CEQR No. 21HPD009Q

Resilient Edgemere Community Initiative

Final Environmental Impact Statement (FEIS)

PREPARED FOR

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Resilient Edgemere Community Initiative Foreword[1]

This document is the Final Environmental Impact Statement (FEIS) for the Department of Housing Preservation and Development (HPD)'s proposed land use actions (collectively the Proposed Actions) to implement recommendations of the Resilient Edgemere Community Planning Initiative—an interagency, community-based effort to align New York City's Sandy Recovery and rebuilding investments in Edgemere with a long-term, comprehensive community vision. The Proposed Actions are expected to result in 1,222 residential units in approximately 1,313,659 gsf, including up to 465 affordable units[2]; approximately 115,849 gsf of local retail uses; and approximately 640 parking spaces. This new development would occur at a number of different sites within the Project Area, including Projected Multi-Family Mixed-Use Development Sites and Projected Residential Infill Sites. Together, these sites are referred to as the Projected Development Sites. HPD, acting as lead agency on behalf of the New York City Planning Commission (CPC), determined the Draft Environmental Impact Statement (DEIS) for the Proposed Actions to be complete and issued a Notice of Completion for the DEIS on December 10, 2021.

A Public Notice of the DEIS public hearing was published in the New York Daily News on March 15, 2022. CPC held a public hearing on the DEIS on March 30, 2022. The public hearing was held remotely via NYC Engage Portal in support of the City's efforts to contain the spread of COVID-19. Comments were accepted at that hearing and throughout the public comment period, which remained open through April 11, 2022.

This FEIS addresses all substantive comments made on the DEIS during the DEIS public hearing and subsequent DEIS comment period. Those comments are summarized and responded to in **Chapter 24, Response to Comments**. Written comments on the DEIS are

[1] This chapter is new to the FEIS

[2] The total number of affordable units is based on a conservative estimate and the share of affordable units may end up being higher.

included in a new **Appendix E**. Changes to the text from the DEIS were made in this FEIS, as necessary, in response to these comments. In addition, this FEIS also reflects all substantive changes to technical analyses resulting from agency reviews, and material changes in conditions since issuance of the DEIS.

Principal changes between the DEIS and this FEIS include:

- Transportation. **Chapter 12, Transportation**, has been revised to incorporate No-Action improvements at the intersection of Rockaway Beach Boulevard and Beach 44th Street which would see the traffic control at this location be converted from two-way stop controlled to all-way stop controlled with new marked pedestrian crossings along the intersection's four approaches. This change provides additional controlled pedestrian crossing opportunities and the projected distribution of project-generated pedestrian trips were revised to account for the new crosswalks at this location. The No-Action and With-Action traffic level of service analyses were updated to reflect this new all-way stop control. The With-Action traffic and pedestrian level of service analyses were also updated to reflect the revised pedestrian trip assignments. The pedestrian safety analysis was revised as the updated pedestrian assignment identifies pedestrian trips along uncontrolled street crossings at only the intersection of Rockaway Beach Boulevard and Beach 49th Street – the DEIS had identified uncontrolled street crossings at six study area intersections.
- Mitigation. **Chapter 19, Mitigation**, has been revised to incorporate the revisions to the No-Action and With-Action traffic analyses described above. In addition, a conversion of the traffic control at the intersection of Rockaway Beach Boulevard and Beach 49th Street from two-way stop controlled to all-way stop controlled is now identified as a proposed mitigation measure.
- Appendix E has been created to include the comments received during the public comment period for the DEIS.

Except where indicated, all text changes since publication of the DEIS are marked by double underlining and ~~strikethroughs~~ in this FEIS. No underlining is used for the Foreword or **Chapter 24, Response to Comments**, both of which are entirely new.

Executive Summary

Introduction

The Department of Housing Preservation and Development (HPD) is proposing a series of land use actions (collectively the Proposed Actions) to implement recommendations of the Resilient Edgemere Community Planning Initiative—an interagency, community-based effort to align New York City's Sandy Recovery and rebuilding investments in Edgemere with a long-term, comprehensive community vision. The Resilient Edgemere Community Planning Initiative builds on past planning efforts, such as creation of the Edgemere Urban Renewal Area (Edgemere URA) in 1997. In 2017, the City released the Resilient Edgemere Community Plan (RECP), a vision for the future of Edgemere with the following goals:

- Protect the neighborhood from flooding;
- Create resilient housing and maintain the neighborhood's low density feel;
- Improve streets and transit; and
- Increase neighborhood amenities.

In order to successfully implement these four community goals, changes are needed to existing land use, zoning, and the Edgemere URA and Edgemere Urban Renewal Plan (Edgemere URP). The Proposed Actions would facilitate the development of market-rate and affordable housing and community amenities to benefit the neighborhood in transit-oriented areas and discourage future development in areas at greater risk to coastal hazards. These actions would work in concert to leverage investments in local public infrastructure, housing, and coastal protection while laying the groundwork for long-term coastal resilience and investments in community development.

The Project Area is located in Queens, New York, on the eastern end of the Rockaway Peninsula. Encompassing the neighborhood of Edgemere, the Project Area is located in Queens Community District 14, between the Far Rockaway and Bayswater neighborhoods to the east, the proposed Arverne East development and Nature Preserve site to the south (and further to the south, the Rockaway Beach and Atlantic shorefront), the Arverne neighborhood to the west, and Jamaica Bay to the north. The Project Area is generally bounded by Beach 35th Street to the east, Rockaway Freeway and Rockaway Beach Boulevard to the south, Beach 50th Street and Beach 51st Street to the west, and Jamaica Bay to the north (see **Figure 1**).

Figure 1 Site Location Map



As described above, the Proposed Actions would place limitations on future development in areas of greater risk to coastal hazards. Specifically, the actions would limit new development along the Jamaica Bay waterfront, which is at highest risk of coastal flooding and may experience additional damage from waves during coastal storms. This area is generally bounded by Jamaica Bay to the north, Beach 49th Street to the west, along a boundary which runs parallel to Beach Channel Drive to the south, and the New York City Housing Authority (NYCHA) Beach 41st Street Houses to the east.

The Proposed Actions would facilitate mid-rise development of multi-family housing and commercial amenities in those portions of the Project Area that are nearest to transit—namely along Beach Channel Drive, Rockaway Beach Boulevard, and Rockaway Freeway.

In total, the reasonable worst-case development scenario (RWCDS) for the Proposed Actions is expected to result in 1,222 residential units in approximately 1,313,659 gsf, including up to 465 affordable units[1]; approximately 115,849 gsf of local retail uses; and approximately 640 parking spaces. This new development would occur at a number of different sites within the Project Area, including Projected Multi-Family Mixed-Use Development Sites and Projected Residential Infill Sites. Together, these sites are referred to as the Projected Development Sites (see **Figure 2**). In comparison to the No-Action condition, the Proposed Actions would result in an incremental increase of 1,222 residential units, including up to 465 affordable units; approximately 113,491 gsf of local retail uses; and 478 parking spaces.

Project Area and Background

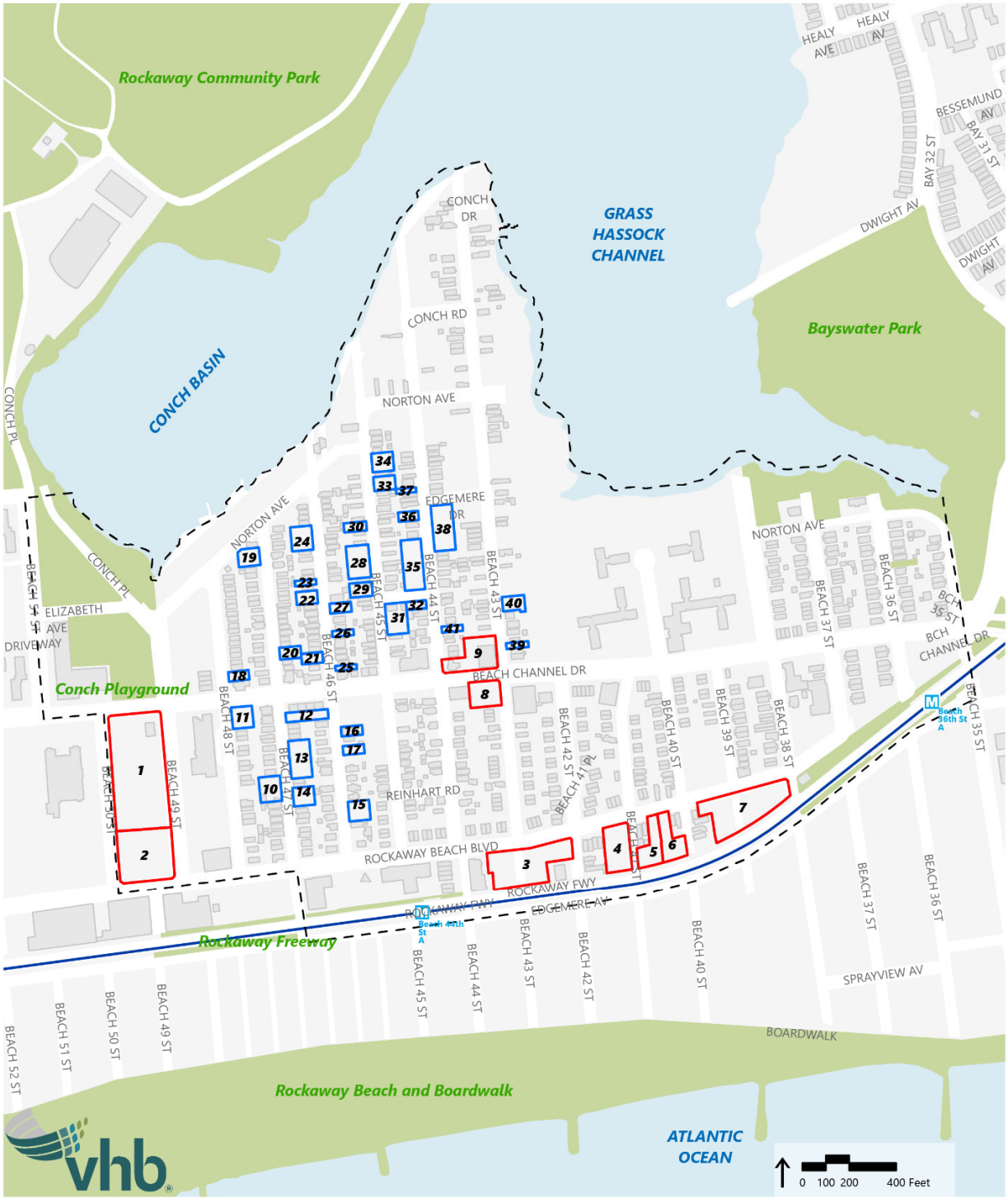
Project Area

The Project Area encompasses a total of approximately 166 acres. Beach Channel Drive, Rockaway Beach Boulevard, and Rockaway Freeway traverse the Project Area from east to west. The elevated A subway line runs along Rockaway Freeway, the southern boundary of the Project Area, with stations at Beach 44th Street-Frank Avenue and Beach 36th Street. The Project Area is flanked by Rockaway Community Park and Bayswater Park to the northwest and northeast, respectively (both located outside the Project Area). Beyond the southern boundary of the Project Area is Rockaway Beach and the Atlantic shorefront.

Residential, mapped parkland, and vacant land are the dominant land uses in the Project Area, with some limited commercial uses. Built form throughout the Project Area predominantly consists of low-density residential buildings with one-to-four dwelling units in two-to-four stories, both attached and detached. The area also contains a few low-rise commercial buildings, high-density residential buildings (namely NYCHA Beach 41st Street Houses, with buildings up to 13 stories), and recently constructed mid-rise, multi-family, mixed-use developments (of up to eight stories). The presence of vacant land is a prevailing condition across the Project Area.

[1] The total number of affordable units is based on a conservative estimate and the share of affordable units may end up being higher.

Figure 2 Projected Development Sites



Project Area Background

Edgemere is a low-lying waterfront community located on the Rockaway Peninsula, a barrier island. The indigenous Canarsie Lenape people originally resided throughout the Rockaway Peninsula and broader Jamaica Bay region. Upon early Dutch and British settlement, primarily in Manhattan and Brooklyn cores, the area remained rural in nature. In 1833, the first hotel, the Marine Hotel, was constructed, spawning the development of numerous other luxury hotel and private residential developments in the Rockaways. In the mid-nineteenth and early-twentieth centuries, Edgemere and the Eastern Rockaways were a waterfront vacation destination for wealthy New Yorkers. By the mid-twentieth century, given improvements in transportation infrastructure, vacationers shifted to other destinations. Businesses closed, resort hotels were demolished or turned into apartments, and summer cottages became housing of last resort for low-income New Yorkers. At this time, the City also began building large public housing campuses in the Eastern Rockaways, including in Edgemere.

Between the 1960s and 1990s, the City acquired over 150 lots in Edgemere, primarily through in-rem foreclosures. In 1997, the City created the Edgemere URA to encourage the development of housing and amenities. The corresponding Edgemere URP, which was amended in 2008, created a framework for the investment of $100 million in sewer and street improvements to support the construction of 800 homes for middle-income homeowners and up to 100,000 square feet of neighborhood retail commercial space. Two phases of housing were built under this plan, but development stalled following the 2008 financial crisis. In 2012, Superstorm Sandy inflicted severe damage across Edgemere, necessitating a new model of development that addresses the neighborhood's coastal vulnerabilities while enhancing quality of life for existing and new residents.

An extensive 18-month, community-based, and inter-agency planning initiative took place in the aftermath and recovery of Superstorm Sandy—between 2015 and 2017. It included four workshops, a mail-in survey, and door-to-door outreach engaging over 400 residents. In 2017, the City released the RECP. The RECP proposes a long-term vision for the community which includes peeling development back from the vulnerable edge and terracing new development toward a transit-oriented, mixed-use spine. The RECP includes a conceptual planning framework and a set of goals, strategies, and over 60 projects led by various agencies—which together aim to address disinvestment in Eastern Rockaway; bring affordable housing, retail, and community facilities; and grow waterfront open space and coastal ecology.

Edgemere continues to face significant flood risks and coastal hazards, which are anticipated to increase over time due to climate change. The entire neighborhood is located in the high-risk floodplain (100 year or 1 percent annual chance floodplain), per the 2015 Preliminary Flood Insurance Rate Map (PFIRM).

In 2019, the U.S. Army Corps of Engineers (USACE) was authorized to move forward with the Rockaway Reformulation Plan, now the East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, New York Coastal Storm Risk Reduction Project. This work is composed of two distinct projects: Atlantic Shorefront and Back Bay High Frequency Flood Risk Reduction Features. These two projects will help protect Rockaway communities from coastal flooding. The Atlantic Shorefront project will run from Beach 149th Street to Beach 19th Street, along NYC Department of Parks and Recreation (DPR) beach property, and includes beach restoration

with renourishment, five groin extensions and the addition of 13 new groins (similar to jetties), reinforced dunes, a beach berm, and enhanced beach crossovers for pedestrian access. This plan reduces risks of erosion and wave attack while limiting storm surge inundation and cross-peninsula flooding. For this area of Jamaica Bay, in the Back Bay High Frequency Flood Risk Reduction Features project, a combination of hard and green infrastructure is designed to reduce future flood risk and economic costs of storm events (i.e., 5- to 10-year storms) and tidal inundation for buildings, infrastructure, and the coastal ecosystem, including anticipated sea level rise over the next 50 years. Project components in Edgemere will primarily include berms and hybrid berms, rock sill structures, marsh restoration, and floodwalls. The USACE architectural engineering consultants initiated the design process in 2019.

Despite these investments, the neighborhood's flood risks are expected to increase over time with climate change. The Proposed Actions would establish a land use and managed growth strategy to address this nuanced landscape of flood risk exposure in the long term.

Proposed Actions

The Proposed Actions include zoning map amendments, zoning text amendments, amendments to the Edgemere URP including acquisition of real property, disposition of City-owned property, Urban Development Action Area (UDAA) designation and Urban Development Action Area Project (UDAAP) approval, a Mayoral Zoning Override, and future construction financing from HPD—including an Article XI tax exemption on certain sites. In addition to these approvals, it is anticipated that some of the Projected Development Sites would be owned and managed in a community land trust model.

The Proposed Actions are designed to mitigate long term flood risk, create affordable housing opportunities, and expand neighborhood commercial amenities alongside investments in coastal protection infrastructure and parks. As such, the Proposed Actions have been tailored to several subareas within the Project Area, each of which has a distinctive neighborhood geography that corresponds to proposed future land uses (see **Figure 3**).

The first subarea corresponds to the proposed *Hazard Mitigation Area* and consists of the area directly along the Jamaica Bay waterfront, bordered to the north by Jamaica Bay, to the south by Norton Avenue, Edgemere Drive and parts of Blocks 15966, 15965 and 15960, and to the east by NYCHA Beach 41st Street Houses. The *Hazard Mitigation Area* comprises the lowest-lying area of the Project Area and is significantly more vulnerable to flooding and coastal hazards than the other three planning sub-areas. The *Hazard Mitigation Area* is roughly defined by the extent of the Federal Emergency Management Agency (FEMA) Coastal A sub-zone of the 100-year floodplain. The FEMA Coastal A sub-zone is at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms. During Superstorm Sandy, Edgemere was inundated with storm surge from this bayside edge. These risks are expected to increase due to climate change. Additionally, the *Hazard Mitigation Area* is vulnerable to twice daily tidal inundation in the future, based on projected sea level rise in the 2050s. The *Hazard Mitigation Area* is currently characterized by low-density, one- to two-family residences in detached and semi-detached buildings and vacant land. The Proposed Actions would limit future development to single-family detached residences and restrict the redevelopment of current and future City-owned URA sites following disposition to "open space." These restrictions on development would be

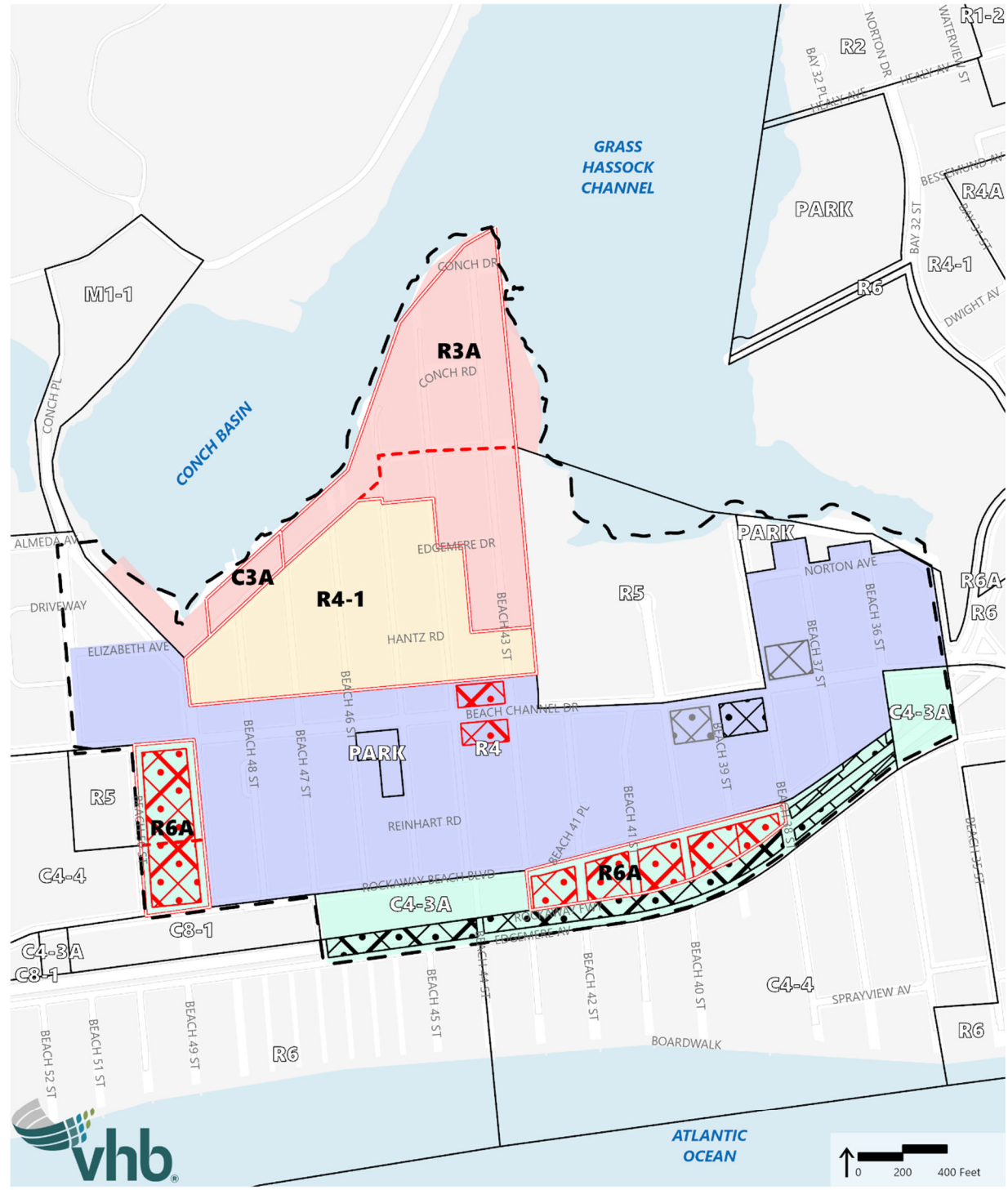
facilitated by the establishment of the Special Coastal Risk District (SCRD), which limits development beyond the proposed zoning district.

The second subarea corresponds to the proposed *Limited Development Area*, which is adjacent to and inland of the *Hazard Mitigation Area* to the south. It is generally bounded by Norton Avenue to the north, Beach 49th Street to the west, Beach Channel Drive to the south, and the NYCHA Beach 41st Street Houses to the east. Though inland from the *Hazard Mitigation Area* and outside of the higher risk FEMA Coastal A sub-zone, the *Limited Development Area* is also low-lying and may experience ponding from tidal flooding and rain events more frequently in the future due to increasing precipitation and sea level rise. The *Limited Development Area* today consists of low-density, one- to four-family residences in detached and semi-detached buildings and vacant land. The establishment of the SCRD would restrict future development to one- to two-family detached buildings and facilitate development of vacant City-owned land beyond the proposed zoning district. Furthermore, lots less than 25 feet in width in this subarea are limited to single-family detached buildings.

The third subarea corresponds to the proposed *Neighborhood Infill Area,* generally comprising the center of the Project Area, is located along and south of Beach Channel Drive and is bounded by Rockaway Beach Boulevard to the south, Beach 49th and 51st Street to the west and Beach 36th and 35th Street to the east. Further inland of the *Limited Development Area*, the *Neighborhood Infill Area* is less exposed to coastal hazards and directly served by two key transportation infrastructure systems: the elevated A subway line to the south and Beach Channel Drive, the route of key bus lines, to the north. This sub-area today consists of low-density, one- to four-family residences in semi-detached and attached buildings as well as low-rise commercial buildings and vacant land. The Proposed Actions would maintain current densities and land uses in this area and facilitate development of vacant City-owned land.

The fourth and final subarea corresponds to the proposed *Commercial Corridor*, located along Rockaway Beach Boulevard and Beach 50th Street, nearest to the elevated A subway line, which runs along the southern boundary of the Project Area. Today it consists of vacant land; surface parking; low-density, one- to four-family residences in semi-detached and attached buildings as well as low-rise commercial buildings; and recently constructed mid-rise, multi-family, mixed-use developments. The Proposed Actions would permit and facilitate development of vacant City-owned land for affordable housing and commercial and community facilities in mixed-use, mid-rise buildings as well as development of vacant non-City-owned land for housing with MIH and/or commercial/community facilities in mid-rise buildings.

Figure 3 Planned Sub-Areas and Proposed Zoning



Zoning Map Amendments

Hazard Mitigation Area

Proposed R3A (from R4-1, R4)

R3A is proposed for the majority of the *Hazard Mitigation Area*, which encompasses an area generally bounded by Jamaica Bay to the north; Beach 47th Street to the west; the continuation of Hantz Road, Edgemere Drive, the portion of Norton Avenue that runs northeast/southwest parallel to Conch Basin to the south; and NYCHA Beach 41st Street Houses to the east (see **Figure 3**).

This area includes areas along the Jamaica Bay waterfront that are at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms. The proposed zoning change would reduce the allowable density of new development in these areas to reduce future exposure to these risks.

R3A districts permit one- and two-family detached residential buildings. The maximum Floor Area Ratio (FAR) is 0.6, which includes a 0.1 FAR attic allowance. The minimum required lot area is 2,375 square feet and the minimum lot width is 25 feet. One off-street parking space is required for each dwelling unit. Community facilities are permitted at an FAR of 1.0. As discussed below, some of these regulations would be modified by the proposed SCRD.

Proposed C3A (from C3)

C3A is proposed for eight parcels within the *Hazard Mitigation Area* and on the Jamaica Bay waterfront, currently zoned C3 including the area bounded on the east by the northern extension of Beach 47th Street, on the south by Norton Avenue, on the west by the midpoint between Beach 48th and Beach 49th Streets and on the north by Jamaica Bay (see **Figure 3**).

C3A districts permit waterfront recreational activities, primarily boating and fishing. They also include facilities for docking, renting, servicing, and storing fishing and pleasure boats, as well as bicycle shops, ice cream stores, and public and private beaches, as listed in Use Group 14. The maximum commercial FAR is 0.5. One off-street parking space is required for each 150 sf of commercial space. Residential development is permitted, consistent with R3A district regulations. Community facilities are permitted at a FAR of 1.0.

This area includes land along the Jamaica Bay waterfront that is at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms. Therefore, while the proposed zoning change would maintain the same FAR permitted in C3 and C3A districts, it would prohibit the development of multi-family homes currently permitted under C3 and allow the development of one- to two-family homes, ensuring that future development occurs in a detached building typology which is more amenable to flood resilient retrofits and interventions that may be necessary in the future. As discussed below, some of these regulations would be modified by the proposed SCRD.

Limited Development Area

Proposed R4-1 (from R4)

An R4-1 district is proposed immediately to the south of the proposed R3A district and would be generally bounded by NYCHA Beach 41st Street Houses to the east, Beach 49th Street to the west, a point 120 feet north of and parallel to Beach Channel Drive to the south, and the proposed R3A and C3A districts to the north.

R4-1 districts permit one- and two-family detached, zero lot line, and semi-detached residential buildings (see **Figure 3**). The maximum FAR is 0.9, which includes a 0.15 FAR attic allowance. The minimum required lot area and lot width is 2,375 sf and 25 feet, respectively, for detached and zero lot line buildings, and 1,700 square feet and 18 feet for semi-detached buildings. Lots less than 25 feet in width in this subarea are limited to single-family detached buildings. One off-street parking space is required for each dwelling unit. This requirement is reduced to 50 percent for income-restricted housing units (IRHUs). Community facilities are permitted at an FAR of 1.0.

The proposed zoning change would restrict new development in these areas to one- or two-family dwellings and prohibit the development of multi-family homes currently permitted under R4, ensuring that future development occurs in a detached building typology which is more amenable to flood resilient retrofits and interventions that may be necessary in the future. As discussed below, some of these regulations would be modified further by the proposed SCRD.

Neighborhood Infill Area

Proposed C2-4 Overlay (from C1-2)

A C2-4 commercial overlay district is proposed for a portion of the neighborhood on two blocks along Beach Channel Drive, bounded by Beach 43rd Street and Beach 44th Street (see **Figure 3**). There is no proposed change to the underlying zoning. As compared to C1-2, a C2-4 overlay has a lower off-street parking requirement, which is expected to provide significant construction cost savings and better facilitate the potential redevelopment of these vacant and/or abandoned properties. The commercial FAR of 1.0 (when mapped over the underlying R4 district) will remain while the change will allow for additional commercial uses such as repairs shops, upholstering shops, catering establishments, and medical labs, to name a few.

Proposed R4 from R4/C1-2 and R4/C2-2

Removal of C1-2 and C2-2 commercial overlays is proposed on portions of two blocks (15829 and 15954) along Beach Channel Drive. Removal of these overlays will better reflect the existing land uses of these two built-out blocks, bringing the zoning map into consistency with existing conditions.

Commercial Corridor

Proposed R6A/C2-4 (from R4, C8-1, R5/C1-2)

R6A is proposed in the *Commercial Corridor*, encompassing all of Block 15841, bounded by Beach Channel Drive to the north, Beach 50th Street to the west, Rockaway Beach Boulevard to the south, and Beach 49th Street to the east; and part of Blocks 15851, 15850, 15849, 15848, and 15847 in an area generally bounded by Rockaway Beach Boulevard to the north, Beach 43rd Street to the west, Rockaway Freeway to the south, and Beach 38th Street to the east (see **Figure 3**). A C2-4 commercial overlay is proposed in an area coterminous with the proposed R6A district.

R6A districts permit multi-family residential buildings. The maximum FAR is 3.0, with a 680-sf dwelling unit factor. Maximum building height is 70 feet (75 feet or 7 stories with a qualifying ground floor). Parking is required for 25 to 50 percent of dwelling units, depending on basic or income-restricted status. As discussed below, some of these regulations would be modified by the proposed Mandatory Inclusionary Housing (MIH) text amendment.

The C2-4 commercial overlay districts permit local retail and commercial services, such as grocery stores, restaurants, and beauty parlors on one or two floors. The maximum commercial FAR is 2.0, when mapped over the underlying R6A district, and the minimum parking requirement is one space per 1,000 sf of commercial space.

This zoning district is proposed in areas more suitable to supporting greater densities of development due to their distance from the bayside waterfront and close proximity to existing and elevated subway transit service. The proposed C2-4 commercial overlay district would permit local retail and commercial services, such as grocery stores, restaurants, and beauty parlors to serve the area's residential population where currently not permitted in the R4 zoning district and currently in scarcity within the neighborhood.

Zoning Text Amendments

Hazard Mitigation Area and Limited Development Area

Proposed Edgemere Special Coastal Risk District (CR)

The Edgemere SCRD is proposed across the *Hazard Mitigation Area* and *Limited Development Area*, and will modify the land use regulations of the proposed underlying zoning districts in the following ways:

- In proposed R3A and C3A underlying zoning districts, the SCRD is proposed to restrict residential development to one-family detached homes, which would ensure that future development occurs in a detached building typology which is more amenable to flood resilient retrofits and interventions that may be necessary in the future. The SCRD is also proposed to prohibit community facilities with overnight sleeping accommodations in order to further limit future exposure to flood and coastal risks for temporary or semi-permanent residential populations. Bulk, density, and FAR are established in the proposed underlying zoning districts: R3A and C3A.

- In the proposed R4-1 underlying zoning district, the SCRD is proposed to restrict residential development on lots 25 feet or greater to one- and two-family detached homes, and, on lots less than 25 feet wide, residential development is restricted to one-family detached buildings. This action would ensure that future development occurs in a detached building typology that is more amenable to flood resilient retrofits and interventions that may be necessary in the future. The SCRD is also proposed to prohibit community facilities with overnight sleeping accommodations in order to further limit future exposure to flood and coastal risks for temporary or semi-permanent residential populations. Bulk, density, and FAR are established in the proposed underlying zoning district: R4-1.

Commercial Corridor

Proposed Mandatory Inclusionary Housing (MIH)

A text amendment to establish a Mandatory Inclusionary Housing (MIH) area is proposed across the Commercial Corridor, in an area coterminous with the proposed R6A/C2-4 district. This MIH Area would allow additional density while requiring a portion of the floor area to be permanently affordable housing within the development of the Commercial Corridor sites.

With MIH, the R6A underlying zoning district permits multi-family residential buildings with a maximum residential FAR of 3.6 and a 680-sf dwelling unit factor. Maximum building height is 80 feet (85 ft with qualifying ground floor) and 8 stories. Parking is required at 25 to 50 percent of dwelling units, depending on basic or income-restricted status.

Edgemere Urban Renewal Plan Amendment and Actions

The Edgemere URP, including the Edgemere URA, was established in Edgemere in 1997 and amended in 2008. The Urban Renewal Law authorizes the City to acquire sites in an Urban Renewal Area for redevelopment in accordance with an Urban Renewal Plan.

Acquisition of Real Property

Acquisition of all properties listed in Exhibit A of the Edgemere URP.

Amendment to the Urban Renewal Area

The Edgemere URA would be expanded to include the following parcels, as identified in the updated Edgemere URP, pending findings of the Blight Study: Block 15837, Lot 27; Block 15960, Lots 24, 37, 42; Block 15961, Lot 78; Block 15962, Lot 59; and Block 15965, Lots 3, 12, 100, 111, 112, 114, 115.

Removal of certain sites from the Edgemere URA, including Block 15834, Lot 17; Block 15852, Lot 60; Block 15853, Lots 95, 96, 97, 98, 102, 103; and Block 15952, Lot 14.

Amendments to the Urban Renewal Plan Land Use Designations

- The designated land use of Edgemere URA Sites 53, 55, 56B, 59, 60, 61, 62B, 64B, 86, 87 would be changed to 'Open Space' (from 'Residential' and 'Residential/Open Space'). New URA Site 54 would be designated as 'Open Space.' This change ensures that City-owned parcels will not be developed for use other than open space in this area.

- The designated land use of Edgemere URA Sites 29, 30, 31, and 32 would be changed to 'Commercial/Residential' (from 'Residential'). New URA Site 63B would be designated as 'Commercial/Residential.' This change permits commercial mixed-use development on sites in the proposed Commercial Corridor and other areas with commercial zoning.
- The designated land use of URA Sites 8 and 47 would be changed to 'Residential' (from 'Commercial/Residential').

Definition of Proposed Uses

- Proposed change to definition of Open Space to allow for agricultural uses when permitted by zoning.

Supplementary Controls on Redevelopment

- Proposed removal of additional height restrictions associated with Section C.3.e from the Edgemere URP. Section C.3.e prohibits perimeter walls of new residential buildings from exceeding 25 feet, with the exception of URA Sites 1, 33, and 34 and prohibits peaks of pitched roofs of new residential buildings from exceeding 35 feet in relation to the elevation of the 100-year flood plain, with the exception of URA Sites 1, 33, and 34. These height restrictions are inconsistent with the proposed plan for multi-family, mixed use buildings in certain parts of the Edgemere URA. Moreover, in lower-density areas, it could prevent designs that address flood risk through building elevation and locating equipment on the roof. With its removal, urban renewal sites will be subject to height controls of the ZR and any permitted adjustments necessary for flood-resistant construction, including building elevation. Development sites would be subject to height controls of the Zoning Resolution and any permitted adjustments necessary for flood-resistant construction, including elevations.
- Proposed amendment to density controls associated with Section C.3.d.1 to permit up to 1,500 dwelling units in the Edgemere URA (from 800 units). This change is proposed to accommodate the additional units projected in the proposed Commercial Corridor, including the units that are already constructed or in the development pipeline, aligned with the neighborhood-wide land use strategy which reserves increases in density in an inland corridor adjacent to transit, and to facilitate the creation of commercial services.

Extension of Urban Renewal Plan Duration

- Proposed extension of the duration of the Edgemere URP for a period of 40 years from the date of approval of the third amended plan.

Disposition of City-Owned Real Property

Disposition of all properties listed in Exhibit A of the Edgemere URP, including properties that will be acquired pursuant to the Edgemere URP, to a sponsor to be determined by HPD.

Urban Development Action Area Program

Designation of an Urban Development Action Area (UDAA) and Approval of an Urban Development Action Area Project (UDAAP)

The Project Area consists of underutilized land that tends to impair or arrest the sound development of the surrounding community, with or without tangible physical blight. Incentives are needed in order to induce the correction of these substandard, insanitary, and blighting conditions. The project activities would protect and promote health and safety and would promote sound growth and development. Portions of the Project Area are therefore eligible to be an Urban Development Action Area (UDAA) and the proposed project(s) are therefore eligible to be Urban Development Action Area Project(s) (UDAAP) pursuant to Article 16 of the General Municipal Law. Specifically, the project includes a proposed UDAA/ UDAAP for 42 lots across Blocks 15847, 15848, 15849, 15850, 15851 and 15852 and the demapped roadbeds of Beach 39th Street between Block 15847 and Block 15848, and Beach 43rd Street between Block 15851 and 15852 (the UDAAP Project Area).

Construction Financing from HPD

Subsequent to completion of the Uniform Land Use Review Procedure (ULURP) and a competitive Request for Proposals (RFP) process, the project sponsor will seek construction financing from HPD—including, but not limited to, city capital and tax exemptions pursuant to Article XI of the New York State Private Housing Finance Law. In addition, the project sponsor may seek funding from state or federal sources in the future.

Mayoral Zoning Override

HPD may, at a later date, seek a Mayoral Zoning Override to slightly reduce the minimum parking requirement on selected City-owned sites in order to facilitate the development of retail uses on the ground floor.

Community Land Trust (CLT)

In addition to the approvals described above, it is anticipated that some of the Projected Development Sites would be owned and managed in a community land trust (CLT) model. A CLT is a not-for-profit organization which owns and stewards land long term for the public's benefit. CLTs separate the ownership of their land from the ownership of structures on the land, typically entering long-term ground leases with homeowners, mutual housing associations, non-profit landlords or other tenants. The RECP called for exploring this unique ownership model because CLTs have the potential to secure long term housing affordability. In addition, studies have found that the increased resident connection and collaboration fundamental to the CLT model can build social cohesion, a critical component of resilience to extreme weather events. HPD is currently facilitating a competitive process to select a partner in forming a CLT in Edgemere and finalizing a development program and operations plan.

Purpose and Need for the Proposed Actions

As described above, Edgemere is a low-lying waterfront community that contains a significant amount of City-owned vacant land. The Edgemere URP, including the Edgemere URA was established in Edgemere in 1997 and amended in 2008. The Resilient Edgemere Community Initiative is an interagency, community-based effort to align New York City's Sandy Recovery and rebuilding investments in Edgemere with a long-term comprehensive community vision. The Resilient Edgemere Community Initiative builds on past planning efforts, such as creation of the Edgemere URA and the Edgemere URP in 1997. In 2017, the City released the RECP, a vision for the future of Edgemere with the following goals:

- Protect the neighborhood from flooding;
- Create resilient housing and maintain the neighborhood's low density feel;
- Improve streets and transit; and
- Increase neighborhood amenities.

In order to successfully implement these four community goals, changes are needed to existing land use, zoning, and the Edgemere URA and Plan. The Proposed Actions would facilitate the development of market rate and affordable housing and community amenities to benefit the neighborhood in transit-oriented areas and discourage future development in areas at greater risk to coastal hazards. These actions would work in concert to leverage investments in local public infrastructure, housing, and coastal protection while laying the groundwork for long-term coastal resilience and community development.

Specifically, the Proposed Actions would further the community goals that were identified in the 2017 RECP in the following ways:

- In areas exposed to greater flood risk, the Proposed Actions would limit residential development to lower density housing and more adaptable building typologies through rezoning to lower density zoning districts, instituting a SCRD, and amending the Edgemere URP to change the permitted land use of parcels from housing to open space use in the *Hazard Mitigation Area*.
- In the proposed transit-oriented commercial corridor, the Proposed Actions would rezone and add commercial overlays—permitting commercial uses and greater densities in order to facilitate mixed-use development, including MIH to maximize and ensure permanent affordable housing.
- The Proposed Actions would designate Urban Development Action Areas as well as seek UDAAP approval and disposition of City-owned land, and URA acquisition and disposition in order to facilitate development of housing, commercial amenities, and open space on select waterfront sites.

With these actions, HPD would issue RFPs to transform vacant City-owned assemblages into mixed-use, multi-family, affordable housing developments (i.e., the Projected Multi-Family Mixed-Use Development Sites) advance development of scattered vacant City-owned lots into low density housing (i.e., the Projected Residential Infill Sites and Projected Multi-Family Mixed-Use Development Sites), as well as reserved land for open space uses throughout the neighborhood.

Analysis Framework and Reasonable Worst-Case Development Scenario

For the purpose of the environmental analyses, the No-Action condition represents the future absent the Proposed Actions and serves as the baseline by which the Proposed Actions (or With-Action condition) are compared to determine the potential for significant environmental impacts. The difference between the No-Action and With-Action conditions represents the increment to be analyzed in the CEQR process.

Development Site Criteria

In projecting the amount and location of new development that would occur in the Project Area with implementation of the Proposed Actions, several factors have been considered in identifying likely development sites. These include known development proposals, past and current development trends, and the development site criteria described below.

Generally, for area-wide rezonings that create a broad range of development opportunities, new development can be expected to occur on selected, rather than all, sites within the Project Area. The first step in establishing the development scenario was to identify those sites where new development could be reasonably expected to occur.

The selection of development sites began with the baseline criteria suggested in the *2020 CEQR Technical Manual:*

- Lots located in areas where a substantial increase in permitted FAR is proposed;
- Lots with a total size of 5,000 sf or larger (may include potential assemblages totaling 5,000 sf if assemblage seems probable);
- Lots for which HPD has or intends to seek disposition approval;
- Underutilized lots (defined as vacant or lots constructed to less than or equal to half of the proposed FAR under the proposed zoning); and,
- Lots located in areas where changes in use would be permitted.

The resulting initial list of development sites was further refined to exclude sites that would be very unlikely to be redeveloped as a result of the Proposed Actions, for the following reasons (unless otherwise indicated through conversations with existing tenants and property owners):

- Sites where construction and/or renovation activity is actively occurring or has recently been completed;
- Sites with institutional uses, active and continuing through the build year, e.g., schools (public and private) and houses of worship, unless there are known development plans. These facilities may meet the development site criteria, because they are built to less than half of the permitted floor area under current zoning and are on larger lots. However, these facilities have not been redeveloped or expanded despite the ability to do so, and it is extremely unlikely that the increment of additional FAR permitted under the proposed zoning would induce redevelopment or expansion of these structures.
- Sites crucial to the daily operations of utility companies;

Further criteria were applied to reflect specific observed development patterns within the Project Area. In recent years, the Edgemere neighborhood has seen few entirely new developments constructed. Accordingly, certain sites that might be typically considered development sites were excluded or determined to be less likely to be developed if they met the following criteria:

› Sites generally smaller than 7,500 sf occupied by existing residential development, excluding government-owned properties.

Future No-Action Condition

In the future without the Proposed Actions (No-Action condition), the Project Area is assumed to mostly remain unchanged from existing conditions (2,358 gsf of commercial space and 118 parking spaces on Projected Multi-Family Mixed-Use Development Site 1 and 44 parking spaces on Projected Multi-Family Mixed-Use Development Site 2).

As relevant for each area of analysis, future growth in population and employment will be considered in the development of the No-Action condition of that study area. This will include both background growth and growth generated by known projects (developments that are under construction, planned, or proposed by the 2031 build year). Inclusion of known developments will be based on, but not limited to, consideration of whether the project requires discretionary approvals, the status of that approval process, and the project size.

Based on 2014-2018 American Community Survey (ACS) data, the average household size for residential units in the study area is 2.92 persons per renter-occupied unit (average of Census Tracts 972.03, 972.04, and 992). Based on this ratio and standard ratios for estimating employment for commercial and community facility uses, the No-Action estimated population would include approximately seven workers.

With-Action Condition

The With-Action condition reflects the future conditions with the Proposed Actions. The RWCDS would result in approximately 1,429,508 gsf of new development on the Projected Development Sites. **Table 1** contains a summary of the assumptions for the Projected Development Sites. **Table 2** provides the increment for analysis.

Table 1 Projected Development Site Assumptions

Projected Development Sites	Block	Lot(s)	Existing Use(s)	Proposed Number of Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Multi-Family Mixed-Use (Residential and Commercial)						
Site 1	15841	19, 40, 50	Commercial; Parking Facilities	387 (97 affordable units)	24,960	170
Site 2	15841	3, 5, 7, 8, 10, 14, 70	Parking Facilities	162 (41 affordable units)	25,560	71
Site 3	15851	33, 35, 40, 42, 44, 58, 59	Vacant Land	172 (103 affordable units)	17,704	86
	15852	64, 68 Demapped bed of Beach 43rd Street between Blocks 15851 and 15852				
Site 4	15850	6	Vacant Land	73 (44 affordable units)	7,564	37
Site 5	15849	6, 8, 9, 10, 17, 18	Vacant Land	57 (34 affordable units)	5,878	29
Site 6	15849	19, 20 27, 28, 29	Vacant Land	54 (33 affordable units)	5,598	27

Table 1 Projected Development Site Assumptions

Projected Development Sites	Block	Lot(s)	Existing Use(s)	Proposed Number of Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Site 7	15847	79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89	Vacant Land	174 (104 affordable units)	17,921	87
	15848	52, 54, 55, 57, 58, 60, 62, 63, 65, 67 Demapped bed of Beach 39th Street between Blocks 15847 and 15848				
Site 8	15834	38, 42	Vacant Land	7 (3 affordable units)	3,596	4
Site 9	15965	3, 111, 112, 114, 115	Vacant Building	14 (6 affordable units)	7,069	7
Residential Infill						
Site 10	15839	51	Parking Facilities	5	--	5
Site 11	15839	26	Vacant Land	4	--	4
Site 12	15838	25, 37	Vacant Land	4	--	4
Site 13	15838	13, 15, 17, 19, 20	Vacant Land	8	--	8
Site 14	15838	7, 9	Vacant Land	4	--	4
Site 15	15837	9, 10, 12	Vacant Land	4	--	4

Table 1 Projected Development Site Assumptions

Projected Development Sites	Block	Lot(s)	Existing Use(s)	Proposed Number of Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Site 16	15837	27	One- & Two-Family Building	2	--	2
Site 17	15837	23	Vacant Land	2	--	2
Site 18	15972	3	Vacant Land	2	--	2
Site 19	15972	33	Vacant Land	5	--	5
Site 20	15969	6, 7	Vacant Land	3	--	3
Site 21	15969	73	Vacant Land	3	--	3
Site 22	15969	59, 60	Vacant Land	4	--	4
Site 23	15969	57	Vacant Land	1	--	1
Site 24	15969	47, 48, 49, 50	Vacant Land	8	--	8
Site 25	15968	5	Vacant Land	1	--	1
Site 26	15968	11	Vacant Land	2	--	2
Site 27	15968	16, 17	Vacant Land	3	--	3
Site 28	15968	84, 85, 86, 87, 88, 89, 90	Vacant Land	11	--	11
Site 29	15968	92, 94	Vacant Land	4	--	4
Site 30	15968	79, 80	Vacant Land	1	--	1
Site 31	15967	10, 12, 13, 14, 111	Vacant Land	6	--	6

Table 1 Projected Development Site Assumptions

Projected Development Sites	Block	Lot(s)	Existing Use(s)	Proposed Number of Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Site 32	15967	18	Vacant Land	2	--	2
Site 33	15966	23, 25	Vacant Land	2	--	2
Site 34	15966	27, 28, 29, 30	Vacant Land	3	--	3
Site 35	15966	72, 74, 75, 76, 77, 78, 79, 80, 81	Vacant Land	11	--	11
Site 36	15966	66	Vacant Land	2	--	2
Site 37	15966	61	Vacant Land	1	--	1
Site 38	15965	29, 31, 34, 35, 36, 37, 38	Vacant Land	9	--	9
Site 39	15960	7	Vacant Land	1	--	1
Site 40	15960	15, 16, 17	Vacant Land	2	--	2
Site 41	15965	12	Vacant Land	2	--	2

Increment for Analysis

Based on the RWCDS for the No-Action and With-Action conditions identified above, the net incremental change in development that would occur as a result of the Proposed Actions in the Project Area is identified in **Table 2**. As shown in the table, the net increment to be analyzed in the EIS would include 1,313,659 gsf of residential floor area (1,222 dwelling units, including 465 affordable units), 113,491 gsf of commercial space, and 478 parking spaces. The total difference between the built square footage in the No-Action and With-Action conditions is approximately 1,427,150 gsf. **Table 2** also provides an estimate of the number of residents and workers on the Projected Development Sites in the No-Action and With-Action conditions. As indicated in the table, under the RWCDS, the Proposed Actions would result in a net increment of 3,568 residents and 389 workers.

