The potential positive or negative impacts of a proposed project within the Jamaica Bay Watershed can be evaluated through a consistency review with the above DEP Water Quality and Stormwater Objectives.

The Future Without the Proposed Actions

Absent the Proposed Actions, the Project Area would continue to be characterized by highly urbanized and developed conditions, with largely unvegetated impervious surfaces occupying the vast majority of land cover. Accordingly, under the Future Without the Proposed Actions, natural resources, as defined in Chapter 11 of the *CEQR Technical Manual,* would continue to be absent from the Project Area.

The Future With the Proposed Actions

As described in detail in **Chapter 1, Project Description**, the Proposed Actions would result in the construction of approximately 2,200,538-gsf of phased development within the Project Area over a period of 10 years, resulting in the construction of 10 buildings, of which eight are predominantly residential, ranging from two to 15 stories. Buildings 7 and 8 and Buildings 9 and 10 are connected, though they will have separate residential lobbies.

As identified in Existing Conditions, the potentially relevant indirect effects of the Proposed Actions on nearby natural resources (i.e., the Fresh Creek Nature Preserve and Jamaica Bay) include potential impacts due to shadows, decreases in water quality, and/or introduction of impervious surfaces that alter drainage patterns.

As detailed in **Chapter 6, Shadows**, incremental shading of the Fresh Creek Nature Preserve would occur only on the June 21 analysis day and would be limited to the very beginning (starting at 5:57 AM) of the analysis day. Furthermore, the areal extent of the incremental shading would be restricted to a minimal (1,050± square-foot) upland area along the far northeastern boundary of the preserve that is dominated by invasive vegetation that has degraded the overall habitat quality within this area. Significantly, there would be no incremental shading to Fish Creek Basin, Jamaica Bay, or any other surface waters or wetlands as a result of the Proposed Actions. Given the very limited temporal and areal extent of incremental shading that would occur within ecologically degraded, upland portions of the Fresh Creek Nature Preserve, and taking into account the absence of incremental shading to Fresh Creek Basin, the overall indirect effects to natural resources would be insignificant. As a result, shading impacts to Fresh Creek Nature Preserve would be *de minimis* and do not warrant further analysis.

The Proposed Actions would result in a net incremental increase of 2,050 residential units and 211,474 sf of commercial/public and institution/community facility space, in a primarily CSO area. As discussed in detail in **Chapter 11, Water and Sewer Infrastructure**, although the Proposed Actions would create new demand for treatment of sewage and stormwater in comparison to the No-Action condition, based on the methodology set forth in the *CEQR Technical Manual*, the incremental increases would be well within the capacity of the City's systems, and the effects would not be considered significant or adverse.

With respect to the potential for adverse effects to water quality within Jamaica Bay, as summarized in Existing Conditions, DEP has identified six Water Quality and Stormwater Objectives for Jamaica Bay in the *Jamaica Bay Watershed Protection Plan Volume II*. Based on the analyses and conclusions included in **Chapter 11, Water and Sewer Infrastructure**, a consistency review of the Proposed Actions with the six objectives is provided below:

- Objective 1a: Reduce nitrogen loading to the tributary basins and Jamaica Bay.

  Sanitary sewage generated by the Proposed Actions would discharge to the 26th Ward Wastewater Treatment Plant (WWTP), which has a State Pollutant Discharge Elimination System (SPDES)-permitted dry weather flow capacity of 85 mgd. This incremental increase in sanitary flow would represent approximately a 0.59 percent of the 26th Ward WWTP's SPDES-permitted capacity. As the projected increase in sanitary sewage would not cause the 26th Ward WWTP to exceed its operational capacity or the SPDES-permitted capacity, the Proposed Actions would not result in significant adverse impacts to sanitary sewage treatment at the 26th Ward WWTP. Wastewater at the 26th Ward WWTP is fully treated by physical and biological processes before it is discharged into Jamaica Bay. The quality of the treated wastewater (effluent) is regulated by the aforementioned SPDES permit issued by the NYSDEC, which establishes limits for effluent parameters (i.e., suspended solids, fecal coliform bacteria, and other pollutants).