Table 2 Increment for Analysis

Land Use	Unit	Existing Condition	No-Action Condition	With-Action Condition	Increment
Residential	*Dwelling Units*	0	0	1,222	1,222
	Affordable Units	0	0	465	465
	Total Residential gsf	0	0	1,313,659	1,313,659
Local Retail/ Commercial	*gsf*	2,358	2,358	115,849	113,491
Parking	*Lot Spaces*[1]	162	162	640	478
Residents[2]		0	0	3,568	3,568
Employees[3]		7	7	396	389

[1] The number of parking lot spaces was provided by the applicant.
[2] The number of residents is based on an average household size of 2.92 for the neighborhood, Edgemere (2014-2018 ACS Survey).
[3] Employee estimates were derived using ratios provided by DCP. The number of employees working in residential buildings was calculated by dividing the total residential units by 25. The number of retail workers was calculated by dividing the total retail gsf by 333.3 sf.

Analysis (Build) Year

For area-wide rezonings not associated with a specific development, a ten-year period is typically the length of time within which area-wide zoning map changes would be acted upon. Therefore, an analysis year of 2031 is assumed for environmental analysis purposes.

Principal Conclusions of Environmental Analyses

Land Use, Zoning, and Public Policy

Overall, the analysis conducted found that the Proposed Actions would not result in significant adverse impacts on land use, zoning, or public policy in the Project Area or the 400-foot study area in the 2031 build year.

Land Use and Zoning

The Proposed Actions would not introduce any new land uses in the Project Area or 400-foot study area. The Proposed Actions would be compatible with surrounding land uses and underlying zoning. Compared to the No-Action condition, in the With-Action condition, the Proposed Actions would reduce the prevalence of vacant land across the Project Area. The Proposed Actions would reduce the allowable density of new development in areas that are at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms, as well as in areas that are expected to experience ponding from tidal flooding and rain events more frequently in the future due to climate change. The Proposed Actions would also allow new development at higher densities than currently permitted in areas near to existing transportation infrastructure. New residential and commercial development would be consistent with existing and planned developments in the Edgemere neighborhood.

Public Policy

The Proposed Actions would be consistent with public policies that are applicable to the Project Area and the 400-foot study area. By introducing a special coastal zoning district that would limit residential and commercial development in those areas that are exposed to greater flood risk and coastal hazards, while encouraging mid-density development near existing transportation infrastructure, the Proposed Actions are consistent with the New York City Waterfront Revitalization Program (WRP). The Proposed Actions would also be consistent with the existing framework of the Edgemere Urban Renewal Plan (Edgemere URP) and the goals set forth in the Resilient Edgemere Community Plan (RECP). As discussed in greater detail below, the Proposed Actions would directly support relevant City policies.

Socioeconomic Conditions

Direct Residential Displacement

The Proposed Actions would not result in significant adverse socioeconomic impacts due to direct residential displacement. The 41 Projected Development Sites within the Project Area currently comprise vacant land or vacant structures and no existing residential population and therefore the Proposed Actions would not directly displace any residents from the socioeconomic conditions study area.

Direct Business Displacement

The Proposed Actions would not result in significant adverse socioeconomic impacts due to direct business displacement. There are currently 2,358 gsf of commercial development and less than 100 employees subject to direct displacement in the Project Area, which is below the threshold set forth in the *CEQR Technical Manual* for assessment of direct business displacement.

Indirect Residential Displacement

A preliminary assessment finds that the Proposed Actions would not result in significant adverse socioeconomic impacts due to indirect residential displacement. Under CEQR, the

objective of the indirect residential displacement analysis is to determine whether a project may either introduce a trend or accelerate a trend of changing socioeconomic conditions that may potentially displace a vulnerable population to the extent that the socioeconomic character of the neighborhood would change. Based on the guidelines of the *CEQR Technical Manual*, a vulnerable population is defined as renters living in privately held units unprotected by rent control, rent stabilization, or other government regulations restricting rents, and whose incomes or poverty status indicate that they may not be able to support substantial rent increases. In the case of the Proposed Actions, most residents of the defined project study area are not vulnerable to displacement as defined under CEQR. The 2014-2018 American Community Survey (ACS) from the U.S. Census reports that the median rent in the defined study area is significantly below current market rents in the Edgemere/Far Rockaway/Arverne market. This is largely due to the fact that a large portion of dwelling units in the study area are in NYCHA or other permanently rent regulated housing. It is reasonable to conclude that a majority of low- and moderate-income households in the study area are living in housing that is protected by government regulations limiting rent increases and therefore are not vulnerable to displacement due to increased rents as defined under CEQR.

While the Proposed Actions would result in the addition of new population, which, in the aggregate, would have a higher average household income than the average household income in the study area, the Proposed Actions would not introduce or accelerate the existing trend of changing socioeconomic conditions in the area. There is already a readily observable trend toward higher incomes and new market-rate residential development in the study area. The average monthly asking rent for market units in the study area currently ranges from approximately $1,800 for a studio unit to $2,500 for a three-bedroom unit and the median market rent for a two-bedroom unit in the local market increased by almost 30 percent between 2015 and 2021. These rents are not affordable to low- and moderate-income households in the study area. The Proposed Actions are also expected to introduce 465 new units, 38 percent of the total new incremental units, that will be permanently affordable, some for households earning 40 percent of AMI. In summary, the Proposed Actions would serve to maintain a housing stock in the study area that is affordable to households with a wide range of incomes within a context of continuing trends of more market-rate housing and increasing market rents.

Indirect Business Displacement

According to the *2020 CEQR Technical Manual,* projects resulting in an increase of more than 200,000 gsf of commercial space have the potential to result in increased rents. The RWCDS established for this project established through consideration of the Proposed Actions would facilitate an increment of 115,849 gsf of commercial space; therefore, there would be no adverse socioeconomic impacts due to indirect business displacement.

Adverse Effects on Specific Industries

The Proposed Actions would not result in significant adverse impacts on specific industries and would not significantly affect the business conditions in any industry or any category of business within or outside the study area. The Proposed Actions would also not result in indirect business displacement, and therefore would not substantially reduce employment or have an impact on the economic viability of any specific industry or category of business.

Community Facilities and Services

Based on a detailed analysis, the Proposed Actions would not result in any significant adverse impacts on elementary and intermediate schools or libraries. The Proposed Actions would result in significant adverse impacts on early childhood programs, warranting consideration of mitigation, as discussed in **Chapter 19, Mitigation**.

Indirect Effects on Public Schools

The Project Area is located within Sub-district 1 of CSD 27 in Queens. In the future with the Proposed Actions (the With-Action condition), the Proposed Project would result in the incremental development of 1,222 units within the Project Area compared to the future without the Proposed Actions (the No-Action condition). Based on student generation rates, the Proposed Actions would result in approximately 207 public elementary school students, 83 public intermediate school students, and 122 high school students.

Based on a detailed analysis of public elementary schools in CSD 27, Sub-district 1 would operate over capacity, with a shortfall of 628 seats. The share of the shortage attributable to the Proposed Actions would be 3.8 percent, due to an increase in the collective utilization rate from 111.6 percent to 115.4 percent. Since the collective utilization rate would be less than a five percent change from the No-Action condition, the Proposed Actions would not result in a significant adverse impact on elementary schools.

Based on a detailed analysis of public intermediate schools, CSD 27, Sub-district 1 would operate within capacity for public intermediate schools, with 570 seats available. Therefore, the Proposed Actions would not result in a significant adverse impact on intermediate schools.

Indirect Effects on Early Childhood Programs

In the With-Action condition, the Proposed Project would result in the incremental development of 465 units intended to be affordable for households with incomes up to 80 percent AMI, as compared to the No-Action condition. Based on the multipliers for estimating the number of children eligible for early childhood programs according to the New York City Department of Education (DOE), the Proposed Actions are anticipated to generate the need for approximately 66 childcare slots. Since there have been no mitigation commitments for slots resulting from Edgemere Commons, the Downtown Far Rockaway Rezoning, and other No-Action projects, the shortage of slots in the No-Action condition is 608; every seat needed by the Proposed Actions would then lead to additional slots over capacity.

Therefore, based on a detailed analysis, early childhood programs would be over capacity with a shortfall of 674 slots in the With-Action condition. The size of the shortage attributable to the Proposed Actions would be 12.3 percent, due to an increase in the collective utilization rate from 213.1 percent in the No-Action condition to 225.4 percent in the With-Action condition. Since the collective utilization rate for childcare/Head Start centers would be greater than 100 percent and the collective utilization rate would increase more than 5 percent from the No-Action condition, the Proposed Actions would result in a significant adverse impact on publicly funded childcare and Head Start Centers, and require consideration of mitigation, as discussed in **Chapter 19, Mitigation**.

Indirect Effects on Libraries

There are two libraries within 1 mile of the Project Area—the Queens Library Arverne and Far Rockaway branches. As stated in the *CEQR Technical Manual*, a significant adverse impact would occur if a project would increase the population of the library catchment area by 5 percent or more and this increase would impair the delivery of library services in the study area. The combined catchment area population would increase by 3.7 percent from the No-Action to With-Action condition, and the holdings per resident would decrease by 0.03 percent. Therefore, the Proposed Actions would not result in a significant adverse impact on libraries.

Open Space

Based on a detailed analysis of indirect effects on open space, the Proposed Actions would result in a significant adverse impact on open space due to reduced active open space ratios. The Project Area is in an area that is neither underserved nor well-served by publicly accessible open space. Under the With-Action condition, the total open space ratio would decrease from 3.24 acres per 1,000 residents in the No-Action condition to 3.00, a percent change of -7.41. The passive open space ratio would decrease from 2.22 acres per 1,000 residents in the No-Action condition to 2.06 in the With-Action condition, a percent change of -7.21. The active open space ratio would decrease from 1.01 acres per 1,000 residents in the No-Action condition to 0.94 in the With-Action condition, a percent change of -6.93. With the Proposed Actions, the total and passive open space ratios of acres per 1,000 residents would remain above City guidelines of 2.5 acres and 1.0 acre, respectively. However, the active open space ratio would continue to be below City guidelines of 1.5 acres. Therefore, the Proposed Actions would result in a significant adverse impact on active open space. While some publicly accessible open space could be created on certain sites within the Project Area under future conditions with the Proposed Actions, which could help to offset the significant impact, these open space sources are not included in the quantitative assessment for purposes of a conservative analysis.

Potential mitigation measures are discussed in **Chapter 19, Mitigation**.

Shadows

A Tier 1 through Tier 3 and detailed shadows analysis was undertaken for Projected Development Sites 1-7 since future development on these sites is expected to exceed 50 feet in height, the CEQR threshold for a shadows analysis. Several resources were identified within the potential Tier 3 shadow sweep: one existing park (Conch Playground) and two potential future open spaces (Peninsula Hospital Site Redevelopment open spaces and, open spaces within the future Arverne East development). An examination of the potential Tier 3 shadow on the future open space resources indicated that there would be no significant adverse impacts on these resources. A detailed analysis was conducted for Conch Playground, which could receive incremental shadow on the December and March/September analysis days. It was determined that these shadows would not adversely impair the public's enjoyment of the space or the viability of vegetation. Therefore, no adverse impacts to sunlight sensitive resources would occur due to shadows from the Proposed Actions.

Historic and Cultural Resources

LPC has indicated that there are no Projected Development Sites within the Project Area that have archaeological significance. Therefore, in the future, either with or without the Proposed Actions, there will be no impacts to archaeological resources, and no further analysis of archaeological resources is warranted.

LPC has also indicated that there are no buildings or structures on the Projected Development Sites within the Project Area that have architectural significance. Therefore, in the future either with or without the Proposed Actions, there will be no impacts to architectural resources on any of the Projected Development Sites.

Lastly, LPC has indicated that no adverse impacts to any of the previously identified historic resources would be anticipated as a result of the Proposed Actions (Santucci 1/14/2021 and 8/12/2021, **Appendix B**). Therefore, no further analysis of architectural resources is warranted.

Urban Design and Visual Resources

Urban Design

The Proposed Actions would not result in significant adverse impacts to urban design. The Proposed Actions would result in built forms and building types that are similar in height and bulk to the buildings that currently exist within the study area. The design of the buildings that could be developed as a result of the Proposed Actions considers the issue of flooding and resiliency by limiting development near the Jamaica Bay waterfront (in the *Hazard Mitigation Area*) and encouraging development in the *Commercial Corridor*, where there are existing multi-family developments such as Beach Green Dunes. Compared to the No-Action condition, the With-Action condition would provide infill development on vacant lots, provide open space access to the waterfront and overall improve the urban design of the Project Area. These measures would activate the major roadways discussed below and introduce economy activity in an area that has been historically underdeveloped.

Visual Resources

Under the No-Action condition, views to Grass Hassock Channel and Conch Basin are partially visible from inland. The With-Action condition would allow a more direct view corridor to the Bay by decreasing the allowable building density along the waterfront. There is a possibility that views to Jamaica Bay would be improved because of potential open spaces located along the waterfront or new waterfront recreational uses that allow the public to better access the Bay. Therefore, there would be no significant adverse impact to visual resources due to the Proposed Actions.

Natural Resources

Potentially relevant direct effects to natural resources under the With-Action condition would be limited to the 41 Projected Development Sites, which consist of disturbed, upland habitats that are designated as unranked cultural communities by the NYNHP due to their artificial origin, disturbed conditions, and wide distribution throughout New York State.

Under the With-Action condition, these existing communities would be replaced with the same and other unranked cultural community types and would support a similar flora of common trees, shrubs, and herbaceous plants. Following development under the With-Action condition, it is anticipated that the majority of the urban-adapted wildlife fauna that currently utilizes the Projected Development Sites will persist, though at proportionally lower species population densities due to the expected decrease in vegetated habitat. However, due to the phased nature of the proposed development activities and the continued proliferation of available successional and developed habitats within and beyond the Project Area, the overall effect on regional wildlife populations and wildlife species diversity is expected to be minimal. As the Projected Development Sites do not provide significant habitat to support the rare/protected species that are known to occur within the region surrounding the Project Area, direct effects to rare/protected species under the With-Action condition would be minimal. As wetlands and surface waters do not occur at or adjacent to any of the Projected Development Sites, direct effects to these resources would not occur.

Potentially relevant indirect effects to the surface waters and wetlands of Conch Basin and Norton Basin that occur beyond the northern boundary of the Project Area were analyzed through the context of the various federal, New York State, and New York City regulatory agencies and advisory programs pertaining to the Jamaica Bay estuarine complex. Based on these analyses, no potentially relevant indirect effects to Conch Basin and Norton Basin would occur under the With-Action condition.

Based on the foregoing, no significant adverse impacts to natural resources are anticipated as a result of the With-Action condition.

Hazardous Materials

The Proposed Actions would not result in significant adverse impacts related to hazardous materials. The hazardous materials assessment identified environmental conditions at various Projected Development Sites and neighboring sites consistent with the listed uses and environmental conditions provided in Appendix A of Title 15, Chapter 24 of the Rules of the City of New York. Under the Proposed Actions, these Projected Development Sites identified with the potential for environmental concerns would be assigned institutional control measures including (E) Designations and LDAs. The OER (or in the case of City-owned lots, NYCDEP) would provide regulatory oversight of the environmental scope, including investigations and remediation during the development process and prior to occupancy. In summary, the Proposed Actions may increase exposure pathways for hazardous materials due to various environmental conditions identified during the analyses. However, all sites assigned institutional controls would be required to be developed under regulatory oversight. This would ensure investigation, mitigation, and remediation of any hazardous materials under the Proposed Actions would be completed in a safe, and comprehensive manner to the maximum extent practicable.

Water and Sewer Infrastructure

The Proposed Actions may have an adverse impact on the City's water and sewer infrastructure. Although the increased water demand is below the 1 mgd threshold, the Project Area is located within an area that experiences low water pressure (Rockaway Peninsula). Based on the *CEQR Technical Manual*, the Proposed Actions create a new

demand for treatment of sewage, in comparison to the No-Action condition, that would be considered significant. Therefore, both the water and sewer infrastructure are subject to an analysis.

Water Supply

New York City consumes approximately 1.3 billion gallons of water per day from a reservoir system with a total storage capacity of approximately 550 billion gallons.[2, 3] The total water usage as a result of the Proposed Actions is calculated to equal approximately 0.396 mgd, which is an increment of approximately 0.394 mgd, compared to the No-Action condition projected demand of approximately 0.002 mgd. The total water usage would result in less than 1 mgd. However, the Proposed Actions are located in an area that experiences low water pressure (Rockaway Peninsula) and meets the *CEQR Technical Manual* threshold requiring a detailed analysis.

Sanitary Sewage

Sanitary sewage generated by the Proposed Actions would discharge to the Rockaway wastewater treatment plant (WWTP), which has a State Pollutant Discharge Elimination System (SPDES)-permitted dry weather flow capacity of 45 mgd.[4] The average monthly flow to Rockaway WWTP over a 12-month period is 22 mgd.[5] The Proposed Actions have the potential to result in a total generation of 0.380 mgd of sanitary sewage discharge, an increment of 0.379 mgd over the No-Action total sewage generation, which is estimated at 0.001 mgd. This incremental increase in sanitary flow would represent approximately 0.80 percent of Rockaway WWTP's SPDES-permitted capacity. The projected increase in sanitary sewage would not cause the Rockaway WWTP to exceed its operational capacity or SPDES-permitted capacity, but the Proposed Actions would exceed the incremental development of residential and commercial space per site. Sites 1, 2, 3, 7 all exceed limit of 100 residential units per site and are located within an R-6A zoning district.

Stormwater Drainage and Management

The Project Area is served by a separate sanitary sewer system. Stormwater is collected and drained into the Jamaica Bay through various outlets. As previously noted, the total area to be redeveloped within the Project Area exceeds one acre and is located in the Jamaica Bay watershed.

Transportation

A detailed transportation analysis determined that the Proposed Actions would result in significant adverse impacts related to traffic, buses and safety. The Proposed Actions would not result in subway station and subway line-haul impacts nor pedestrian impacts. A parking analysis determined that there would be sufficient off-street parking availability to

[2] Source: New York City's Wastewater Treatment System, New York City Department of Environmental Protection; https://www1.nyc.gov/site/dep/water/

[3] Source: *2020 CEQR Technical Manual.*

[4] Source: New York City's Wastewater Treatment System, New York City Department of Environmental Protection.

[5] 12-month period through December 2020

accommodate demand generated by the Proposed Actions during the weekday AM, midday, and PM periods. Shortfalls forecasted for the weekday overnight and Saturday peak periods would be fully accommodated by on-street parking spaces projected in the future.

Overall, of the 27 intersections analyzed, the Proposed Actions would result in significant adverse traffic impacts at 13 intersections (at 27 movements) during the weekday AM peak hour, 12 intersections (at 17 movements) during the weekday midday peak hour, 13 intersections (at 22 movements) during the weekday PM peak hour, and 11 intersections (at 14 movements) during the Saturday peak hour. The identification and evaluation of traffic capacity improvements needed to mitigate these impacts are presented in **Chapter 19, Mitigation**.

A line-haul analysis of the Q22 local bus route indicated that the Proposed Actions would result in a significant impact to the eastbound and westbound directions of this route during both the weekday AM and PM commuter peak hours. Measures needed to mitigate these impacts are presented in **Chapter 19, Mitigation**.

No intersection in the study area is classified as a high crash location according to *2020 CEQR Technical Manual* guidelines. As there is currently no marked crossing on Rockaway Beach Boulevard between Beach ~~39th~~45th Street and Beach 53rd Street, it is likely that pedestrians en route to and from Projected Developments Sites 1 and 2 would choose to cross Rockaway Beach Boulevard at a proximate location where a marked crosswalk is not ~~not~~ present~~. These locations would include Rockaway Beach Boulevard intersections~~, such as at the ~~following cross-streets: Beach 40th Street, Beach 41st Street, Beach 42nd Street, Beach 44th Street, Beach 47th Street and~~ intersection at Beach 49th Street. There is a potential for a significant pedestrian safety impact at ~~these locations~~this location. Measures needed to mitigate the potential for safety impacts are presented in **Chapter 19, Mitigation**.

Air Quality

The air quality analysis addressed mobile sources, parking facilities, emissions from the HVAC and hot water systems and from industrial sources.

The number of incremental trips generated by the Proposed Actions would be higher than the screening thresholds for carbon monoxide (CO) and particulate matter ($PM_{2.5}$) identified in the *CEQR Technical Manual*. A screening assessment was undertaken, which indicated the need for additional analysis. Three intersections were selected as worst- case locations, and a microscale analysis for CO and PM was conducted. The highest predicted CO and 24-hour and annual $PM_{2.5}$ concentrations were below respective National Ambient Air Quality Standards (NAAQS) and the City's *de minimis* value at all intersections except Beach Channel Drive and Beach 37th Street. However, with the application of traffic mitigation measures to this intersection as presented in **Chapter 19, Mitigation**, the maximum predicted annual $PM_{2.5}$ would comply with the City's annual *de minimis* and no significant adverse air quality impacts would be expected from the project's mobile sources.

An analysis of parking facilities was undertaken and focused on the largest parking facility—which would be located at Projected Development Sites 1 and 2. The analysis determined that emissions from this facility would not result in a significant adverse air quality impact. Since the parking facilities on the other Projected Multi-Family Mixed-Use sites would be

smaller, no impacts would result from these facilities, and overall, no significant adverse air quality impacts are expected from the parking facilities.

An analysis of the potential for impacts from stationary sources at the Projected Development Sites was undertaken. The detailed analysis of Projected Multi-Family Mixed-Use Development Sites 1 through 9 demonstrated that these projected developments must use natural gas in their fossil fuel-fired heating and hot water systems and ensure that the exhaust stacks are located at the highest tier and at least 88 feet (83 feet for Sites 8 and 9) above grade to avoid any potential significant adverse air quality impact. Also, Projected Multi-Family Mixed-Use Development Sites 1, 2, and 3 must use boilers with the low NO_x burners in order to avoid any potential significant adverse air quality impact.

The screening analysis of impacts of the Projected Residential Infill Sites demonstrated that there would be no significant adverse air quality impacts at all sites with the following commitments: Sites 13, 22, 23, 28, 29, 33, and 34 must use natural gas in their HVAC and hot water systems; in addition, Sites 22, 23, 28, 29, 33, and 34 must also ensure that the exhaust stacks are located at the highest tier and at least 38 feet above grade. These commitments would be memorialized in either a Land Disposition Agreement (LDA) or an (E) designation for the Proposed Actions (E-655). With these measures, development at these sites would not result in potential significant adverse air quality impacts.

No large or major sources were identified within a 1,000-foot radius of the Project Area and therefore the analysis of large or major sources was not warranted.

An analysis of the potential for industrial sources was undertaken to determine if such sources would adversely affect the Projected Development Sites. The identified light industrial sources would not emit any carcinogenic air toxic pollutants. The analysis of non-carcinogenic non-criteria pollutants resulted in concentrations below guideline levels and demonstrated the hazard index below the threshold. Hence, no adverse air quality impacts on the Projected Development Sites are expected from the nearby industrial sources.

Greenhouse Gas Emissions and Climate Change

The Proposed Actions would be consistent with the applicable City GHG emissions reduction and climate change goals, and there would be no significant adverse GHG emission or climate change impacts as a result of the Proposed Actions.

Following the methodology provided in the *CEQR Technical Manual*, it is estimated that the Proposed Actions would result in approximately 5,913 metric tons of carbon dioxide equivalent (CO_2e) emissions from its annual operations and 6,623 metric tons a year of CO_2e emissions from mobile sources. This represents less than 0.02 percent of the City's overall 2017 GHG emissions of 50.7 million metric tons, an insignificant contribution.

Although the estimated carbon emissions are above projected goals according to the Local Law 97, Climate Mobilization Act, the Proposed Actions would need to comply with the 2020 Energy Conservation Construction Code of New York State and 2020 NYC Energy Conservation Code, which govern performance requirements of heating, ventilation, and air conditioning systems, as well as the exterior building envelope of new buildings. As a result, the Proposed Actions ultimately generate emissions below the Local Law 97 requirements and would contribute towards the NYC GHG reduction goals.

Since the Project Area is located within the 1 percent annual chance floodplain, the potential effects of global climate change have been considered and are presented in **Appendix A: Waterfront Revitalization Program Consistency Assessment**. The assessment considers the effects of climate change on rising sea levels, storm surge, and coastal flooding resulting from the Proposed Actions. As detailed in the Appendix, it was determined that the Proposed Actions would be supportive of Policy 6.2 of the NYC WRP. Therefore, adverse impacts to climate change are not anticipated as a result of the Proposed Actions.

Noise

A noise assessment was conducted to determine whether the Proposed Actions would significantly increase sound levels from mobile and stationary sources at existing noise receptors, and if new noise receptors that would be introduced would be in an acceptable ambient sound level environment as defined in applicable provisions of the City's noise code.

Existing Noise Receptors

As described in **Chapter 12, Transportation,** a detailed transportation analysis was conducted at 27 intersections in the Project Area during the weekday morning, midday, afternoon, and Saturday afternoon peak periods. The traffic analysis includes existing (2020), No-Action (2031), and With-Action (2031) conditions at the 27 intersections in the Project Area. Mobile source noise levels were evaluated based on proportional traffic modeling.

The transportation analysis indicated that the Proposed Actions would result in significant adverse traffic and bus impacts. The traffic mitigation measures identified in **Chapter 19, Mitigation** would not affect the traffic volumes, which are the basis of the mobile source noise analysis. Therefore, the mobile source noise analysis to assess potential noise impact for existing receptors is the same with and without potential traffic mitigation measures.

Due to the trip generation in the No-Action condition, mobile source noise levels would increase up to 3.1 dBA compared to existing conditions. The Proposed Actions would result in mobile source noise levels increasing by up to 2.2 dBA the With-Action condition compared to the No-Action condition. Since mobile source noise levels would increase by less than 3 dBA due to traffic generated by the Proposed Actions, there would be no potential for significant adverse noise impacts due to mobile sources.

Noise from stationary sources such as mechanical equipment that would be introduced by the Proposed Actions have also been considered for potential noise impact. The Proposed Actions would not introduce significant stationary sources of noise except for typical rooftop mechanical equipment or residential heating, ventilation, and air conditioning (HVAC) equipment (i.e., air conditioner condenser units). The design and specifications of mechanical equipment in the Project Area, such as heating, ventilation, and air conditioning, are not known at this time. As the Project Development Sites are developed, building mechanical systems would be designed to meet all applicable noise regulations (i.e., Subchapter 5 Section 24-227 of the NYC Noise Control Code and the NYC Department of Buildings (DOB) Building Code). The mechanical equipment would be selected to ensure that it does not result in any significant increases in noise levels by itself or cumulatively with other project noise sources at residential or commercial receptors. Therefore, the Proposed Actions do not have the potential to result in a significant adverse noise impact

on existing receptors from stationary sources.

New Noise Receptors

The Proposed Actions would include the development of nine Multi-Family Projected Development Sites (Sites 1 to 9) and 32 Residential Infill Sites (Sites 10 to 41).

Noise monitoring and previous noise measurements conducted as part of the Peninsula Hospital Site Redevelopment Environmental Impact Statement (EIS) (CEQR No. 18DCP124) were used to determine the existing sound levels in the Project Area. The measured L_{eq} sound levels ranged from 53.5 to 75.0 dBA, and the L_{10} sound levels ranged from 54.8 to 74.2 dBA.

The No-Action and With-Action noise conditions were then determined using proportional modeling of the traffic as presented in the **Transportation** analysis. The No-Action L_{eq} sound levels would range from 55.2 to 76.4 dBA and the L_{10} sound levels ranged from 55.5 to 76.5 dBA. The With-Action L_{eq} sound levels ranged from 55.6 to 76.5 dBA and the L_{10} sound levels ranged from 56.8 to 76.5 dBA.

The increase in noise at upper floor receptors compared to measurements at ground-level has been calculated for Projected Development Sites along the elevated A/C/E subway line using the Federal Transit Administration's (FTA) assessment methodology. The analysis indicated that upper floor receptors would be 6.5 dBA higher at the nearest facades than measurements conducted at Site 3. At Site 2, upper floor receptors would be 1.6 dBA higher than the measurements.

Projected Development Sites 1 and 2 would require a minimum composite window/wall OITC rating of up to 31. Projected Development Sites 3 to 7 would require a minimum composite window wall OITC of 38 on the southern facades adjacent to the elevated train line, including the nearest 50 feet of the eastern and western facades and a minimum OITC of 28 on the other facades. Projected Development Sites 8 and 9 would have a minimum OITC requirement of 33 and Projected Development Site 11 would have a minimum OITC requirement of 31. Standard building materials would be sufficient to provide the required interior noise levels for residential spaces for all Project Development Infill Sites except Projected Development Site 11.

To implement these attenuation requirements, it is anticipated that the requirements specifying the appropriate amount of window/wall attenuation and an alternate means of ventilation would be incorporated into a LDA for those sites under City control and an (E) Designation (E-655) for privately-owned sites.

Public Health

As described in the relevant analyses of this Environmental Impact Statement, the Proposed Actions would not result in unmitigated significant adverse impacts in any of the technical areas related to public health: hazardous materials, water quality, air quality, or noise.

As a conservative measure due to the potential for community facility use in the buildings, an (E) Designation (E-655) for hazardous materials and noise would be placed on privately-owned sites and a land disposition agreement (LDA) would be placed on City-Owned sites in the Project Area. The (E) Designation and LDA for hazardous materials requires sampling and

remedial protocols be implemented under the administration of the New York City Mayor's Office of Environmental Remediation (OER) prior to the issuance of any permits that allow for soil disturbance related to the inclusion of a community facility use, or prior to applying for or accepting a temporary or permanent Certificate of Occupancy (C/O) that reflects a change in use group to community facility use. The (E) Designation and LDA for noise would require a minimum window/wall sound attenuation, interior partition sound attenuation, and building sound transmission requirements for new community facility spaces, if and as necessary, to meet an interior noise condition of 45 dBA.

As described in **Chapter 9, Natural Resources** and **Chapter 11, Water and Sewer Infrastructure**, the Proposed Actions would not result in significant adverse impacts. Therefore, no water quality impacts are anticipated as a consequence of the Proposed Actions.

The analysis of operational air quality showed that the Proposed Actions would not result in stationary source impacts if specific Projected Development Sites use natural gas in their fossil fuel-fired heating and hot water systems and ensure that the exhaust stacks are located at the highest tier and at least 88 feet above grade or use boilers with the low NO_x burners. These commitments would be memorialized in either an LDA or an (E) Designation for the Proposed Actions (E-655). No impacts are anticipated from light industrial sources. The analysis of mobile sources showed that at the intersection of Beach Channel Drive and 37th Street, the maximum predicted annual $PM_{2.5}$ would exceed the City's annual *de minimis* and result in an air quality impact. However, with the application of traffic mitigation measures to this intersection as presented in **Chapter 19, Mitigation**, the maximum predicted annual $PM_{2.5}$ would comply with the City's annual *de minimis* and no significant adverse air quality impacts would be expected from the project's mobile sources.

An analysis of construction air quality showed that based on the location of nearby sensitive receptors relative to the sources of construction air quality emissions, the duration and intensity of construction activities, a comparison of emissions profiles, and the use of emission control measures, the construction at the Projected Development Sites would not result in significant adverse construction air quality impacts. Moreover, the maximum number of construction-related vehicle trips is not expected to exceed the *CEQR Technical Manual* thresholds for conducting a mobile source analysis.

Construction period mobile source noise levels, set forth by the *CEQR Technical Manual*, would not increase by 3 dBA or more. The construction noise assessment at each noise-sensitive building and façade in the Project Area determined that construction noise levels five feet above the ground do not exceed 85 dBA at any receptor location. Therefore, there would not be significant adverse impacts to public health due to noise.

Neighborhood Character

Overall, the Proposed Actions would not result in significant adverse impacts to neighborhood character. With the exception of open space and transportation, the Proposed Actions would not result in significant adverse impacts in any of the technical areas that contribute to neighborhood character (i.e., the Proposed Actions would not result in significant adverse impacts to land use, zoning, and public policy; socioeconomic conditions; historic and cultural resources; urban design and visual resources; shadows; or noise). While

the Proposed Actions would result in significant adverse impacts to active open space ratios, other projects are underway to increase accessibility to open space resources in the Project Area. Although there is a significant adverse impact on traffic, buses, and pedestrian safety, the increase in travel demand would not result in changes to traffic patterns nor substantial increases in traffic on the residential street network. Furthermore, density in the area is expected to increase independent of the Proposed Actions, due to the number of development projects already underway in the surrounding areas. Overall, the potential traffic, bus, and pedestrian safety impacts would not result in a significant change to the defining features of neighborhood character.

The Proposed Actions would enhance the urban design of the neighborhood by revitalizing vacant lots, increasing access to the waterfront, and mitigating exposure to coastal hazards by downscaling development at the Jamaica Bay shoreline and encouraging development in transit-oriented areas near the center of the peninsula. Additionally, the open space resources and natural and nature-based features that define the landscape of this unique coastal neighborhood would not be impacted by the Proposed Actions, but potentially enhanced.

Finally, the elevated A-train line, which delineates the southern border of the Project Area would continue to serve as both a critical transportation option and a prominent visual feature of the neighborhood, would not be altered by the Proposed Actions.

Together, the Proposed Actions facilitate a more resilient and economically viable future for the neighborhood, working toward the goals of the Resilient Edgemere Community Plan.

Construction

Transportation

An assessment of the potential for temporary transportation impacts due to peak construction activity was undertaken according to the same methodology used in the operational analysis presented in **Chapter 12, Transportation**. This assessment focuses on the first quarter of 2023, when, based on a conceptual construction schedule, the average daily trips generated by construction workers and trucks would be highest (when Projected Development Sites 1 and 2, "the construction sites" are under construction).

Based on a forecast of construction worker vehicle trips and truck trips during the first quarter of 2023, a total of 155 passenger car equivalent (PCE) trips and 115 PCE trips are expected during the weekday AM (6:00 AM to 7:00 AM) and PM (3:00 PM to 4:00 PM) construction peak hours, respectively. During this quarter, it is assumed that Projected Development Sites 3 and 4 would be made available for worker vehicle parking and staging. Based on these trip estimates and anticipated vehicular travel patterns to and from the parking sites and the construction site, no intersection within the Edgemere study area is expected to attract 50 or more construction vehicle trips (worker autos plus trucks) in PCEs in either the weekday AM or PM construction peak hour. Therefore, per *CEQR Technical Manual* screening guidelines (Level 2), no detailed level of service analysis is warranted for construction traffic.

A peak of approximately 29 bus person trips and 35 subway person trips are estimated for the weekday AM (6:00 AM to 7:00 AM) and PM (3:00 PM to 4:00 PM) construction peak

hours, respectively. Per *CEQR Technical Manual* guidelines, as these levels of transit trips are less than the 200 trip Level 1 screening threshold as well as the 50 trip Level 2 screening threshold, detailed transit analyses are not warranted for the peak construction period.

Overall, a peak of 208 pedestrian trips are anticipated in both the weekday AM and PM construction peak hours. These volumes include walk-only trips to and from the construction sites plus walking connections between the construction site and bus stops, subway stations and off-street parking lots. This level of peak pedestrian trips would exceed the *CEQR Technical Manual* Level 1 screening threshold. Considering the location of nearby bus stops and subway stations, as well as the location of off-street worker parking, it is unlikely that any potential concentration of construction worker pedestrian trips would result in 200 or more trips taking place at any point of the street network. As there would no exceedances of the *CEQR Technical Manual* Level 2 screening thresholds, a detailed pedestrian analysis is not warranted.

Air Quality

As discussed in the *CEQR Technical Manual*, several factors, such as location of construction activities in relation to existing residential uses or other sensitive receptors, the intensity of the construction activity, and the extent to which a project incorporates commitments to appropriate emission control measures, are taken into account to determine the potential for construction air quality impacts.

Construction air quality impacts were considered for the Projected Multi-Family Mixed-Use Sites since these sites are projected to have a construction duration greater than 24 months. As the Projected Residential Infill Sites are expected to be constructed in less than 24 months and are much smaller in scale, the analysis focuses on the Projected Multi-Family Mixed-Use Sites, which are expected to have greater air quality impacts.

Based on the location of nearby sensitive receptors relative to the sources of construction air quality emissions, the duration and intensity of construction activities, a comparison of emissions profiles, and the use of emission control measures, the Proposed Actions would not result in any significant adverse construction air quality impacts. Further, the maximum number of construction-related vehicle trips is not expected to exceed the *CEQR Technical Manual* thresholds for conducting a mobile source analysis.

Noise

Construction of the Projected Development Sites would involve standard construction activities and practices for buildings in New York City. The excavation, foundation, and superstructure phases of construction are typically when the noisiest activities occur. The interior fit out phase of construction typically involves minimal exterior equipment and substantially quieter noise conditions. The Project Area includes existing residential land uses which are often in close proximity to Projected Development Sites. Therefore, there is the potential for construction to cause significant adverse noise impacts, and a detailed construction noise analysis is warranted.

Construction noise from mobile sources (i.e., construction worker vehicles and trucks) would not cause ambient noise levels to increase by 3 dBA or more. Therefore, there would be no significant adverse noise impact from construction mobile sources. Construction noise levels

would increase by 20 dBA or more over ambient conditions and exceed the interior noise criterion for 3 months of longer at 136 receptors which are in close proximity to Projected Development Sites. Construction noise levels would increase by 15 dBA or more over ambient conditions and exceed the interior noise criterion for 12 months or longer at 64 receptors and would increase by 3 to 5 dBA or more over ambient conditions at 55 receptors. In total, future construction noise levels would exceed the thresholds for interior noise impact and exterior noise impact at 255 receptors throughout the Project Area. Therefore, there would be significant adverse impact due to construction noise. The impact is due primarily to the relatively quiet existing ambient sound level in the Project Area, the close proximity of receptors to the Projected Development Sites, and the duration of construction activities throughout the Project Area. Construction noise levels would not exceed 85 dBA at any receptor at ground level, therefore, construction noise would not cause a significant adverse noise impact due to the Public Health noise criterion.

Vibration

Construction activities have the potential to generate ground-borne vibration that can potentially cause structural or architectural damage or annoy people in nearby vibration-sensitive spaces, such as residences. The most substantial sources of construction vibration are equipment associated with the excavation and foundation phase, such as pile drivers, drill rigs, bulldozers, and jack hammers.

There are no buildings within the Project Area listed by the New York City Landmarks Preservation Commission (LPC) or the State and/or National Register of Historic Places (S/NR) which would require special protections from potential damage due to vibration. There is the potential for construction vibration from some construction equipment, such as pile drivers, to cause annoyance in nearby residences. However, these construction activities would only occur for limited periods of time at any particular location and there would be no significant adverse impact as a result of construction vibration.

Other Technical Areas

Land Use and Neighborhood Character

While construction of the new buildings under the Proposed Actions would cause temporary disruption, particularly related to noise, it is expected that such effects in any given area would be relatively short in duration, even under the worst-case construction sequencing and, therefore, would not create a neighborhood character impact. Therefore, no significant adverse construction impacts to land use and neighborhood character are expected.

Socioeconomic Conditions

Construction could, in some instances, temporarily affect pedestrian and vehicular access on street frontages immediately adjacent to the development sites. However, lane and/or sidewalk closures are not expected during construction and therefore, would not restrict access to any existing or planned retail businesses. Utility service would also be maintained to all businesses, although there may be very short-term interruptions. Overall, construction resulting from the Proposed Actions is not expected to result in any significant adverse impacts on surrounding businesses.

Community Facilities

The construction sites would be surrounded by construction fencing and barriers that would limit the potential for impacts of construction on nearby community facilities. Construction of the projected buildings would not block or restrict access to any facilities in the area and would not affect emergency response times of the New York City Police Department (NYPD) and New York City Fire Department (FDNY) given the geographic distribution of the police and fire facilities and their respective coverage areas. Therefore, no construction impacts would be expected to community facilities as a result of the Proposed Actions.

Open Space

As described in **Chapter 5, Open Space** there are no publicly accessible open spaces on any of the Projected Development Sites. While one of the Projected Development Sites (Site 1) is located near existing open space resources (Conch Playground), no access to publicly accessible open space would be impeded during construction within the Project Area. In addition, measures would be implemented across all Projected Development Sites to control air emissions, dust, noise, and vibration on the construction sites.

Historic and Cultural Resources

There is one historic resource within 400 feet of Projected Development Site 7, the S/NR eligible St. Gertrude the Good Church Complex. There are no archaeological resources within the historic resources study area. The NYC LPC indicated that there would be no adverse impacts to any of these historic resources anticipated as a result of the Proposed Actions (Santucci 1/14/2021, **Appendix B**).

Hazardous Materials

As discussed in greater detail in **Chapter 10, Hazardous Materials**, the potential for significant adverse impacts related to hazardous materials resulting from the Proposed Actions would be precluded through the placement of institutional controls such as (E) designations and LDAs for the Projected Development Sites identified with potential hazardous or contaminated materials concerns.

Mitigation

Community Facilities and Services

The Proposed Actions would result in a significant adverse impact on publicly funded childcare and Head Start Centers. Possible mitigation measures may include provision of suitable space on-site for a childcare center, provision of a suitable location off-site and within a reasonable distance (at a rate affordable to DOE providers), or funding or making program or physical improvements to support adding capacity to existing facilities if determined feasible through consultation with DOE's Division of Early Childhood Education, or providing new early childhood programs within or near the Projected Development Sites. At this time, it is not feasible to determine precise mitigation measures that would be appropriate for the study area. The childcare analysis is conservatively based on the existing inventory of publicly funded early childhood programs in the area and does not reflect likely

shifts in demand or the creation of new childcare capacity. Because this impact would remain unmitigated, further discussion of this technical area is provided in **Chapter 21, Unavoidable Adverse Impacts**.

Open Space

Based on detailed analysis of indirect effects on open space, the Proposed Actions would result in a significant adverse impact to open space due to reduced active open space ratios. The Project Area is located in an area that is neither underserved nor well-served by publicly accessible open space. In spite of the anticipated increase in residential population that would result from the Proposed Actions within the open space study area, the total and passive open space ratios of acres per 1,000 residents would continue to exceed city guidelines. The active open space ratio would decrease from 1.01 acres per 1,000 residents in the No-Action condition to 0.94 in the With-Action condition, a percent change of -6.93. As such, the active open space ratio would continue to be below city guidelines of 1.5 acres. Therefore, a significant adverse impact to active open space is anticipated.

The *CEQR Technical Manual* lists potential mitigation measures for open space impacts. These measures include, but are not limited to, creating new open space within the study area; funding for improvements, renovation, or maintenance at existing local parks; or improving existing open spaces to increase their utility or capacity to meet identified open space needs in the area, such as through the provision of additional open space facilities. As described below, while a variety of qualitative considerations have been identified that could help to ameliorate the active open space impact, no feasible mitigation measures have been identified to eliminate this impact. Because this impact would remain unmitigated, further discussion of this technical area is provided in **Chapter 21, Unavoidable Adverse Impacts.**

Transportation

Of the 27 intersections analyzed, the Proposed Actions would result in significant adverse traffic impacts at 13 intersections during the weekday AM peak hour, 12 intersections during the weekday midday peak hour, 13 intersections during the weekday PM peak hour, and 11 intersections during the Saturday peak hour. Some of the impacts could be fully mitigated with implementation of an all-way stop control, signal phasing and timing modifications, and lane configuration changes, which are subject to review and approval by the New York City Department of Transportation (NYCDOT). These measures would provide full mitigation for seven of the 13 intersections significantly impacted in the weekday AM peak hour, ~~four~~five of the 12 intersections impacted in the weekday midday peak hour, six of the 13 intersections impacted in the weekday PM peak hour, and six of the 11 intersections impacted in the Saturday peak hour. In terms of significantly impacted movements, the measures would fully mitigate 15 out of 27 movements impacted in the weekday AM peak hour, ~~five~~six out of 17 movements impacted during the weekday midday peak hour, 11 out of 22 movements impacted in the weekday PM peak hour, and seven out of 14 movements impacted in the Saturday peak hour.

One or more traffic movements at the following intersections could not be mitigated in at least one peak hour:

› Beach Channel Drive and Beach 37th Street (all four peak hours)

- Beach Channel Drive and Beach 40th Street (weekday midday, weekday PM and Saturday peak hours)
- Beach Channel Drive and Beach 44th Street (weekday midday peak hour)
- Beach Channel Drive and Arverne Boulevard and Beach 62nd Street (all four peak hours)
- Edgemere Avenue and Beach 41st Street (weekday AM and weekday PM peak hours)
- Edgemere Avenue and Beach 54th Street (weekday AM and weekday PM peak hours)
- Rockaway Beach Boulevard and Beach 59th Street (all four peak hours)
- Beach Channel Drive and Beach 49th Street (weekday midday peak)
- Beach Channel Drive and Beach 50th Street (all four peak hours)
- ~~Rockaway Beach Boulevard and Beach 49th Street (weekday midday peak)~~

The Q22 bus is expected to be significantly impacted by the Proposed Actions in the weekday AM and PM peak hours in both the eastbound and westbound directions. The introduction of one additional bus in each direction in both peak hours would fully accommodate future projected demand. Implementation of these service changes requires approval and implementation by the operator (MTA Bus Company) and is subject to fiscal and operational constraints. Overall, with the proposed service adjustment, the Q22 bus route in the weekday AM peak hour would be able to accommodate 46 additional passengers in the eastbound direction and 50 additional passengers in the westbound direction. In the weekday PM peak hour, the Q22 route would be able to accommodate 42 and 33 additional passengers, in the eastbound and westbound directions, respectively.

Currently there is no marked crossing in the north/south direction on Rockaway Beach Boulevard between Beach ~~39th~~45th Street and Beach 53rd Street. As a result, it is likely that pedestrians en route to and from ~~projected developments sites~~Projected Developments Sites 1 and 2 would choose to cross Rockaway Beach Boulevard at a proximate location where a marked crosswalk is not ~~not~~ present, such as at the intersection~~s~~ of Rockaway Beach Boulevard at Beach ~~40th Street, Beach 41st Street, Beach 42nd Street, Beach 44th Street, Beach 47th Street and Beach 49th Street.~~49th Street. This would have the potential for a significant pedestrian safety impact. The installation of new pedestrian crossings ~~at~~as part of the ~~locations listed above would fully mitigate the Proposed Action's potential for a pedestrian safety impact. A new crossing would involve the installation of a new~~proposed traffic ~~signal, a new~~ control conversion from a two-way stop control to all-way stop control~~, or an Enhanced Pedestrian crossing. Between the DEIS and FEIS, the appropriate traffic control measure to be installed will be finalized in consultation with the lead agency and NYCDOT to~~ at this location would facilitate the safe and efficient movement of pedestrians crossing Rockaway Beach Boulevard. ~~If, however, no control device is found to be warranted or~~Therefore, this proposed measure would fully mitigate the Proposed Action's potential for a pedestrian safety impact. However, these improvements are under further review by NYCDOT. In the event these improvements are not feasible, the ~~significant pedestrian safety~~ impact would remain unmitigated.

Air Quality

The air quality analysis demonstrated that one intersection would be adversely impacted by the With-Action traffic emissions. Results of the air quality analysis for the intersection of Beach Channel Drive and Beach 37th Street were above the CEQR *de minimis* annual

threshold. In order to mitigate the impact, the intersection's signal phasing plan was modified to improve traffic flow along Beach Channel Drive as described in the **Traffic** section below. The mitigated scenario improved traffic speeds. As a result, the mitigation was able to eliminate the air quality impact and reduce emissions to a level that meets the CEQR *de minimis* annual criteria. Therefore, with the proposed traffic mitigation measure in place, no significant adverse air quality impacts are anticipated.

Construction

The construction analysis showed a significant adverse impact on noise as a result of the Proposed Actions.

Alternatives

A summary of the principal conclusions for the two alternatives is described below.

No-Action Alternative

The No-Action Alternative examines future conditions in 2031 absent the Proposed Actions. In simplest terms, the No-Action Alternative is the No-Action condition identified, described, and assessed in the preceding chapters of this EIS. In the No-Action Alternative, the Project Area is assumed to mostly remain unchanged from existing conditions (2,358 gsf of commercial space and 118 parking spaces on Projected Multi-Family Mixed-Use Development Site 1 and 44 parking spaces on Projected Multi-Family Mixed-Use Development Site 2). As discussed in greater detail below, the significant adverse impacts associated with the Proposed Actions would not occur under the No-Action Alternative. However, the No-Action Alternative would not meet the project goals, and as compared to the Proposed Actions, the intended benefits—the introduction of affordable housing units, economic activity introduced by local retail, and designation of open spaces along the waterfront—would be eliminated or substantially reduced with the No-Action Alternative.

The No-Action Alternative would not result in significant traffic, bus transit, or safety impacts whereas the Proposed Actions would have significant adverse impacts for those areas. Similar to the Proposed Actions, the No-Action Alternative would not result in significant adverse parking, subway station, subway line-haul, or pedestrian element impacts.

No Unmitigated Significant Adverse Impacts Alternative

The No Unmitigated Significant Adverse Impacts Alternative examines a scenario in which the projected density increase and other components of the Proposed Actions are changed specifically to avoid the unmitigated significant adverse impacts associated with the Proposed Actions. The Proposed Actions would result in significant adverse impacts to community facilities—specifically, early childhood programs, active open space, transportation in the areas of traffic and bus transit, and noise from construction.

To avoid the identified significant adverse impact to early childhood programs, the number of affordable dwelling units that could be developed on the Projected Development Sites would have to be reduced from 465 to 342, a reduction of 123 affordable units. A substantial reduction in the number of affordable housing units developed in the Project Area would be less supportive of the goals and objectives of the Proposed Actions. Alternatively, taking into

account the proposed mitigation from other developments in the study area, the provision of 15 early childhood slots under this alternative would avoid the unmitigated significant adverse impact to early childhood programs.

To avoid the identified significant adverse impact to active open space ratios, the number of dwelling units that could be developed on the Projected Development Sites would have to be reduced from 1,222 to 801, a reduction of 421 units. A substantial reduction in the number of housing units developed in the Project Area would be less supportive of the goals and objectives of the Proposed Actions. Alternatively, approximately 1.20 acres of active open space would need to be provided in the Project Area to avoid the unmitigated significant adverse impact to active open space.

A sensitivity analysis determined that the RWCDS square footage would have to be reduced by as much as approximately 98 percent in order for the Proposed Actions to not result in any unmitigable transportation impacts. The degree to which the Proposed Actions would need to be modified to avoid unmitigable transportation impacts would compromise HPD's ability to achieve the project goals and objectives of introducing affordable housing units, economic activity introduced by local retail, and designation of open spaces along the waterfront. Therefore, the No Unmitigated Significant Adverse Impact Alternative is not a reasonable alternative, as it would not realize HPD's goals of the Proposed Actions.

Construction activities are regulated by the NYCDEP Noise Control Code; however, in order to eliminate all significant adverse construction noise impacts, construction activities would have to be limited so as to not occur on parcels directly adjacent to existing noise sensitive receptors. This limitation would severely impede the Proposed Actions' goals and objectives.

Unavoidable Significant Adverse Impacts

As described in **Chapter 19, Mitigation**, the Proposed Actions have the potential to result in significant adverse impacts on publicly funded childcare facilities, active open space resources, traffic, transit, mobile air quality sources, and construction noise. To the extent practicable, mitigation has been proposed for these identified significant adverse impacts. However, in some instances no practicable mitigation has been identified to fully mitigate the significant adverse impacts, and there are no reasonable alternatives to the Proposed Actions that would meet the purpose and need, eliminate potential impacts, and not cause other or similar significant adverse impacts.

Growth-Inducing Aspects of the Proposed Project

The Proposed Actions would permit zoning map amendments, zoning text amendments, amendments to the Edgemere URP including acquisition of real property, disposition of City-owned property, UDAA designation and UDAAP approval, a Mayoral Zoning Override, and future construction financing from HPD—including an Article XI tax exemption on certain sites. Approval of these actions would limit development along the waterfront and concentrate density along the upland areas of the Project Area through the development of multi-family mixed-use sites and residential infill sites. It is intended to further the City's development goals for the Edgemere neighborhood, provide economic vitality in an area that has been historically underserved, and address the challenges of flood-related impacts from climate change.

These planning, economic development, and resiliency goals would be realized in connection with the development of 1,222 units, of which 465 would be affordable; 115,849 gsf of local retail space; and 640 parking spaces—all of which would occur on lots that are underutilized or vacant. As described in **Chapter 2, Land Use, Zoning, and Public Policy**, there are several developments that would bring substantial residential and mixed-use growth to the neighborhood surrounding the Project Area, which is occurring independent of the Proposed Project. This would collectively result in over 3,500 residential units and nearly 340,000 square feet of commercial space, growth that will occur in the future without the Proposed Action. Furthermore, as discussed in **Chapter 8, Urban Design and Visual Resources**, there are several transportation projects underway, including the Edgemere Avenue reconstruction, the new streets and street raising as part of both the Arverne East Development and Edgemere Commons projects. These would facilitate enhanced traffic circulation introduced by the new development in the Project Area and improve sidewalks and sidewalk amenities such as street trees. As discussed in **Chapter 11, Water and Sewer Infrastructure**, the infrastructure in the study area is already well developed such that improvements associated with the Proposed Actions would not induce additional growth or overburden the existing system.

Although the Proposed Actions would result in increased development, with denser development focused near the elevated subway A line, it is not anticipated that the Proposed Actions would generate significant secondary impacts resulting in substantial new development in nearby areas. Additionally, the zoning changes introduced by the Proposed Actions are limited to the boundaries of the Project Area and would not extend beyond the Project Area.

Therefore, the Proposed Actions would not induce significant new growth in the surrounding area.

Irreversible and Irretrievable Commitments of Resources

The Proposed Project constitutes a long-term commitment of land resources, thereby rendering land use for other purposes highly unlikely in the foreseeable future; however, the Projected Multi-Family Mixed-Use Development Sites and Projected Residential Infill Sites do not possess any natural resource of significant value, and the sites have been previously developed. Furthermore, funds committed to the design, construction/renovation, and operation of developments under the Proposed Actions are not available for other projects.

These commitments of resources and materials are weighed against the benefits of the Proposed Project. As described in **Chapter 1, Project Description,** the Proposed Actions would facilitate the development of 1,222 residential units in approximately 1,313,659 gsf, including up to 465 affordable residential units; approximately 115,849 gsf of local retail uses; and approximately 640 parking spaces.

The Proposed Actions would facilitate the development of market-rate and affordable housing, the latter of which would add to the city's affordable housing stock and support the goals outlined in Mayor Bill de Blasio's affordable housing plan, "Housing New York: A Five-Borough Ten-Year Plan," of producing 200,000 affordable homes two years ahead of schedule, by 2022, and generating an additional 100,000 homes over the following four years. Additionally, the community amenities introduced by the Proposed Actions in the

form of local retail and additional parking would benefit the neighborhood in upland, transit-oriented areas and discourage future development in areas at greater risk to coastal hazards. These actions would work in concert to leverage investments in local public infrastructure, housing, and coastal protection while laying the groundwork for long-term coastal resilience and community development.

With these actions, the City would facilitate the development of new mixed-use, multi-family, affordable housing developments (i.e., the Projected Multi-Family Mixed-Use Development Sites), advance development of scattered vacant City-owned lots into low density housing (i.e., the Projected Residential Infill Sites and Projected Multi-Family Mixed-Use Sites), and reserve land for open space uses throughout the neighborhood.

1

Project Description

This chapter provides descriptive information about the requested discretionary land use action and the development project that could be facilitated by the requested actions. The purpose of this chapter is to convey project information relevant to environmental review.

Introduction

The Department of Housing Preservation and Development (HPD) is proposing a series of land use actions (collectively the Proposed Actions) to implement recommendations of the Resilient Edgemere Community Planning Initiative—an interagency, community-based effort to align New York City's Sandy Recovery and rebuilding investments in Edgemere with a long-term, comprehensive community vision. The Resilient Edgemere Community Planning Initiative builds on past planning efforts, such as creation of the Edgemere Urban Renewal Area (Edgemere URA) in 1997. In 2017, the City released the Resilient Edgemere Community Plan (RECP), a vision for the future of Edgemere with the following goals:

- Protect the neighborhood from flooding;
- Create resilient housing and maintain the neighborhood's low density feel;
- Improve streets and transit; and
- Increase neighborhood amenities.

In order to successfully implement these four community goals, changes are needed to existing land use, zoning, and the Edgemere URA and Edgemere Urban Renewal Plan (Edgemere URP). The Proposed Actions would facilitate the development of market-rate and

affordable housing and community amenities to benefit the neighborhood in transit-oriented areas and discourage future development in areas at greater risk to coastal hazards. These actions would work in concert to leverage investments in local public infrastructure, housing, and coastal protection while laying the groundwork for long-term coastal resilience and investments in community development.

The Project Area is located in Queens, New York, on the eastern end of the Rockaway Peninsula. Encompassing the neighborhood of Edgemere, the Project Area is located in Queens Community District 14, between the Far Rockaway and Bayswater neighborhoods to the east, the proposed Arverne East development and Nature Preserve site to the south (and further to the south, the Rockaway Beach and Atlantic shorefront), the Arverne neighborhood to the west, and Jamaica Bay to the north. The Project Area is generally bounded by Beach 35th Street to the east, Rockaway Freeway and Rockaway Beach Boulevard to the south, Beach 50th Street and Beach 51st Street to the west, and Jamaica Bay to the north (see **Figure 1-1**).

Figure 1-1 Site Location Map



As described above, the Proposed Actions would place limitations on future development in areas of greater risk to coastal hazards. Specifically, the actions would limit new development along the Jamaica Bay waterfront, which is at highest risk of coastal flooding and may experience additional damage from waves during coastal storms. This area is generally bounded by Jamaica Bay to the north, Beach 49th Street to the west, along a boundary which runs parallel to Beach Channel Drive to the south, and the New York City Housing Authority (NYCHA) Beach 41st Street Houses to the east.

The Proposed Actions would facilitate mid-rise development of multi-family housing and commercial amenities in those portions of the Project Area that are nearest to transit—namely along Beach Channel Drive, Rockaway Beach Boulevard, and Rockaway Freeway.

In total, the reasonable worst-case development scenario (RWCDS) for the Proposed Actions is expected to result in 1,222 residential units in approximately 1,313,659 gsf, including up to 465 affordable units[1]; approximately 115,849 gsf of local retail uses; and approximately 640 parking spaces. This new development would occur at a number of different sites within the Project Area, including Projected Multi-Family Mixed-Use Development Sites and Projected Residential Infill Sites. Together, these sites are referred to as the Projected Development Sites (see **Figure 1-2**). In comparison to the No-Action condition, the Proposed Actions would result in an incremental increase of 1,222 residential units, including up to 465 affordable units; approximately 113,491 gsf of local retail uses; and up to 478 parking spaces.

Project Area and Background

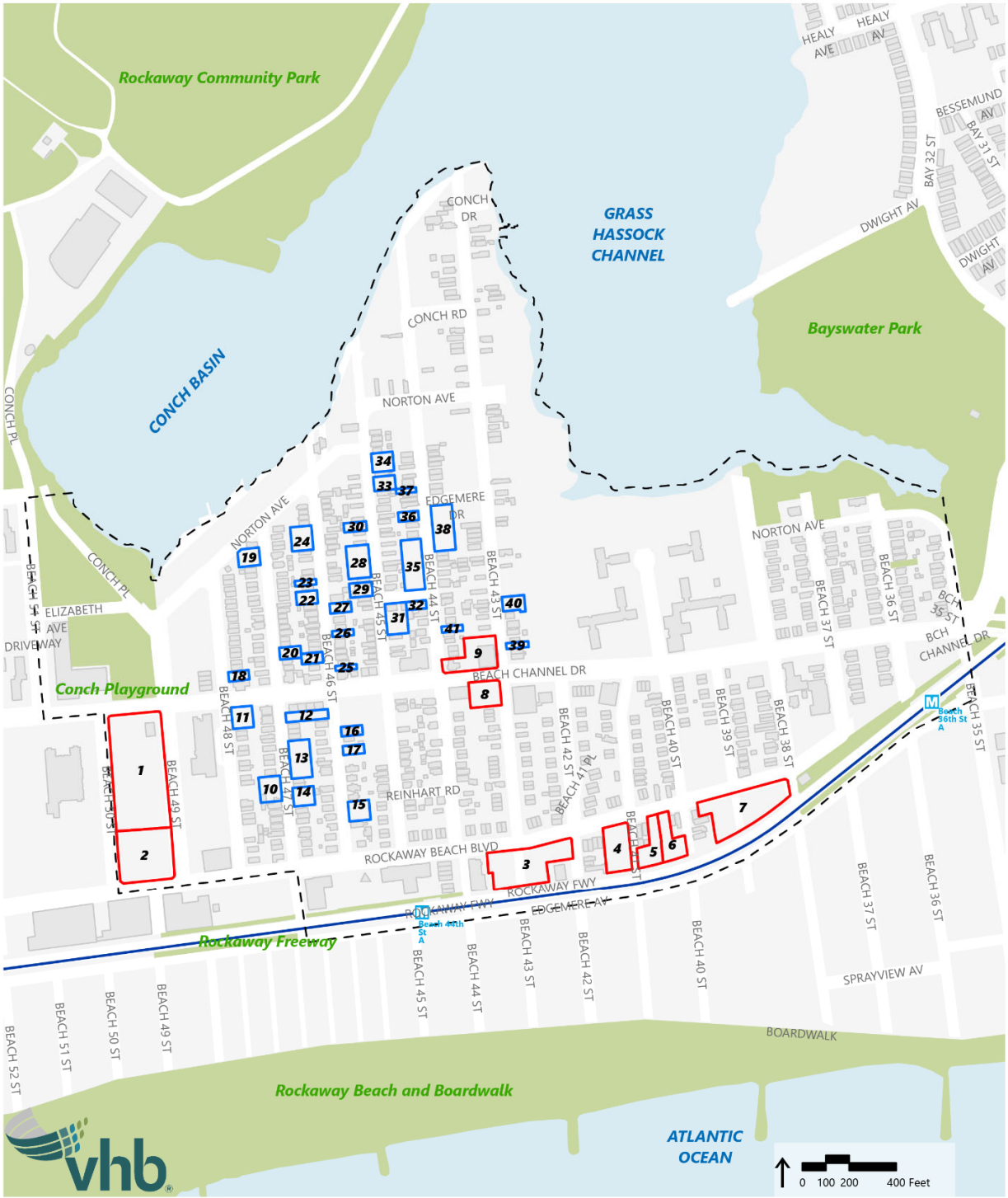
Project Area

The Project Area encompasses a total of approximately 166 acres. Beach Channel Drive, Rockaway Beach Boulevard, and Rockaway Freeway traverse the Project Area from east to west. The elevated A subway line runs along Rockaway Freeway, the southern boundary of the Project Area, with stations at Beach 44th Street-Frank Avenue and Beach 36th Street. The Project Area is flanked by Rockaway Community Park and Bayswater Park to the northwest and northeast, respectively (both located outside the Project Area). Beyond the southern boundary of the Project Area is Rockaway Beach and the Atlantic shorefront.

Residential, mapped parkland, and vacant land are the dominant land uses in the Project Area, with some limited commercial uses. Built form throughout the Project Area predominantly consists of low-density residential buildings with one-to-four dwelling units in two-to-four stories, both attached and detached. The area also contains a few low-rise commercial buildings, taller residential buildings (namely NYCHA Beach 41st Street Houses, with buildings up to 13 stories), and recently constructed mid-rise, multi-family, mixed-use developments (of up to eight stories). The presence of vacant land is a prevailing condition across the Project Area.

[1] The total number of affordable units is based on a conservative estimate and the share of affordable units may end up being higher.

Figure 1-2 Projected Development Sites



Project Area Background

Edgemere is a low-lying waterfront community located on the Rockaway Peninsula, a barrier island. The indigenous Canarsie Lenape people originally resided throughout the Rockaway Peninsula and broader Jamaica Bay region. Upon early Dutch and British settlement, primarily in Manhattan and Brooklyn cores, the area remained rural in nature. In 1833, the first hotel, the Marine Hotel, was constructed, spawning the development of numerous other luxury hotel and private residential developments in the Rockaways. In the mid-nineteenth and early-twentieth centuries, Edgemere and the Eastern Rockaways were a waterfront vacation destination for wealthy New Yorkers. By the mid-twentieth century, given improvements in transportation infrastructure, vacationers shifted to other destinations. Businesses closed, resort hotels were demolished or turned into apartments, and summer cottages became housing of last resort for low-income New Yorkers. At this time, the City also began building large public housing campuses in the Eastern Rockaways, including in Edgemere.

Between the 1960s and 1990s, the City acquired over 150 lots in Edgemere, primarily through in-rem foreclosures. In 1997, the City created the Edgemere URA to encourage the development of housing and amenities. The corresponding Edgemere URP, which was amended in 2008, created a framework for the investment of $100 million in sewer and street improvements to support the construction of 800 homes for middle-income homeowners and up to 100,000 square feet of neighborhood retail commercial space. Two phases of housing were built under this plan, but development stalled following the 2008 financial crisis. In 2012, Superstorm Sandy inflicted severe damage across Edgemere, necessitating a new model of development that addresses the neighborhood's coastal vulnerabilities while enhancing quality of life for existing and new residents.

An extensive 18-month, community-based, and inter-agency planning initiative took place in the aftermath and recovery of Superstorm Sandy—between 2015 and 2017. It included four workshops, a mail-in survey, and door-to-door outreach engaging over 400 residents. In 2017, the City released the RECP. The RECP proposes a long-term vision for the community which includes peeling development back from the vulnerable edge and terracing new development toward a transit-oriented, mixed-use spine. The RECP includes a conceptual planning framework and a set of goals, strategies, and over 60 projects led by various agencies—which together aim to address disinvestment in Eastern Rockaway; bring affordable housing, retail, and community facilities; and grow waterfront open space and coastal ecology.

Edgemere continues to face significant flood risks and coastal hazards, which are anticipated to increase over time due to climate change. The entire neighborhood is located in the high-risk floodplain (100 year or 1 percent annual chance floodplain), per the 2015 Preliminary Flood Insurance Rate Map (PFIRM).

In 2019, the U.S. Army Corps of Engineers (USACE) was authorized to move forward with the Rockaway Reformulation Plan, now the East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, New York Coastal Storm Risk Reduction Project. This work is composed of two distinct projects: Atlantic Shorefront and Back Bay High Frequency Flood Risk Reduction Features. These two projects will help protect Rockaway communities from coastal flooding. The Atlantic Shorefront project will run from Beach 149th Street to Beach 19th Street, along NYC

Department of Parks and Recreation (DPR) beach property, and includes beach restoration with renourishment, five groin extensions and the addition of 13 new groins (similar to jetties), reinforced dunes, a beach berm, and enhanced beach crossovers for pedestrian access. This plan reduces risks of erosion and wave attack while limiting storm surge inundation and cross-peninsula flooding. For this area of Jamaica Bay, in the Back Bay High Frequency Flood Risk Reduction Features project, a combination of hard and green infrastructure is designed to reduce future flood risk and economic costs of storm events (i.e., 5- to 10-year storms) and tidal inundation for buildings, infrastructure, and the coastal ecosystem, including anticipated sea level rise over the next 50 years. Project components in Edgemere will primarily include berms and hybrid berms, rock sill structures, marsh restoration, and floodwalls. The USACE architectural engineering consultants initiated the design process in 2019.

Despite these investments, the neighborhood's flood risks are expected to increase over time with climate change. The Proposed Actions will establish a land use and managed growth strategy to address this nuanced landscape of flood risk exposure in the long term.

Proposed Actions

The Proposed Actions include zoning map amendments, zoning text amendments, amendments to the Edgemere URP including acquisition of real property, disposition of City-owned property, Urban Development Action Area (UDAA) designation and Urban Development Action Area Project (UDAAP) approval, a Mayoral Zoning Override, and future construction financing from HPD—including an Article XI tax exemption on certain sites.

The Proposed Actions are designed to mitigate long term flood risk, create affordable housing opportunities, and expand neighborhood commercial amenities alongside investments in coastal protection infrastructure and parks. As such, the Proposed Actions have been tailored to several subareas within the Project Area, each of which has a distinctive neighborhood geography that corresponds to proposed future land uses (see **Figure 1-3**).

The first subarea corresponds to the proposed *Hazard Mitigation Area* and consists of the area directly along the Jamaica Bay waterfront, bordered to the north by Jamaica Bay, to the south by Norton Avenue, Edgemere Drive and parts of Blocks 15966, 15965 and 15960, and to the east by NYCHA Beach 41st Street Houses. The *Hazard Mitigation Area* comprises the lowest-lying area of the Project Area and is significantly more vulnerable to flooding and coastal hazards than the other three planning sub-areas. The *Hazard Mitigation Area* is roughly defined by the extent of the Federal Emergency Management Agency (FEMA) Coastal A sub-zone of the 100-year floodplain. The FEMA Coastal A sub-zone is at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms. During Superstorm Sandy, Edgemere was inundated with storm surge from this bayside edge. These risks are expected to increase due to climate change. Additionally, the *Hazard Mitigation Area* is vulnerable to twice daily tidal inundation in the future, based on projected sea level rise in the 2050s. The *Hazard Mitigation Area* is currently characterized by low-density, one- to two-family residences in detached and semi-detached buildings and vacant land. The Proposed Actions would limit future development to single-family detached residences and restrict the redevelopment of current and future City-owned URA sites following disposition to "open space." These restrictions on development would be

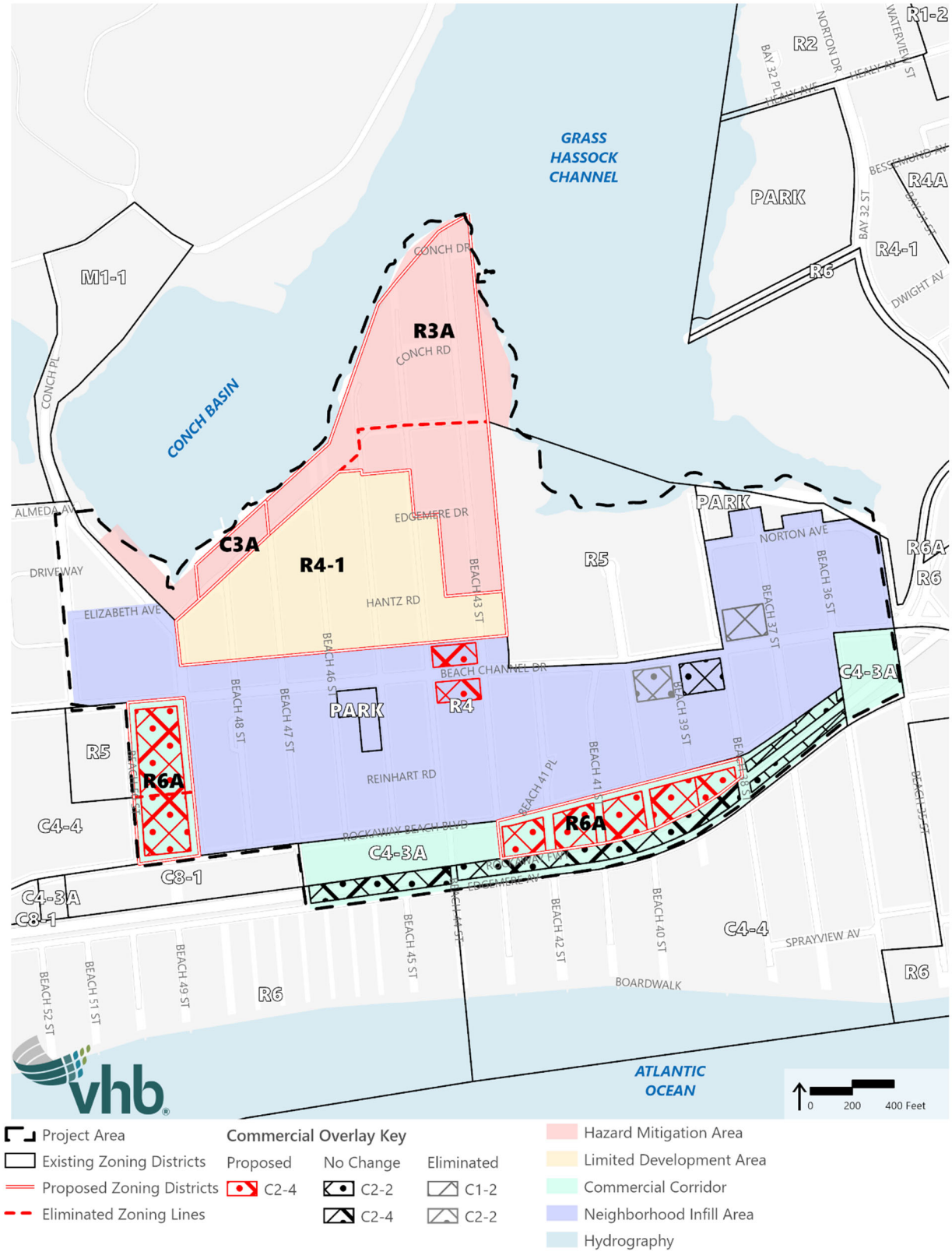
facilitated by the establishment of the Special Coastal Risk District (SCRD), which limits development beyond the proposed zoning district.

The second subarea corresponds to the proposed *Limited Development Area*, which is adjacent to and inland of the *Hazard Mitigation Area* to the south. It is generally bounded by Norton Avenue to the north, Beach 49th Street to the west, Beach Channel Drive to the south, and the NYCHA Beach 41st Street Houses to the east. Though inland from the *Hazard Mitigation Area* and outside of the higher risk FEMA Coastal A sub-zone, the *Limited Development Area* is also low-lying and may experience ponding from tidal flooding and rain events more frequently in the future due to increasing precipitation and sea level rise. The *Limited Development Area* today consists of low-density, one- to four-family residences in detached and semi-detached buildings and vacant land. The establishment of the SCRD would restrict future development to one- to two-family detached buildings and facilitate development of vacant City-owned land beyond the proposed zoning district. Furthermore, lots less than 25 feet in width in this subarea are limited to single-family detached buildings.

The third subarea corresponds to the proposed *Neighborhood Infill Area,* generally comprising the center of the Project Area, is located along and south of Beach Channel Drive and is bounded by Rockaway Beach Boulevard to the south, Beach 49th and 51st Street to the west and Beach 36th and 35th Street to the east. Further inland of the *Limited Development Area*, the *Neighborhood Infill Area* is less exposed to coastal hazards and directly served by two key transportation infrastructure systems: the elevated A subway line to the south and Beach Channel Drive, the route of key bus lines, to the north. This sub-area today consists of low-density, one- to four-family residences in semi-detached and attached buildings as well as low-rise commercial buildings and vacant land. The Proposed Actions would maintain current densities and land uses in this area and facilitate development of vacant City-owned land.

The fourth and final subarea corresponds to the proposed *Commercial Corridor*, located along Rockaway Beach Boulevard and Beach 50th Street, nearest to the elevated A subway line, which runs along the southern boundary of the Project Area. Today it consists of vacant land; surface parking; low-density, one- to four-family residences in semi-detached and attached buildings as well as low-rise commercial buildings; and recently constructed mid-rise, multi-family, mixed-use developments. The Proposed Actions would permit and facilitate development of vacant City-owned land for affordable housing and commercial and community facilities in mixed-use, mid-rise buildings as well as development of vacant non-City-owned land for housing with MIH and/or commercial/community facilities in mid-rise buildings.

Figure 1-3 Planned Sub-Areas and Proposed Zoning



Zoning Map Amendments

Hazard Mitigation Area

Proposed R3A (from R4-1, R4)

R3A is proposed for the majority of the *Hazard Mitigation Area*, which encompasses an area generally bounded by Jamaica Bay to the north; Beach 47th Street to the west; the continuation of Hantz Road, Edgemere Drive, the portion of Norton Avenue that runs northeast/southwest parallel to Conch Basin to the south; and NYCHA Beach 41st Street Houses to the east (see **Figure 1-3**).

This area includes land along the Jamaica Bay waterfront that is at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms. The proposed zoning change would reduce the allowable density of new development in these areas to reduce future exposure to these risks.

R3A districts permit one- and two-family detached residential buildings. The maximum Floor Area Ratio (FAR) is 0.6, which includes a 0.1 FAR attic allowance. The minimum required lot area is 2,375 square feet and the minimum lot width is 25 feet. One off-street parking space is required for each dwelling unit. Community facilities are permitted at an FAR of 1.0. As discussed below, some of these regulations would be modified by the proposed SCRD.

Proposed C3A (from C3)

C3A is proposed for eight parcels within the *Hazard Mitigation Area* and on the Jamaica Bay waterfront, currently zoned C3 including the area bounded on the east by the northern extension of Beach 47th Street, on the south by Norton Avenue, on the west by the midpoint between Beach 48th and Beach 49th Streets and on the north by Jamaica Bay (see **Figure 1-3**).

C3A districts permit waterfront recreational activities, primarily boating and fishing. They also include facilities for docking, renting, servicing, and storing fishing and pleasure boats, as well as bicycle shops, ice cream stores, and public and private beaches, as listed in Use Group 14. The maximum commercial FAR is 0.5. One off-street parking space is required for each 150 sf of commercial space. Residential development is permitted, consistent with R3A district regulations. Community facilities are permitted at a FAR of 1.0.

This area includes land along the Jamaica Bay waterfront that is at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms. Therefore, while the proposed zoning change would maintain the same FAR permitted in C3 and C3A districts, it would prohibit the development of multi-family homes currently permitted under C3 and allow the development of one- to two-family homes, ensuring that future development occurs in a detached building typology which is more amenable to flood resilient retrofits and interventions that may be necessary in the future. As discussed below, some of these regulations would be modified by the proposed SCRD.

Limited Development Area

Proposed R4-1 (from R4)

An R4-1 district is proposed immediately to the south of the proposed R3A district and would be generally bounded by NYCHA Beach 41st Street Houses to the east, Beach 49th Street to the west, a point 120 feet north of and parallel to Beach Channel Drive to the south, and the proposed R3A and C3A districts to the north.

R4-1 districts permit one- and two-family detached, zero lot line, and semi-detached residential buildings (see **Figure 1-3**). The maximum FAR is 0.9, which includes a 0.15 FAR attic allowance. The minimum required lot area and lot width is 2,375 sf and 25 ft, respectively, for detached and zero lot line buildings, and 1,700 square feet and 18 ft for semi-detached buildings. Lots less than 25 feet in width in this subarea are limited to single-family detached buildings. One off-street parking space is required for each dwelling unit. This requirement is reduced to 50 percent for income-restricted housing units (IRHUs). Community facilities are permitted at an FAR of 1.0.

The proposed zoning change would restrict new development in these areas to one- or two-family dwellings and prohibit the development of multi-family homes currently permitted under R4, ensuring that future development occurs in a detached building typology which is more amenable to flood resilient retrofits and interventions that may be necessary in the future. As discussed below, some of these regulations would be modified further by the proposed SCRD.

Neighborhood Infill Area

Proposed C2-4 Overlay (from C1-2)

A C2-4 commercial overlay district is proposed for a portion of the neighborhood on two blocks along Beach Channel Drive, bounded by Beach 43rd Street and Beach 44th Street (see **Figure 1-3**). There is no proposed change to the underlying zoning. As compared to C1-2, a C2-4 overlay has a lower off-street parking requirement, which is expected to provide significant construction cost savings and better facilitate the potential redevelopment of these vacant and/or abandoned properties. The commercial FAR of 1.0 (when mapped over the underlying R4 district) will remain while the change will allow for additional commercial uses such as repairs shops, upholstering shops, catering establishments, and medical labs, to name a few.

Proposed R4 from R4/C1-2 and R4/C2-2

Removal of C1-2 and C2-2 commercial overlays is proposed on portions of two blocks (15829 and 15954) along Beach Channel Drive. Removal of these overlays will better reflect the existing land uses of these two built-out blocks, bringing the zoning map into consistency with existing conditions.

Commercial Corridor

Proposed R6A/C2-4 (from R4, C8-1, R5/C1-2)

R6A is proposed in the *Commercial Corridor*, encompassing all of Block 15841, bounded by Beach Channel Drive to the north, Beach 50th Street to the west, Rockaway Beach Boulevard to the south, and Beach 49th Street to the east; and part of Blocks 15851, 15850, 15849, 15848, and 15847 in an area generally bounded by Rockaway Beach Boulevard to the north, Beach 43rd Street to the west, Rockaway Freeway to the south, and Beach 38th Street to the east (see **Figure 1-3**). A C2-4 commercial overlay is proposed in an area coterminous with the proposed R6A district.

R6A districts permit multi-family residential buildings. The maximum FAR is 3.0, with a 680-sf dwelling unit factor. Maximum building height is 70 ft (75 ft or 7 stories with a qualifying ground floor). Parking is required for 25 to 50 percent of dwelling units, depending on basic or income-restricted status. As discussed below, some of these regulations would be modified by the proposed Mandatory Inclusionary Housing (MIH) text amendment.

The C2-4 commercial overlay districts permit local retail and commercial services, such as grocery stores, restaurants, and beauty parlors on one or two floors. The maximum commercial FAR is 2.0, when mapped over the underlying R6A district, and the minimum parking requirement is one space per 1,000 sf of commercial space.

This zoning district is proposed in areas more suitable to supporting greater densities of development due to their distance from the bayside waterfront and close proximity to existing and elevated subway transit service. The proposed C2-4 commercial overlay district would permit local retail and commercial services, such as grocery stores, restaurants, and beauty parlors to serve the area's residential population where currently not permitted in the R4 zoning district and currently in scarcity within the neighborhood.

Zoning Text Amendments

Hazard Mitigation Area and Limited Development Area

Proposed Edgemere Special Coastal Risk District

The Edgemere SCRD is proposed across the *Hazard Mitigation Area* and *Limited Development Area*, and will modify the land use regulations of the proposed underlying zoning districts in the following ways:

- In proposed R3A and C3A underlying zoning districts, the SCRD is proposed to restrict residential development to one-family detached homes, which would ensure that future development occurs in a detached building typology which is more amenable to flood resilient retrofits and interventions that may be necessary in the future. The SCRD is also proposed to prohibit community facilities with overnight sleeping accommodations in order to further limit future exposure to flood and coastal risks for temporary or semi-permanent residential populations. Bulk, density, and FAR are established in the proposed underlying zoning districts: R3A and C3A.
- In the proposed R4-1 underlying zoning district, the SCRD is proposed to restrict residential development on lots 25 feet or greater to one- and two-family detached

homes, and, on lots less than 25 feet wide, residential development is restricted to one-family detached buildings. This action would ensure that future development occurs in a detached building typology that is more amenable to flood resilient retrofits and interventions that may be necessary in the future. The SCRD is also proposed to prohibit community facilities with overnight sleeping accommodations in order to further limit future exposure to flood and coastal risks for temporary or semi-permanent residential populations. Bulk, density, and FAR are established in the proposed underlying zoning district: R4-1.

Commercial Corridor

Proposed Mandatory Inclusionary Housing (MIH)

A text amendment to establish a Mandatory Inclusionary Housing (MIH) area is proposed across the Commercial Corridor, in an area coterminous with the proposed R6A/C2-4 district. This MIH Area would allow additional density while requiring a portion of the floor area to be permanently affordable housing within the development of the Commercial Corridor sites.

With MIH, the R6A underlying zoning district permits multi-family residential buildings with a maximum residential FAR of 3.6 and a 680-sf dwelling unit factor. Maximum building height is 80 ft (85 ft with qualifying ground floor) and 8 stories. Parking is required at 25 to 50 percent of dwelling units, depending on basic or income-restricted status.

Edgemere Urban Renewal Plan Amendment and Actions

The Edgemere URP, including the Edgemere URA, was established in Edgemere in 1997 and amended in 2008. The Urban Renewal Law authorizes the City to acquire sites in an Urban Renewal Area for redevelopment in accordance with an Urban Renewal Plan.

Acquisition of Real Property

Acquisition of all properties listed in Exhibit A of the Edgemere URP.

Amendment to the Urban Renewal Area

The Edgemere URA would be expanded to include the following parcels, as identified in the updated Edgemere URP, pending findings of the Blight Study: Block 15837, Lot 27; Block 15960, Lots 24, 37, 42; Block 15961, Lot 78; Block 15962, Lot 59; and Block 15965, Lots 3, 12, 100, 111, 112, 114, 115.

Removal of certain sites from the Edgemere URA, including Block 15834, Lot 17; Block 15852, Lot 60; Block 15853, Lots 95, 96, 97, 98, 102, 103; and Block 15952, Lot 14.

Amendments to the Urban Renewal Plan Land Use Designations

› The designated land use of Edgemere URA Sites 53, 55, 56B, 59, 60, 61, 62B, 64B, 86, 87 would be changed to 'Open Space' (from 'Residential' and 'Residential/Open Space'). New URA Site 54 would be designated as 'Open Space.' This change ensures that City-owned parcels will not be developed for use other than open space in this area.

- The designated land use of Edgemere URA Sites 29, 30, 31, and 32 would be changed to 'Commercial/Residential' (from 'Residential'). New URA Site 63B would be designated as 'Commercial/Residential.' This change permits commercial mixed-use development on sites in the proposed Commercial Corridor and other areas with commercial zoning.
- The designated land use of URA Sites 8 and 47 would be changed to 'Residential' (from 'Commercial/Residential').

Definition of Proposed Uses

- Proposed change to definition of Open Space to allow for agricultural uses when permitted by zoning.

Supplementary Controls on Redevelopment

- Proposed removal of additional height restrictions associated with Section C.3.e from the Edgemere URP. Section C.3.e prohibits perimeter walls of new residential buildings from exceeding 25 feet, with the exception of URA Sites 1, 33, and 34 and prohibits peaks of pitched roofs of new residential buildings from exceeding 35 feet in relation to the elevation of the 100-year flood plain, with the exception of URA Sites 1, 33, and 34. These height restrictions are inconsistent with the proposed plan for multi-family, mixed use buildings in certain parts of the Edgemere URA. Moreover, in lower-density areas, it could prevent designs that address flood risk through building elevation and locating equipment on the roof. With its removal, urban renewal sites will be subject to height controls of the ZR and any permitted adjustments necessary for flood-resistant construction, including building elevation. Development sites would be subject to height controls of the Zoning Resolution and any permitted adjustments necessary for flood-resistant construction, including elevations.
- Proposed amendment to density controls associated with Section C.3.d.1 to permit up to 1,500 dwelling units in the Edgemere URA (from 800 units). This change is proposed to accommodate the additional units projected in the proposed Commercial Corridor, including the units that are already constructed or in the development pipeline, aligned with the neighborhood-wide land use strategy which reserves increases in density in an inland corridor adjacent to transit, and to facilitate the creation of commercial services.

Extension of Urban Renewal Plan Duration

- Proposed extension of the duration of the Edgemere URP for a period of 40 years from the date of approval of the third amended plan.

Disposition of City-Owned Real Property

Disposition of all properties listed in Exhibit A of the Edgemere URP, including properties that will be acquired pursuant to the Edgemere URP, to a sponsor to be determined by HPD.

Urban Development Action Area Program

Designation of an Urban Development Action Area (UDAA) and Approval of an Urban Development Action Area Project (UDAAP)

The Project Area consists of underutilized land that tends to impair or arrest the sound development of the surrounding community, with or without tangible physical blight. Incentives are needed in order to induce the correction of these substandard, insanitary, and blighting conditions. The project activities would protect and promote health and safety and would promote sound growth and development. Portions of the Project Area are therefore eligible to be an Urban Development Action Area (UDAA) and the proposed project(s) are therefore eligible to be Urban Development Action Area Project(s) (UDAAP) pursuant to Article 16 of the General Municipal Law. Specifically, the project includes a proposed UDAA/UDAAP for 42 lots across Blocks 15847, 15848, 15849, 15850, 15851 and 15852 and the demapped roadbeds of Beach 39th Street between Block 15847 and Block 15848, and Beach 43rd Street between Block 15851 and 15852 (the UDAAP Project Area).

Construction Financing from HPD

Subsequent to completion of the Uniform Land Use Review Procedure (ULURP) and a competitive Request for Proposals (RFP) process, the project sponsor will seek construction financing from HPD—including, but not limited to, city capital and tax exemptions pursuant to Article XI of the New York State Private Housing Finance Law. In addition, the project sponsor may seek funding from state or federal sources in the future.

Mayoral Zoning Override

HPD may, at a later date, seek a Mayoral Zoning Override to slightly reduce the minimum parking requirement on selected City-owned sites in order to facilitate the development of retail uses on the ground floor.

Community Land Trust (CLT)

In addition to the approvals described above, it is anticipated that some of the Projected Development Sites would be owned and managed in a community land trust (CLT) model. A CLT is a not-for-profit organization which owns and stewards land long term for the public's benefit. CLTs separate the ownership of their land from the ownership of structures on the land, typically entering long-term ground leases with homeowners, mutual housing associations, non-profit landlords or other tenants. The RECP called for exploring this unique ownership model because CLTs have the potential to secure long term housing affordability. In addition, studies have found that the increased resident connection and collaboration fundamental to the CLT model can build social cohesion, a critical component of resilience to extreme weather events. HPD is currently facilitating a competitive process to select a partner in forming a CLT in Edgemere and finalizing a development program and operations plan.

Purpose and Need for the Proposed Actions

As described above, Edgemere is a low-lying waterfront community that contains a significant amount of City-owned vacant land. The Edgemere URP, including the Edgemere URA was established in Edgemere in 1997 and amended in 2008. The Resilient Edgemere Community Initiative is an interagency, community-based effort to align New York City's Sandy Recovery and rebuilding investments in Edgemere with a long-term comprehensive community vision. The Resilient Edgemere Community Initiative builds on past planning efforts, such as creation of the Edgemere URA and the Edgemere URP in 1997. In 2017, the City released the RECP, a vision for the future of Edgemere with the following goals:

- Protect the neighborhood from flooding;
- Create resilient housing and maintain the neighborhood's low density feel;
- Improve streets and transit; and
- Increase neighborhood amenities.

In order to successfully implement these four community goals, changes are needed to existing land use, zoning, and the Edgemere URA and Plan. The Proposed Actions would facilitate the development of market-rate and affordable housing and community amenities to benefit the neighborhood in transit-oriented areas and discourage future development in areas at greater risk to coastal hazards. These actions would work in concert to leverage investments in local public infrastructure, housing, and coastal protection while laying the groundwork for long-term coastal resilience and community development.

Specifically, the Proposed Actions would further the community goals that were identified in the 2017 RECP in the following ways:

- In areas exposed to greater flood risk, the Proposed Actions would limit residential development to lower density housing and more adaptable building typologies through rezoning to lower density zoning districts, instituting a SCRD, and amending the Edgemere URP to change the permitted land use of parcels from housing to open space use in the *Hazard Mitigation Area*.
- In the proposed transit-oriented commercial corridor, the Proposed Actions would rezone and add commercial overlays—permitting commercial uses and greater densities in order to facilitate mixed-use development, including MIH to maximize and ensure permanent affordable housing.
- The Proposed Actions would designate Urban Development Action Areas as well as seek UDAAP approval and disposition of City-owned land, and URA acquisition and disposition in order to facilitate development of housing, commercial amenities, and open space on select waterfront sites.

With these actions, HPD would issue RFPs to transform vacant City-owned assemblages into mixed-use, multi-family, affordable housing developments (i.e., the Projected Multi-Family Mixed-Use Development Sites), advance development of scattered vacant City-owned lots into low density housing (i.e., the Projected Residential Infill Sites and Projected Multi-Family Mixed-Use Development Sites), as well as reserve land for open space uses throughout the neighborhood.