  Moreover, as detailed in the consistency analysis with Objective 1b below, the incorporation of the appropriate DEP-required sanitary flow and stormwater source control BMPs, would reduce the overall volume of sanitary sewer discharge and stormwater runoff that might otherwise be generated from the Project Area, thereby reducing the potential for nitrogen loading in Jamaica Bay and its tributaries as a result of the Proposed Actions.

  Therefore, the Proposed Actions are consistent with this objective.

- Objective 1b: Reduce CSO and other discharges into the tributary basins to improve pathogen and DO levels.

  It is important to note that the Proposed Actions would not result in the introduction of new or additional CSO, MS4, or WWTP effluent outfalls to Jamaica Bay or any of its tributaries, including Fresh Creek Basin.

  The DEP Guidelines for the Criteria for Detention Facility Design establish allowable stormwater release rates. To achieve the allowable release rates for the Proposed Actions, stormwater could be managed by utilizing one or a combination of detention or infiltration techniques identified in the NYC Green Infrastructure Plan. Green technologies, such as green and blue roofs, subsurface detention and infiltration, and permeable pavement, could be implemented to retain or release stormwater with slowed discharge rates to control peak runoff rates. Specific BMP methods will be determined with further refinement of the building design and in consultation with DEP. Moreover, in accordance with the New York City Plumbing Code (Local Law 33 of 2007), the Proposed Project would be required to utilize low-flow plumbing fixtures, which would reduce sanitary flows to the plant 26th Ward WWTP and therefore CSO discharge volume to Jamaica Bay. In summary, the incorporation of the appropriate sanitary flow and stormwater source control BMPs that would be required as part of the site connection approval process, with the review and approval of DEP, would reduce the

overall volume of sanitary sewer discharge and stormwater runoff that might otherwise be generated from the Project Area.

With respect to pathogen and dissolved oxygen levels, Wastewater at the 26th Ward WWTP is fully treated by physical and biological processes before it is discharged into Jamaica Bay. The quality of the treated effluents is regulated by a SPDES permit issued by the NYSDEC, which establishes limits for effluent parameters (i.e., suspended solids, fecal coliform bacteria, and other pollutants).

Based on the foregoing, the Proposed Actions are consistent with this objective.

› Objective 1c: Increase dissolved oxygen levels in tributary basin areas of chronic hypoxia to improve ecological productivity.

As described in the consistency analyses for objectives 1a and 1b, the incorporation of the appropriate sanitary flow and stormwater source control BMPs that would be required as part of the site connection approval process, with the review and approval of DEP, would reduce the overall volume of sanitary sewer discharge and stormwater runoff. Therefore, the BMPs would reduce loading of nitrogen and other nutrients in WWTP effluent that contribute to declines in dissolved oxygen levels and cause hypoxic conditions in Jamaica Bay and its tributaries.

Accordingly, the Proposed Actions are consistent with this objective.

› Objective 1d: Develop a robust and coordinated scientific monitoring program.

As the objective relates to government and non-government agency monitoring of water quality, it is not applicable to the Proposed Actions.

› Objective 3a: Promote the use of on-site Best Management Practices in new and existing development.

As detailed in the consistency analysis for Objective 1b, new development under the Proposed Actions could incorporate one or more stormwater BMPs identified in the NYC Green Infrastructure Plan, including green and blue roofs, subsurface detention and infiltration, and permeable pavement. Specific BMP methods will be determined with further refinement of the building design and in consultation with DEP. Additional on-site BMPs include the required use of low-flow plumbing fixtures, which would reduce sanitary flows to the plant 26th Ward WWTP and therefore CSO discharge volume to Jamaica Bay.

Therefore, the Proposed Actions are consistent with this objective.

› Objective 3b: Promote the use of off-site stormwater Best Management Practices.

As the objective relates to off-site activities that are beyond the scope of the Proposed Actions, it is not applicable to the Proposed Actions. However, it is important to note that the Proposed Actions would comply with all on- and off-site stormwater BMPs ultimately required by DEP.

Based on the foregoing consistency review, the Proposed Actions are consistent with the applicable DEP Water Quality and Stormwater Objectives for Jamaica Bay included in the *Jamaica Bay Watershed Protection Plan Volume II*.