Analysis Framework and Reasonable Worst-Case Development Scenario

For the purpose of the environmental analyses, the No-Action condition represents the future absent the Proposed Actions and serves as the baseline by which the Proposed Actions (or With-Action condition) are compared to determine the potential for significant environmental impacts. The difference between the No-Action and With-Action conditions represents the increment to be analyzed in the CEQR process.

Development Site Criteria

In projecting the amount and location of new development that would occur in the Project Area with implementation of the Proposed Actions, several factors have been considered in identifying likely development sites. These include known development proposals, past and current development trends, and the development site criteria described below.

Generally, for area-wide rezonings that create a broad range of development opportunities, new development can be expected to occur on selected, rather than all, sites within the Project Area. The first step in establishing the development scenario was to identify those sites where new development could be reasonably expected to occur.

The selection of development sites began with the baseline criteria suggested in the *2020 CEQR Technical Manual:*

- Lots located in areas where a substantial increase in permitted FAR is proposed;
- Lots with a total size of 5,000 sf or larger (may include potential assemblages totaling 5,000 sf if assemblage seems probable);
- Lots for which HPD has or intends to seek disposition approval;
- Underutilized lots (defined as vacant or lots constructed to less than or equal to half of the proposed FAR under the proposed zoning); and,
- Lots located in areas where changes in use would be permitted.

The resulting initial list of development sites was further refined to exclude sites that would be very unlikely to be redeveloped as a result of the Proposed Actions, for the following reasons (unless otherwise indicated through conversations with existing tenants and property owners):

- Sites where construction and/or renovation activity is actively occurring or has recently been completed;
- Sites with institutional uses, active and continuing through the build year, e.g., schools (public and private) and houses of worship, unless there are known development plans. These facilities may meet the development site criteria, because they are built to less than half of the permitted floor area under current zoning and are on larger lots. However, these facilities have not been redeveloped or expanded despite the ability to do so, and it is extremely unlikely that the increment of additional FAR permitted under the proposed zoning would induce redevelopment or expansion of these structures.
- Sites crucial to the daily operations of utility companies;

Further criteria were applied to reflect specific observed development patterns within the Project Area. In recent years, the Edgemere neighborhood has seen few entirely new developments constructed. Accordingly, certain sites that might be typically considered development sites were excluded or determined to be less likely to be developed if they met the following criteria:

› Sites generally smaller than 7,500 sf occupied by existing residential development, excluding government-owned properties.

Future No-Action Condition

In the future without the Proposed Actions (No-Action condition), the Project Area is assumed to mostly remain unchanged from existing conditions (2,358 gsf of commercial space and 118 parking spaces on Projected Multi-Family Mixed-Use Development Site 1 and 44 parking spaces on Projected Multi-Family Mixed-Use Development Site 2).

As relevant for each area of analysis, future growth in population and employment will be considered in the development of the No-Action condition of that study area. This will include both background growth and growth generated by known projects (developments that are under construction, planned, or proposed by the 2031 build year). Inclusion of known developments will be based on, but not limited to, consideration of whether the project requires discretionary approvals, the status of that approval process, and the project size.

Based on 2014-2018 American Community Survey (ACS) data, the average household size for residential units in the study area is 2.92 persons per renter-occupied unit (average of Census Tracts 972.03, 972.04, and 992). Based on this ratio and standard ratios for estimating employment for commercial and community facility uses, the No-Action estimated population would include approximately seven workers.

With-Action Condition

The With-Action condition reflects the future conditions with the Proposed Actions. The RWCDS would result in approximately 1,429,508 gsf of new development on the Projected Development Sites. **Table 1-1** contains a summary of the assumptions for the development sites. **Table 1-2** provides the increment for analysis.

Table 1-1 Projected Development Site Assumptions

Projected Development Sites	Block	Lot(s)	Existing Use(s)	Proposed Number of Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Multi-Family Mixed-Use (Residential and Commercial)						
Site 1	15841	19, 40, 50	Commercial; Parking Facilities	387 (97 affordable units)	24,960	170
Site 2	15841	3, 5, 7, 8, 10, 14, 70	Parking Facilities	162 (41 affordable units)	25,560	71
Site 3	15851	33, 35, 40, 42, 44, 58, 59	Vacant Land	172 (103 affordable units)	17,704	86
	15852	64, 68 Demapped bed of Beach 43rd Street between Blocks 15851 and 15852				
Site 4	15850	6	Vacant Land	73 (44 affordable units)	7,564	37
Site 5	15849	6, 8, 9, 10, 17, 18	Vacant Land	57 (34 affordable units)	5,878	29
Site 6	15849	19, 20 27, 28, 29	Vacant Land	54 (33 affordable units)	5,598	27

Table 1-1 Projected Development Site Assumptions

Projected Development Sites	Block	Lot(s)	Existing Use(s)	Proposed Number of Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Site 7	15847	79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89	Vacant Land	174 (104 affordable units)	17,921	87
	15848	52, 54, 55, 57, 58, 60, 62, 63, 65, 67 Demapped bed of Beach 39th Street between Blocks 15847 and 15848				
Site 8	15834	38, 42	Vacant Land	7 (3 affordable units)	3,596	4
Site 9	15965	3, 111, 112, 114, 115	Vacant Building	14 (6 affordable units)	7,069	7
Residential Infill						
Site 10	15839	51	Parking Facilities	5	--	5
Site 11	15839	26	Vacant Land	4	--	4
Site 12	15838	25, 37	Vacant Land	4	--	4
Site 13	15838	13, 15, 17, 19, 20	Vacant Land	8	--	8
Site 14	15838	7, 9	Vacant Land	4	--	4
Site 15	15837	9, 10, 12	Vacant Land	4	--	4

Table 1-1 Projected Development Site Assumptions

Projected Development Sites	Block	Lot(s)	Existing Use(s)	Proposed Number of Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Site 16	15837	27	One- & Two-Family Building	2	--	2
Site 17	15837	23	Vacant Land	2	--	2
Site 18	15972	3	Vacant Land	2	--	2
Site 19	15972	33	Vacant Land	5	--	5
Site 20	15969	6, 7	Vacant Land	3	--	3
Site 21	15969	73	Vacant Land	3	--	3
Site 22	15969	59, 60	Vacant Land	4	--	4
Site 23	15969	57	Vacant Land	1	--	1
Site 24	15969	47, 48, 49, 50	Vacant Land	8	--	8
Site 25	15968	5	Vacant Land	1	--	1
Site 26	15968	11	Vacant Land	2	--	2
Site 27	15968	16, 17	Vacant Land	3	--	3
Site 28	15968	84, 85, 86, 87, 88, 89, 90	Vacant Land	11	--	11
Site 29	15968	92, 94	Vacant Land	4	--	4
Site 30	15968	79, 80	Vacant Land	1	--	1
Site 31	15967	10, 12, 13, 14, 111	Vacant Land	6	--	6

Table 1-1 Projected Development Site Assumptions

Projected Development Sites	Block	Lot(s)	Existing Use(s)	Proposed Number of Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Site 32	15967	18	Vacant Land	2	--	2
Site 33	15966	23, 25	Vacant Land	2	--	2
Site 34	15966	27, 28, 29, 30	Vacant Land	3	--	3
Site 35	15966	72, 74, 75, 76, 77, 78, 79, 80, 81	Vacant Land	11	--	11
Site 36	15966	66	Vacant Land	2	--	2
Site 37	15966	61	Vacant Land	1	--	1
Site 38	15965	29, 31, 34, 35, 36, 37, 38	Vacant Land	9	--	9
Site 39	15960	7	Vacant Land	1	--	1
Site 40	15960	15, 16, 17	Vacant Land	2	--	2
Site 41	15965	12	Vacant Land	2	--	2

Increment for Analysis

Based on the RWCDS for the No-Action and With-Action conditions identified above, the net incremental change in development that would occur as a result of the Proposed Actions in the Project Area is identified in **Table 1-2**. As shown in the table, the net increment to be analyzed in the EIS would include 1,313,659 gsf of residential floor area (1,222 dwelling units, including 465 affordable units), 113,491 gsf of commercial space, and 478 parking spaces. The total difference between the built square footage in the No-Action and With-Action conditions is approximately 1,427,150 gsf. **Table 1-2** also provides an estimate of the number of residents and workers on the Projected Development Sites in the No-Action and With-Action conditions. As indicated in the table, under the RWCDS, the Proposed Actions would result in a net increment of 3,568 residents and 389 workers.

Table 1-2 Increment for Analysis

Land Use	Unit	Existing Condition	No-Action Condition	With-Action Condition	Increment
Residential	*Dwelling Units*	0	0	1,222	1,222
	Affordable Units	0	0	465	465
	Total Residential gsf	0	0	1,313,659	1,313,659
Local Retail/ Commercial	*gsf*	2,358	2,358	115,849	113,491
Parking	*Lot Spaces*[1]	162	162	640	478
Residents[2]		0	0	3,568	3,568
Employees[3]		7	7	396	389

[1] The number of parking lot spaces was provided by the City.
[2] The number of residents is based on an average household size of 2.92 for the neighborhood, Edgemere (2014-2018 ACS Survey).
[3] Employee estimates were derived using ratios provided by DCP. The number of employees working in residential buildings was calculated by dividing the total residential units by 25. The number of retail workers was calculated by dividing the total retail gsf by 333.3 sf.

Analysis (Build) Year

For area-wide rezonings not associated with a specific development, a ten-year period is typically the length of time within which area-wide zoning map changes would be acted upon. Therefore, an analysis year of 2031 is assumed for environmental analysis purposes.

Public Review Process

The Proposed Actions are subject to both ULURP and CEQR.

Uniform Land Use Review Procedure (ULURP)

The City's ULURP process, mandated by Sections 197-c and 197-d of the New York City Charter, is designed to allow public review of ULURP applications at four levels: Community Board, Borough President, the City Planning Commission (CPC), and the City Council. The procedure has mandated time limits for review at each stage to ensure a maximum review

period of approximately seven months. The process begins with certification by the Department of City Planning (DCP) that the ULURP application is complete. The application is then referred to the relevant Community Board (in this case Queens Community Board (CB) 14). The Community Board has up to 60 days to review and discuss the proposal, hold a public hearing, and adopt an advisory resolution on the ULURP application. The Borough President then has up to 30 days to review the application. The CPC then has up to 60 days, during which time a public hearing is held on the ULURP application. If approved by the CPC, the application is then forwarded to the City Council, which has 50 days to review the ULURP application, during which time a ULURP/CEQR public hearing is held. Comments made at the Draft EIS (DEIS) public hearing and during the subsequent comment period (the record for commenting remains open for ten days after the hearing to receive written comments) are incorporated into a Final EIS (FEIS). The FEIS must be completed at least ten days before CPC makes its decision on the application. The CPC may approve, approve with modifications, or deny the application. If the ULURP application is approved, or approved with modifications, it moves forward to the City Council for review. The City Council has 50 days to review the application and during this time will hold a public hearing on the Proposed Actions. The Council may approve, approve with modifications, or deny the application. If the Council proposes a modification to the Proposed Actions, the ULURP review process is extended for 15 days, providing time for a CPC determination on whether the proposed modification is within the scope of the environmental review and ULURP review. If it is, then the Council may proceed with the modification; if not, then the Council may only vote on the actions as approved by the CPC. Following the Council's vote, the Mayor has five days in which to veto the Council's actions. The City Council may override the mayoral veto within 10 days.

City Environmental Quality Review (CEQR)

CEQR is a process by which agencies review discretionary actions for the purpose of identifying the impacts those actions may have on the environment. The City of New York established CEQR regulations in accordance with the New York State Environmental Quality Review Act (SEQRA). Pursuant to the SEQRA (Article 8 of the Environmental Conservation Law) and its implementing regulations found at 6 NYCRR Part 617, New York City has established rules for its own environmental quality review in Executive Order 91 of 1977, as amended, and 62 RCNY Chapter 5, the Rules of Procedure for CEQR. The environmental review process provides a means for decision-makers to systematically consider environmental effects along with other aspects of project planning and design, to propose reasonable alternatives, and to identify, and when practicable mitigate, significant adverse environmental impacts. CEQR rules guide environmental review, as follows:

- *Establish a Lead Agency*. Under CEQR, the "lead agency" is the public entity responsible for conducting environmental review. In accordance with CEQR rules (62 RCNY §5-03), HPD is serving as the CEQR lead agency for environmental review and will coordinate the review of the Proposed Actions.
- *Environmental Review and Determination of Significance*. The lead agency determines whether the proposed action(s) may have a significant impact on the environment. To do so, HPD, in this case, evaluated an Environmental Assessment Statement (EAS) dated December 18, 2020 for the Proposed Actions. Based on information contained in the EAS, and as the Proposed Actions are classified as a "Type I Action," HPD determined that the Proposed Actions may have a significant adverse impact on the environment, as

defined by statute, and issued a Positive Declaration on December 18, 2020, requiring that an EIS be prepared in conformance with all applicable laws and regulations.

- *Scoping*. Along with its issuance of a Positive Declaration, HPD issued a Draft Scope of Work for the EIS, dated December 18, 2020, marking the beginning of the comment period on the Draft Scope. "Scoping," or creating the scope of work, is the process of identifying the environmental impact analysis areas, the methodologies to be used, the key issues to be studied, and creating an opportunity for others to comment on the study areas, methodologies, and areas of analysis presented in the scoping document. CEQR requires a public scoping meeting as part of the process. A public scoping meeting was held on January 19, 2021 at 4:00pm and, in support of the City's efforts to contain the spread of COVID-19, the public scoping meeting was held remotely. The public review period for agencies and the public to review and comment on the Draft Scope of Work was open through January 29, 2021. Modifications to the Draft Scope of Work for the project's EIS were made as a result of public and interested agency input during the scoping process. A Final Scope of Work (FSOW) document for the Proposed Actions was issued on December 10, 2021.
- *Draft Environmental Impact Statement (DEIS)*. This DEIS was prepared in accordance with the FSOW and followed the methodologies and criteria for determining significant adverse impacts in the 2020 *CEQR Technical Manual*. The lead agency reviewed all aspects of the document, calling on other City and state agencies to participate where the agency's expertise is relevant. Once the lead agency was satisfied that the DEIS was complete, it issued a Notice of Completion and circulated the DEIS for public review.
- *Public Review*. Publication of the DEIS and issuance of the Notice of Completion signals the start of the public review period. During this time, the public has the opportunity to review and comment on the DEIS either in writing or at a public hearing convened for the purpose of receiving such comments. When the CEQR process is coordinated with the ULURP process, the public hearings are held jointly. All substantive comments received at the hearing become part of the CEQR record and must be summarized and responded to in the FEIS. A public hearing on the DEIS will be held at a later date to be announced, in conjunction with the CPC public hearing pursuant to ULURP. Subsequent notice will be given as to the time and place of the public hearing. Written comments on the DEIS are requested and would be received and considered by the Lead Agency until the 10th calendar day following the close of the public hearing.
- *Final Environmental Impact Statement (FEIS)*. After the close of the public comment period for the DEIS, the FEIS is prepared. The FEIS must address relevant comments on the DEIS, either in a separate chapter or in changes to the body of the text, graphics and tables. Once the lead agency determines the FEIS is complete, it will issue the Notice of Completion and circulate the FEIS.
- *Findings*. To document that the responsible public decision-makers have taken a hard look at the environmental consequences of a proposed project, agencies taking discretionary actions regarding the project must adopt a formal set of written findings, reflecting their conclusions about the significant adverse environmental impacts of the project, potential alternatives, and potential mitigation measures. The findings may not be adopted until ten (10) days after the Notice of Completion has been issued for the FEIS. Once findings are adopted, the lead and involved agencies may take their actions. Accordingly, HPD must wait at least ten days after the FEIS is complete to take action on the application.

2

Land Use, Zoning, and Public Policy

This section considers the potential for the Proposed Actions to result in significant adverse impacts to land use, zoning, and public policy. Under the guidelines of the *2020 City Environmental Quality Review (CEQR) Technical Manual*, this analysis evaluates the uses in the area that may be affected by the Proposed Actions and determines whether the Proposed Actions are compatible with land use, zoning, and public policy conditions, or may otherwise affect them. The analysis also considers the Proposed Actions' compatibility with zoning regulations and other public policies applicable to the area.

Introduction

The Department of Housing Preservation and Development (HPD) is proposing a series of land use actions (collectively the Proposed Actions) to implement recommendations of the Resilient Edgemere Community Initiative, an interagency, community-based effort to align New York City's Sandy Recovery and rebuilding investments in Edgemere with a long-term comprehensive community vision. The Proposed Actions would result in 1,222 residential units across approximately 1,313,659 gross square feet (gsf), including up to 465 affordable units; approximately 115,849 gsf of local retail uses; and approximately 640 parking spaces. This new development would occur at a number of different sites within the Project Area, including Projected Multi-Family Mixed-Use Development Sites and Projected Residential Infill Sites. Together, these sites are referred to as the Projected Development Sites.

In comparison to the No-Action condition, the Proposed Actions would result in an incremental increase of 1,222 residential units across approximately 1,313,659 gsf, including up to 465 affordable units; approximately 113,491 gsf of local retail uses; and approximately 478 new parking spaces.

This chapter provides an assessment of existing and future conditions for the Project Area and study area with and without the Proposed Actions, which are described in detail below.

According to the *CEQR Technical Manual*, a land use and zoning analysis is warranted for projects involving a change in land use or zoning. As the Proposed Actions involve a number of discretionary land use actions that would result in changes in density and bulk, an analysis is warranted.

Principal Conclusions

Overall, the analysis conducted found that the Proposed Actions would not result in significant adverse impacts on land use, zoning, or public policy in the Project Area or the 400-foot study area in the 2031 build year.

Land Use and Zoning

The Proposed Actions would not introduce any new land uses in the Project Area or 400-foot study area. The Proposed Actions would be compatible with surrounding land uses and underlying zoning. Compared to the No-Action condition, in the With-Action condition, the Proposed Actions would reduce the prevalence of vacant land across the Project Area. The Proposed Actions would reduce the allowable density of new development in areas that are at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms, as well as in areas that are expected to experience ponding from tidal flooding and rain events more frequently in the future due to climate change. The Proposed Actions would also allow new development at higher densities than currently permitted in areas near to existing transportation infrastructure. New residential and commercial development would be consistent with existing and planned developments in the Edgemere neighborhood.

Public Policy

The Proposed Actions would be consistent with public policies that are applicable to the Project Area and the 400-foot study area. By introducing a special coastal zoning district that would limit residential and commercial development in those areas that are exposed to greater flood risk and coastal hazards, while encouraging mid-density development near existing transportation infrastructure, the Proposed Actions are consistent with the New York City Waterfront Revitalization Program. The Proposed Actions would also be consistent with the existing framework of the Edgemere Urban Renewal Plan (Edgemere URP) and the goals set forth in the Resilient Edgemere Community Plan (RECP). As discussed in greater detail below, the Proposed Actions would directly support relevant City policies.

Methodology

This analysis of land use, zoning, and public policy follows the guidelines set forth in the *CEQR Technical Manual* for a preliminary assessment (Section 320). According to the *CEQR Technical Manual*, a preliminary land use and zoning assessment:

- Describes existing and future land uses and zoning information, and describes any changes in zoning that could cause changes in land use;
- Characterizes the land use development trends in the area surrounding the project site that might be affected by the proposed action; and
- Determines whether the proposed project is compatible with those trends or may alter them.

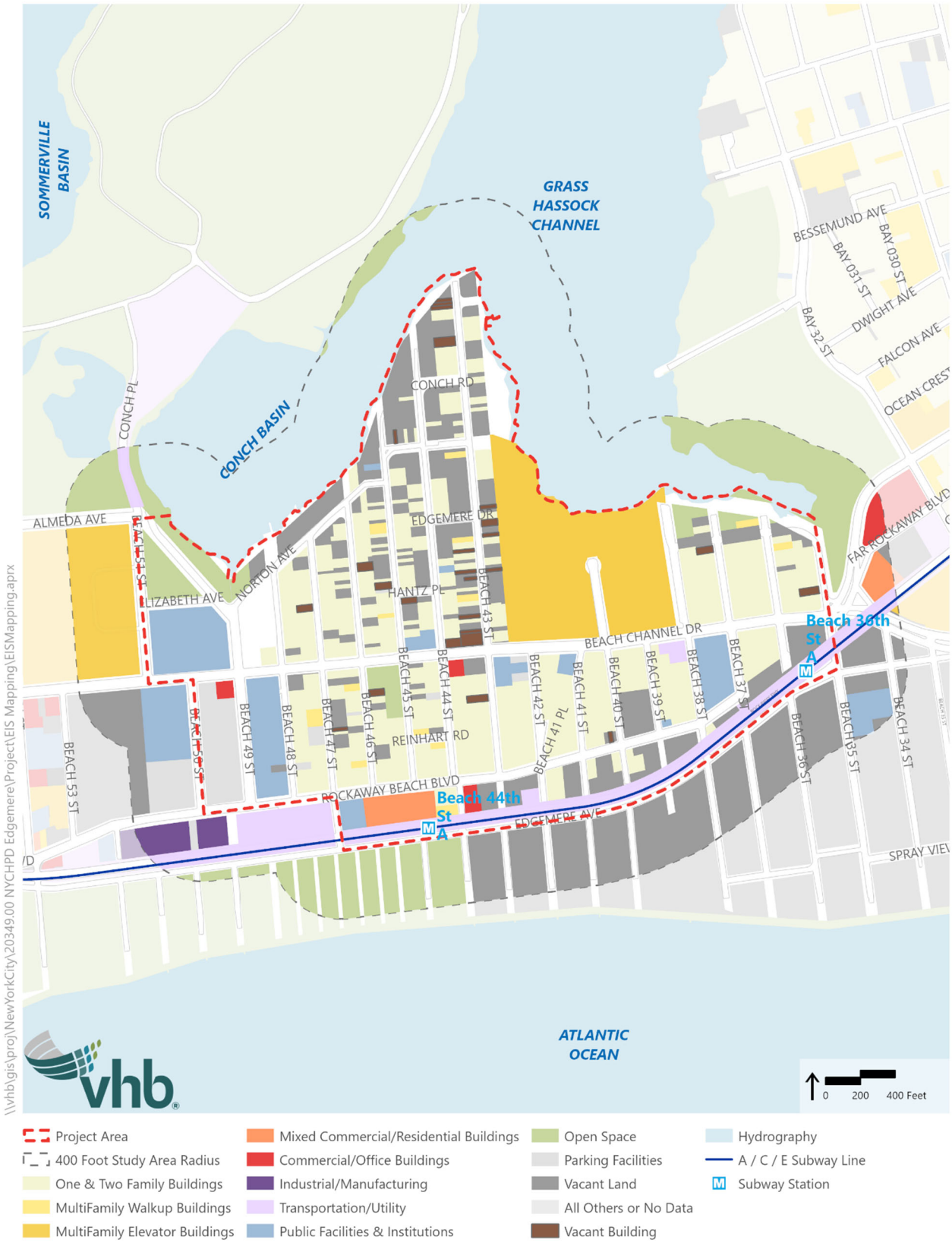
The following assessment method was used to determine the potential for the proposed project to result in significant adverse impacts on land use, zoning, and public policy:

1. Establish a "study area", a geographic area surrounding the project site to determine how the proposed project may affect the immediate surrounding area. For this assessment, a study area of 400 feet surrounding the development site was used.
2. Identify data sources, including any public policies (formal plans, published reports) to be used to describe the existing and No-Action conditions related to land use, zoning, and/or public policy.
3. Assess the proposed project's potential effects on land use, zoning and public policy to determine whether the proposed project is consistent with or conflicts with area land uses, zoning, or the identified policies.
    - If a proposed project could conflict with the identified policies, a detailed assessment would be conducted; or
    - If the proposed project is found to not conflict with the identified policies, no further assessment is needed.

Study Area Definition

According to the *CEQR Technical Manual*, the appropriate study area for land use, zoning, and public policy is related to the type and size of the proposed project, as well as the location and context of the area that could be affected by the project. For the purposes of this assessment, the study area is the area within 400 feet of the Project Area. The Project Area is generally bounded by Beach 35th Street to the east, Rockaway Freeway and Rockaway Beach Boulevard to the south, Beach 50th Street and Beach 51st Street to the west, and Jamaica Bay to the north. As shown in **Figure 2-1**, the study area for this analysis is generally bounded by Beach 34th Street to the east, midway between Rockaway Freeway and the Rockaway Beach Boardwalk to the south, Beach 53rd Street to the west, and Jamaica Bay to the north.

Figure 2-1 Land Use Map



Assessment

Existing Conditions

Land Use

Project Area

The Project Area is located in Queens, New York, on the eastern end of Rockaway Peninsula. It is approximately 166 acres and encompasses the neighborhood of Edgemere. Beach Channel Drive, Rockaway Beach Boulevard, and Rockaway Freeway transverse the Project Area from east to west. The elevated A subway line runs along Rockaway Freeway, the southern boundary of the Project Area, with stations at Beach 44th Street – Frank Avenue and Beach 36th Street. The Project Area is flanked by Rockaway Community Park and Bayswater Park to the northwest and northeast, respectively. Beyond the southern boundary of the Project Area is Rockaway Beach and the Atlantic shorefront. Residential and vacant land uses dominate the Project Area, with some limited public facilities and institutions, transportation and utility, and open space uses (see **Table 2-1**).

Table 2-1 Study Area Generalized Existing Land Uses

Land Use	Number of Tax Lots[2]	Percentage of Total Lots (%)	Lot Area (sf)	Percentage of Total Lot Area (%)
One & Two Family Residential	599	57	1,923,987	39
Multi-Family Walkup Residential	21	2	72,974	1
Multi-Family Elevator Residential	2	0	880,660	18
Mixed Commercial/Residential	2	0	64,297	1
Commercial/Office	3	0	31,350	1
Transportation & Utility	8	1	36,047	1
Public Facilities and Institutions	34	3	496,933	10
Open Space	31	3	205,283	4
Parking Facilities	8	1	29,885	1
Vacant Land	318	30	1,159,767	23
Vacant Building	26	2	89,048	2
Total	**1,052**	**100%[1]**	**4,990,231**	**100%[1]**

Source: Map PLUTO 21v3

[1] Numbers may not add up to 100 percent due to rounding

[2] All lots intersecting the 400-foot radius study area were included in analysis

In the portion of the Project Area nearest to the Jamaica Bay waterfront, the presence of vacant and unimproved land is a prevailing condition: a majority of the parcels north of Edgemere Drive are vacant. Built form throughout this area consists of one- and two-family

homes of either one or two stories, in detached and semi-detached buildings (several of which are vacant). A low-rise, multi-family walk-up building is located on Beach 43rd Street, south of Norton Avenue, and a church is located on Beach 45th Street, north of Norton Avenue. NYC Department of Parks and Recreation (DPR) owns several parcels designated as open space north of Norton Avenue; however, they are currently vacant and unimproved.

Between Edgemere Drive and Beach Channel Drive, the presence of vacant and unimproved land (and vacant buildings) remains a prevailing condition. In addition to one- and two-family homes of either one or two stories, a handful of low-rise, multi-family walk-up buildings are found in this area, as well as a church (on Beach 44th Street). The New York City Housing Authority (NYCHA) apartment complex known as the NYCHA Beach 41st Street Houses is located along Beach Channel Drive, between Beach 38th Street and Beach 43rd Street, and consists of four buildings of approximately 13-stories each. The western portion of the Project Area includes Public School 105, Conch Playground, and a portion of Rockaway Community Park, while the eastern portion of the Project Area includes a portion of Bayswater Park.

South of Beach Channel Drive, there are fewer vacant lots. Residential land uses take the form of one- and two-family homes, multi-family walk-up buildings, and a recently constructed mixed-use apartment complex known as Beach Green Dunes I and II. Located on Rockaway Beach Boulevard, between Beach 48th Street and Beach 45th Street, Beach Green Dunes I and II includes 227 affordable residential units across two eight-story buildings. The Edgemere Urban Renewal Park (Edgemere Farm) is located on Beach Channel Drive, between Beach 45th Street and Beach 46th Street.

There are several public facilities and institutions along Beach Channel Drive and in the area to the south. They include a nursing home on Beach Channel Drive and Beach 49th Street, an adult care facility on Rockaway Beach Boulevard and Beach 47th Street, a day care on Beach Channel Drive between Beach 44th Street and Beach 45th Street, and a care facility on Beach Channel Drive and Beach 41st Street. There is a New York City Fire Department fire station on Rockaway Beach Boulevard and Beach 48th Street as well as a church with a food bank on Beach Channel Drive, between Beach 37th Street and Beach 38th Street.

There are limited commercial uses on Beach Channel Drive and in the area to the south. There is a fast-food chain restaurant at Beach 49th Street; the remainder of the block is a surface parking lot. At Beach 44th Street, there is a deli, a restaurant, a tax service business, and a pawn shop. On the north side of Beach Channel Drive, between Beach 43rd Street and Beach 44th Street, there is a vacant commercial building. There is a six-story hotel on Rockaway Beach Boulevard and Beach 44th Street and a gas station on Beach Channel Drive and Beach 38th Street.

Study Area

As shown in **Figure 2-1**, land uses in the study area are similar to those in the Project Area. The northwest portion of the study area includes a portion of Rockaway Community Park and a portion of Ocean Bay Apartments, a 24-building, 1,395-unit apartment complex that recently underwent substantial rehabilitation. South of Ocean Bay Apartments is the Peninsula Nursing and Rehabilitation Center; the remainder of that block is the site of Edgemere Commons (described in detail below). South of the redevelopment site, between Rockaway Beach Boulevard and Rockaway Freeway, there are several buildings used for light manufacturing and

a warehouse. An MTA Bus Deport is located on Rockaway Beach Boulevard between Beach 47th Street and Beach 49th Street.

The portion of the study area located south and southeast of the Project Area is the site of the Arverne East redevelopment project, which includes a 35-acre nature preserve (described in detail below). The northeastern portion of the study area includes a portion of Bayswater Park, a shopping center with a parking lot, and a seven-story condominium called Rockaway Seagirt Residences.

Zoning

Project Area

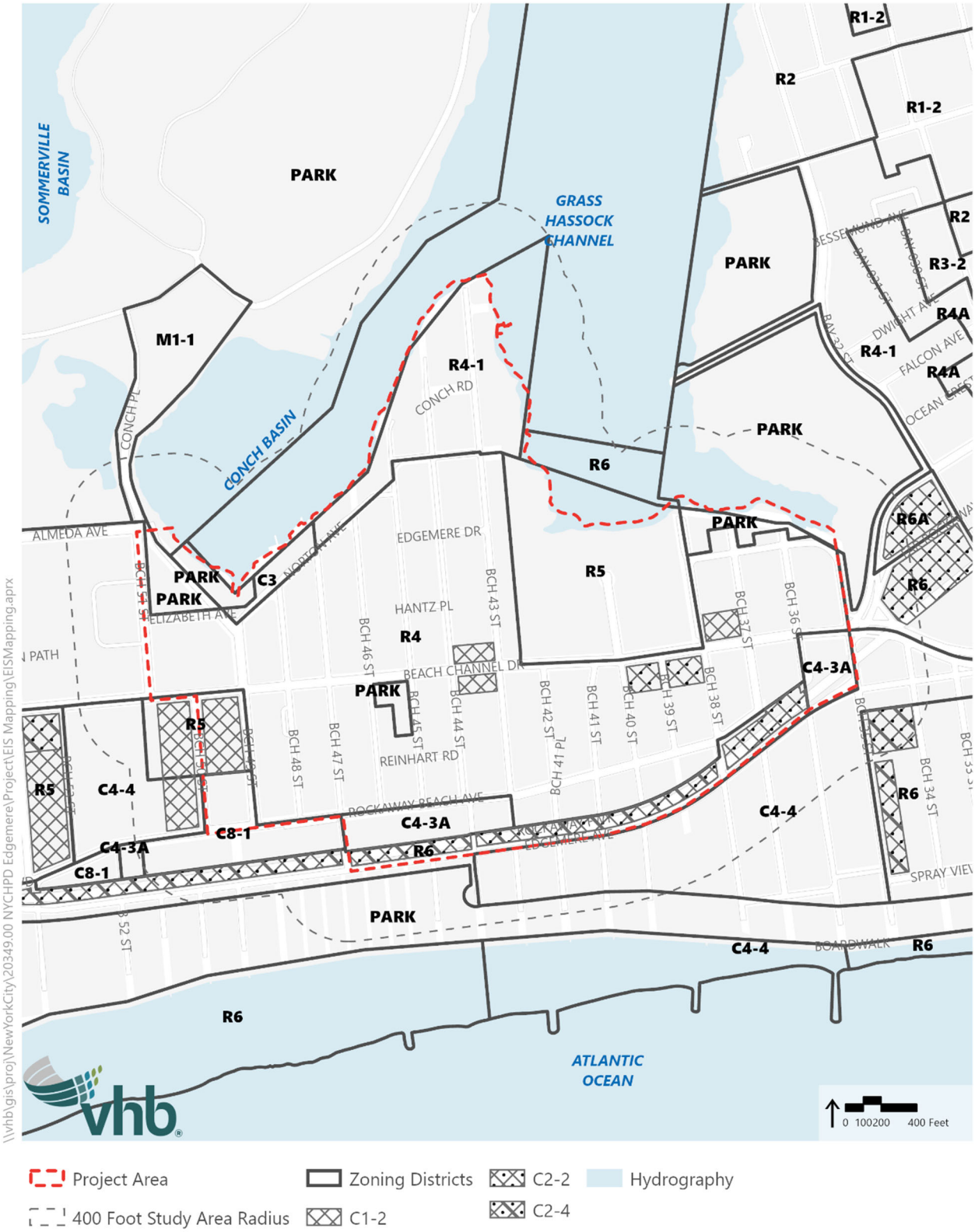
~~There~~As shown in **Figure 2-1**, there are several residential and commercial zoning districts mapped within the Project Area, including the following: R4, R4-1, R5, R6, C3, C4-3A, and C8-1. C1-2 and C2-2 commercial overlays are mapped along Beach Channel Drive within the R4 district, and C2-4 commercial districts are mapped within the R6 district along Edgemere Avenue.

R4, R5, R6, and C4-3A zoning districts have Quality Housing options that allow for height and parking allowances discussed in detail below.

The majority of the Project Area is mapped within a R4 district. R4 districts allow all types of housing at a floor area ratio (FAR) of 0.75, plus an attic allowance of up to 20 percent for inclusion of space under the pitched roof common to these districts. This district usually produces buildings with three stories. To accommodate a potential third floor beneath a pitched roof, the perimeter wall in R4 districts may rise to 25 feet before being set back to the maximum building height of 35 feet. Front yards must be 10 feet deep or, if deeper, a minimum of 18 feet to provide sufficient space for on-site parking. Cars may park in the side or rear yard, in the garage or in the front yard within the side lot ribbon; the driveway must be within the side lot ribbon unless the lot is wider than 35 feet. Detached houses must have two side yards that total at least 13 feet and each one must be at least five feet wide. Semi-detached buildings need one side yard with a minimum width of eight feet. The maximum street wall length for a building on a single zoning lot is 185 feet. One off-street parking space is required for each dwelling unit. However, requirements are lower for income-restricted housing units (IRHU) and are further modified within the Transit Zone.

The northern portion of the Project Area is mapped within a R4-1 contextual district, which permits only one- and two-family detached and semi-detached houses. The district requires a minimum lot width of 25 feet for detached homes and allows an FAR of 0.75 plus an attic allowance of up to 20 percent. The perimeter wall may rise to 25 feet before sloping or being set back to a maximum building height of 35 feet. Two side yards that total eight feet must be provided for a detached residence. There is no minimum width for each side yard but there must be eight feet between buildings on adjacent zoning lots. One four-foot side yard is required for each semi-detached residence, which must be on a lot at least 18 feet wide. Zero lot line buildings are permitted in R4-1 districts and require only one eight-foot side yard. Front yards must be at least 10 feet deep and at least as deep as an adjacent front yard but need not exceed a depth of 20 feet. Parking must be within the side or rear yard or in a garage. An in-house garage is permitted within a semi-detached house, or in a detached house if the lot is 35 feet or wider. One off-street parking space is required for each dwelling unit.

Figure 2-1 Zoning Map



An R5 district is primarily mapped at the NYCHA Beach 41st Street Houses. R5 districts allow a variety of housing at a higher density than permitted in R4 districts. With a height limit of 40 feet, R5 districts provide a transition between lower and higher density neighborhoods, which typically produce three- to four-story attached houses and small walkup apartment buildings. The maximum FAR in R5 districts is 2.0 for community facility use while residential use is limited to 1.25 FAR. To ensure compatibility with neighborhood scale, the maximum street wall height of a new building is 30 feet. Above a height of 30 feet, a setback of 15 feet is required from the street wall of the building; in addition, any portion of the building that exceeds a height of 33 feet must be set back from a rear or side yard line. Apartment houses need two side yards, each at least eight feet wide. Front yards must be 10 feet deep or, if deeper, a minimum of 18 feet to prevent cars parked on-site from protruding onto the sidewalk. Cars may park in the side or rear yard, in the garage or in the front yard within the side lot ribbon; parking is also allowed within the front yard when the lot is wider than 35 feet. Off-street parking is required for 85 percent of the dwelling units in the building. This requirement is decreased to 42.5 percent for IRHUs.

An R6 district is mapped along Rockaway Freeway, the southern boundary of the Project Area. R6 districts allow all housing types at a maximum FAR of up to 2.43. A maximum FAR of up to 4.8 is permitted for buildings containing certain community facility uses. R6 is a height factor district where residential and community facility uses are permitted with no fixed height limits. Building envelopes are regulated by an open space ratio and a sky exposure plane that begins at a height of 60 feet above the street line and then slopes inward over the zoning lot. Off-street parking is generally required for 70 percent of a building's dwelling units, but requirements are lower for IRHUs. Residential development under the optional Quality Housing Program has a maximum FAR of 2.2 on narrow streets with a 55-foot building height limit and a maximum of 3.6 FAR on wide streets with a height limit of 70 feet. Off-street parking is required for 70 percent of the dwelling units. This requirement is lowered to 50 percent of the units if the lot area is less than 10,000 square feet (sf) or if Quality Housing provisions are used. In R6 districts, if fewer than five spaces are required, the off-street parking requirement is waived. Accessory parking is required for 25 percent of IRHUs.

A C3 district is mapped along a portion of the Jamaica Bay waterfront, in the northwest portion of the Project Area. C3 districts permit waterfront recreational activities, primarily boating and fishing, in areas along the waterfront that are usually adjacent to residential districts. C3 districts also permit residences and community facilities (Use Groups 1–4). The commercial FAR permitted in C3 districts is 0.5. Commercial buildings may be no more than two stories or 30 feet in height, whichever is less. Residential development in C3 districts is governed by R3-2 district regulations. R3-2 districts are general residence districts that allow a variety of housing types, including low-rise attached houses, small multi-family apartment houses, and detached and semi-detached one- and two-family residences. A maximum FAR of 0.50 is permitted with a maximum building height of 35 feet. The perimeter wall may rise to 21 feet before sloping or being set back to a maximum building height of 35 feet. Lots with detached homes must be at least 40 feet wide; if occupied by semi-detached and attached buildings, lots must be at least 18 feet wide. The maximum street wall length for a building on a zoning lot is 125 feet. The maximum lot coverage of any residence is 35 percent. Front yards must be at least 15 feet deep. Cars may park in the side or rear yard, in the garage or in the front yard within the side lot ribbon; parking is also allowed within the

front yard when the lot is wider than 35 feet. In a mixed-use building, commercial uses may occupy the ground floor only. Off-street parking requirements vary with the use.

A C4-3A district is mapped in three areas along the southern boundary of the Project Area. C4 districts are mapped in regional commercial centers that are located outside of the central business districts. In these areas, specialty and department stores, theaters and other commercial and office uses serve a larger region and generate more traffic than neighborhood shopping areas. C4-3A districts are contextual districts. The maximum FAR is 3.0. Floor area may be increased with a public plaza or Inclusionary Housing Program bonus. The required accessory parking within this district is one space per 400 sf of floor area. The residential district equivalent is R6A and its zoning requirements are discussed in detail under the **Study Area** section below.

A C8-1 district is mapped in the southwest corner of the Project Area. This district bridges commercial and manufacturing uses and provides for automotive and other heavy commercial services that often require large amounts of land. Housing is not permitted, thus a residential district equivalent does not apply. Performance standards are imposed for certain semi-industrial uses. The maximum FAR is 1.0. One accessory parking is required per 300 sf of floor area.

C1-2 and C2-2 commercial overlays are mapped along portions of Beach Channel Drive within the Project Area, as well as a segment of Rockaway Freeway in the southeast corner of the Project Area. C1-2 and C2-2 commercial overlays are generally mapped within residential districts along streets that serve local retail needs; C2 districts permit a slightly wider range of uses than C1 districts. When mapped in an R4 district, the maximum commercial FAR is 1.0. Unless otherwise indicated, the depth of overlay districts ranges from 100 to 200 feet; however, C1-2 and C2-2 commercial overlays are typically mapped to a depth of 150 feet. In mixed-use buildings, commercial use is limited to one or two floors and must always be located below the residential use. Off-street parking requirements vary by use but generally one parking space is required for every 300 sf of floor area.

A C2-4 commercial overlay is mapped along portions of the Rockaway Freeway in the southern boundary of the Project Area. Like C1-2 and C2-2 commercial overlays, C2-4 commercial overlays are generally mapped within residential districts along streets that serve local retail needs. In mixed-use buildings, commercial use is limited to one or two floors and must always be located below the residential use. When mapped in R6 districts, the maximum commercial FAR is 2.0. Commercial buildings are subject to commercial bulk rules. Unless otherwise indicated on the zoning maps, the depth of overlay districts ranges from 100 to 200 feet. One parking space is generally required per 1,000 sf of commercial space.

Study Area

~~There~~As shown in **Figure 2-1**, there are several residential and commercial zoning districts mapped within the study area's 400-foot radius, including the following: R4, R5, R6, R6A, C4-3A, C4-4, and C8-1. C2-2 and C2-4 commercial overlays are also mapped within the study area.

R4, R4-1, R5, R6, and C4-3A, C8-1 zoning districts are discussed above, as are C2-2 and C2-4 and commercial overlays.

An R6A zoning district is mapped in the northeastern portion of the study area. R6A districts permit multi-family residential buildings. The maximum FAR is 3.0 and the maximum building height is 70 feet (75 feet or seven stories with a qualifying ground floor). Parking is required at 25 percent to 50 percent of dwelling units, depending on basic or income-restricted status. With Mandatory Inclusionary Housing, R6A permits multi-family residential buildings with a maximum residential FAR of 3.6 and a maximum building height of 80 feet (85 feet or eight stories with a qualifying ground floor). Parking is required at 25 to 50 percent of dwelling units, depending on the share of basic or income-restricted status.

C4-4 zoning districts are mapped in the southwestern and southeastern portions of the study area. As described above, C4 districts are mapped in regional commercial centers that are located outside of the central business districts. The required accessory parking within this district is one space per 1,000 sf of floor area. C4-4 districts have a maximum FAR of 3.4 and a residential district equivalent of R7-2. R7 districts are medium-density apartment house districts. The height factor regulations for R7 districts encourage lower apartment buildings on smaller zoning lots and, on larger lots, taller buildings with less lot coverage. As an alternative, developers may choose the optional Quality Housing regulations to build lower buildings with greater lot coverage. Under basic zoning requirements, a maximum FAR of 3.44 is permitted with a maximum height of 75 feet but can increase to a FAR of 4.6 and a maximum height of 135 feet under Quality Housing regulations. Off-street parking is generally required for 50 percent of a building's dwelling units, but requirements are lower for IRHUs. Off-street parking requirements can be waived if 15 or fewer parking spaces are required or if the zoning lot is 10,000 sf or less in R7-2 districts.

Public Policy

Officially adopted and promulgated public policies also describe the intended use applicable to an area or site(s) in the city. Some of these policies have the force of law, while others describe general goals. They can help define the existing and future context of the land use and zoning of an area. A preliminary assessment of public policy should identify and describe any public policies, including formal plans or published reports, which pertain to the study area. If a proposed project could potentially alter or conflict with identified policies, a detailed assessment should be conducted; otherwise, no further analysis of public policy is necessary. The public policies relevant to the Proposed Actions include Housing New York 2.0, Local Law 41 – Climate Resiliency Design Guidelines, OneNYC 2050, the RECP, the Edgemere URP, the Waterfront Revitalization Program (WRP), and Zoning for Coastal Flooding Resiliency (ZCFR).

Housing New York 2.0

The City first released Mayor Bill de Blasio's affordable housing plan, "Housing New York: A Five-Borough Ten-Year Plan," in May 2014 to create and preserve 200,000 high-quality, affordable homes over ten years. An updated version of the plan titled "Housing New York 2.0" was released in November 2017, which commits to completing the initial goal of 200,000 affordable homes two years ahead of schedule, by 2022, and generating an additional 100,000 homes over the following four years.

Local Law 41 – Climate Resiliency Design Guidelines

The Climate Resiliency Design Guidelines (CRDG) are a set of strategies published by the Mayor's Office of Climate Resiliency and brought into law under Local Law 41. The CRDG addresses three key climate risks: increasing heat, increasing precipitation, and sea level rise. Examples of how the anticipated development may comply with future climate risks is designing to a Design Flood Elevation (DFE) which accounts for projected sea level rise during the useful life of a proposed building located in the City's floodplain. Under Local Law 41 and in compliance with the CRDG, construction in the floodplain will be required to supplement historic climate data with specific, regional, forward-looking climate change data into their design.

OneNYC 2050

In April 2015, the Mayor's Office of Sustainability and the Mayor's Office of Resiliency released "OneNYC," a comprehensive plan for a sustainable and resilient city. OneNYC represents a reworking of the sustainability plan for the City, known as "PlaNYC: A Greener, Greater New York." Like PlaNYC, growth, sustainability, and resiliency remain at the core of OneNYC, but promoting economic equity is a guiding principle throughout the plan. OneNYC has since been updated to OneNYC 2050, which was released in 2019 and consists of eight goals and thirty initiatives.

The goals of the plan are to support:

- A Vibrant Democracy through empowering participation, welcoming immigrants, promoting justice and equal rights, and promoting democracy and civic innovation;
- An Inclusive Economy through good paying jobs and job training, economic security through fair wages and benefits, expanded decision making power of workers and communities;
- Thriving Neighborhoods through affordable housing, access to neighborhood open spaces and cultural resources, community safety, and place-based community planning;
- Healthy Lives through high quality, accessible health care, addressing health and mental health needs of communities, making healthy lifestyles easier, and designing a healthy physical environment;
- Equity and Excellence in Education through early childhood education, equity in K-12 opportunity, and increasing integration, diversity, and inclusion in NYC schools;
- A Livable Climate through carbon neutrality and clean electricity, resilience, economic opportunities through climate action, and climate accountability and justice;
- Efficient Mobility through modern mass transit, safe and accessible streets, reduced congestion and emissions, and regional and global connections; and
- Modern Infrastructure through investments in core physical infrastructure and hazard mitigation, digital infrastructure improvement, and best practices for asset maintenance and capital project delivery.

Waterfront Revitalization Program

The Project Area is located within the Coastal Zone Boundary. Therefore, policies related to the Waterfront Revitalization Program (WRP) apply to the Proposed Actions. The WRP is the

City's principal Coastal Zone management tool and establishes a broad range of public policies for the City's coastal areas. The guiding principle of the WRP is to maximize the benefits derived from economic development, environmental conservation, and public use of the waterfront, while minimizing the conflicts among these objectives. The WRP was originally adopted in 1982. The recent revisions include incorporation of climate change and sea level rise considerations to increase the resiliency of the waterfront area, promotion of waterfront industrial development as well as commercial and recreational waterborne activities, increased restoration of ecologically significant areas, and best practices for the design of waterfront open spaces. Because the project is located in the Coastal Zone, and requires local, State, and/or Federal discretionary actions or review, an assessment of the project's consistency with applicable WRP policies was conducted.

Edgemere Urban Renewal Plan

The New York State Urban Renewal Law authorizes the City to acquire sites in an Urban Renewal Area for redevelopment in accordance with an Urban Renewal Plan. Unlike the Zoning Resolution, the Urban Renewal Law is not a land use regulation statute. It does not authorize the City to simply regulate the use of privately owned property. Instead, the Urban Renewal Law authorizes the City to acquire property and then dispose of it (by sale or lease) for redevelopment in accordance with the requirements of a Plan.

The Project Area is located within the Edgemere Urban Renewal Area (Edgemere URA), which was created in 1997 to encourage the development of housing and amenities. The corresponding Edgemere URP, which was amended in 2008, created a framework for the investment of $100 million in sewer and street improvements to support the construction of 800 homes for middle-income homeowners. The objectives of the Urban Renewal Plan were as follows:

- Redevelop the Urban Renewal Area in a comprehensive manner, removing blight and maximizing appropriate land use.
- Remove or rehabilitate substandard and insanitary structures.
- Remove impediments to land assemblage and orderly development.
- Strengthen the tax base of the City by encouraging development and employment opportunities in the Urban Renewal Area.
- Provide new housing of high quality and/or rehabilitated housing of upgraded quality.
- Provide appropriate community facilities, parks and recreational uses, retail shopping, public parking, and private parking.
- Provide a stable environment within the Urban Renewal Area which will not be a blighting influence on surrounding neighborhoods.

Two phases of housing were built under this plan, but development stalled following the 2008 financial crisis. The original objectives of the Urban Renewal Area stayed the same, although development continued to be on hold.

Resilient Edgemere Community Plan

The Resilient Edgemere Community Initiative builds on past planning efforts, such as creation of the Edgemere URA in 1997 and amendment of the Urban Renewal Plan in 2008.

The impacts of Superstorm Sandy and heightened awareness of coastal hazards due to climate change necessitated a new model of development in Edgemere that addresses the risks of flooding and coastal storms as well as historic social and economic challenges. The Resilient Edgemere Community Planning Process was initiated in 2015 to align and leverage New York City's Sandy recovery investments and inventory of vacant land with a long-term and comprehensive community vision.

Between 2015 and 2017, HPD led an extensive, 18-month, community-based, and inter-agency planning initiative—including four workshops, a mail-in survey, and door-to-door outreach—that engaged over 400 residents. In 2017, the City released the RECP. The RECP proposes a long-term vision for the community that includes peeling development back from the vulnerable edge and terracing new development toward a transit-oriented, mixed-use spine along Rockaway Boulevard and the elevated A subway line. The Plan includes a conceptual planning framework and land uses plan, complemented by a set of goals, strategies, and over 60 projects led by various agencies. The RECP established the following key goals:

- Protect the neighborhood from flooding;
- Create resilient housing and maintain the neighborhood's low density feel;
- Improve streets and transit; and
- Increase neighborhood amenities.

The 'Conceptual Planning Framework' and 'Proposed Land Uses' developed in the planning process established a land use and managed growth strategy to address this nuanced landscape of flood risk exposure in the long term as well as facilitate the development of vacant land to create affordable housing and commercial and community facility spaces. Together with the discrete strategies and projects, these key elements of the RECP aim to turn the tide on disinvestment in Eastern Rockaway; expand affordable housing, retail, and community facilities; and grow waterfront open spaces and coastal ecology.

Since its release in 2017, various agencies of the City have worked to advance the goals, strategies, and projects established in the RECP. Major milestones include:

- The opening of Beach Green Dunes I and II, bringing 227 affordable homes and community spaces to the neighborhood;
- Nearly completed designs for Bayswater Park and Rockaway Community Park reconstruction projects, improving recreational amenities and increasing flood mitigation in both parks;
- Reconstruction of the Rockaway Beach Boardwalk with integrated coastal protection features and new beach access at Beach 35th Street; and
- Elevation, rehabilitation, or reconstruction of 109 Edgemere homes damaged by Superstorm Sandy through New York City's Build It Back storm recovery program.

Zoning for Coastal Flood Resiliency (ULURP No. N210095 ZRY)

DCP updated the Flood Resilience Zoning Text and Special Regulations for Neighborhood Recovery, which were adopted on an emergency basis after Superstorm Sandy. These zoning text amendments were adopted to advance the reconstruction of storm-damaged properties and enable new and existing buildings to comply with flood-resistant construction standards

set forth in Appendix G of the New York City Building Code. Because these rules were set to expire, DCP updated and made them permanent under a citywide zoning text amendment known as Zoning for Coastal Flood Resiliency (ZCFR). As currently set forth by DCP, the updated and permanent rules feature:

1. An expanded the geography where optional zoning rules apply to the 0.2 percent annual chance floodplain, in addition to the 1 percent annual chance floodplain, to facilitate investments in small resiliency improvements to buildings or otherwise proactively meet or exceed flood-resistant construction standards;
2. Optional flexibility to measure the building envelope, so building owners can accommodate projected sea level rise when designing new buildings or retrofitting existing ones while ensuring an accessible design that maintains an inviting streetscape;
3. More flexibility with permitted obstruction rules for buildings to locate mechanical, electrical and plumbing equipment above the Design Flood Elevation, including emergency generators;
4. Rules that facilitate the reconstruction of damaged buildings to allow the City to more quickly recover from future disasters including the COVID-19 pandemic by limiting the growth of nursing homes and other similar facilities in flood prone areas.

These zoning changes affect the Project Area, so their relevant and applicable effects are analyzed below.

No-Action Condition

In the future without the Proposed Actions (No-Action condition), the Project Area is assumed to remain largely unchanged from existing conditions, which includes 2,358 gsf of commercial space and 118 parking spaces on Projected Development Site 1 and 44 parking spaces on Projected Development Site 2. The remaining projected development sites would remain vacant.

Land Use

Project Area

Independent of the Proposed Actions, one new development, Beach Green Dunes III, will be completed within the Project Area (see **Figure 2-3** and **Table 2-2**) by the 2031 build year. The Beach Green Dunes III development will be located at the south side of Beach Channel Drive, bounded by Beach 35th Street, Rockaway Freeway and Beach 36th Street. A mayoral zoning override is being sought, which would allow for more floor area than permitted under existing zoning regulations. The resulting development will contain 138 affordable apartments, 5,500 gsf of local retail, and 8,000 gsf of residential parking. It would also include a transit plaza to connect to the Beach 36 Street-Edgemere Station on the A line. The project is expected to complete full construction buildout by 2022.

Study Area

Within the study area, there are two planned developments that are expected to be completed (in whole or in part) by the 2031 build year. These include Edgemere Commons and Arverne East. A summary of these developments can be found in **Figure 2-3** and **Table 2-2**.

Table 2-2 No-Action Projects Within 400-Foot Study Area

Map No.	Location	Description	Total zoning floor area (SF)	Commercial zoning floor area (SF)	Community Facility zoning floor area (SF)	Res. Units	Build Year
1	51-15 Beach Channel Dr	Edgemere Commons	1,856,000	72,000	77,000	1,791	2031
2	Bounded by Edgemere Ave (north), Rockaway Boardwalk (south), Beach 32nd St (east) and Beach 56th Pl (west)	Arverne East	5,000,000	262,000 (+150 hotel rooms)	22,000	1,650	2031
3	35-01 Beach Channel Dr	Beach Green Dunes III	150,000	5,500	-	138	2022

Edgemere Commons

Located to the west of the Project Area is the site of Edgemere Commons—for which a large-scale general development special permit was approved by the City Council in 2019, in conjunction with related applications that include a zoning map amendment, zoning text amendments, and a City map amendment. Edgemere Commons will consist of an 11-building development that is projected to include 2,050 income-restricted dwelling units, 72,000 gsf of retail space, 77,000 gsf of community facility space, and 24,000 sf of open space on property generally bounded by Beach 50th Street, Beach Channel Drive, Beach 53rd Street, and Rockaway Beach Boulevard in Edgemere. The project is expected to be fully developed by 2034. As shown in **Table 2-2**, by 2031, eight of the 11 buildings are expected to be complete, totaling 1,791 dwelling units and 72,000 gsf of retail space.

Arverne East

Located to the south of the Project Area, Arverne East will be an approximately 116-acre mixed-use, mixed-income community that will feature a mix of building types, provide for community amenities, enhance public access to world-class beaches and the natural environment, and adhere to resilient design principles. Development of Arverne East would complete implementation of the Arverne Urban Renewal Plan, which was adopted in 1968 and amended in 1990 and 2003. In 2008, the City Council approved a UDAAP amendment to facilitate development of the eastern and central portions of the URA with up to 1,650 residential units (of which at least 20 percent were to be affordable), up to 500,000 sf of commercial space, and approximately 3.3 acres of recreation and open space. Construction of the project stalled following the 2008 housing market crash and again after Superstorm Sandy in 2012. In 2021, the City Council approved a UDAAP and text amendment for the Arverne East project to include approximately 1,650 residential units (of which approximately 1,350 would be affordable units), 252,00 sf of commercial floor area, 10,000 sf of manufacturing floor area (limited to a microbrewery), and approximately 22,000 sf of community facility floor area. The development would contain approximately 3.3 acres of recreation and open space, an approximately 15-acre beachfront dune preserve, and an

approximately 35-acre nature preserve. Arverne East is expected to be complete and occupied in 2031.

Furthermore, major Peninsula-wide infrastructure projects, providing both oceanfront and bayside coastal protection, are also underway. In 2019, the Unit States Army Corps of Engineers (USACE) was authorized to move forward with the Rockaway Reformulation Plan, now the East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, New York Coastal Storm Risk Reduction Project. This work is composed of two distinct projects: Atlantic Shorefront and Back Bay High Frequency Flood Risk Reduction Features. These two projects will help protect Rockaway communities from coastal flooding. The Atlantic Shorefront project will run from Beach 149th Street to Beach 19th Street, along DPR beach property, and includes beach restoration with renourishment, five groin extensions and the addition of 13 new groins (similar to jetties), reinforced dunes, a beach berm, and enhanced beach crossovers for pedestrian access. This plan reduces risks of erosion and wave attack while limiting storm surge inundation and cross-peninsula flooding. For this area of Jamaica Bay, in the Back Bay High Frequency Flood Risk Reduction Features project, a combination of hard and green infrastructure is designed to reduce future flood risk and economic costs of storm events (i.e., 5- to 10-year storms) and tidal inundation for buildings, infrastructure, and the coastal ecosystem, including anticipated sea level rise over the next 50 years. Project components in Edgemere will primarily include berms and hybrid berms, rock sill structures, marsh restoration, and floodwalls.

Figure 2-2 No-Action Projects within 400-Foot Study Area



Zoning

In the future No-Action condition, no changes to zoning are expected to occur in the Project Area or in the 400-foot study area.

Public Policy

There are no planned changes in public policy applicable to the Project Area and 400-foot study area under future No-Action conditions.

With-Action Condition

The Proposed Actions are expected to result in the construction of a mix of residential space, local retail/commercial space, and accessory parking that would be phased over a 10-year period. In total, the Proposed Actions are expected to result in 1,222 residential units across approximately 1,313,659 gsf, including up to 465 affordable units; approximately 115,849 gsf of local retail uses; and approximately 640 parking spaces. The Proposed Actions would result in an incremental increase over the No-Action condition of 1,222 residential units across approximately 1,313,659 gsf—including up to 465 affordable units, approximately 113,491 gsf of local retail uses, and approximately 478 new parking spaces.

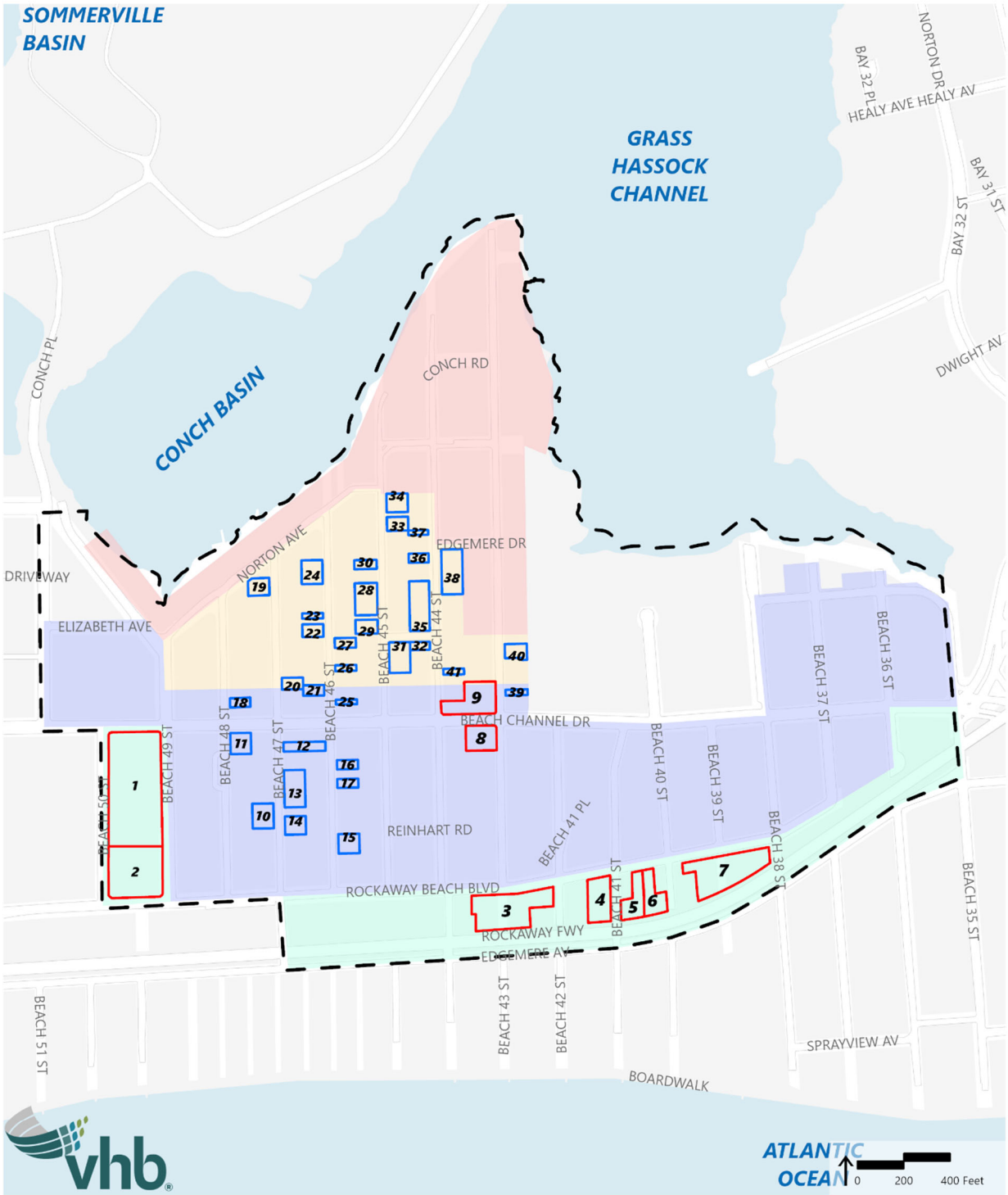
As described in **Chapter 1, Project Description**, the Proposed Actions would facilitate implementation of the RECP by mitigating long term flood risk, creating affordable housing opportunities, and expanding neighborhood commercial amenities alongside investments in coastal protection infrastructure and parks. The Proposed Actions have been tailored to several subareas within the Project Area, each of which has a distinctive neighborhood geography that corresponds to the proposed future land uses and zoning (see **Figure 2-3**).

- The *Hazard Mitigation Area* is located directly along the Jamaica Bay waterfront, bordered to the north by Jamaica Bay, to the south by Norton Avenue, Edgemere Drive and parts of Blocks 15966, 15965 and 15960, and to the east by NYCHA Beach 41st Street Houses. The *Hazard Mitigation Area* comprises the lowest-lying area of the Project Area and is significantly more vulnerable to flooding and coastal hazards than the other three planning sub-areas. The *Hazard Mitigation Area* is roughly defined by the extent of the Federal Emergency Management Agency (FEMA) Coastal A sub-zone of the 100-year floodplain. The FEMA Coastal A sub-zone is at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms. During Superstorm Sandy, Edgemere was inundated with storm surge from this bayside edge. These risks are expected to increase due to climate change. Additionally, the *Hazard Mitigation Area* is vulnerable to twice daily tidal inundation in the future, based on projected sea level rise in the 2050s. The *Hazard Mitigation Area* is currently characterized by low-density, one- to two-family residences in detached and semi-detached buildings and vacant land. The Proposed Actions would limit future development to single-family detached residences and restrict the redevelopment of current and future City-owned URA sites following disposition to "open space," however, none of the Projected Development Sites are proposed for this area. In the proposed R3A and C3A underlying zoning districts, the SCRD is proposed to restrict residential development to one-family detached homes, which would ensure that future development occurs in a detached building typology which is more amenable to flood resilient retrofits and interventions

that may be necessary in the future. The SCRD is also proposed to prohibit community facilities with overnight sleeping accommodations in order to further limit future exposure to flood and coastal risks for temporary or semi-permanent residential populations. Bulk, density, and FAR are established in the proposed underlying zoning districts: R3A and C3A.

- The *Limited Development Area* is adjacent and inland of the *Hazard Mitigation Area* to the south. It is generally bounded by Norton Avenue to the north, Beach 49th Street to the west, Beach Channel Drive to the south, and the NYCHA Beach 41st Street Houses to the east. It consists of low-density one- to four-family residences in detached and semi-detached buildings. This area is expected to experience ponding from tidal flooding and rain events more frequently in the future due to climate change. In this zone, new development would under the Proposed Actions would be limited to one- and two-family detached homes due to the establishment of the SCRD. In the proposed R4-1 underlying zoning district, the SCRD is proposed to restrict residential development on lots 25 feet or greater to one- and two-family detached homes and on lots less than 25 feet wide, residential development is restricted to one-family detached buildings. This action would ensure that future development occurs in a detached building typology which is more amenable to flood resilient retrofits and interventions that may be necessary in the future. The SCRD is also proposed to prohibit community facilities with overnight sleeping accommodations in order to further limit future exposure to flood and coastal risks for temporary or semi-permanent residential populations. Bulk, density, and FAR are established in the proposed underlying zoning district: R4-1. The proposed zoning changes for this subarea specifically affect the residential infill Projected Development Sites 19, 22-24, 26-41.
- The *Neighborhood Infill Area* is generally located along and south of Beach Channel Drive and is bounded by Rockaway Beach Boulevard to the south, Beach 49th and 51st Street to the west and Beach 36th and 35th Street to the east. Further inland of the Limited Development Area, the Neighborhood Infill Area is less exposed to coastal hazards and directly served by two key transportation infrastructure systems: the elevated A subway line to the south and Beach Channel Drive, the route of key bus lines, to the north. It consists of low-density, one-to-four-family residences in semi-detached and attached buildings as well as low-rise commercial buildings. In this area, development under the Proposed Actions would be consistent with the existing land uses and densities and would facilitate the construction of Projected Development Sites 10-18, 20, 21, 25, 39 and Projected Multi-Family Mixed-Use Sites 8 and 9.

Figure 2-3 Projected Development Sites and Proposed Sub-areas



› The *Commercial Corridor,* located along Rockaway Beach Boulevard and Beach 50th Street, consists of low-density, one-to-four family residences in semi-detached and attached buildings as well as low-rise commercial buildings; recently constructed mid-rise, multi-family, mixed-use developments; surface parking; and vacant land. It is the area nearest to the elevated A subway line, which runs along the southern boundary of the Project Area. In this area, new development under the Proposed Actions would include medium density development in the form of commercial uses and affordable housing units under Projected Development Sites 1-7. These sites would go through a Request for Proposal (RFP) process to facilitate construction.

The development assumptions for each Projected Development Site are outlined in **Table 2-3.**

Table 2-3 Projected Development Site Program

Projected Development Site ID	Tax Block	Tax Lot(s)	Anticipated Building Type	Proposed Number of Dwelling Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Multi-Family Mixed-Use (Residential and Commercial)						
Site 1	15841	19, 40, 50	Multi-Family Walk-Up	387 (97 affordable units)	24,960	170
Site 2	15841	3, 5, 7, 8, 10, 14, 70	Multi-Family Walk-Up	162 (41 affordable units)	25,560	71
Site 3	15851	33, 35, 40, 42, 44, 58, 59	Multi-Family Walk-Up	172 (103 affordable units)	17,704	86
	15852	64, 68 Demapped bed of Beach 43rd Street between Blocks 15851 and 15852				
Site 4	15850	6	Multi-Family Walk-Up	73 (44 affordable units)	7,564	37
Site 5	15849	6, 8, 9, 10, 17, 18	Multi-Family Walk-Up	57 (34 affordable units)	5,878	29
Site 6	15849	19, 20 27, 28, 29	Multi-Family Walk-Up	54 (33 affordable units)	5,598	27

Table 2-3 Projected Development Site Program

Projected Development Site ID	Tax Block	Tax Lot(s)	Anticipated Building Type	Proposed Number of Dwelling Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Site 7	15847	79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89	Multi-Family Walk-Up	174 (104 affordable units)	17,921	87
	15848	52, 54, 55, 57, 58, 60, 62, 63, 65, 67 Demapped bed of Beach 39th Street between Blocks 15847 and 15848				
Site 8	15834	38, 42	Multi-Family Detached/Semi-detached with Ground-Floor Retail	7 (3 affordable units)	3,596	4
Site 9	15965	3, 111, 112, 114, 115	Multi-Family Detached/Semi-detached with Ground-Floor Retail	14 (6 affordable units)	7,069	7
Residential Infill						
Site 10	15839	51	One- & Four-Family Detached/Semi-detached	5	--	5

Table 2-3 Projected Development Site Program

Projected Development Site ID	Tax Block	Tax Lot(s)	Anticipated Building Type	Proposed Number of Dwelling Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Site 11	15839	26	One- & Four-Family Detached/Semi-detached	4	--	4
Site 12	15838	25, 37	One- & Four-Family Detached/Semi-detached	4	--	4
Site 13	15838	13, 15, 17, 19, 20	One- & Four-Family Detached/Semi-detached	8	--	8
Site 14	15838	7, 9	One- & Four-Family Detached/Semi-detached	4	--	4
Site 15	15837	9, 10, 12	One- & Four-Family Detached/Semi-detached	4	--	4
Site 16	15837	27	One- & Four-Family Detached/Semi-detached	2	--	2
Site 17	15837	23	One- & Four-Family Detached/Semi-detached	2	--	2

Table 2-3 Projected Development Site Program

Projected Development Site ID	Tax Block	Tax Lot(s)	Anticipated Building Type	Proposed Number of Dwelling Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Site 18	15972	3	One- & Four-Family Detached/Semi-detached	2	--	2
Site 19	15972	33	One- & Two-Family Detached	5	--	5
Site 20	15969	6, 7	One- & Four-Family Detached/Semi-detached	3	--	3
Site 21	15969	73	One- & Four-Family Detached/Semi-detached	3	--	3
Site 22	15969	59, 60	One- & Two-Family Detached	4	--	4
Site 23	15969	57	One- & Two-Family Detached	1	--	1
Site 24	15969	47, 48, 49, 50	One- & Two-Family Detached	8	--	8
Site 25	15968	5	One- & Four-Family Detached/Semi-detached	1	--	1

Table 2-3 Projected Development Site Program

Projected Development Site ID	Tax Block	Tax Lot(s)	Anticipated Building Type	Proposed Number of Dwelling Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Site 26	15968	11	One- & Two-Family Detached	2	--	2
Site 27	15968	16, 17	One- & Two-Family Detached	3	--	3
Site 28	15968	84, 85, 86, 87, 88, 89, 90	One- & Two-Family Detached	11	--	11
Site 29	15968	92, 94	One- & Two-Family Detached	4	--	4
Site 30	15968	79, 80	One- & Two-Family Detached	1	--	1
Site 31	15967	10, 12, 13, 14, 111	One- & Two-Family Detached	6	--	6
Site 32	15967	18	One- & Two-Family Detached	2	--	2
Site 33	15966	23, 25	One- & Two-Family Detached	2	--	2

Table 2-3 Projected Development Site Program

Projected Development Site ID	Tax Block	Tax Lot(s)	Anticipated Building Type	Proposed Number of Dwelling Units	Proposed Commercial Floor Area (gsf)	Required Parking Spaces
Site 34	15966	27, 28, 29, 30	One- & Two-Family Detached	3	--	3
Site 35	15966	72, 74, 75, 76, 77, 78, 79, 80, 81	One- & Two-Family Detached	11	--	11
Site 36	15966	66	One- & Two-Family Detached	2	--	2
Site 37	15966	61	One- & Two-Family Detached	1	--	1
Site 38	15965	29, 31, 34, 35, 36, 37, 38	One- & Two-Family Detached	9	--	9
Site 39	15960	7	One- & Four-Family Detached/Semi-detached	1	--	1
Site 40	15960	15, 16, 17	One- & Two-Family Detached	2	--	2
Site 41	15965	12	One- & Two-Family Detached	2	--	2

Land Use

The Proposed Actions would not introduce any new land uses to the Project Area or the 400-foot study area. Compared to the No-Action condition, in the With-Action condition, the Proposed Actions would reduce the prevalence of vacant land in the Edgemere neighborhood. The Proposed Project identifies a total of 41 projected development sites, of which 37 sites contain vacant lots. In the With-Action condition, these sites would be developed with a combination of residential and commercial uses. The Proposed Actions would also discourage future development in areas of greater risk to coastal hazards and encourage the development of affordable housing and community amenities to benefit the neighborhood in transit-oriented areas.

Projected development under the Proposed Actions would be consistent with the density and scale of existing land uses. For instance, in the *Hazard Mitigation Area*, new residential development would be limited to one-family detached homes and, in the *Limited Development Area*, new residential development would be limited to one- and two-family detached homes. Furthermore, lots less than 25 feet in width in this subarea are limited to single-family detached buildings. In the *Neighborhood Infill Area*, the Proposed Actions would better facilitate the potential redevelopment of vacant properties with neighborhood amenities. Lastly, in the *Commercial Corridor*, the Proposed Actions would allow for greater density of commercial and residential development in areas located within proximity of existing subway service, consistent with existing and planned developments in the Edgemere neighborhood.

In the *Commercial Corridor*, the Proposed Actions would also require that a share of new housing be permanently affordable (where significant new housing capacity would be created) and expand permitted commercial uses to include grocery stores, restaurants, and beauty parlors, among other uses.

It is anticipated that some of the Projected Development Sites would be owned and managed in a community land trust (CLT) model. A CLT is a not-for-profit organization which owns and stewards land in perpetuity for the public's benefit. CLTs separate the ownership of their land from the ownership of structures on the land, typically entering into long-term ground leases with homeowners, mutual housing associations, non-profit landlords or other tenants. Ground leases provide a mechanism for CLTs to enforce affordability and other restrictions for typically 99 years or more. CLTs seek to acquire and de-commodify land to stabilize neighborhoods; they may balance this goal by also providing measured wealth-building opportunities. HPD is currently facilitating a competitive process to select a partner to work with in forming a CLT in Edgemere and finalizing development program and operations plan. The more precise development program and design of these sites (including non-residential, open space sites located within the *Hazard Mitigation Area*) will be further refined and consistent with the land use designations of the Edgemere Urban Renewal Plan.

Zoning

The zoning changes under the Proposed Actions would facilitate the land use changes described above. The rezoning proposal would replace all or portions of existing R4, R4-1, R5, R6, C3, C4-3A, and C8-1 districts mapped within the Project Area with R3A, R4-1, R6A,

and C3A districts (see **Figure 2-4**). The proposed rezoning would also replace or eliminate portions of existing C1-2, C2-2, and C2-4 commercial overlays. In addition, the Proposed Actions include zoning text amendments to establish and apply a new Mandatory Inclusionary Housing (MIH) area and to establish a SCRD.

In the *Hazard Mitigation Area*, the existing R4 and R4-1 districts would be replaced with a R3A district. R3A districts permit one- and two-family detached residential buildings. The maximum FAR is 0.6, which includes a 0.1 FAR attic allowance. The minimum required lot area is 2,375 sf and the minimum lot width is 25 feet. One off-street parking space is required for each dwelling unit. Community facilities are permitted at an FAR of 1.0. The existing C3 district would also be replaced with a C3A district. C3A districts permits waterfront recreational activities, primarily boating and fishing. These waterfront uses are listed in Use Group 14. The maximum commercial FAR is 0.5. Commercial buildings may be no more than two stories or 30 feet high, whichever is less. One off-street parking space is required for each 150 sf of commercial space. Residential development is permitted consistent with R3-2 district regulations. In a mixed-use building, commercial uses may occupy the ground floor only.

In the *Limited Development Area*, the existing R4 district would be replaced with a R4-1 contextual district, which permits only one- and two-family detached and semi-detached houses. The district requires a minimum lot width of 25 feet for detached homes and allows an FAR of 0.75 plus an attic allowance of up to 20 percent. The perimeter wall may rise to 25 feet before sloping or being set back to a maximum building height of 35 feet. Two side yards that total eight feet must be provided for a detached residence. There is no minimum width for each side yard but there must be eight feet between buildings on adjacent zoning lots. One four-foot side yard is required for each semi-detached residence, which must be on a lot at least 18 feet wide. Zero lot line buildings are permitted in R4-1 districts and require only one eight-foot side yard. Front yards must be at least 10 feet deep and at least as deep as an adjacent front yard but need not exceed a depth of 20 feet. Parking must be within the side or rear yard or in a garage. An in-house garage is permitted within a semi-detached house, or in a detached house if the lot is 35 feet or wider. One off-street parking space is required for each dwelling unit. These zoning regulations would apply to the residential infill Projected Development Sites 19, 22-24, 26-41.

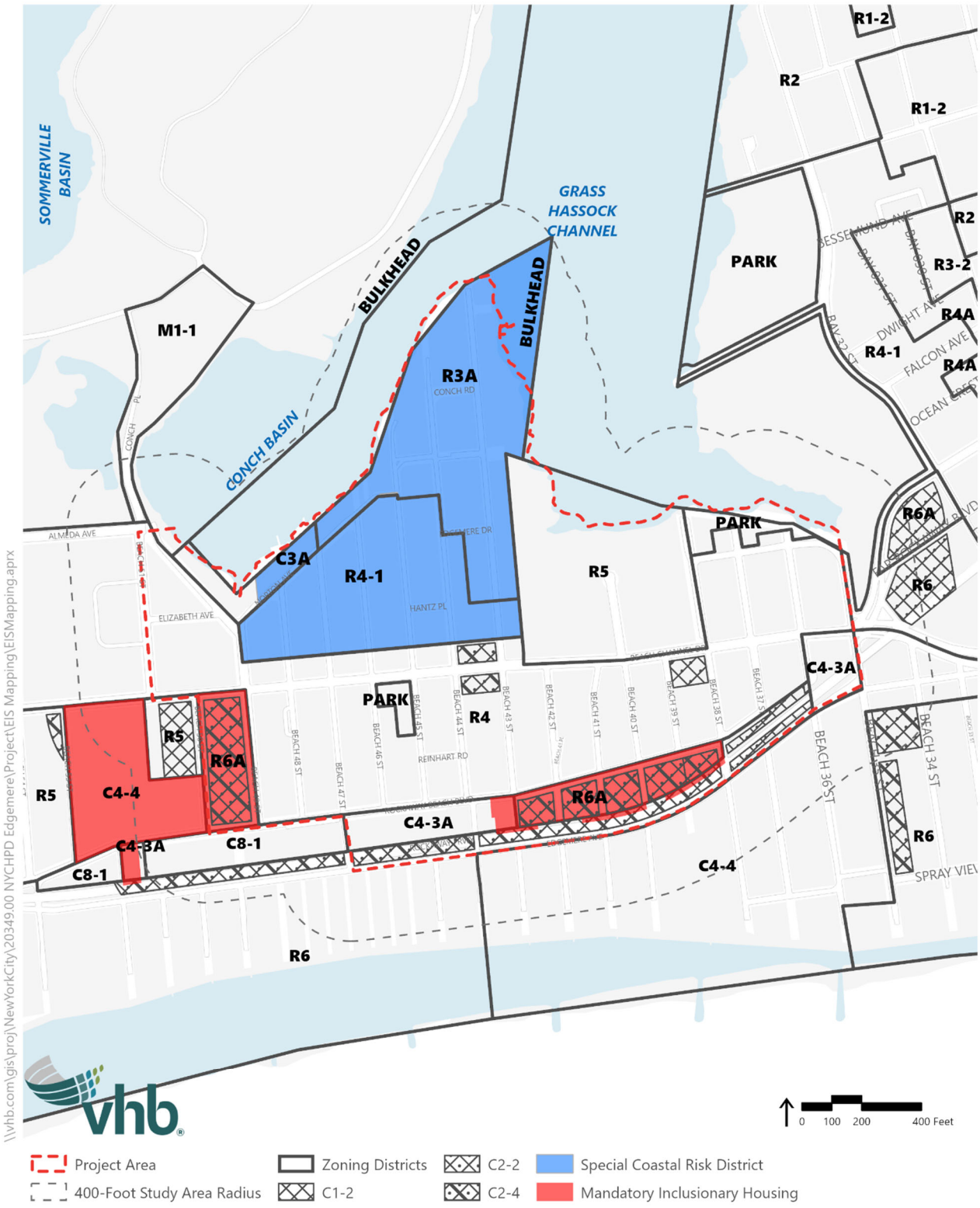
The Proposed Actions include establishment of a SCRD, which would limit residential development to one-family detached homes in the *Hazard Mitigation Area* and one- and two-family detached homes in the *Limited Development Area*. In both zones, the SCRD would prohibit community facilities with overnight sleep accommodations. Bulk, density, and FAR would be stablished in the proposed underlying zoning districts.

In the *Neighborhood Infill Area*, a C2-4 commercial overlay is proposed on two blocks along Beach Channel Drive, bounded by Beach 43rd Street and Beach 44th Street, with no change to the underlying zoning. As compared to C1-2, a C2-4 overlay has a lower off-street parking requirement, which is expected to provide significant construction cost savings and better facilitate the potential redevelopment of these vacant and/or abandoned properties. The Proposed Actions also include removal of C1-2 and C2-2 commercial overlays on portions of two blocks along Beach Channel Drive, to the east of Beach 40th Street, to better reflect existing land uses. The overlay would apply to Projected Multi-Family Mixed-Use Sites 8 and 9.

In the *Commercial Corridor*, the existing R4, C4-3A, C8-1, and R5/C1-2 districts would be replaced with R6A and R6A/C2-4 districts. R6A districts permit multi-family residential buildings. In R6A contextual districts, the maximum FAR is 3.0, with a 680-sf dwelling unit factor. The maximum building height is 70 feet (75 feet or seven stories with a qualifying ground floor). Parking is required at 25 percent to 50 percent of dwelling units, depending on basic or income-restricted status. C2-4 commercial overlay districts permit local retail and commercial services, such as grocery stores, restaurants, and beauty parlors, on one or two floors at a depth of 100 ft to the interior of the lot. The maximum commercial FAR is 2.0 and the minimum parking requirement is one space per 1,000 sf of commercial space. The proposed zoning would apply to Projected Multi-Family Mixed-Use Sites 1-7.

The Proposed Actions also include establishment and application of a MIH area that is coterminous with the *Commercial Corridor*. This would require a share of new housing to be permanently affordable where significant new housing capacity is created. With MIH, the R6A underlying zoning district permits multi-family residential buildings with a maximum residential FAR of 3.6. The maximum building height is 80 feet (85 feet with a qualifying ground floor) and eight stories. Parking is required at 25 percent to 50 percent of dwelling units, depending on share of basic or income-restricted status.

Figure 2-4 Proposed Zoning Map



Public Policy

As discussed below, the Proposed Actions would be consistent with, and supportive of, public policies affecting the Project Area and the 400-foot study area.

Housing New York 2.0

The Proposed Actions would introduce 470 new affordable housing units. As such, the Proposed Actions would contribute to achieving the City's goal of creating new affordable housing units and would be supportive of this public policy goal.

Local Law 41 – Climate Resiliency Design Guidelines

Given that the Project Area is located within the New York City Coastal Zone, the Proposed Actions are subject to the guidelines in the CRDG and mandated by Local Law 41. As discussed in **Appendix A**, DFE of the Projected Development Sites would be a minimum of 12.5 feet NAVD88 which accounts for current estimates for sea level rise. If the elevation of the floodplain increases beyond the current DFE in the future, additional protection could be provided through temporary barriers, or subsequent retrofits to extend dry floodproofed materials to higher elevations. Therefore, the Proposed Actions would be consistent with this policy goal of designing construction to meet the goals of Local Law 41 and CRDG.

OneNYC 2050

The Proposed Actions would be consistent with OneNYC 2050 policies, as follows.

Goal 3: Thriving Neighborhoods

Initiative 9: Ensure all New Yorkers have access to safe, secure, and affordable housing.

This goal is focused around fostering communities that have safe and affordable housing, and are well-served by parks, cultural resources, and shared spaces. As noted, the Proposed Actions would introduce 470 new affordable housing units to the Edgemere community and introduce MIH to the multi-family developments along the *Commercial Corridor*. As such, the Proposed Actions would be in support of this initiative by expanding the City's affordable housing stock.

Initiative 10. Ensure all New Yorkers have access to neighborhood open spaces and cultural resources.

The Proposed Actions involve changes to the Edgemere URP that would change the land use designation vacant City-owned lots from 'Residential' and 'Residential/Open Space' to 'Open Space' in the *Hazard Mitigation Area* for recreational and drainage infrastructure uses. As such, the Proposed Actions would be consistent with this initiative in providing increased access to open spaces in the city.

Goal 6: A Livable Climate

Initiative 21. Strengthen communities, buildings, infrastructure, and the waterfront to be more resilient.

This goal aims to mitigate the impacts of climate change and protect the city's coastal neighborhoods that are vulnerable to flooding. The Project Area is the City's Coastal Zone. The Proposed Actions would introduce establish a SCRD, which would reduce the density of development in areas nearest to the Jamaica Bay waterfront. Future development in the Project Area would undertake resiliency measures to ensure that critical infrastructure and properties are protected from flooding. This includes a 1.67-acre City-owned lot (Block 15973, Lot 1) that is reserved for future large-scale drainage infrastructure. These open spaces would be designed to aid in the absorption of water, which would reduce flood risk and redirect stormwater from City sewers and sewage treatment facilities. These actions ensure that the land uses in the most vulnerable area of the neighborhood align with and support the greater coastal resiliency strategy.

Waterfront Revitalization Program

Given that the Project Area is located within the New York City Coastal Zone, the Proposed Actions are subject to review for their consistency with the City's Waterfront Revitalization Program. In accordance with the guidelines of the *CEQR Technical Manual*, a preliminary evaluation was undertaken for the Proposed Actions' consistency with the new WRP policies. This preliminary evaluation requires completion of the WRP Consistency Assessment Form (CAF), which contains a series of questions designed to screen out those policies that would have no bearing on a consistency determination for a proposed action (see **Appendix A**). The CAF lists the WRP policies and indicates whether the proposed project would promote or hinder that policy, or if that policy would not be applicable. For any policies which may be affected, this section provides additional information. As detailed in **Appendix A**, the Proposed Actions would be consistent with WRP policies.

Edgemere Urban Renewal Plan

The Proposed Actions include amendments to the Edgemere URP, which would be consistent with most of its goals outlined below:

Redevelop the Urban Renewal Area in a comprehensive manner, removing blight and maximizing appropriate land use.

The Proposed Project would introduce 1,222 residential units across approximately 1,313,659 gsf, including up to 465 affordable units; approximately 113,491 gsf of local retail uses; and approximately 478 new parking spaces. As mentioned above, these uses would be consistent with the existing residential and commercial uses found in the study area. As such, the Proposed Actions would be supportive of this goal.

Remove or rehabilitate substandard and insanitary structures.

The Proposed Actions include acquisition of real property that has either remained vacant or owners have been unsuccessful in selling to prospective buyers. This acquisition action would allow the City to then dispose of the property redevelop and contribute to the rehabilitation of vacant, overgrown lots and/or vacant buildings. Therefore, the Proposed Actions would be supportive of this goal.

Remove impediments to land assemblage and orderly development.

The proposed amendments to the Edgemere URP also include the removal of additional height controls, to allow for higher-density development than currently permitted by zoning.

The amendments to the Edgemere URP would also include a revision of a density control to permit up to 1,500 dwelling units in the Edgemere URA. Between 1997 and 2008, 307 units were developed as part of the URP and the Proposed Project would add an additional 1,222 units. Thus, the revision to the URP would encourage further residential development in the URA.

Provide new housing of high quality and/or rehabilitated housing of upgraded quality.

As noted, the Proposed Actions would introduce a total of 1,222 residential units of which 465 new affordable housing units to the Edgemere community. These units would be integrated in multi-family developments along the *Commercial Corridor* and one- and two-family residences in the *Neighborhood Infill Area*. As such, the Proposed Actions would be in support of this initiative by expanding the City's affordable housing stock.

Provide appropriate community facilities, parks and recreational uses, retail shopping, public parking, and private parking.

The Proposed Actions involve changes to the land use designation from 'Residential' and 'Residential/Open Space' to 'Open Space' in the *Hazard Mitigation Area*. As such, the Proposed Actions would be consistent with this goal in providing increased access to open spaces in the city. Furthermore, the Projected Multi-Family Mixed Use sites located in the *Commercial Corridor* would introduce local retail, community facility uses, and parking to the area. Thus, the Proposed Actions would be supportive of this goal.

Provide a stable environment within the Urban Renewal Area which will not be a blighting influence on surrounding neighborhoods.

The proposed amendments to the Edgemere URP involve the removal of some sites from the URA which have been developed and no longer show blight as well as the expansion of the URA to sites that continue to exhibit blight. Lastly, the Proposed Actions include an extension of the duration of the Edgemere URP for a period of 40 years from the date of approval of the third amended plan. These updates to the Edgemere URP would change the URA boundary to better reflect the current conditions of the Project Area, encouraging development of housing and amenities in appropriate sites, and reduce the blighting influence on surrounding neighborhoods. Therefore, the Proposed Actions would be supportive of this goal.

Resilient Edgemere Community Plan

The Proposed Actions would support several of the goals outlined in the RECP: facilitate the development of affordable housing and community amenities to benefit the neighborhood in transit-oriented areas as well as discourage future development in areas of greater risk to coastal hazards. These actions would work in concert to leverage investments in local public infrastructure, housing, and coastal protection while laying the groundwork for long-term coastal resilience and community development.

Protect the neighborhood from flooding

The Proposed Project's design would encourage in the upland areas encompassing the *Limited Development Area*, *Neighborhood Infill Area*, and *Commercial Corridor* while development in the *Hazard Mitigation Zone*, an area that is subject to sea surge, bay surge, and tidal flooding, would be limited to low density residential use due to the establishment of SCRD and would aim to increase access to parkland. Therefore, the Proposed Actions would be supportive of this goal.

Create resilient housing and maintain the neighborhood's low density feel

The Proposed Actions would include a SCRD, which would limit residential development to one-family detached homes in the *Hazard Mitigation Area* and one- and two-family detached homes in the *Limited Development Area*. The Proposed Actions would contribute to residential development in the *Neighborhood Infill Zone* and mixed-use development that includes residential and commercial uses in the *Commercial Corridor* of the Project Area, which are located nearest to public transit. The additional development to the Project Area would the maintain low density feel in areas that currently contain low density residences while encouraging mid density develop along in areas with public transit. Therefore, the Proposed Actions would be supportive of this goal.

Increase neighborhood amenities.

In the *Commercial Corridor*, the Proposed Actions would also require that a share of new housing be permanently affordable (where significant new housing capacity would be created) and expand permitted commercial uses to include grocery stores, restaurants, and beauty parlors, among other uses. Therefore, the Proposed Actions would increase neighborhood amenities and would be supportive of this goal.

Zoning for Coastal Flood Resiliency

The implementation of ZCFR allows future developers to opt to measure heights from a Reference Plane up to 10 feet above the Design Flood Elevation, which could result in a building up to 10 feet taller. The Proposed Project is consistent with ZCFR given that the first floors of all of the Projected Development Sites would be elevated above the design flood elevation but would still provide an active ground floor for the multi-family sites and residential infill sites or additional parking for future residents. Therefore, the current design of the Proposed Project would meet resiliency needs and the purposes of the Proposed Project.

3

Socioeconomic Conditions

This chapter considers the potential for the Proposed Actions to result in significant adverse impacts to the socioeconomic character of the surrounding area, which includes its population, housing, and economic activity.

Introduction

According to the *2020 CEQR Technical Manual (CEQR Technical Manual)*, the socioeconomic character of an area includes its population, housing, and economic activity. Socioeconomic changes are disclosed if they would affect land use patterns, low-income populations, the availability of goods and services, or economic investment in a way that changes the socioeconomic character of the area, regardless of whether the changes result in other environmental impacts under CEQR. A socioeconomic assessment considers whether a proposed project could result in significant adverse impacts on the socioeconomic character of an area due to the direct displacement of the residential population on a project site, indirect displacement of the residential population within a study area, direct displacement of existing businesses on a project site, indirect displacement of existing businesses within a study area, or adverse effects on specific industries.

Beyond providing the socioeconomic assessment as outlined in the *CEQR Technical Manual*, this chapter includes additional context for framing the housing and economic outcomes of the Proposed Actions. This includes analysis of the study area's two New York City Housing Authority campuses and their relationship to the overall housing and economic conditions. In addition, the chapter concludes by demonstrating how the Proposed Actions emerge

from the 2017 Resilient Edgemere Community Plan (RECP) and reflect a balanced approach to catalyzing equitable neighborhood change.

Principal Conclusions

Direct Residential Displacement

The Proposed Actions would not result in significant adverse socioeconomic impacts due to direct residential displacement. The 41 Projected Development Sites within the Project Area currently comprise vacant land or vacant structures and no existing residential population and therefore the Proposed Actions would not directly displace any residents from the socioeconomic conditions study area.

Direct Business Displacement

The Proposed Actions would not result in significant adverse socioeconomic impacts due to direct business displacement. There are currently 2,358 gross square feet (gsf) of commercial development and less than 100 employees subject to direct displacement in the Project Area, which is below the threshold set forth in the *CEQR Technical Manual* for assessment of direct business displacement.

Indirect Residential Displacement

A preliminary assessment finds that the Proposed Actions would not result in significant adverse socioeconomic impacts due to indirect residential displacement. Under CEQR, the objective of the indirect residential displacement analysis is to determine whether a project may either introduce a trend or accelerate a trend of changing socioeconomic conditions that may potentially displace a vulnerable population to the extent that the socioeconomic character of the neighborhood would change. Based on the guidelines of the *CEQR Technical Manual*, a vulnerable population is defined as renters living in privately held units unprotected by rent control, rent stabilization, or other government regulations restricting rents, and whose incomes or poverty status indicate that they may not be able to support substantial rent increases. In the case of the Proposed Actions, most residents of the defined project study area are not vulnerable to displacement as defined under CEQR. The 2014-2018 American Community Survey (ACS) from the U.S. Census reports that the median rent in the defined study area is significantly below current market rents in the Edgemere/Far Rockaway/Arverne market. This is largely due to the fact that a large portion of dwelling units in the study area are in NYCHA or other permanently rent regulated housing. It is reasonable to conclude that a majority of low- and moderate-income households in the study area are living in housing that is protected by government regulations limiting rent increases and therefore are not vulnerable to displacement due to increased rents as defined under CEQR.

While the Proposed Actions would result in the addition of new population, which, in the aggregate, would have a higher average household income than the average household income in the study area, the Proposed Actions would not introduce or accelerate the existing trend of changing socioeconomic conditions in the area. There is already a readily observable trend toward higher incomes and new market-rate residential development in

the study area. The average monthly asking rent for market units in the study area currently ranges from approximately $1,800 for a studio unit to $2,500 for a three-bedroom unit and the median market rent for a two-bedroom unit in the local market increased by almost 30 percent between 2015 and 2021. These rents are not affordable to low- and moderate-income households in the study area. The Proposed Actions are also expected to introduce 465 new units, 38 percent of the total new incremental units, that will be permanently affordable, some for households earning 40 percent of AMI. In summary, the Proposed Actions would serve to maintain a housing stock in the study area that is affordable to households with a wide range of incomes within a context of continuing trends of more market-rate housing and increasing market rents.

Indirect Business Displacement

According to the *2020 CEQR Technical Manual,* projects resulting in an increase of more than 200,000 gsf of commercial space have the potential to result in increased rents. The Reasonable Worst Case Development Scenario (RWCDS) established for this project established through consideration of the Proposed Actions would facilitate an increment of 115,849 gsf of commercial space; therefore, there would be no adverse socioeconomic impacts due to indirect business displacement.

Adverse Effects on Specific Industries

The Proposed Actions would not result in significant adverse impacts on specific industries and would not significantly affect the business conditions in any industry or any category of business within or outside the study area. The Proposed Actions would also not result in indirect business displacement, and therefore would not substantially reduce employment or have an impact on the economic viability of any specific industry or category of business.

Proposed Actions

The RWCDS for the actions related to the Resilient Edgemere Community Initiative established that these actions (collectively the Proposed Actions) would facilitate the development of up to 1,222 incremental dwelling units (DU) and 115,849 gsf of incremental commercial space. In addition, the Proposed Actions will result in the creation of 465 affordable dwelling units, or 38 percent of the total new and incremental dwelling units that would be developed. For conservative analysis purposes Option 1 of the New York City Mandatory Inclusionary Housing (MIH) was selected for this assessment. However, it should be noted that exact affordability levels are not yet known. The Option 1 text amendment of March 22, 2016 requires that 25 percent of residential floor area must be affordable for residents with incomes averaging 60 percent AMI ($64,440 per year for a family of three) and ten percent of residential floor area must be affordable for residents with incomes averaging 40 percent AMI ($42,960 per year for a family of three). For Sites 1 and 2, 25 percent of the dwelling units will be affordable per Option 1. In addition, for Sites 3-7, 60 percent of the of the dwelling units will be affordable at the average of 80 percent AMI ($81,920 per year for a family of three). Further, 43 percent of the 21 units planned for Sites 8 and 9 will be affordable. The Community Land Trust (CLT) dwelling units at Sites 10-41 will not include any affordable units though the CLT structure allows for more affordable home purchase costs.

Methodology

An assessment of socioeconomic conditions separates the socioeconomic conditions of area residents from those of area businesses, although a proposed project may affect them in similar ways. The *CEQR Technical Manual* defines direct displacement as "the involuntary displacement of residents or businesses from a site(s) directly affected by a proposed project." Indirect displacement is the involuntary displacement of residents, businesses, or employees that results from a change in socioeconomic conditions in a particular study area as a result of a proposed project. Indirect displacement is defined in the *CEQR Technical Manual* as "the involuntary displacement of residents, businesses, or employees that results from a change in socioeconomic conditions in a particular study area as a result of the proposed project."

Direct Residential Displacement

The 41 Projected Development Sites within the Project Area (see **Figure 1-2** in **Chapter 1, Project Description**) currently comprise vacant land or vacant structures and no existing residential population. According to the *CEQR Technical Manual*, a direct residential displacement analysis is warranted if more than 500 residents would be directly displaced. As no residents would be directly displaced by the Proposed Actions, no significant adverse impacts will result, and no further assessment is required.

Indirect Residential Displacement

The objective of indirect residential displacement analysis is to determine whether the Proposed Actions may either introduce or accelerate a trend of changing socioeconomic conditions that may potentially displace a vulnerable population, most notably renters living in privately held units unprotected by rent control, rent stabilization, or other government regulations.

According to the *CEQR Technical Manual*, the potential for indirect displacement depends on the demographic, housing, and socioeconomic characteristics of a study area. These characteristics include:

- Total population by census tract, for a study area, the borough and New York City. In addition, demographic data from the larger Public Use Microdata Area 4114 (PUMA), which encompasses the study area, will also be considered, where appropriate or where certain data are lacking for smaller geographies.
- Housing values and rent. This chapter relies on market data from online proprietary sources for current and recent rental listings in the Study area and environs. Real estate brokers were also asked about local activity related to conversion of rental units to condominium or cooperative ownership units. While rent data from the U.S. Census ACS was also reviewed, it should be noted that this data set includes rents for rent regulated and subsidized dwelling units and therefore does not accurately represent rents for dwelling units available on the open market.
- Median household income and percentage of population living below the poverty line, based on data from the U.S. Census.

After identifying these characteristics, the socioeconomic analysis comprises three general components:

1. Determine if the Proposed Actions would add new population with higher average incomes than existing and projected average incomes in the Study area;
2. Determine if the increase in population due to the Proposed Actions is large enough, relative to the size of the population expected to live in the Study area without the Proposed Actions, to affect the local residential real estate market for rental properties. If the population increase is five percent or greater, then further analysis is needed;
3. Consider whether the Study area has experienced a readily observable trend toward increasing rents and the likely effect of the Proposed Actions on such trends.

The *CEQR Technical Manual* defines what conditions are necessary for a finding of significant impact that would require mitigation. If the population that is vulnerable to displacement due to increasing rents exceeds five percent of a study area, a significant adverse impact would be declared. However, if a readily observable trend toward increasing rents is already occurring and the proposed actions would not accelerate the increasing trend, then there would be a finding of no significant impact.

The first level of indirect residential displacement analysis is the addition of new dwelling units. According to the *CEQR Technical Manual*, projects that would result in more than 200 incremental residential units have the potential to result in significant adverse impacts related to indirect residential displacement, Because the Proposed Actions would result in 1,222 incremental dwelling units, significant adverse impact is possible and, therefore, a preliminary assessment of potential indirect residential displacement is provided.

Business Displacement

The Proposed Actions would not result in development that meets the *CEQR Technical Manual*'s thresholds for either a direct or indirect displacement of existing businesses. There are currently 2,358 gsf of commercial development and less than 100 employees subject to direct displacement in the Project Area. According to the *CEQR Technical Manual*, projects resulting in an increase of more than 200,000 gsf of commercial space have the potential to result in indirect business displacements due to increased rents. The RWCDS established for this project established the Proposed Actions would facilitate an increment of 115,849 gsf of commercial space, therefore further assessment is not required.

Study Area

The study area for socioeconomic conditions reflects the scale of change anticipated to result from the Proposed Actions. The *CEQR Technical Manual* states that the Study area should comprise those census tracts with 50 percent or more of their areas within 0.25 miles of the Project Area. If the Proposed Actions that would increase the population within a 0.25-mile study area by more than five percent compared to the No-Action condition, then a study area comprising the census tracts with 50 percent or more of their areas within 0.50 miles of the Project Area is more appropriate to assess socioeconomic conditions.

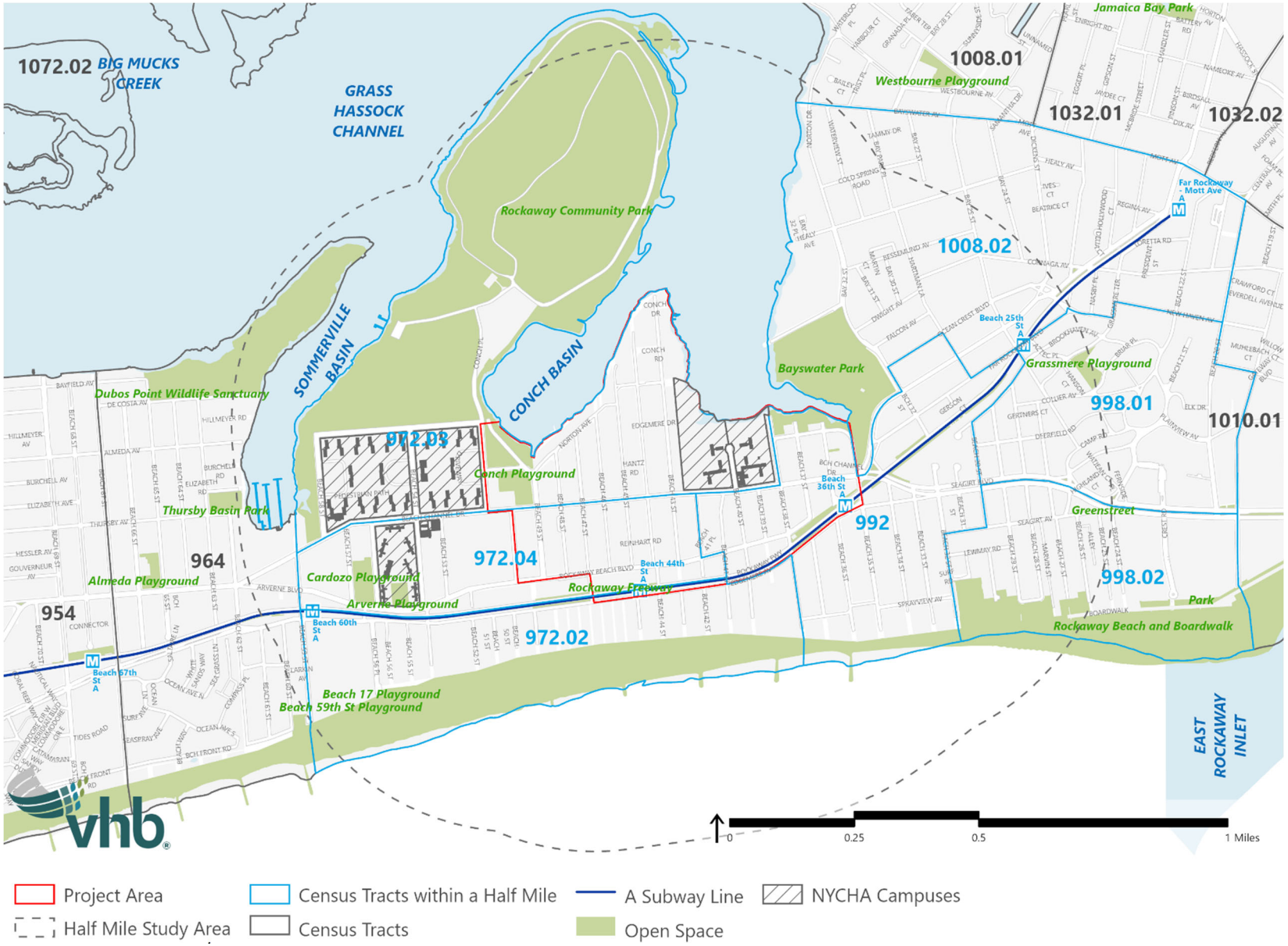
The Proposed Actions would allow for an additional 1,222 residential units in the Project Area. Based on the 2014-2018 ACS data, the average household size for residential units in

the study area is 2.92 persons per renter-occupied unit. Therefore, the Proposed Actions would likely increase the population by 3,568 residents compared to the No-Action condition. The ACS currently shows the combined population of those three census tracts generally comprising the Project Area – 992, 972.03 and 972.04 - to be 15,200; the projected net new population exceeds five percent of the population within a 0.25-mile radius of the Project Area's perimeters. Therefore, pursuant to the *CEQR Technical Manual*, the Study area should be expanded to a 0.5-mile radius.

For the purposes of the socioeconomic analysis, the study area boundary defined as 0.5-mile radius from the perimeters of the Project Area should be adjusted to match the census tracts that most closely define the 0.5-mile perimeter surrounding the Project Area.

These include the three census tracts that generally comprise the Project Area: 992, 972.03, and 972.04. In addition, the study area should include census tract 972.02 to the south, and 998.01 and 998.02 to the east. To the west, only a very small portion of census tract 964 is within the 0.5-mile radius of the perimeter of the Project Area, and therefore it is recommended that it not be included as part of the study area. While a larger portion of Census Tract 1008.02 is within a 0.5-mile radius of the perimeter of the Project Area, due to the overall higher incomes in this census tract and a desire for a more conservative analysis, is recommended that this tract be excluded from this analysis. These differences include a median household income that is 46 percent higher in the census tract compared to the study area and a much lower level of households with household income below the poverty level. It should be noted that although the portion of households that are rent-burdened is higher in Census Tract 1008.02 than in the study area, this is due to the relatively high number of renters in protected NYCHA units in the Study area as compared to Census Tract 1008.02 (see **Figure 3-1**).

Figure 3-1 Socioeconomic Conditions Study area



Data Sources

This socioeconomic conditions assessment draws upon data from the U.S. Census Bureau's 2010 Census and the five-year ACS data from 2006-2010 and 2014-2018. The assessment also uses data from the New York City Department of City Planning (DCP) Primary Land Use Tax Lot Output (PLUTO) and the real estate websites StreetEasy, and Zumper, in addition to conversations with real estate professionals in the Rockaways.

Preliminary Indirect Residential Displacement Assessment

The goal of the indirect residential displacement assessment is to determine whether a proposed project may either introduce or accelerate a trend of changing socioeconomic conditions that could displace a vulnerable population to the extent that the socioeconomic character of the affected neighborhood would change. A preliminary assessment of a project's potential to result in indirect residential displacement first considers the following question:

Step 1: Will the Proposed Actions add a new population with higher average incomes compared to the average incomes of the existing population and any new population expected to reside in the Study area without the project?

Table 3-1 indicates the 2014-2018 ACS median and mean household incomes in the Study area as compared to the Borough of Queens and the City of New York as a whole. In addition, this table breaks out Census Tracts 972.03 and 972.04, the two census tracts that make up all of the NYCHA campuses in the study area. The median household income in the Study area is $41,616, which is 36 percent lower than the median household income in Queens and 32 percent lower than the median household income in New York City. The median household income in the two indicated Census Tracts is $31,817, which is 23 percent lower than that of the Study area as a whole and 48 percent lower than that of New York City.

Further, the mean household incomes for the Study area, the two Census Tracts, Queens and New York City are higher than their respective median household incomes, indicating that a small percentage of populations in each geography earn significantly more than the typical household. Both the mean and the median household incomes in the Study area are smaller than the mean and median household incomes in Queens and New York City as a whole.

Table 3-1 Household Income Characteristics (2014-2018)

Geography	Median HH Income 2014-2018	Mean HH Income 2014-2018
Study area	$41,616	$56,839
CTs 972.03, .04	$31,817	$47,784
Queens	$65,534	$85,332
New York City	$60,769	$97,648

Source: U.S. Census Bureau, 2014-2018 ACS 5-Year Estimates (NYC Planning Population FactFinder)

Table 3-2 shows a distribution of incomes in the study area, Queens, and New York City, in addition to Census Tracts 972.03 and 972.04, which contain a significant majority of NYCHA households within the Study area. One-third of the households in the Study area earn less than $25,000 annually, while almost 15 percent earn $100,000 or more annually. Compared to Queens and New York City, a larger portion of households in the Study area earn less than $25,000 annually and there is a smaller proportion of households in the higher income brackets. By isolating the two census tracts containing the NYCHA households, the impact of these households on the study area can be more clearly exemplified. These two census tracts account for 31 percent of the households in the study area and over 75 percent of the households in these two census tracts earn less than $50,000, compared to 61 percent in the Study area as a whole or 43 percent of New York City households generally.

Table 3-2 Distribution of Household Incomes (2014-2018)

	Study area		CTs 972.03 & 972.04[1]		Queens		New York City	
Household Income	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Less than $25,000	3,705	33.6%	1,383	39.5%	146,572	18.8%	772,160	24.5%
$25,000 – $49,999	3,027	27.4%	1,260	36.0%	157,717	20.2%	590,856	18.7%
$50,000 - $74,999	1,854	16.8%	312	8.8%	134,102	17.3%	462,374	14.7%
$75,000 - $99,999	839	7.6%	205	5.9%	101,438	13.0%	345,558	11.0%
$100,000 - $149,999	1,062	9.6%	283	8.1%	127,283	16.3%	440,162	14.0%
$150,000 or more	549[1]	5.0%	60	1.7%	112,148	14.4%	542,993	17.2%
Total	11,036	100.0%	3,503	100.0%	779,260	100.0%	3,154,103	100.0%

Source: U.S. Census Bureau, 2014-2018 ACS 5-Year Estimates (NYC Planning Population FactFinder)
[1] Margin of Error in ACS data is too high to estimate with confidence

The data presented in **Table 3-3** show that a much larger percentage of households have a median income below the poverty level in the study area than in Queens or New York City as a whole.

Table 3-3 Median Household Income below the Poverty Level in the Past 12 Months (2014-2018)

Geography	2014-2018
Study area	22.6%
Queens	10.5%
New York City	15.6%

In the No-Action condition, there would be no new residential development and the projected net population increase in the Project Area would be zero.

The Proposed Actions would facilitate new development with permanently affordable housing pursuant to the program of the Resilient Edgemere Community Initiative. At least 38 percent of the 1,222 With-Action dwelling units, or 465 dwelling units, would be permanently affordable with incomes at or below 80 percent of AMI and, under Option 1 of the New York City MIH Text Amendment, some units will have deep affordability at 40 percent AMI. **Table 3-4** provides information on 2020 New York City AMI for determining affordable housing income eligibility.

Table 3-4 2020 New York City Area Median Income (AMI)

Family Size	30% AMI	40% AMI	50% AMI	60% AMI	80% AMI	100% AMI	130% AMI
1	$23,880	$31,840	$39,800	$47,760	$63,680	$79,600	$103,480
2	$27,300	$36,400	$45,500	$54,600	$72,800	$91,000	$118,300
3	$30,720	$40,960	$51,200	$61,440	$81,920	$102,400	$133,120
4	$34,110	$45,480	$56,850	$68,220	$90,960	$113,700	$147,810

Source: NYC Department of Housing Preservation and Development (https://www1.nyc.gov/site/hpd/renters/area-median-income.page, accessed January 2021)

Compared to the No-Action, the With-Action condition would result in 1,222 incremental dwelling units, of which 465 would be permanently affordable. For Sites 1 and 2, 25 percent of the dwelling units will be affordable per Option 1 of the New York City Mandatory Inclusionary Housing text amendment of March 22, 2016. Option 1 of the New York City Mandatory Inclusionary Housing text amendment of March 22, 2016 requires that 25 percent of units are affordable for households with incomes averaging 60 percent AMI and ten percent of the units are affordable for households with incomes averaging 40 percent AMI. Based on the affordability levels outlined in **Table 3-4**, this would respectively be $64,440 and $42,960 per year for a family of three. For Sites 3-7, 60 percent of the of the dwelling units will be affordable at the average of 80 percent AMI, or $81,920 for a family of three.

Table 3-5 summarizes the median asking rents for studios, one-bedroom, two-bedroom, three-bedroom and four-bedroom apartments in the area comprising Far Rockaway, Edgemere and Arverne in the three months preceding October 2021.

Table 3-5 2021 Median Asking Rents in Far Rockaway/Edgemere/Arverne

	Studio	1-Bedroom	2-Bedroom	3-Bedroom	4-Bedroom
Median	$1,813	$1,733	$2,173	$2,525	$2,800

Source: Zumper Research (http://zumper.com) accessed October 2021) for apartments listed in Edgemere, Far Rockaway and Arverne Rental Market.

For the past several decades, the conventional public policy indicator of housing affordability in the United States has been the percent of gross income spent on housing. The U.S Department of Housing and Urban Development (HUD) has historically viewed households that spend more than 30 percent of their household income on housing as "burdened." Therefore, based on the assumption that households would be anticipated to spend approximately 30 percent of income on housing costs, under current conditions based on average market rents in the period July-October 2021, households would need to annually earn approximately $72,520 to afford a market rate studio, $69,320 to afford a one-bedroom unit, $86,920 to afford a two-bedroom unit, $101,000 to afford a three-bedroom unit, and $112,000 to afford a four-bedroom unit. **Table 3-6** shows the expected market rate household income by unit type based on the assumption that new residents would spend up to 30 percent of their income spent on housing costs.

Table 3-6 Household Income by Unit Type

Unit Type	Monthly Rent[1]	Monthly Income	Annual Income[2]
Studio	$1,813	$6,043	$72,520
One-Bedroom	$1,733	$5,777	$69,320
Two-Bedroom	$2,173	$7,243	$86,920
Three-Bedroom	$2,525	$8,417	$101,000
Four-Bedroom	$2,800	$9,333	$112,000

Source: Zumper Research (http://zumper.com), accessed October 2021), used for rental research.
Notes:
[1] Represents the median market-rent based on July–Sep 2021 market listings.
[2] Household incomes were imputed using HUD 30 percent guideline and rounded to nearest $100.

The annual household income expected to afford the monthly current market rent for each of these units is higher than both the median ($41,616) and mean ($56,839) household incomes of the Study area that are outlined in **Table 3-1**. This is to say that, using HUD's general definition of households spending more than 30 percent of household income on gross rent as being burdened, current market rate units are not affordable to average residents in Edgemere. However, it is important to note that, as of the 2014-2018 ACS, 64.6 percent of occupied units paying rent in the study area are paying an annual gross rent that is 30 percent or more of their annual household income. In addition, the 2014-2018 ACS reports that the median rent in the study area is $999, an amount that is significantly below current median market rents in the study area. This is likely due to the fact that a large portion of dwelling units in the study area are in NYCHA or other rent regulated housing.

The Proposed Actions would incrementally introduce 745 market-rate dwelling units into the study area, a 7.8 percent increase over the study area's current inventory of 9,495 occupied rent paying dwelling units. In order to afford these market-rate units, the occupants would

have an average household income considerably higher than the current median household income in the study area of $41,616. The Proposed Actions would also incrementally introduce 465 permanently affordable units into the study area. Thirty percent of these units, or 138, would be priced at rents affordable to households earning an average annual income between 40 and 60 percent AMI, or between $40,960 and $61,440 for a family of three. The remaining 70 percent of these permanently affordable units, or 318, would be priced at rents affordable to households earning 80 percent AMI, or $81,920 for a family of three. Despite these affordability levels, the majority of the households occupying the permanently affordable units in the Proposed Actions would still be earning more than the current median household income in the study area. Based on the *CEQR Technical Manual* Guidelines, if the expected average incomes of the new population would exceed the average incomes of the study area population, then Step 2 of the preliminary assessment should be conducted.

Step 2: How large is the expected increase in population due to the Proposed Actions compared to the population of the Study area under the No-Action Scenario?

Table 3-7 shows that, according to 2014-2018 ACS data, the Study area has a population of 33,069. Since the 2010 Census, the Study area population has increased by 11 percent, from the population of 29,898 reported in the 2010 Census. During the same period, the New York City population growth was approximately three percent while the population growth in Queens was three percent as well.

Table 3-7 Residential Population (2010-2018)

Geography	2010 Census	2014-2018 ACS	Percent Change
Study area	29,898	33,069	11%
Queens	2,230,722	2,298,611	3%
New York City	8,175,133	8,443,717	3%

Source: U.S. Census Bureau (NYC Population Fact Finder)

In the No-Action condition, it is assumed that the developments shown in **Table 3-8** would be completed independent of the Proposed Actions.

In the No-Action condition, the study area's No-Action 2031 residential population would be 42,731. This was determined by adding the projected population from the No-Action developments outlined in **Table 3-8** and **Table 3-9**.

The With-Action condition would result in an incremental increase of 1,222 dwelling units with 3,568 incremental residents over the No-Action condition, assuming an average household size of 2.92 residents per dwelling unit (average household size per renter-occupied units in Census Tracts 972.03, 972.04, and 992). Accordingly, the study area population in the With-Action condition would be 46,299, an 8.3 percent increase over the No-Action condition. See **Table 3-10**. Based on guidance in the *CEQR Technical Manual*, if the population increase is greater than 5 percent in the study area then it should be considered whether the study area has experienced a readily observable trend toward increasing rents and the likely effect of the Proposed Actions on such trends.

Because the population increase is more than 5 percent but less than 10 percent, Step 3 is required.

Table 3-8 2031 No-Action Planned Developments in the Study Area

Census Tract	Project Name	Project Address	No. of D.U.s	No. of Affordable D.U.s	Build Year
972.04	Edgemere Commons	Rockaway Beach Drive between Beach 50th Street and Beach 53rd Street	1,791	1,791	2031
972.02 992	Arverne East	Between Beach 32nd Street and Beach 56th Place	1,650	1,350	2031
992	Beach Green Dunes III	Beach Channel Drive between Beach 35th Street and Beach 36th Street	138	108	2022
992	25-46 Far Rockaway Rezoning	Hartman Lane between Ocean Crest Boulevard and Rockaway Beach Boulevard	30	N/A	2022
		Total number of Units	**3,609**	**3,249**	

Source: NYC Department of City Planning, NYC Department of Buildings, *Peninsula Hospital Site Redevelopment EIS*.

Table 3-9 Summary of 2031 No-Action Planned Development in the Study Area

No-Action Development	DUs	Residential Population*
Study area	3,609	
Projected Occupied Units**	3,309	
Study area Total	3,309	9,662

* Assumes 2.92 residents per DU, based on US Census 2014-2018 ACS data for Study area.
** Assumes vacancy rate of 8.3%.

Table 3-10 2031 No-Action and With-Action Populations

Geography	2018	2031 No-Action	2031 With-Action	% Change
Project Area	0	0	3,568	N/A
Study area	33,069	42,731	42,731	0%
Total	33,069	42,731	46,299	8.3%

Source: U.S. Census Bureau, 2014-2018 ACS 5-Year Estimates. No-Build population based on Table C-9.

Step 3: Has the study area already experienced a readily observable trend toward increasing rents and what is likely effect of the Proposed Actions on such trends?

The study area has experienced a readily observable trend toward increasing market rents and changing nature of residential development. Using market data from Zumper Research, **Table 3-11** shows that the median market rent for a 2-bedroom apartment in the market comprising Edgemere, Far Rockaway and Arverne increased by 29 percent between 2015

and 2021. Compared to Queens and New York City as a whole, the study area saw a net increase in the reported median asking rent for a 2-bedroom apartment while the median asking rents in Queens and New York City experienced a net decline. In addition, unlike in Queens or New York City as a whole, the median asking rent for a 2-bedroom apartment in the area comprising Edgemere, Far Rockaway and Arverne continued to increase even after the onset of the COVID-19 pandemic in 2020.

As noted above, however, the reported median asking rent in the study area is much higher than the median gross rent reported in the U.S. Census 2014-2018 ACS for the study area, which is $999 and $1,165 if Far Rockaway, Edgemere and Arverne are included. This lower median gross rent is largely due to the inclusion of rent regulated and NYCHA dwelling units in the ACS sample. The NYU Furman Center Coredata NYC Subsidized Housing Database shows that over 5,220 rental dwelling units in the study area are in buildings that receive government subsidy. This includes 2,525 units in NYCHA Housing, accounting for almost 27 percent of occupied units in the study area that pay rent.[1] Yet, median gross rent increased by 13 percent over the 2006-2010 ACS in the study area and by 15 percent in the slightly broader geography of Edgemere, Far Rockaway and Arverne.[2]

Table 3-11 Average Median Market Rents for 2-Bedroom Apartment (2014-2018)

	2015	2016	2017	2018	2019	2020	2021 (Jan-Sep)	% Change 2015 - 2019	% Change 2015-2021
Study area	$1,663	$1,982	$1,861	$2,154	$2,056	$2,079	$2,141	24%	29%
Queens	$3,038	$3,138	$2,842	$2,885	$2,576	$2,508	$2,362	-15%	-22%
New York City	$3,666	$3,513	$3,313	$3,275	$3,400	$3,095	$2,870	-7%	-22%

As shown in this preliminary analysis, the study area and its surrounding environs have already experienced a readily observable trend toward increasing market rents, exceeding increases in Queens and New York City as a whole and continuing to increase even since the beginning of the COVID-19 pandemic. Therefore, in accordance with the *CEQR Technical Manual* guidelines, a Detailed Assessment and further analysis is not necessary.

While the Proposed Actions would result in the introduction of new households with higher incomes as compared to the average household income in the study area, the Proposed Actions would also introduce a significant quantity of affordable housing units to the study area, at rents affordable to households with incomes up to 80 percent of AMI, or about $80,000 for a family of three. Some units would be affordable to households at 40 percent AMI, or about $40,000 for a household of three, per Option 1 of the New York City MIH Text Amendment. In addition, the Proposed Actions would provide for significant new housing opportunities and investment in Edgemere and nearby neighborhoods by introducing 122 units of ownership housing to the study area where, currently, only 13 percent of dwelling units are owner occupied.[3]

[1] NYU Furman Center Coredata NYC Database and U.S. Census Bureau 2014-2018 ACS 5-Year Estimate for Study area

[2] U.S. Census Bureau 2014-2018 ACS 5-Year Estimate for Study area

[3] U.S. Census Bureau, 2014-2018 ACS 5-Year Estimates (NYC Planning Population FactFinder).

Alignment with the Resilient Edgemere Community Plan

The Proposed Actions are critical to achieving the long-term investments in housing, retail and amenities envisioned in the RECP. Like the RECP, the Proposed Actions and associated initiatives reflect a balanced approach to catalyzing equitable neighborhood change: preserving existing homes and building safe, affordable housing while committing to thoughtful investments that advance opportunity. This balanced approach ensures that Edgemere's current residents will benefit from the proposed changes neighborhood land uses.

History of the Resilient Edgemere Community Plan

Edgemere has faced a series of natural and man-made disasters in recent past. Decades of disinvestment left residents with few commercial amenities and dozens of vacant lots. Between 1997 and 2008, new public and private investment signaled a shift in these trends but were stymied by the devastation of the 2008 financial crisis. In 2012, Super Storm Sandy brought significant damage to the neighborhood, particularly to residences directly on or near Jamaica Bay waterfront.

In response to these neighborhood needs, in 2015 the City initiated a year-long community planning process asking residents to define goals, priorities and principles for shaping the neighborhood's future. The resulting RECP identified specific recommendations for increasing resilience, preserving the residential neighborhoods, and improving quality of life in Edgemere.

Create Resilient Housing and Maintain the Low Density Feel

As called for in the RECP, the Proposed Actions would facilitate new housing opportunities while limiting development in the most flood-prone areas. The Proposed Actions call for reducing allowable density in the *Limited Development Area* to one- or two-family detached homes, thereby prohibiting the development of multifamily homes that are currently permitted under R4. This change will ensure that future development in the flood-prone area adjacent to Jamaica Bay occurs in a detached building typology which is more amenable to flood resilient retrofits. Limiting residential development in vulnerable areas means mitigating the environmental hazards that could create housing instability for future residents.

In addition, and as called for in the RECP, the *Limited Development Area* is anticipated to be owned and managed in a CLT. A CLT is a not-for-profit organization which owns and stewards land long term for the public's benefit. CLTs separate the ownership of their land from the ownership of structures on the land, typically entering long-term ground leases with homeowners, mutual housing associations, non-profit landlords, or other tenants.

The RECP called for exploring this unique ownership model because CLTs have the potential to secure long term housing affordability. In addition, studies have found that the increased resident connection and collaboration fundamental to the CLT model can build social cohesion, a critical component of resilience to extreme weather events. HPD is currently

facilitating a competitive process to select a partner in forming a CLT in Edgemere and finalizing a development program and operations plan.

Increase Neighborhood Amenities

The Proposed Actions respond directly to the RECP's call to increase commercial opportunities adjacent to the subway stations. The proposed actions strengthen the commercial corridor along Rockaway Beach Boulevard, bringing commercial and services uses to the first and second floors of multifamily housing within walking distance of public transportation. The proposed actions also fulfill recommendations from the RECP to increase neighborhood services and amenities along Beach Channel Drive by increasing mixed-use development opportunities at significant intersections.

These alignments with the RECP demonstrate a direct connection between stakeholders in Edgemere and the future the Proposed Actions would facilitate. The New York City Department of Housing Preservation and Development is committed to supporting the development and implementation of neighborhood plans that enhance the quality of life and opportunity for existing residents, while expanding affordable housing and economic opportunities for all New Yorkers.

4

Community Facilities and Services

This section assesses the potential impacts of the proposed actions on community facilities and services. The *2020 City Environmental Quality Review Technical Manual (CEQR Technical Manual)* defines community facilities as public or publicly funded facilities including schools, libraries, early childhood programs, healthcare facilities, and fire and police protection services.

Introduction

This chapter assesses the potential impacts of the Proposed Actions on community facilities and services. According to the *2020 CEQR Technical Manual*, a community facilities assessment should be conducted if a project would directly or indirectly affect existing community facilities, including publicly supported day care, libraries, public schools, healthcare facilities, and fire and police protection services. A project can affect community services when it physically displaces or alters a community facility or causes a change in population that may affect the services delivered by a community facility, as might happen if a facility is already over-utilized, or if a project is large enough to create a demand that could not be met by the existing facility.

While the Proposed Actions would not physically displace or alter an existing community facility, they would introduce a substantial new residential population to the Project Area, resulting in increased demand for community facilities and services. Therefore, an

assessment was conducted to determine whether the Proposed Actions would result in any significant adverse impacts to community facilities.

Principal Conclusions

Based on a detailed analysis, the Proposed Actions would not result in any significant adverse impacts on elementary and intermediate schools or libraries. The Proposed Actions would result in significant adverse impacts on early childhood programs, warranting consideration of mitigation, as discussed in **Chapter 19, Mitigation**.

Indirect Effects on Public Schools

The Project Area is located within Sub-district 1 of CSD 27 in Queens. In the future with the Proposed Actions (the With-Action condition), the Proposed Project would result in the incremental development of 1,222 units within the Project Area compared to the future without the Proposed Actions (the No-Action condition). Based on student generation rates, the Proposed Actions would result in approximately 207 public elementary school students, 83 public intermediate school students, and 122 high school students.

Based on a detailed analysis of public elementary schools in CSD 27, Sub-district 1 would operate over capacity, with a shortfall of 628 seats. The share of the shortage attributable to the Proposed Actions would be 3.8 percent, due to an increase in the collective utilization rate from 111.6 percent to 115.4 percent. Since the collective utilization rate would be less than a five percent change from the No-Action condition, the Proposed Actions would not result in a significant adverse impact on elementary schools.

Based on a detailed analysis of public intermediate schools, CSD 27, Sub-district 1 would operate within capacity for public intermediate schools, with 570 seats available. Therefore, the Proposed Actions would not result in a significant adverse impact on intermediate schools.

Indirect Effects on Early Childhood Programs

In the With-Action condition, the Proposed Project would result in the incremental development of 465 units intended to be affordable for households with incomes up to 80 percent AMI, as compared to the No-Action condition. Based on the multipliers for estimating the number of children eligible for early childhood programs according to the New York City Department of Education (DOE), the Proposed Actions are anticipated to generate the need for approximately 66 childcare slots. Since there have been no mitigation commitments for slots resulting from Edgemere Commons, the Downtown Far Rockaway Rezoning, and other No-Action projects, the shortage of slots in the No-Action condition is 608; every seat needed by the Proposed Actions would then lead to additional slots over capacity.

Therefore, based on a detailed analysis, early childhood programs would be over capacity with a shortfall of 674 slots in the With-Action condition. The size of the shortage attributable to the Proposed Actions would be 12.3 percent, due to an increase in the collective utilization rate from 213.1 percent in the No-Action condition to 225.4 percent in the With-Action condition. Since the collective utilization rate for childcare/Head Start

centers would be greater than 100 percent and the collective utilization rate would increase more than 5 percent from the No-Action condition, the Proposed Actions would result in a significant adverse impact on publicly funded childcare and Head Start Centers, and require consideration of mitigation, as discussed in **Chapter 19, Mitigation**.

Indirect Effects on Libraries

There are two libraries within 1 mile of the Project Area—the Queens Library Arverne and Far Rockaway branches. As stated in the *CEQR Technical Manual*, a significant adverse impact would occur if a project would increase the population of the library catchment area by 5 percent or more and this increase would impair the delivery of library services in the study area. The combined catchment area population would increase by 3.7 percent from the No-Action to With-Action condition, and the holdings per resident would decrease by 0.03 percent. Therefore, the Proposed Actions would not result in a significant adverse impact on libraries.

Methodology

The *CEQR Technical Manual* provides thresholds to make an initial determination of whether detailed studies are necessary to determine potential indirect impacts on public schools, libraries, early childhood programs, healthcare facilities, and fire and police protection services. According to CEQR guidelines, a project would need to introduce a sizeable new neighborhood to trigger further analysis on police/fire services and healthcare facilities. A project introducing 139 units affordable to residents earning not more than 80 percent of the area median income would introduce 20 or more eligible children under age five and would warrant further analysis on early childhood programs. A project generating more than 50 elementary and intermediate school aged children would warrant a primary schools analysis, and a project generating more than 150 high school students would generate a high school analysis. Finally, a project would need to introduce 734 total units to trigger a detailed analysis on libraries.

Using the CEQR App, an analysis tool developed by the New York City Department of City Planning (DCP), the need for detailed analysis was assessed for these areas. As stated previously, the Proposed Actions would introduce 1,222 dwelling units, of which 465 are anticipated to be affordable units. As analyzed in the **EAS Technical Screenings** and shown in **Table 4-1** below, the Proposed Actions do not have the potential to impact high schools, healthcare facilities or police and fire services. However, an assessment of public schools, libraries, and early childhood programs is warranted. Furthermore, the Proposed Actions would not directly displace a community facility nor place a physical barrier to service delivery. Therefore, an analysis of direct effects is not warranted.

Table 4-1 Residential Increment for Analysis

Land Use	Unit	Existing Condition	No-Action Condition	With-Action Condition	Increment
Residential	*Dwelling Units*	0	0	1,222	1,222
	Affordable Units	0	0	465	465
	Total Residential gsf	0	0	1,313,659	1,313,659
Residents[1]		0	0	3,568	3,568
Elementary Students[2]		0	0	207	207
Intermediate Students[2]		0	0	83	83
High School Students[2]		0	0	122	122
Early Childhood Program Eligible Children[3]		0	0	66	66

[1] The number of residents is based on an average household size of 2.88 for the neighborhood, Melrose (2014-2018 ACS Survey).
[2] The number of students generated is based on the 2019 School Multipliers provided by the SCA for Queens District 27. The multipliers assume 0.31 Elementary Students per unit, 0.14 intermediate students per unit, and 0.13 high school students per unit.
[3] The number of early childhood program eligible children is determined by the Queens multiplier of 0.14 eligible children per affordable housing unit (*2020 CEQR Technical Manual* Table 6-1a). Please note that while the *2020 CEQR ~~2020~~ Technical Manual* adjusted the eligible age to five years old, the multiplier remains for children under 6 years old for conservative analysis purposes.

Public Schools

In conformance with the *2020 CEQR Technical Manual* guidance, the public school analysis uses the most recent DOE data on school capacity, enrollment, and utilization rates for elementary and intermediate schools in the sub-district study area as well as New York City School Construction Authority (SCA) projections of future enrollment in order to determine indirect effects on public schools (the 2018-2019 SCA Enrollment, Capacity, and Utilization Blue Book). To understand the percent utilization for the study area, the existing conditions of public schools within the study area are then examined by assessing their enrollment, target capacity, and available seats.

Future conditions are predicted based on SCA enrollment projections and data obtained from SCA Capital Planning Division on the number of new housing units and students expected at the sub-district and borough levels. The future utilization rate for school facilities is calculated by adding the estimated enrollment from proposed residential developments in the schools' study area to DOE's projected enrollment and then comparing that number with projected school capacity. DOE does not include charter school enrollment in its projections. DOE's enrollment projections for years 2019 through 2028, the most recent data currently available, is posted on the SCA website. The latest available enrollment projections to 2028 have been used in this analysis to project student enrollment to 2031. These enrollment projections are based on broad demographic trends and do not explicitly account for discrete new residential development projects expected to be completed within the study

area. Therefore, the estimated student population from other new development projects expected to be completed within the study area have been obtained from the SCA Capital Planning Division and are added to the projected enrollment to ensure a more conservative prediction of future enrollment and utilization. In addition, any new school projects identified in the DOE Five-Year Capital Plan are included if construction has begun, or if deemed appropriate to include in the analysis by the lead agency and the SCA. This data together provides the analysis of the No-Action condition.

The number of students that would be generated by a proposed project are estimated by "Projected Public School Ratios" (i.e., the number of elementary, intermediate, and high school students that would be generated by each residential unit) and assessed under the With-Action condition. The With-Action condition is assessed against the No-Action condition by calculating the change in utilization rates.

Study Area

According to the guidelines presented in the *CEQR Technical Manual*, the study area for the analysis of public primary and intermediate schools is the school district's "subdistrict" (also known as "regions" or "school planning zones") in which the project area is located. The Project Area is in Subdistrict 1 of Community School District (CSD) 27 (see **Figure 4-1**).

Data Sources

This analysis presents the most recent DOE data on school capacity, enrollment, and utilization rates for primary and intermediate schools and the SCA projections of future enrollment in the respective study areas, as provided and guided by DCP and the CEQR App.[1] The existing conditions analysis uses data provided in the DOE's *Utilization Profiles: Enrollment/Capacity/Utilization, 2018-2019 Edition*. Future conditions are predicted based on SCA enrollment and capacity projections for current schools and schools under construction, as provided by the CEQR App. In the No-Action condition, the future utilization rate for school facilities is calculated by adding DOE's projected enrollment for the subdistrict study area and the school district, and then comparing that number with projected school capacity. DOE's enrollment projections for years 2019-2028, the most recent data currently available, were provided by DCP through the CEQR App. These enrollment projections are based on broad demographic trends and do not explicitly account for discrete new residential projects planned for the study area. In addition, new capacity from any new school projects identified in the DOE Five Year Capital Plan are included if construction has begun or if deemed appropriate to include in the analysis by the lead agency and SCA.

In the With-Action condition, the number of schoolchildren generated by the proposed project is added to DOE's projected enrollment for the subdistrict study area and the school district in the No-Action condition. If a proposed project would include the construction of new schools or other measures that result in additional seats, such seats would be included in the future capacity estimates.

[1] Consistent with CEQR methodology, the analysis focuses only on potential impacts on public schools operated by the DOE; private and parochial education facilities as well as charter schools are excluded from the analysis.

Impact Criteria

The effect of new students introduced by a proposed project on the capacity of schools within the study areas is then evaluated. According to the *CEQR Technical Manual*, a significant adverse impact may occur if a proposed project would result in both:

- A collective utilization rate of primary schools or intermediate schools in the subdistrict study area equal to or greater than 100 percent in the future With-Action condition; and
- An increase of five percent or more in the collective utilization rate between the future No-Action and the future With-Action conditions.

Early Childhood Programs

Publicly financed early childhood education services under the DOE are available for eligible children five years old and younger (until the child is eligible to attend Kindergarten for a fall start date). Early childhood programs comprise EarlyLearn NYC (Child Care and Early Head Start), 3-K, and Pre-K for All. While 3-K and Pre-K programs are free for all three- and four-year-old children in New York City, there are financial and social eligibility requirements for children to enroll in EarlyLearn NYC Child Care and Early Head Start programs. For the purposes of CEQR analysis, early childhood program analysis is limited to EarlyLearn.

The existing conditions analysis presents the most recent capacity and enrollment data of existing publicly funded early childhood programs within the study area using information from DOE. The early childhood program enrollment in the future No-Action condition is estimated by multiplying the number of new affordable housing units expected in the study area by the CEQR multiplier for estimating the number of children under the age of five eligible for publicly funded early childhood services. For Queens, the multiplier estimates 0.140 eligible children per affordable housing unit (*CEQR Technical Manual* Table 6-1a)[2].

For purposes of this analysis, the estimated population eligible for early childhood programs results from the number of housing units expected to be subsidized and targeted for incomes of 80 percent AMI or below and is used as a proxy for early childhood program enrollment. Therefore, the incremental 465 affordable units under the With-Action condition is added to the early childhood program enrollment calculation for the future No-Action condition above. In addition, the analysis accounts for any changes in capacity due to the introduction of space available as part of the Proposed Actions for use as an early childhood program facility.

Study Area

According to the *CEQR Technical Manual*, the study area for the analysis of early childhood programs is typically defined as the area within 1.5 miles of the project area. Although there are no locational requirements for enrollment in early childhood programs, and parents/guardians can choose an early childhood program close to their employment rather than their residence, centers closest to the Project Area are more likely to be subject to

[2] Note that the *2020 CEQR Technical Manual* Table 6-1a multiplier pertains to children under 6 years old. This multiplier was used for a conservative analysis.

increased demand. Therefore, a 1.5-mile study area around the Project Area was used for this analysis.

Data Sources

Consistent with the *CEQR Technical Manual,* the data obtained for this analysis is provided by DOE's Division of Early Childhood Education. DOE did not provide data on changes planned for early childhood programs or facilities in the Project Area under the No-Action scenario, therefore no capacity changes are assumed.

Impact Criteria

According to the *CEQR Technical Manual*, a significant adverse impact may occur if a proposed development would result in both:

- A collective utilization rate of the early childhood programs in the study area that is greater than 100 percent in the With-Action condition; and,
- An increase of five percent or more in the collective utilization rate between the future No-Action and the future With-Action conditions.

Libraries

Public libraries as analyzed under CEQR are branch libraries operated by the New York Public Library, the Queens Borough Public Library, and the Brooklyn Public Library systems. The analysis of libraries generally focuses on the resources available to the population within the service area(s) of the library or libraries nearest to the project area. Potential impacts on libraries can result from an increased user population.

A detailed analysis of libraries includes a description of existing libraries within the study area, their information services, and their user population. Branch holdings and circulation data are identified. The future population in the study area under the No-Action condition is determined, and any changes or planned new branches are integrated into the analysis. The With-Action condition is similarly established, and the change over the No-Action condition assessed for effects on library access and services. A libraries analysis typically compares the population that would be generated by a proposed action with the catchment area population of libraries available within an approximately 0.75-mile area around the project area. However, the 0.75-mile catchment area around the nearest library does not encompass the entire Project Area. Therefore, the catchment area was extended to a 1-mile area.

The 2018 American Community Survey (ACS) five-year estimates were assembled for all census tracts that fall primarily within 1 mile of each library to determine the existing population of each library's catchment area. The catchment area population in the No-Action condition was estimated by multiplying the number of new residential units in projects located within the 1-mile catchment area that are expected to be complete by 2031 by an average household size of 3.02 persons (the average household size for the Hammels-Arverne-Edgemere and the Far Rockaway-Bayswater Neighborhood Tabulation Area according to the 2014-2018 ACS five-year estimates). The catchment area population in the With-Action condition is estimated by adding the anticipated population that would result from the Proposed Actions to the catchment area population estimate in the No-Action condition.

The new population in the No-Action condition and With-Action condition is then added to the existing catchment area population to assess affects.

Study Area

Library branch catchment areas are typically not more than three-quarters of a mile, which is the distance that one might be expected to travel for such services. The Arverne branch is within a three-quarter mile radius of the Project Area, but a three-quarter mile catchment area for the library does not cover the entire Project Area. Therefore, libraries within a mile of the Project Area, and a mile catchment area, were used for the analysis. Two Queens Borough Public Library branches—Arverne and Far Rockaway—are located within a mile radius of the Project Area.

Data Sources

As discussed above, the 2018 ACS five-year estimates were assembled for all census tracts that fall primarily within 1 mile of each library to determine the existing population of each library's catchment area. The Queens Library was contacted for the latest data on circulation for the two branches within the study area.

Impact Criteria

Generally, if a proposed project would increase the study area population by five percent or more over No-Action levels, and it is determined—in consultation with the appropriate library agency—that this increase would impair the delivery of library services in the study area, a significant impact may occur, warranting consideration of mitigation.

Detailed Assessment: Public Schools

Existing Conditions

As shown in **Table 4-2** and **Figure 4-1**, the sub-district contains 11 primary schools with a total enrollment of 4,822 students and a surplus of 447 seats, leading to a utilization rate of 92 percent.

The sub-district contains 10 intermediate school that have an existing total enrollment of 2,006 students and a surplus of 586 seats, leading to an overall utilization rate of 77 percent.

Table 4-2 Public School Enrollment, Capacity, and Utilization for Existing Conditions, School District 27, Sub-District 1

Org. ID	Bldg. ID	School Name	Address	Grades	Enrollment	Target Capacity	Available Seats	Utilization
Elementary Schools								
Q042	Q042	P.S. 42- Q	488 Beach 66 St	PK-8	460	644	184	71%
Q043	Q043	P.S. 43- Q	160 Beach 29 St	PK-8	585	625	40	94%
Q043	Q907	P.S. 43 Annex- Q	12 Marvin St	PK-8	81	77	-4	105%
Q104	Q104	P.S. 104- Q	26-01 Mott Ave	PK-5	634	656	22	97%
Q105	Q105	P.S. 105- Q	420 Bach 51 St	PK-8	571	506	-65	113%
Q106	Q106	P.S. 106- Q	180 Beach 35 St	PK-5	209	147	-62	142%
Q183	Q183	P.S. 183- Q	2-45 Beach 79 St	PK-8	339	496	157	68%
Q197	Q197	P.S. 197- Q	825 Hicksville Rd	PK-5	523	589	66	89%
Q253	Q253	P.S. 253- Q	1307 Central Ave	PK-5	562	516	-46	109%
Q333	Q198	I.S. 198- Q	3-65 Beach 56 St	PK-8	315	472	157	67%
Q362	Q215	P.S. 215- Q	535 Briar Pl	PK-5	543	541	-2	100%
			Study Area Total		**4,822**	**5,269**	**447**	**92%**
Intermediate Schools								
Q042	Q042	P.S. 42- Q	488 Beach 66 St	PK-8	183	254	71	72%
Q043	Q043	P.S. 43- Q	160 Beach 29 St	PK-8	204	217	13	94%
Q043	Q907	P.S. 43 Annex- Q	12 Marvin St	PK-8	28	27	-1	104%
Q053	Q053	I.S. 53- Q	10-45 Nameoke St	4-6	230	442	212	52%
Q105	Q105	P.S. 105- Q	420 Beach 51 St	PK-8	262	233	-29	112%
Q183	Q183	P.S. 183- Q	2-45 Beach 79 St	PK-8	146	212	66	69%
Q282	Q465	M.S. 282- Q	8-21 Bay 25 St	4-6	264	339	75	78%
Q309	Q465	Acad. Of Medical Tech.- Q	8-21 Bay 25 St	6-12	226	248	22	91%
Q319	Q053	I.S. 53-Q	10-45 Nameoke St	4-6	378	493	115	77%
Q333	Q198	I.S. 198-Q	3-65 Beach 56 St	PK-8	85	127	42	67%
			Study Area Total		**2,006**	**2,592**	**586**	**77%**

Source: CEQR App, NYC DOE Enrollment, Capacity and Utilization Blue Book 2018-2019
Note: Only Enrollment and capacity data for relevant grades were included for each primary and intermediate school. Charter, citywide gifted and talented, D75 special education, and D79 alternative high school equivalency schools are not included in analysis

Figure 4-1 Public Schools District 27, Sub-district 1



No-Action Condition

Enrollment Projections

Projected enrollment was determined for the future 2031 No-Action condition using SCA's *Enrollment Projections for the New York City Public Schools, 2019-2028*, which references DOE's projected New Housing Starts as well as Panel for Educational Policy (PEP) proposals for changes in school utilization. SCA enrollment projections focus on the natural growth of the city's student population (through births and grade retention) and do not account for future residential developments planned for the sub-district study areas (No-Action projects). Therefore, future utilization rate for school facilities is calculated by adding the estimated enrollment from proposed residential developments in the school study areas to SCA's projected enrollment, and then comparing that number with projected school capacity (see **Table 4-3**). For this study, the Arverne East Development and Edgemere Commons developments were added to the No-Action condition because they have build years beyond the SCA's projections and would therefore not be anticipated in the SCA's natural growth calculations.

As shown in **Table 4-3**, 1,115 elementary students and 447 intermediate students would be added in the No-Action condition from No-Action residential development.

Table 4-3 No-Action Developments Projected Enrollment

No-Action Developments	Residential Units	Estimated Students	
		Elementary	Intermediate
Arverne East	1,650	280	112
Edgemere Commons[1]	1,791	304	122
Downtown Far Rockaway Rezoning[2]	3,131	531	213
Total	**6,572**	**1,115**	**447**

Source: Arverne East EAS (20HPD081Q), *Peninsula Hospital Site Redevelopment FEIS* (18DCP124Q)
Notes:
[1] Edgemere Commons (previously known as the Peninsula Hospital Site Redevelopment) has a build year of 2034. It is anticipated that buildings A1-D1 would be completed by the 2031 build year. Therefore, they were included in this analysis.
[2] The Downtown Far Rockaway Rezoning is anticipated to be completed in 2032 and includes an urban renewal area, two disposition sites, and 19 projected development sites. Some of these sites are currently under construction or completed, and others may complete after the Proposed Project's build year. However, the entire anticipated development program is included here for conservative analysis purposes

Projected Capacity Changes

There are two expected capacity changes within the sub-district. The first, scheduled to be at scale in 2018-2019 at I.S. 198 Queens, would create 47 more elementary seats at the existing school. Additionally, P.S. 256 would be co-located in the same building as I.S. 198, resulting in 96 new elementary student seats[3]. Overall, this capacity change would result in 143 new elementary seats. The second capacity change is co-locating and opening 84QTBD within

[3] Panel for Education Policy - Public Notice Q198.pdf - All Documents (sharepoint.com)

building Q053, where it would be co-located with the Q319-Village Academy Middle School and Q053-Brian Piccolo[4]. This change would be at scale in 2019-2020 and result in 1,215 student seats between the three schools in the building.

The *Peninsula Hospital Site Redevelopment FEIS* (CEQR No. 18DCP124Q) identified the potential for that project to result in significant adverse impacts on elementary and intermediate schools with the completion of phase 3 of the project (June 2026). As such, potential mitigation measures were identified and included either the provision of funding to the DOE and SCA or the provision of off-site land and/or fit-out annex space to accommodate an increase of the school capacity by up to 162 public elementary and 57 public intermediate school seats within sub-district 1 of CSD 27. The final form of mitigation in connection with the Edgemere Commons project will be determined at a later date and rely on a new analysis at an as-yet-to-be-decided future date. Since it is not known at this time which option will be chosen or how many seats will result, this potential change in study area capacity was not included in the quantitative analysis.

No-Action Utilization

As shown in **Table 4-4**, elementary schools in CSD 27, Sub-district 1 would operate over capacity, with a 111.6 percent utilization rate and a deficit of 628 seats. Intermediate schools would operate within capacity, with a 77.3 percent utilization rate and a surplus of 653 seats.

Table 4-4 Projected Public School Enrollment, Capacity, and Utilization for No-Action Condition, School District 27, Sub-District 1

Projected Enrollment	Students Introduced by No-Action Residential Development	Total No Action Enrollment	Capacity	Available Seats	Utilization (%)
Elementary Schools					
4,524	1,115	6,040	5,412	-628	111.6%
Intermediate Schools					
1,615	447	2,219	2,872	653	77.3%

Source: CEQR App, SCA Enrollment Projections for New York City Public Schools by the Statistical Forecasting (2019-2028)

With-Action Condition

As described in **Chapter 1, Project Description,** the Proposed Actions are anticipated to result in the development of 1,222 dwelling units, which would introduce approximately 207 elementary students and 83 intermediate students to the sub-district. The Proposed Actions are not anticipated to provide additional capacity within the Project Area for public schools.

As shown in **Table 4-5**, elementary schools in CSD 27, sub-district 1 would continue to operate with a shortfall of seats in the With-Action condition. The sub-district elementary schools would operate at 115.4 percent utilization rate with a deficit of 836 seats. The

[4] Panel for Education Policy - Revised Public Notice Q053.pdf - All Documents (sharepoint.com)

collective utilization rate in the With-Action condition would increase 3.8 percent from the No-Action condition.

Intermediate schools, however, would continue to operate within capacity. Under the No-Action condition, the sub-district intermediate schools would operate at approximately 80.2 percent capacity with 570 available seats.

Table 4-5 Projected Public School Enrollment, Capacity, and Utilization for With-Action Condition, School District 27, Sub-District 1

Projected Enrollment Without Project	Students Generated by Project	Total With-Action Enrollment	Projected Capacity	Available Seats	Utilization (%) with Project	Change in Utilization (%) from No Action
Elementary Schools						
6,040	207	6,248	5,412	-836	115.4%	3.8%
Intermediate Schools						
2,218	83	2,302	2,872	570	80.2%	2.9%

Source: CEQR App, SCA Enrollment Projections for New York City Public Schools by the Statistical Forecasting (2019-2028)

The collective utilization rate for public elementary schools in the With-Action condition would be greater than 100 percent but would not increase more than 5 percent from the No-Action condition. Therefore, the Proposed Actions would not result in a significant adverse impact to elementary schools. Intermediate schools would continue to operate within capacity under the With-Action condition, therefore the Proposed Actions would not result in a significant adverse impact to intermediate schools.

Detailed Analysis: Early Childhood Programs

Existing Conditions

There are seven publicly funded early childhood programs within the 1.5-mile radius study area. These early childhood programs have a total capacity of 537 seats and have 49 available seats (90.88 percent utilization) (see **Table 4-6**). The table below shows the current capacity and enrollment for these facilities. Family-based childcare facilities and informal care arrangement provide additional seats in the study area, but these seats are not included in the quantitative analysis.

Table 4-6 Publicly Funded Early Childhood Program Serving the Study Area

ID	Program Name	Program Address	Borough	Capacity	Enrollment	Available Seats	Utilization Rate (%)
1	Blanche Comm #2	44-02 Beach Channel Drive	QN	145	144	1	99%
2	Community and Family HS	41-05 Beach Channel Drive	QN	120	110	10	92%
3	Ralph Hirschkorn CCC	310 Beach 20th Street	QN	95	86	9	91%
4	Rockaway Child Care Center	14-66 Beach Channel Drive	QN	35	21	14	60%
5	Bethel Mission Loving Day Care	338 Beach 56th Street	QN	35	28	7	80%
6	Lucille Rose Day Care Center	148 Beach 59th Street	QN	60	56	4	93%
7	Sheldon R Weaver DCC 2	71-15 Beach Channel Drive	QN	47	43	4	91%
		Child Care Total		**537**	**488**	**49**	**91%**

Source: DOE EarlyLearn Contractor Centers Capacity and Enrollment as of June 2018, obtained from the Department of Housing Preservation and Development

No-Action Condition

Planned or proposed No-Action development projects in the early childhood programs study area will introduce approximately 4,672 new affordable housing units by the analysis year (see **Table 4-7**). Based on the CEQR generation rates for the projection of children eligible for publicly funded day care, these developments would introduce approximately 657 children under the age of six who will be eligible for publicly funded childcare services.

When the estimated 657 publicly funded childcare-eligible children are introduced by the No-Action development projects, early childhood programs in the study area will operate at 213.1 percent utilization with a deficit of 608 seats.

There are currently no specific planned changes for early childhood programs or centers in the study area. However, both the Edgemere Commons and Downtown Far Rockway Rezoning projects identified the potential for those projects to result in significant adverse impacts on childcare services; potential mitigation measures, in the form of additional capacity, were identified for both projects. The provision of 217 and 209 childcare slots was identified as mitigation for Edgemere Commons[5] and the Downtown Far Rockaway Rezoning, respectively. Since there are no known development plans or funding commitments for childcare slots in connection with either of these projects, no additional capacity is considered in the No-Action condition.

[5] The Peninsula FEIS stated that potential mitigation measures will be developed in consultation with ACS, DOE, and SCA and further states that ACS will monitor the demand and need for additional publicly funded day care services in the area and identify the appropriate measures to meet demand for additional slots.

Table 4-7 No-Action Developments with Affordable Units

Project	Borough	Total Proposed Dwelling Units	Proposed Affordable Units[1]	Multiplier[2]	Child-Care Eligible Children[3]
Downtown Far Rockaway Rezoning	Queens	3,131	1,580	0.140	222
Arverne East	Queens	1,650	1,350		189
Peninsula Hospital Site Redevelopment	Queens	1,590	1,590		223
Beach Green Dunes III	Queens	138	108		16
Beach 67th Street Rezoning	Queens	305	44		7
Total		**6,814**	**4,672**		**657**

Sources: ZAP Planning, NYC Active Major Construction via Department of Buildings, NYC Dept. Housing Preservation and Development Housing New York Map

Notes:

[1] Affordable units relevant to this analysis excludes senior AIRS units

[2] As provided in the *CEQR Technical Manual*, the multiplier for estimating the number of children for publicly funded early childhood programs is 0.140 per affordable unit in Queens.

[3] All numbers rounded up

Table 4-8 No Action Condition Estimated Publicly Funded Child Care Center Enrollment, Capacity and Utilization

Enrollment	Capacity	Available Slots	Utilization Rate (%)	Change in Utilization
1,145	537[1]	-608[2]	213.1%[3]	122.3%[4]

Notes:

[1] If the suggested mitigation for the Peninsula Hospital Site Redevelopment and Downtown Far Rockaway Rezoning were taken into account, 426 childcare slots could be added to the study area for a total No-Action capacity of 963.

[2] If the suggested mitigation for the Peninsula Hospital Site Redevelopment and Downtown Far Rockaway Rezoning were taken into account, the study area would operate with a deficit of 182 slots.

[3] If the suggested mitigation for the Peninsula Hospital Site Redevelopment and Downtown Far Rockaway Rezoning were taken into account, the study area utilization rate would be 118.9 percent.

[4] If the suggested mitigation for the Peninsula Hospital Site Redevelopment and Downtown Far Rockaway Rezoning were taken into account, the change in utilization from existing conditions would be 28 percent.

Future With-Action Condition

As stated above, 465 affordable units would be provided as part of the Proposed Actions, resulting in an increment of 66 additional childcare-eligible children. This would increase the projected enrollment to 1,211 children, and early childhood program facilities would operate with a capacity at 225.4 percent utilization (see **Table 4-9**). In comparison to the No-Action condition, the study area would operate at 12.3 percent higher utilization for childcare.

The collective utilization rate for early childhood program facilities would be well above 100 percent, and the change in utilization between the No-Action and With-Action conditions would be above 5 percent regardless of whether or not No-Action projects mitigate their adverse impacts. Therefore, there would be a significant adverse impact on early childhood program facilities due to the Proposed Actions.

Table 4-9 With Action Condition Estimated Publicly Funded Child Care Center Enrollment, Capacity and Utilization

Enrollment	Capacity	Available Slots	Utilization Rate (%)	Change in Utilization
1,211	537[1]	-674[2]	225.4%[3]	12.3%[4]

Notes:
[1] If the suggested mitigation for the Peninsula Hospital Site Redevelopment and Downtown Far Rockaway Rezoning were taken into account, 426 childcare slots could be added to the study area for a total capacity of 963.
[2] If the suggested mitigation for the Peninsula Hospital Site Redevelopment and Downtown Far Rockaway Rezoning were taken into account, the study area would only operate at a deficit of 248 slots.
[3] If the suggested mitigation for the Peninsula Hospital Site Redevelopment and Downtown Far Rockaway Rezoning were taken into account, the study area utilization rate would be 125.7 percent.
[4] If the suggested mitigation for the Peninsula Hospital Site Redevelopment and Downtown Far Rockaway Rezoning were taken into account, the change in utilization for the Proposed project would be 6.9%.

Detailed Analysis- Libraries

Existing Conditions

The Project Area is served by the Queens Library (QL) system, also known as the QBPL, which includes 66 neighborhood branches and houses approximately 7.8 million holdings and 2.9 million volumes. Two QBPL locations (see **Figure 4-2**) are located within one mile of the Project Area. The Queens Library at Arverne is located to the west of Beach 53rd Street (312 Beach 54th Street). The new Queens Public Library at Far Rockaway is being constructed at the intersection of Mott Avenue and Central Avenue and is expected to be complete by 2021. A temporary swing space location for the library is located one block south at the intersection of Cornaga Avenue and Beach 20th Street. **Table 4-10** below provides the number of holdings and total catchment area population served by the libraries. Residents can visit and order books from any QBPL branch, including the QBPL for Teens, a New York Public Library branch, or from any of the other library branches.

The Arverne Library was originally located at Beach 75th Street and Rockaway Beach Boulevard, from 1915 to 1921. It moved to 488 Beach 66th Street in 1922 and was located there until 1935. Between 1951 and 1964, it was located at 339 Beach 54th Street, until it moved to its current location at 312 Beach 54th Street in 1964. The library has 18 public computers, one early literacy station, free internet access, printers, and restrooms. The holdings at the Arverne branch include books, CD-ROMs, DVDs, and videotapes. The branch library serves a catchment area population of 20,204, with approximately 38,000 holdings.

The Far Rockaway Library has been located at 1637 Central Avenue since 1968, and new construction broke ground at the site in 2018 with anticipated completion in 2021. The library is an important establishment in the neighborhood and brought disaster relief to residents in the wake of hurricane Sandy. The new branch will have double the square footage of the former library, and will have a Teen Room, Cyber Center, and Small Business Center among other amenities[6]. The library has a total of 22 public computers, free internet access, printers, and restrooms. The holdings at the branch total approximately 29,000.

Together the combined catchment areas have holdings totaling 67,000, a population of 75,145 and 0.89 holdings per resident.

[6] Break Ground On New Far Rockaway Library (nyc.gov)

Figure 4-2 Libraries Study Area

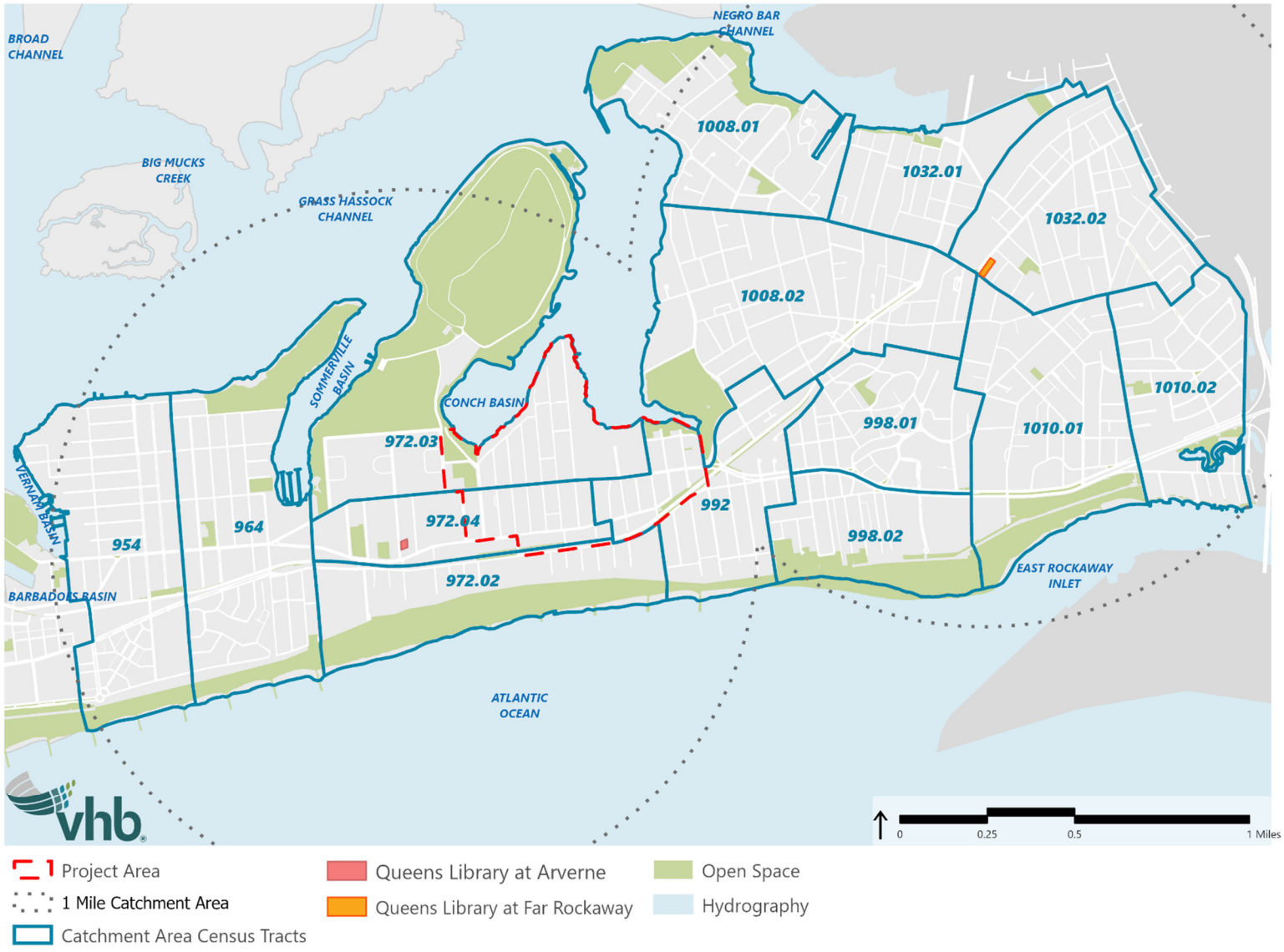


Table 4-10 Public Libraries Serving the Project Area

ID	Library Name	Address	Holdings[1]	Catchment Area Population[2]	Holdings-per Resident
1	Arverne	312 Beach 54th Street	38,000	30,188	1.26
2	Far Rockaway	1637 Central Avenue	29,000	44,957	0.64
		Total	**67,000**	**75,145**	**0.89**

Source: QBPL, 2018 ACS 5-year estimates, NYC Capital Planning Platform
[1] Approximate holdings, which include books, CD-ROMs, DVDs, and videotapes
[2] 2014-2018 ACS 5 year estimates for census tracts primarily within each of the library's mile catchment area (Census Tracts 954, 964, 972.02, 972.03, 972.04, 992, and 998.01, 998.02, 1008.01, 1008.02, 1010.01, 1010.02, 1032.01, 1032.02)

No-Action Condition

In the No-Action condition, the existing libraries will continue to serve the study area, and the new Far Rockaway Library will have been constructed and have double the space. No information on an increase in holdings for the No-Action condition was provided by the Queens Library.

The catchment area population would increase due to planned No-Action development (see **Table 4-11**).

Table 4-11 No-Action Developments Within Library Catchment Area

Development Name	Build Year	Dwelling Units	Expected Population[1]
Peninsula Hospital Site Redevelopment	2034	1,791	5,409
Arverne East	2031	1,650	4,983
Beach Green Dunes III	2022	138	417
Downtown Far Rockaway Development	2032	3,131	9,456
Total		**6,710**	**20,265**

Source: Arverne East EAS (20HPD081Q), *Peninsula Hospital Site Redevelopment FEIS* (18DCP124Q),
[1] Calculated based on the average household size (3.02) for the Hammels-Arverne-Edgemere and Far Rockaway-Bayswater NTA (2018 ACS 5-year estimates)

As shown in **Table 4-12**, planned No-Action developments would introduce approximately 20,265 residents to the catchment area, increasing its population to 95,410. Assuming no increase in holdings in the No-Action condition, the holdings-per resident ratio for the library would decrease from 0.89 in existing conditions to 0.70 in the No-Action condition.

Table 4-12 No-Action Condition Public Library Catchment Area Population and Holdings

Library Name	No-Action Holdings Total	No-Action Residents	No-Action Catchment Area Total Population	No-Action Holdings-per-Resident
Arverne	38,000	20,265	95,410	0.70
Far Rockaway	29,000			

With-Action Condition

As shown in **Table 4-13**, based on the average household size of 3.02 for the Hammels-Arverne-Edgemere Neighborhood Tabulation Area, by the 2031 analysis year, the Proposed Actions would result in an incremental increase of approximately 3,568 new residents (an approximately 3.7 percent increase). With the Proposed Actions, the holdings-per-resident ratio for the Arverne Library catchment area would decrease from 0.70 to 0.68. The population increase is not above the 5 percent threshold cited in *the CEQR Technical Manual*. Therefore, the Proposed Actions would not result in a significant adverse impact on libraries.

Table 4-13 With-Action Condition Public Library Catchment Area Population and Holdings

Library Name	With-Action Holdings Total	With-Action Residents	With-Action Catchment Area Population	With-Action Holdings-per-Resident	Population Increase
Arverne	38,000	3,568	98,978	0.68	3.7%
Far Rockaway	29,000				

5

Open Space

This chapter assesses the potential impacts of the Proposed Actions on open space. The *2020 City Environmental Quality Review (CEQR) Technical Manual* defines open space as publicly or privately-owned land that is publicly accessible and available for leisure, play, or sport, or is set aside for the protection and/or enhancement of the natural environment.

Introduction

The Department of Housing Preservation and Development (HPD) is proposing a series of land use actions (collectively the "Proposed Actions") to implement recommendations of the Resilient Edgemere Community Initiative, an interagency, community-based effort to align New York City's Sandy Recovery and rebuilding investments in Edgemere with a long-term comprehensive community vision. The Proposed Actions would result in 1,222 residential units in approximately 1,313,659 gsf, including up to 465 affordable units; approximately 115,849 gsf of local retail uses; and approximately 640 new parking spaces. This new development would occur at a number of different sites within the Project Area, including Projected Multi-Family Mixed-Use Development Sites and Projected Residential Infill Sites. Together, these sites are referred to as the Projected Development Sites.

In comparison to the No-Action condition, the Proposed Actions would result in an incremental increase of 1,222 residential units, including up to 465 affordable units; approximately 113,491 gsf of local retail uses; and up to 478 parking spaces.

Principal Conclusions

Based on a detailed analysis of indirect effects on open space, the Proposed Actions would result in a significant adverse impact on open space due to reduced active open space ratios. The Project Area is in an area that is neither underserved nor well-served by publicly accessible open space. Under the With-Action condition, the total open space ratio would decrease from 3.24 acres per 1,000 residents in the No-Action condition to 3.00, a percent change of -7.41. The passive open space ratio would decrease from 2.22 acres per 1,000 residents in the No-Action condition to 2.06 in the With-Action condition, a percent change of -7.21. The active open space ratio would decrease from 1.01 acres per 1,000 residents in the No-Action condition to 0.94 in the With-Action condition, a percent change of -6.93. With the Proposed Actions, the total and passive open space ratios of acres per 1,000 residents would remain above City guidelines of 2.5 acres and 1.0 acre, respectively. However, the active open space ratio would continue to be below City guidelines of 1.5 acres. Therefore, the Proposed Actions would result in a significant adverse impact on active open space. While some publicly accessible open space could be created on certain sites within the Project Area under future conditions with the Proposed Actions, which could help to offset the significant impact, these open space sources are not included in the quantitative assessment for purposes of a conservative analysis.

Potential mitigation measures are discussed in **Chapter 19, Mitigation**.

Methodology

Per guidance in the *CEQR Technical Manual*, the need for an open space analysis varies in certain areas of the City depending on whether they have been identified as well-served, under-served, or neither well-served nor under-served by open space.[1] If a project is located in an under-served area, the threshold for an open space analysis is 50 new residents or 125 new employees. If a project is located in a well-served area, the threshold for an open space analysis is 350 new residents or 750 new employees. In areas that are neither well-served nor under-served, the threshold is 200 residents or 500 employees. Maps in the Open Space Appendix of the *CEQR Technical Manual* indicate that the Project Area is neither well-served nor under-served, and therefore, the threshold used in this analysis is 200 residents or 500 employees.

As shown in **Table 5-1**, the Proposed Actions would introduce a new residential population well above the 200-resident threshold, and thus a residential open space analysis is warranted. The anticipated number of workers introduced by the Proposed Actions is not expected to exceed 500. Therefore, a non-residential open space analysis is not warranted.

[1] The *CEQR Technical Manual* defines underserved areas as areas of high population density in the City that are generally the greatest distance from parkland, where the amount of open space per 1,000 residents is currently less than 2.5 acres. Well-served areas are defined as having an open space ratio above 2.5 accounting for existing parks that contain developed recreational resources, or are located within a quarter-mile (i.e., approximately a 10-minute walk) from developed and publicly accessible portions of regional parks.

Table 5-1 Future No-Action and With-Action Population/Employment Summaries

Use	Existing Conditions	Future No-Action Condition	Future With-Action Condition	Increment
Residential	0	0	1,313,659 gsf	1,313,659 gsf
Commercial	0	2,358 gsf	115,849 gsf	113,491 gsf
Population/Employment				
Residents[1]	0	0	3,568	3,568
Workers	0	7	396	389

Notes:
[1] Based on the Average Household Size for the Study Area census tracts of 2.92 (2018 5-yr ACS)

The open space analysis has been conducted in accordance with the methodology outlined in the *CEQR Technical Manual*. The purpose of the analysis is to provide an evaluation of the Study Area's existing open space conditions relative to the open space needs of the Study Area's open space users, and to predict and compare open space conditions relative to open space needs in the future No-Action and With-Action conditions. Because the Proposed Actions would introduce additional residents to the area, which would place demands on the Study Area's active and passive open space resources, the analysis examines the amount of active and passive open space available in the No-Action and With-Action conditions in order to quantify the potential project-related impact.

Open Space Study Area

According to the *CEQR Technical Manual*, the first step in an open space analysis is to define and map a study area to allow analysis of both the open spaces and the population using those open spaces within a specified distance of a project area. The size of the study area is based on the distance a person may be reasonably assumed to walk to reach a local open space. Workers typically use passive open spaces within a quarter mile of their workplace, while residents use both passive and active open spaces and are more likely to travel farther—up to a half-mile from their places of residence—to reach open spaces. Because the Proposed Actions would not generate a net increase in workers above the 500-employee threshold compared to the future No-Action condition, only a residential study area was defined. The residential study area comprises the area within a half-mile distance from the Project Area.

Pursuant to *CEQR Technical Manual* guidance, the residential study area comprises all census tracts that have at least 50 percent of their area located within a half-mile radius of the Study Area. Six census tracts in Queens County have at least 50 percent of their area located within a half-mile of the Project Area: Tracts 972.02, 972.03, 972.04, 992, 998.02 and 1008.02. See **Figure 5-1** for the open space Study Area and census tracts.

Direct Effects Analysis

Consistent with the *CEQR Technical Manual*, a direct effects analysis should be performed if a proposed project would directly affect open space conditions by causing the loss of public open space; changing the use of an open space so that it no longer serves the same user population; limiting public access to an open space; or increasing noise or air pollutant

emissions, odor, or shadows that would temporarily or permanently affect the usefulness of a public open space. A proposed project can also directly affect an open space by enhancing its design or increasing its accessibility to the public. The Proposed Actions would not result in the physical loss or direct displacement of publicly accessible open space or increase access to open space, and no direct effects analysis is warranted.[2]

Indirect Analysis

The *CEQR Technical Manual* states that indirect effects may occur when the population generated by a project would overtax the capacity of open spaces so that their service to the future population of the affected area would be substantially or noticeably diminished. The Proposed Actions would result in a net increase of 3,507 residents and 474 workers compared to the future No-Action condition. Therefore, a residential analysis of indirect effects is warranted, with a study area encompassing an approximately half-mile distance around the Project Area. The purpose of the indirect effects analysis is to quantitatively assess the adequacy of open space in the Study Area for existing and potential future users based on an inventory of open space resources and the effect of the residential population increase anticipated with the Proposed Action as well as any population increase in the No-Action condition due to other planned or proposed developments.

Specifically, an indirect effects analysis includes:

- Identification of the open space user groups: residents. To determine the number of residents to be included in the analysis, population data from the 2014-2018 5-year American Community Survey were compiled for census tracts within the Study Area.
- An inventory of all publicly accessible open spaces in the Study Area, using secondary sources supplemented with field surveys.
- A quantitative assessment of the open space ratio in the Study Area—calculated as the ratio of open space acreage to user population—compared to benchmarks established in the *CEQR Technical Manual*. These include the optimal ratio for resident populations, which is 2.0 acres of active open space per 1,000 residents and 0.5 acres of passive open space per 1,000 residents.

According to the *CEQR Technical Manual*, projects that may result in significant quantitative impacts on open space resources, or projects that would exacerbate an existing underserved area in relation to open space, are typically further assessed in a qualitative assessment to determine the overall significance of the impact.

[2] The potential for the Proposed Actions to result in shadows on open space resources is provided in **Chapter 6, Shadows**.

Figure 5-1 Residential Open Space Study Area Map



Preliminary Assessment

Existing Conditions

Study Area Population

As shown in **Table 5-1**, based on the 2014-2018 5-year American Community Survey (ACS) data, the six census tracts in the open space Study Area contain a total residential population of 33,480.

Table 5-1 Existing Population in the Residential Study Area

Census Tract	Residential Population
972.02	3,170
972.03	7,331
972.04	3,682
992	4,191
998.02	6,029
1008.02	9,077
Total	**33,480**

Study Area Open Space Resources

Open space that is accessible to the public on a constant and regular basis, including for designated daily periods, is defined as publicly accessible and is analyzed as such per *CEQR Technical Manual* guidelines. Publicly accessible open space may be under government or private jurisdiction and includes open space designated through regulatory approvals, such as public plazas. Private open space—that which is not publicly-accessible or is available only to limited users and is not available to the public on a constant and regular basis—is not included in CEQR-compliant quantitative open space analyses.

In addition to the distinction between public and private open spaces, individual spaces may also be classified as either active or passive, according to the types of activities for which the space is primarily used. Open space that is used for sports, exercise, or active play is classified as active and consists mainly of recreational facilities, while open space that is used for relaxation, such as a plaza, is classified as passive. Some types of open space facilities, such as esplanades, may be devoted to both active and passive uses.

In conducting the open space analysis for the Proposed Actions, publicly accessible open spaces within the Study Area were inventoried. The open space resources were identified by their location, owner, features, total acreage, and acreage of passive and active areas. The secondary sources for this analysis included land use and geographic PLUTO data at the tax lot level and additional data provided by the New York City Department of Parks and Recreation (DPR). According to the *CEQR Technical Manual*, public open space does not include Greenstreets, malls without seating, or sidewalks.

The publicly accessible open space resources that include passive and active open space within the Study Area are shown in **Figure 5-1** and listed in **Table 5-2**. The Study Area contains seven open space resources, which include a mix of large multi-use parks, a large sandy ocean beach, and playgrounds, and comprise 91.29 total acres of open space, of which approximately 42.44 is active and 48.85 is passive.

Rockaway Beach stretches nearly the entire length of the Rockaway Peninsula, and the Boardwalk stretches 5.5 miles. There are numerous concessions, spray showers, playgrounds, barbequing areas, fitness equipment, bathrooms and aid stations across the length of the beach and it is New York City's only legal surfing beach. Approximately 43.00 acres of publicly accessible beach and boardwalk are contained within the residential study area. There is also a restricted portion of sandy beach between Beach 38th and Beach 57th Street, which is the breeding area for the Piping Plover, a federally designated endangered species; this area is not included in the open space acreage totals. However, the boardwalk adjacent to the restricted beach front is included. There are access points to the beach and boardwalk nearly every block on the east side of the study area between Beach 32nd Street and Beach 19th Street. However, further west, adjacent to the area that will be developed into the Arverne Central Preserve, access points to Rockaway Beach and Boulevard are currently limited and lack clear connections to the Edgemere neighborhood to the north.

Rockaway Community Park contains approximately 253 acres on a peninsula that extends north into Jamaica Bay, which it shares with the NYC Department of Sanitation Queens 14 Garage. Only a small portion of the park is publicly accessible and therefore included in the Study Area open space total. The majority of the park north of the ballfields and tennis courts adjacent to Almeda Avenue are not publicly accessible.

Similarly, to Rockaway Community Park, only approximately 55 percent of Bayswater Park, which intersects with the Project Area's eastern edge, is publicly accessible and therefore included in the Study Area open space total. The portion of the park that is accessible contains a skate park, ball fields, and basketball, handball and tennis courts.

In addition to the larger parks and beaches in the Study Area are four playgrounds, which are described below:

- Conch Playground is located on the grounds of Public School 105 in the Project Area and is one of two open spaces in the Study Area that is co-managed by the NYC Department of Education (DOE) and the NYC Department of Parks and Recreation. The playground contains basketball courts, handball courts, a running track, jungle-gym, sitting areas, and landscaped features.
- Arverne Playground and Cardozo Playground are located on opposite sides of Beach 56th Street between Beach Channel Drive and Arverne Boulevard. Both contain courts and small jungle-gyms. Cardozo Playground, similar to Conch Playground, is comanaged by the DOE and is located on the same block as Goldie Maple Academy. Arverne Playground is located on the same block as the NYCHA Ocean Bay Apartments.
- Beach 30th Street Playground is located just north of the Rockaway Beach Boardwalk. The playground features a ball field and seating area and the boardwalk includes a jungle-gym and spray shower.

Table 5-2 Existing Residential Study Area Open Spaces

Map No.	Name	Owner/ Agency	Features and Amenities	Total Acres	Active Acres	Passive Acres
O1	Rockaway Community Park	DPR	Basketball, tennis and handball courts, playground, cricket fields	12.00[1]	7.20	4.80
O2	Bayswater Park	DPR	Basketball, tennis and handball courts, playground, fields, bathrooms, spray showers, barbecue areas	24.13[2]	14.48	9.65
O3	Rockaway Beach and Boardwalk	DPR	Beaches, playgrounds, eateries, bathrooms, fitness equipment, spray showers	43.00[3]	8.60	34.40
O4	Arverne Playground	DPR	Basketball and handball courts, playground, spray shower	0.99	0.99	0
O5	Cardozo Playground	DPR/DOE	Playground	2.10	2.10	0
O6	Conch Playground	DPR/DOE	Handball Court, playground	1.89	1.89	0
O7	Beach 30th Street Playground	DPR	Playground, spray shower	7.18	7.18	0
			Residential Study Area Total	**91.29**	**42.44**	**48.85**
			Percent of Study Area Open Space	**100%**	**46.49%**	**53.51%**

[1] Approximately 12-acres of Rockaway Community Park is publicly accessible

[2] Approximately 24.13-acres of Baywater Park is publicly accessible

[3] 43-acres reported here is an estimate for the amount of a larger park that is located within the study area. The park overall is approximately 170 acres

Figure 5-2 Residential Open Space Inventory



Adequacy of Open Spaces

The open space analysis focuses on open space that may be used by residential populations. Using *CEQR Technical Manual* guidelines, the adequacy of open space was evaluated by comparing the ratio of existing active and passive open space acreage in the Study Area per 1,000 residents with the CEQR benchmark of 2.0 acres of active open space and 0.5 acres of passive open space per 1,000 residents.

The existing residential population of the Study Area was estimated at 33,480 people. The residential study area currently has an overall open space ratio of 2.73 acres per 1,000 residents, which above the City's goal of 2.5 acres per 1,000 residents and average of 1.5 acres per 1,000 residents (see **Table 5-3**). The Study Area's active open space ratio is 1.27 acres per 1,000 residents, which is below the City's guideline of 2.0 acres per 1,000 residents, and the passive open space ratio is 1.46 acres per 1,000 residents, which is well above the City guideline of 0.5 acres per 1,000 residents. Thus, based on the quantitative analysis, the Study Area is well served by passive open space and open space overall, with a deficit in active open space.

Table 5-3 Existing Conditions – Adequacy of Open Space Resources

Population	Open Space Acreage		Ratios*	DCP Guidelines
33,480	Active	42.44	1.27	2.00
	Passive	48.85	1.46	0.50
	Total	**91.29**	**2.73**	**2.50**

*Acres per 1,000 people

No-Action Condition

As described in **Methodology**, above, the No-Action condition accounts for population growth and changes expected to the inventory of open space resources.

Study Area Population

New development in the residential study area would result in an additional 3,976 residential units, increasing the residential population by 11,610 for a total residential population of 45,090 persons in 2031 (See **Table 5-4**).

Table 5-4 No-Action Condition: No-Build Developments Estimated Population

Development Name/Location	Total GSF	Residential Units	Estimated Residents[1]
Beach Green Dunes III	150,000	138	654
Edgemere Commons (Peninsula Hospital)	1,856,000	1,791	5,230
Arverne East	5,000,000	1,650	4,818
1047 Beach 21st Street	255,237	224	654
19-38 Cornaga Avenue	155,875	173	505
Total		**3,976**	**11,610**

Source: New York City Department of Buildings, New York City Department of City Planning,
Notes:
[1] Based on the Average Household Size for the Study Area census tracts of 2.92 (2018 5-yr ACS)

Study Area Open Spaces

In the No-Action condition, there are open spaces planned within the Study Area (as listed in **Table 5-4** and shown in **Figure 5-3**). Within the Arverne East development, a number of open spaces are planned, including a dune preserve, an urban farm, and a plaza area as well as neighborhood parks, pocket parks, and greenways. These are indicated in **Figure 5-3** as NA1, Arverne East Nature Preserve and NA2, Arverne East Open Space. In addition to creating a variety of open spaces, the Arverne East project would improve access points to Rockaway Beach and Boardwalk at Beach 56th Street, Beach 54th Street, Beach 52nd Street, Beach 49th and Beach 47th just south of the Edgemere neighborhood where those connections are most lacking. A third open space would be developed as part of the Edgemere Commons (Peninsula Hospital) project (NA3). Altogether, these three open spaces would add 54.35 acres of publicly accessible open space to the Study Area, divided between 3.30 active acres and 51.05 passive acres. Additionally, a fourth open space (NA4) is planned to be opened in January 2022 on Block 15961, Lots 102, 103, and 104 (approximately 0.23 acres). This open space is anticipated to be mostly a landscaped passive area that will provide a kayak launch, and an area for fishing. Initially (as of January 2022) this area will be opened with some picnic benches, plantings and be used for fishing.[3]

Table 5-5 No-Action Open Spaces

Map No.	Name	Owner/ Agency	Total Acres	Active Acres	Passive Acres
NA1	Arverne East Nature Preserve	DPR	35.00	0.00	35.0
NA2	Arverne East Open Space	DPR	18.80	3.30	15.5
NA3	Peninsula Hospital Open Space	DPR	0.55	0.00	0.55
NA4	Future Edgemere Open Space (Block 15961, Lots 102, 103, and 104)	DPR	0.23	0.00	0.23
		Total	**54.58**	**3.30**	**51.28**

[3] An additional project that could affect overall open space acreage is under consideration—the decommissioning of the Rockaway Freeway between Beach 62nd Street and Beach 35th Street and the conversion of this area to a greenway. Because the design and timing of this potential project is uncertain, it is not included in this analysis.

Figure 5-3 No-Action Open Spaces



In the No-Action condition, there are also improvement projects proposed at two parks in the study area. However, none of the proposed improvements to existing open space resources would add new park space and therefore these improvements are not included in the quantitative analysis. The proposed park improvement projects are as follows:

- Rockaway Community Park will be reconstructed with new pathways, berms and wetlands, with completion estimated for August 2021.
- Bayswater Park will be reconstructed, including the construction of a maintenance and operations building and a comfort station, with completion estimated between February and May 2021.

Adequacy of Open Spaces

In the No-Action condition, the active open space ratio would decrease to 1.01 acres per 1,000 residents from 1.27 in the existing conditions. However, the passive open space ratio would increase to 2.22 acres per 1,000 residents from 1.46, which would lead to an overall increase in the total open space ratio to 3.24 acres per 1,000 residents as shown in **Table 5-6**. As in existing conditions, the passive and total open space ratios would remain above the guidelines of 0.50 and 2.50 acres of open space per 1,000 residents, respectively. However, the active open space ratio would continue to be lower than the guideline of 2.0 acres of active open space per 1,000 residents.

Table 5-6 No-Action Condition – Adequacy of Open Space Resources

Population	Open Space	Acreage	Ratios*	DCP Guidelines
45,090	Active	45.74	1.01	2.00
	Passive	100.13	2.22	0.50
	Total	**145.87**	**3.24**	**2.50**

*Acres per 1,000 people

With-Action Condition

Study Area Population

In the With-Action condition, 1,222 units would be introduced to the Project Area, which is estimated to introduce approximately 3,568 residents and result in a total residential population of 48,658 in the half-mile Study Area.

Study Area Open Spaces

For purposes of a conservative analysis, while some publicly accessible open space could be created on certain sites within the Project Area, it is assumed that no new open spaces would be created in the With-Action condition as part of the Proposed Actions. Therefore, the amount of active and passive open space is the same in the With-Action condition as in the No-Action condition.

Adequacy of Open Spaces

Table 5-7 shows the open space ratios under the proposed future condition. Under the With-Action condition, the active open space ratio would decrease to 0.94 acre per 1,000 residents from 1.01 in the No-Action condition. The passive open space ratio would also decrease to 2.06 acres per 1,000 residents from 2.22 in the No-Action condition. There would be an overall decrease in the total open space ratio to 3.00 acres per 1,000 residents, from 3.24 in the No-Action condition, as shown in **Table 5-8**. As in existing conditions, the passive and total open space ratios would remain above the guidelines of 0.50 and 2.50 acres of open space per 1,000 residents, respectively. However, the active open space ratio would continue to be lower than the guideline of 2.0 acres of active open space per 1,000 residents.

Table 5-7 With-Action Condition – Adequacy of Open Space Resources

Population	Open Space	Acreage	Ratios*	Percent Change from No-Action	DCP Guidelines*
48,658	Active	45.74	0.94	-6.93%	2.00
	Passive	100.13	2.06	-7.21%	0.50
	Total	**145.87**	**3.00**	**-7.41%**	**2.50**

*Acres per 1,000 people

Under the With-Action condition, the total open space ratio for the residential population would decrease by 7.41 percent compared to the No-Action condition open space ratio (a raw change of -0.240 acres). However, the Study Area would continue to have a total open space ratio that is above the City guideline of 2.50 acres per 1,000 residents and the Citywide median of 1.50 acres per 1,000 residents.

Table 5-8 Open Space Ratio Summary

	No-Action*	With-Action*	Percent Change	Absolute Change (acres)
Active	1.01	0.94	-6.93%	-0.070
Passive	2.22	2.06	-7.21%	-0.162
Total	**3.24**	**3.00**	**-7.41%**	**-0.240**

*Acres per 1,000 people

As described previously, a proposed project would result in a significant adverse open space impact if it would reduce the open space ratio by more than 5 percent in areas that are currently below the City's median community district open space ratio of 1.5 acres per 1,000 residents. Due to the increase in the residential population that would be introduced to the Study Area as a result of the Proposed Actions, the total and passive open space ratios would continue to exceed city guidelines. Additionally, the Proposed Actions would result in a greater than five percent decrease in the active open space ratio which constitutes a significant adverse impact. Potential mitigation measures are discussed in **Chapter 19, Mitigation**.

Qualitative Analysis

While only the portion of Rockaway Beach and Boardwalk located within the Study Area is included in the quantitative analysis, the remainder of the beach beyond the Study Area boundaries would be easily accessible to residents and workers from the Study Area. The beach and boardwalk provide ample active recreation space in the form of basketball courts, baseball fields, and playgrounds, and walking paths, as well as access to the beach and waterfront for unprogrammed active recreation or passive recreation. In addition, the quantitative analysis took a conservative approach and did not include the vacant land that would be converted to open space on select sites within the proposed *Hazard Mitigation Area* as part of the Proposed Actions. It is anticipated that these new publicly accessible open spaces would also help to meet new project-generated demand for open space resources in the Project Area. Moreover, the residential infill development sites would have yard requirements to meet zoning, which could help to meet some of the open space needs of the population introduced by the Proposed Project as residents would be able to use their yards for active or passive recreation.

In addition to open spaces in the study area considered for the quantitative analysis, there are other planned and potential open space improvements for the area that would increase the amount of open space available to current and future residents. They include open spaces associated with the planned U.S. Army Corps of Engineers (USACE) Back Bay High Frequency Flood Risk Reduction Features project, a combination of hard and green infrastructure along Jamaica Bay waterfront which is planned to incorporate the Bayside Walking Path envisioned in prior community planning efforts. The analysis also does not include the potential for active open space amenities to be provided on future development sites, such as the children's playground recently constructed at HPD's Beach Green Dunes II development on Rockaway Beach Boulevard. While these planned or potential open spaces do not change the conclusion of this chapter that a significant adverse impact to active open space would occur as a result of the Proposed Actions, they demonstrate that there are several plans to deliver more recreational open space in the coming years. Potential mitigation measures are discussed in **Chapter 19, Mitigation**.

6

Shadows

A shadow is defined in the *2020 CEQR Technical Manual* as the condition that results when a building or other built structure blocks the sunlight that would otherwise directly reach a certain area, space, or feature. The purpose of this section is to assess whether new structures may cast shadows on sunlight sensitive publicly accessible resources or other resources of concern such as natural resources, and to assess the significance of their impact.

Introduction

According to the *CEQR Technical Manual*, a shadows assessment is warranted for proposed actions that would result in new structures greater than 50 feet in height or located adjacent to, or across the street from, a sunlight-sensitive resource. Such resources include publicly accessible open spaces, important sunlight-sensitive natural features, or historic resources with sun-sensitive features. A significant adverse shadow impact occurs when the incremental shadow added by a proposed project falls on a sunlight-sensitive resource and substantially reduces or completely eliminates direct sunlight exposure, thereby significantly altering the public's use of the resource or threatening the viability of vegetation or other resources.

The Proposed Actions are expected to facilitate a program of commercial and residential uses in the Project Area across multiple sites. It is expected that development on Projected Development Sites 1 through 7 will exceed the thresholds for a shadows analysis, while Projected Development Sites 8 and 9 and the Projected Residential Infill Sites are not expected to exceed 50 feet in height. Therefore, further assessment is warranted for Projected Development Sites 1 through 7.

Principal Conclusions

A Tier 1 through Tier 3 and detailed shadows analysis was undertaken for Projected Development Sites 1-7 since future development on these sites is expected to exceed 50 feet in height, the CEQR threshold for a shadows analysis. Several resources were identified within the potential Tier 3 shadow sweep: one existing park (Conch Playground) and two potential future open spaces (Peninsula Hospital Site Redevelopment open spaces and open spaces within the future Arverne East development). An examination of the potential Tier 3 shadow on the future open space resources indicated that there would be no significant adverse impacts on these resources. A detailed analysis was conducted for Conch Playground, which could receive incremental shadow on the December and March/September analysis days. It was determined that these shadows would not adversely impair the public's enjoyment of the space or the viability of vegetation. Therefore, no adverse impacts to sunlight sensitive resources would occur due to shadows from the Proposed Actions.

Methodology

According to the *CEQR Technical Manual*, the longest shadow a structure will cast in New York City, except for periods close to dawn or dusk, is 4.3 times its height. In accordance with the *CEQR Technical Manual*, a preliminary screening assessment is conducted to ascertain whether shadows resulting from a project could reach any sunlight-sensitive resource at any time of year; if the preliminary assessment indicates that, in the absence of intervening buildings, shadows from a project could reach sunlight-sensitive resources on any of the representative analysis days, a detailed analysis is typically warranted. The representative analysis days are December 21 (winter solstice), June 21 (summer solstice), March 21/September 21 (vernal/autumnal equinox), and May 6/August 6 (halfway between summer solstice and the equinoxes).

Sunlight-Sensitive Resources

The *CEQR Technical Manual* defines sunlight-sensitive resources as those resources that depend on sunlight or for which direct sunlight is necessary to maintain the resource's usability or architectural integrity. The following are considered to be sunlight sensitive resources:[1]

- Public open space (e.g., parks, beaches, playgrounds, plazas, schoolyards, greenways, and landscaped medians with seating). Planted areas within unused portions of

[1] According to the CEQR Technical Manual, City streets, sidewalks, and private open spaces (such as private residential front and back yards, stoops, and vacant lots) are not considered to be sunlight-sensitive resources in the context of an environmental review.

roadbeds that are part of the Greenstreets program are also considered sunlight-sensitive resources. The uses and vegetation in an open space establish its sensitivity to shadows. This sensitivity is assessed for both (1) warm-weather-dependent features like wading pools and sand boxes, or vegetation that could be affected by loss of sunlight during the growing season (i.e., March through October); and (2) features, such as benches, that could be affected by a loss of winter sunlight. Uses that rely on sunlight include passive use, such as sitting or sunning; active use, such as playfields or paved courts; and activities such as gardening or children's wading pools and sprinklers. Where lawns are actively used, the turf requires extensive sunlight. Vegetation requiring direct sunlight includes the tree canopy, flowering plants, and plots in community gardens. Generally, four to six hours a day of sunlight, particularly in the growing season, is a minimum requirement.

- Features of historic architectural resources that depend on sunlight for their enjoyment by the public. Only the sunlight-sensitive features are considered, as opposed to the entire architectural resource. Sunlight-sensitive features include the following: design elements that are part of a recognized architectural style that depends on the contrast between light and dark (e.g., deep recesses or voids such as open galleries, arcades, recessed balconies, deep window reveals, and prominent rustication); elaborate, highly carved ornamentation; stained-glass windows; exterior building materials and color that depend on direct sunlight for visual character (e.g., the polychromy (multicolored) features found on Victorian Gothic Revival or Art Deco façades); historic landscapes, such as scenic landmarks including vegetation recognized as an historic feature of the landscape; and structural features for which the effect of direct sunlight is described as playing a significant role in the structure's importance as an historic landmark.
- Natural resources where the introduction of shadows could alter the resource's condition or microclimate. Such resources could include surface water bodies, wetlands, or designated resources such as coastal fish and wildlife habitats.

Per the *CEQR Technical Manual*, open spaces that would be introduced in the No-Action condition are not typically included in the Tier 1 through 3 analysis and are only included in a detailed analysis. However, this analysis considers No-Action open spaces in the Tier 1 through Tier 3 assessment because these future open spaces are significant and to present a conservative analysis.

Preliminary Assessment

In accordance with the *CEQR Technical Manual*, a preliminary screening assessment is conducted to ascertain whether shadows resulting from a project could reach any sunlight-sensitive resource at any time of year. This preliminary screening assessment consists of three tiers of analysis:

- **Tier 1 Screening:** The first tier determines a simple radius around a proposed project representing the longest shadow that could be cast. The longest shadow that a structure can cast at the latitude of New York City occurs on December 21, the winter solstice, at the start of the analysis day at 8:51 AM, and is equal to 4.3 times the height of the structure. If there are sunlight-sensitive resources within the radius, the analysis proceeds to the second tier;

- **Tier 2 Screening:** The second-tier analysis reduces the area that could be affected by project-generated shadows by accounting for a specific range of angles that can never receive shade in New York City due to the path of the sun in the northern hemisphere. According to the *CEQR Technical Manual*, shadows cannot be cast within New York City within 108 degrees from True North. Topographic lines are included to demonstrate the terrain of the area;
- **Tier 3 Screening:** If the second tier of analysis does not eliminate the possibility of new shadows on sunlight-sensitive resources, a third tier of screening analysis further refines the area that could be reached by new shadows by looking at specific representative days of the year and determining the maximum extent of shadow over the course of each representative day. For the Tier 3 screening, three-dimensional modeling software with the capacity to model shadows is used, and the maximum building envelope that could be achieved as a result of a project is modeled and geo-located within the program. Terrain, which has been included in the Tier 1 and Tier 2 Screenings, is also incorporated into the model to account for how changes in elevation throughout the study area can influence shadows that could be cast by a project. The representative days are December 21 (winter solstice), June 21 (summer solstice), March 21/September 21 (vernal/autumnal equinox), and May 6/August 6 (halfway between summer solstice and the equinoxes). The assessment considers shadows occurring between 90 minutes after sunrise and 90 minutes before sunset. At times earlier or later than this timeframe window of analysis, the sun is low on the horizon, producing shadows that are long, move fast, and generally blend with shadows from existing structures. Consequently, shadows occurring in these two 90-minute periods are not considered significant under CEQR, and their assessment is not required.

Detailed Assessment

As noted above, if the Tier 3 screening indicates that, in the absence of intervening buildings, shadows from a project would reach a sunlight-sensitive resource on any of the representative analysis days, a detailed shadow analysis would be warranted. Because existing buildings (or No-Action buildings) may already cast shadows on a sun-sensitive resource, a project may not result in additional (incremental) shadows upon that resource. The detailed shadow analysis models a baseline condition (future No-Action) that is compared to the future condition resulting from a project (future With-Action) to illustrate the shadows cast by the No-Action development and distinguish the additional (incremental) shadow cast by a project. The detailed shadows analysis uses a combination of Geographic Information Systems (GIS) 3D modeling and modeling in Sketchup, as well as GIS data provided publicly.

Determination of Significance

As described in the *CEQR Technical Manual*, an incremental shadow is generally not considered significant when its duration is no longer than 10 minutes at any time of year and the resource continues to receive substantial direct sunlight. A significant shadow impact generally occurs when an incremental shadow of 10 minutes or longer falls on a sunlight-sensitive resource and results in one of the following:

- Vegetation: a substantial reduction in sunlight available to a sunlight-sensitive feature of the resource to less than the minimum time necessary for its survival (when there was sufficient sunlight in the future without the project), or a reduction in direct sunlight exposure where the sensitive feature of the resource is already subject to substandard sunlight (i.e., less than the minimum time necessary for its survival).
- Historic and cultural resources: a substantial reduction in sunlight available for the enjoyment or appreciation of the sunlight-sensitive features of an historic or cultural resource.
- Open space utilization: a substantial reduction in the usability of open space as a result of increased shadow, with consideration given to anticipated new users and the open space's utilization rates throughout the affected time periods as well as to the inventory of available open space resources in the study area.
- For any sunlight-sensitive feature of a resource: complete elimination of all direct sunlight on the sunlight-sensitive feature of the resource, when the complete elimination results in substantial effects on the survival, enjoyment, or, in the case of open space or natural resources, the use of the resource.

In general, a significant adverse shadow impact occurs when the incremental shadow added by a project falls on a sunlight-sensitive resource and substantially reduces or completely eliminates direct sunlight exposure, thereby significantly altering the public's use of the resource or threatening the viability of vegetation or other resources.

Analysis Framework

For conservative analysis purposes, a maximum building envelope was assumed for each Projected Development Site undergoing analysis. Under the With-Action condition, the Projected Multi-Family Development Sites (Projected Development Sites 1-7) would be in R6A zoning districts, which have a maximum building height of 80 feet for buildings with inclusionary housing or 85 feet for those with a qualifying ground floor, a height which does not include the mechanical roof bulkheads.[2] Projected Development Sites 1-7 are also within the 100-year floodplain, meaning that they will be constructed to the Design Flood Elevation (DFE), which is one foot above the Base Flood Elevation (BFE) of 10 feet for the neighborhood, which can be higher than the sidewalk and result in additional real feet in building height. With this in mind, Projected Development Sites 1-7 were assumed to be constructed to the maximum height inclusive of the DFE and assuming a 15-foot-tall bulkhead. The ground elevation across the sites ranges from 5 feet to 7 feet, so a ground elevation of 5 feet was assumed for the most conservative difference between the DFE and the ground of 6 feet. This led to an assumption of a roofline of 91 feet and total building height of 106 feet including the bulkhead across Projected Development Sites 1-7.

Furthermore, the buildings were massed with their facades at the lot lines and uniform height for the most conservative analysis.

[2] According to the New York City Zoning Resolution, mechanical roof bulkheads must be maximum one-third of the Roof Floor Area and have a setback of 10-feet or 15-feet from the street façade.

Preliminary Assessment

Tier 1 and 2 Screening

Shadow Sweep

For the Tier 1 assessment, the longest shadow that Projected Development Sites 1-7 could cast throughout the year was calculated and, using this length as the radius, a perimeter was drawn around the footprint of each of the Projected Development Sites 1-7. The maximum shadow length that could be cast by each of the Projected Development Sites is 4.3 times as long as their assumed height of 106 feet, or 456 feet. **Figure 6-1** shows the area that could be shadowed by Projected Development Sites 1-7 given the assumptions discussed above.

The Tier 2 assessment reduces the area that could be affected by project-generated shadows by accounting for a specific range of angles that can never receive shade in New York City due to the path of the sun in the northern hemisphere. According to the *CEQR Technical Manual*, shadows cannot be cast within New York City within ±108 degrees from True North. This area is shown on **Figure 6-1** for Projected Development Sites 1 and 2; however, for Projected Development Sites 3 through 7, this is not indicated in the map due to the location of the sites in relation to each other and the resulting overlap in area.

Resources of Concern Located within the Tier 1 and Tier 2 Shadow Sweep

In coordination with the analysis in **Chapter 7, Historic and Cultural Resources**, all historic architectural resources within the shadow radius were evaluated for the presence of sunlight sensitive features. All publicly accessible open space resources were similarly evaluated, and a base map was created to show those sunlight-sensitive historic and open space resources within the potential shadow sweep (see **Figure 6-1**). **Table 6-1** lists the resources that fall within the potential shadow sweep and that are subsequently analyzed in the Tier 3 assessment.[3] These resources are described in more detail in this section.

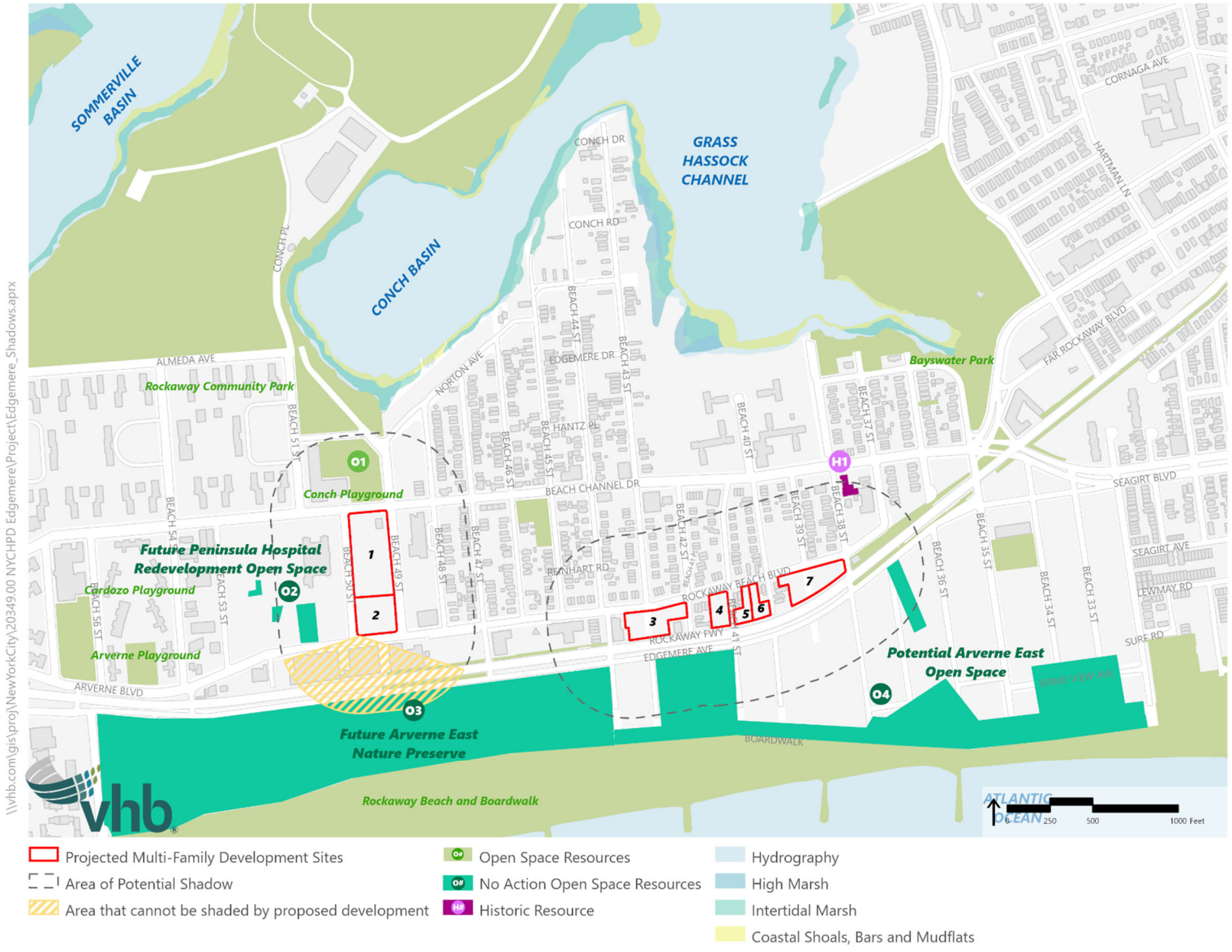
[3] A corner of Rockaway Community Park falls within the Tier 1 and Tier 2 shadows sweep, but as it contains vacant, unimproved land owned by the NYC Department of Parks and Recreation (DPR) that is without features or amenities, and there are no identified plans for its improvement in the No-Action condition, it is not considered further. An additional project is under consideration—the decommissioning of the Rockaway Freeway between Beach 62nd Street and Beach 35th Street and the conversion of this area to a greenway. However, because the design and timing of this potential project is uncertain, it is not included in this analysis.

Table 6-1 Potential Sunlight-Sensitive Open Spaces and Historic Resources of Concern

Map No.	Resource Name	Owner	Sunlight Sensitive Features
Existing Open Space Resources			
O1	Conch Playground	DPR	Play equipment, spray shower, courts, seating, vegetation
No-Action Open Space Resources			
O2	Potential Peninsula Hospital Site Redevelopment Open Spaces[1]	Private	Pedestrian plaza, play area, planters, seating, and vegetation
O3	Future Arverne East Nature Preserve[2]	DPR/Private	35-acre nature preserve, walking paths, native plantings and habitats, and a visitor center
O4	Potential Arverne East Open Spaces[2]	Private	Urban farm, dune preserve, pocket parks, greenways, plazas
Historic Resources			
H1	St. Gertrude's	St. Gertrude's Church	Stained glass windows

Notes:
[1] Peninsula Hospital Site Redevelopment, City Council Modification, Technical Memorandum (18DCP124Q)
[2] Arverne East EAS (20HPD081Q) and arverneeast.com

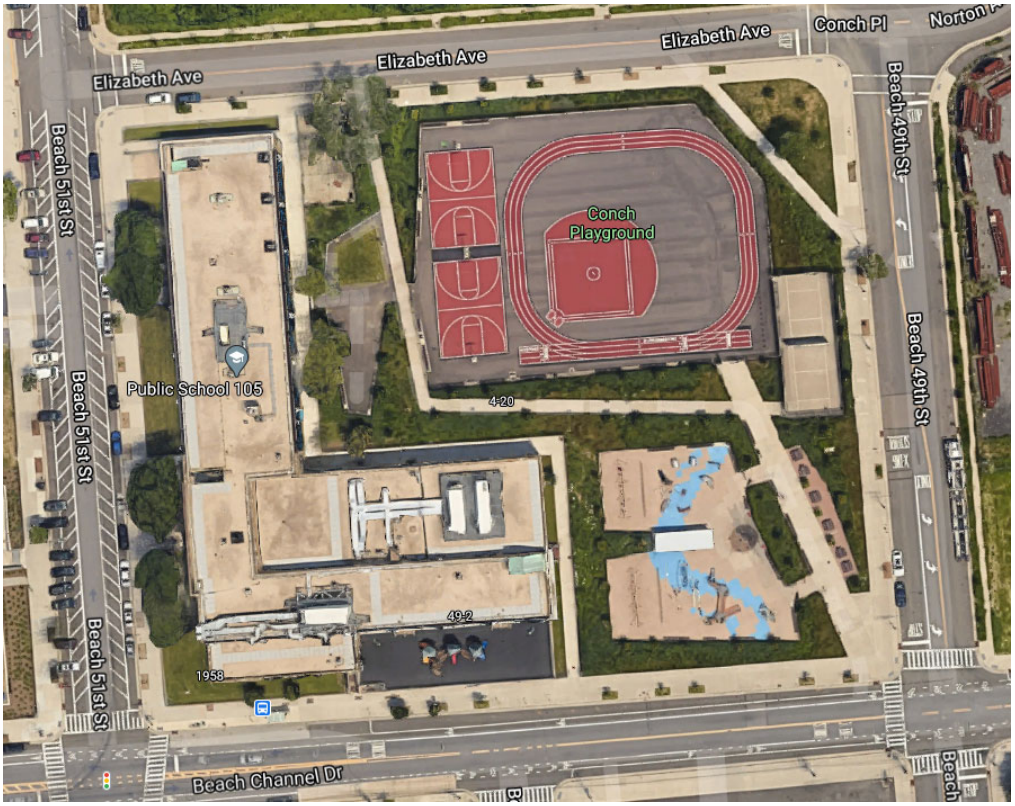
Figure 6-1 Tier 1 and Tier 2 Screening



Conch Playground (O1)

Conch Playground is the only existing open space resource in the area that could be shadowed by the Proposed Actions. It is located directly north of Projected Development Site 1 across Beach Channel Drive and is a 1.89-acre open space jointly operated between NYC Department of Parks and Recreation (DPR) and NYC Department of Education, as it is adjacent to Public School 105. This open space features play equipment, a spray shower, courts, seating, and paved paths—which comprise approximately 1.3 acres. The remainder of the playground, approximately 0.59 acres, consists of vegetation (see **Figure 6-2**).

Figure 6-2 Conch Playground Aerial



Source: Google Maps, Accessed January 19, 2021

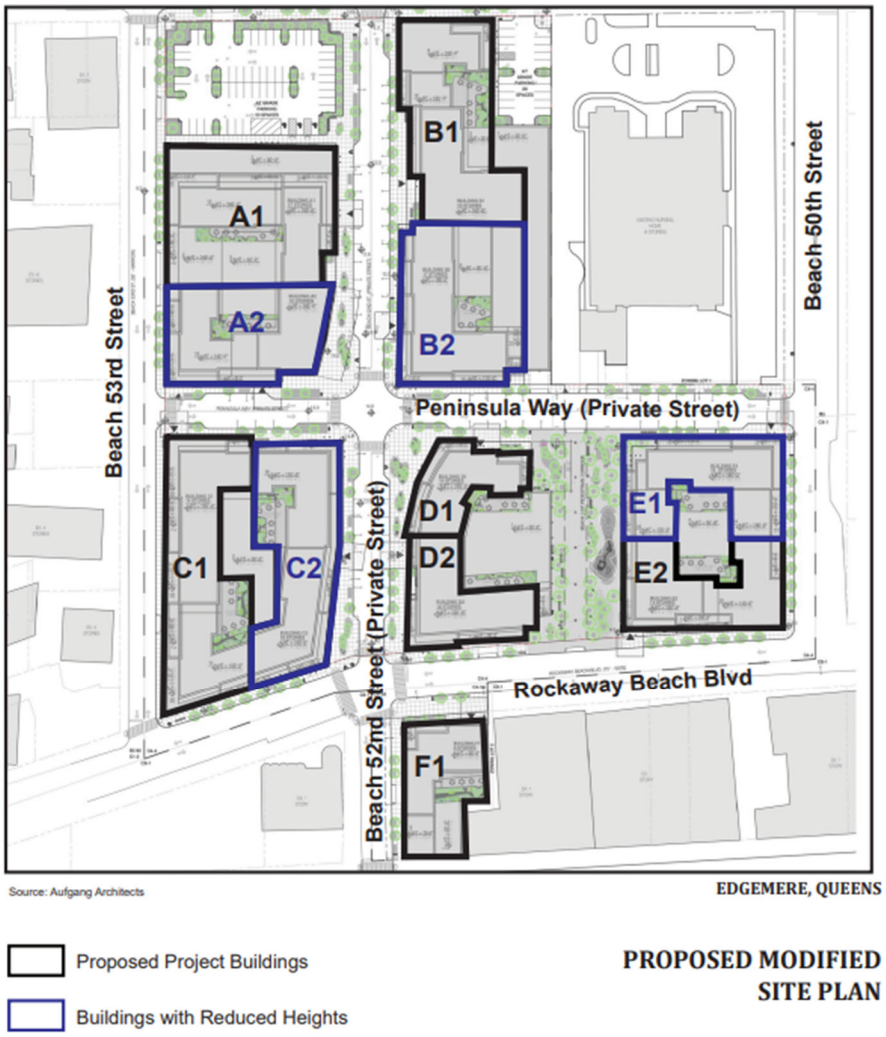
Potential Peninsula Hospital Site Redevelopment Open Spaces (O2)

In the No-Action condition, new open spaces are expected to be developed as part of the Peninsula Hospital Redevelopment, located west of the Project Area. The *Peninsula Hospital FEIS* and subsequent environmental review documents[4] identified several plaza areas to be developed as part of the project. These proposed spaces, which would be accessible from Rockaway Beach Boulevard or the private streets that will run through the Peninsula Hospital development site, are planned to be located between buildings that would range between 150 and 190 feet in height (see **Figure 6-3**). It is possible that as building design for the Peninsula Hospital Redevelopment project progresses, the site plan will change. In addition,

[4] *18DCP124Q, Peninsula Hospital Site Redevelopment, City Council Modification, Technical Memorandum*

it is unknown at this time if the open spaces will be constructed as indicated in **Figure 6-3** and what features or amenities they will ultimately contain.

Figure 6-3 Peninsula Hospital Site Redevelopment Proposed Modified Site Plan



Source: Peninsula Hospital Site Redevelopment, City Council Modification, Technical Memorandum (18DCP124Q)

Future Arverne East Nature Preserve (O3) and Potential Arverne East Open Spaces (O4)

In the No-Action condition, new open spaces will be developed as part of the Arverne East development, located south of the Project Area.[5]

These new spaces include a 35-acre nature preserve that will be developed with the oversight of the DPR in the area bounded by Rockaway Freeway to the north, Rockaway Beach and Boardwalk to the south, Beach 44th Street to the east, and Beach 56th Place to the west. In this area, the existing natural ecology will be preserved, invasive species will be

[5] *20HPD081Q. Arverne East Environmental Assessment Statement (August 2020) and arverneeast.com.*

cleared, the area will be enhanced with new native plantings as well as looped pedestrian path (see **Figure 6-4**).

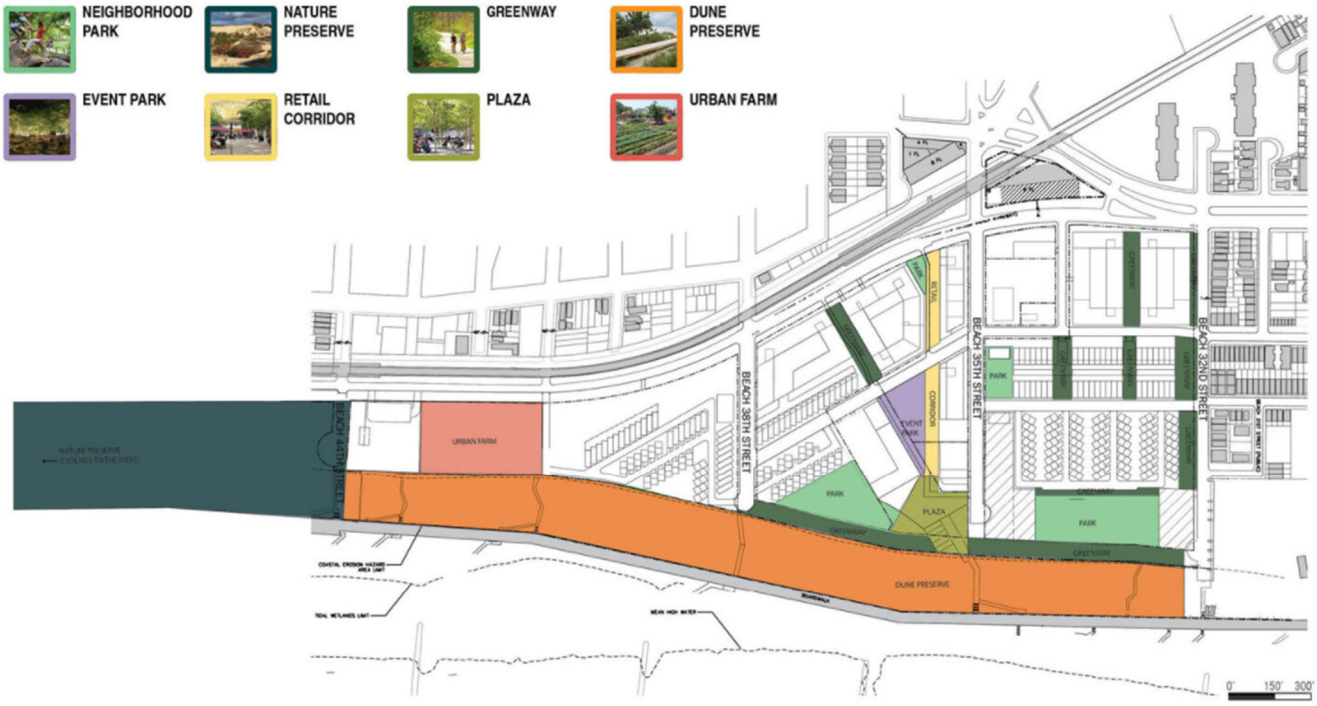
Within the Arverne East development, a number of open spaces are planned, including a dune preserve, an urban farm, and a plaza area as well as neighborhood parks, pocket parks, and greenways (see **Figure 6-5**). These open spaces will be located to the south of the Project Area, south of the elevated subway infrastructure, and largely situated between the Arverne East buildings to be developed. The exact location and programming for these spaces are subject to change as the Arverne East development is designed and built-out.

Figure 6-4 Arverne East Nature Preserve



Source: arverneeast.com

Figure 6-5 Potential Arverne East Open Spaces



Source: arverneeast.com

St. Gertrude's (H1)

St. Gertrude's is a church located at Beach 38th Street and Beach Channel Drive. The church contains stained-glass windows, considered a sunlight-sensitive feature.

Tier 3 Screening Assessment

In accordance with the *CEQR Technical Manual*, a Tier 3 screening assessment was performed because the Tier 1 and Tier 2 assessments identified several sunlight-sensitive resources within the potential shadow sweep.

The Tier 3 screening assessment was performed for the four representative days of the year set forth in the *CEQR Technical Manual*: December 21, the winter solstice and shortest day of the year; March 21 / September 21, the equinoxes; May 6/August 6, the midpoints between the summer solstice and the equinoxes; and June 21, the summer solstice and the longest day of the year. As noted above, the Tier 3 shadow screening shows the potential shadow that could be cast as a result of the Proposed Actions but does not account for existing shadow (from existing buildings) that may already be cast on the identified resources.

In accordance with the *CEQR Technical Manual*, a model of the buildings in the With-Action condition was developed in a three-dimensional computer program (ArcGIS Pro). The model was geolocated and the surrounding terrain was imported into the model to account for differences in topography.

Figure 6-6 through **Figure 6-13** and **Table 6-2** show the Tier 3 screening results which indicate that on the four analysis days, in the absence of intervening buildings:

- One existing open space resource (Conch Playground – O1), could receive incremental shadow on two analysis days;
- Two future No-Action condition open spaces could receive incremental shadow on two or three analysis days (the future Peninsula Hospital Site Redevelopment open spaces and the potential Arverne East open spaces); and
- No historic resources would receive shadows from Projected Development Sites 1-7.

Table 6-2 Tier 3 Resource Screening

Map No.	Resource Name	December 21	March 21/ September 21	May 6/ August 6	June 21	Screened at Tier 3
Existing Open Space Resources						
O1	Conch Playground	Yes	Yes	No	No	No
No-Action Open Space Resources						
O2	Future Peninsula Hospital Site Redevelopment Open Spaces	No	Yes	Yes	Yes	Yes
O3	Future Arverne East Nature Preserve	No	No	No	No	Yes
O4	Potential Arverne East Open Spaces	No	No	Yes	Yes	Yes
Historic Resources						
H1	St. Gertrude's	No	No	No	No	Yes

O1 – Conch Playground

Based on the Tier 3 screening results, Conch Playground could potentially receive shadows from Projected Development Sites 1 and 2 on the December 21st and March 21st/September 21st analysis days (see **Figure 6-6** and **Figure 6-7**, respectively). There would be no potential for project shadow to reach Conch Playground on either the May 6th/August 6th or June 21st analysis days (see **Figure 6-8** and **Figure 6-9**, respectively). Therefore, a detailed assessment it warranted, see below.

O2 – Future Peninsula Hospital Redevelopment Open Spaces

Based on the Tier 3 screening, Projected Development Sites 1 and 2 could potentially cast shadow on the future Peninsula Hospital Redevelopment open spaces on three analysis days: the March 21st, May 6th/August 6th, and June 21st analysis days but would not have the potential to cast shadow on the December analysis day (see **Figure 6-6**).

As shown in Figure 6-7, **Figure 6-8**, and **Figure 6-9**, the Tier 3 analysis indicates that shadows from Projected Development Sites 1 and 2 could reach the easternmost of the future Peninsula Hospital Redevelopment open spaces on the March 21st analysis day, on the May 6th/August 6th analysis day, and on the June 21st analysis day. However, as noted above, the Tier 3 analysis does not account for intervening buildings, and as shown in **Figure 6-3**, this open space would be located between two buildings with heights in the range of 150 feet to 190 feet, which would casting their own shadows on the open space during this time. Therefore, since these spaces would be in shadow from the Peninsula Hospital Redevelopment program of which they are a part, Projected Development Sites 1 and 2 would not have significant adverse shadows impacts on this future open space.

Figure 6-6 Tier 3 Screening December 21 Analysis Day: Projected Development Sites 1 and 2

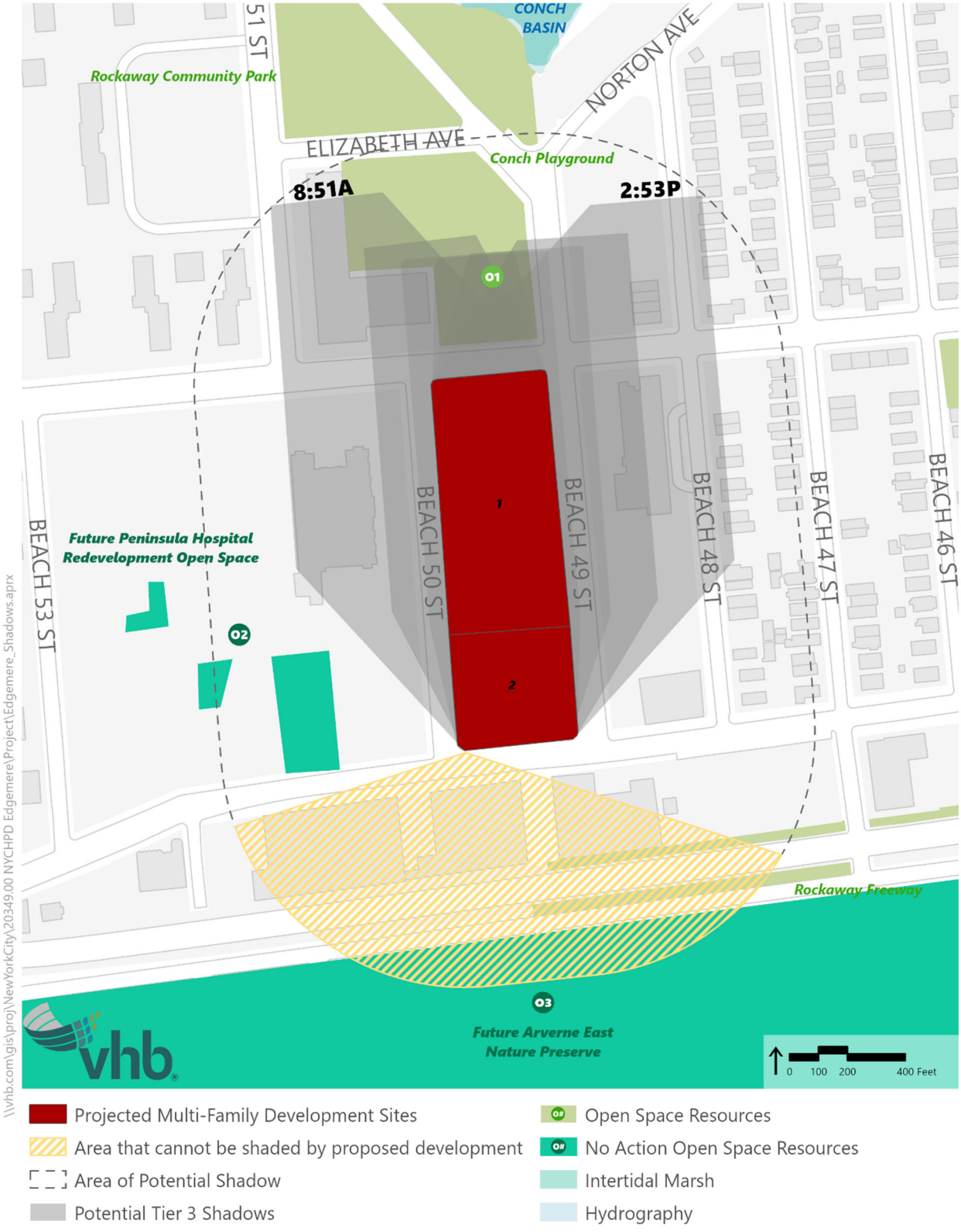


Figure 6-7 Tier 3 Screening March 21 Analysis Day: Projected Development Sites 1 and 2

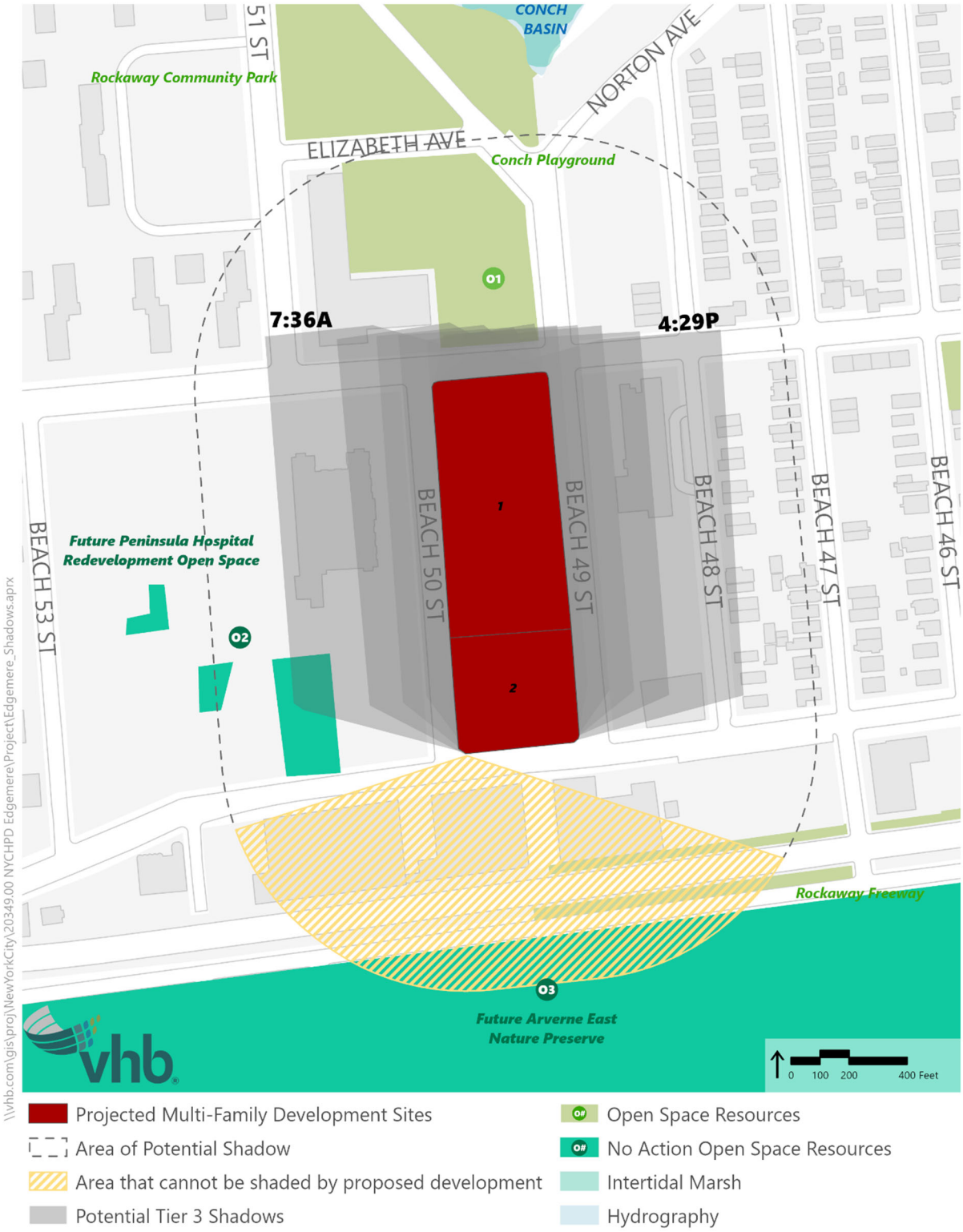


Figure 6-8 Tier 3 Screening May 6 Analysis Day: Projected Development Sites 1 and 2

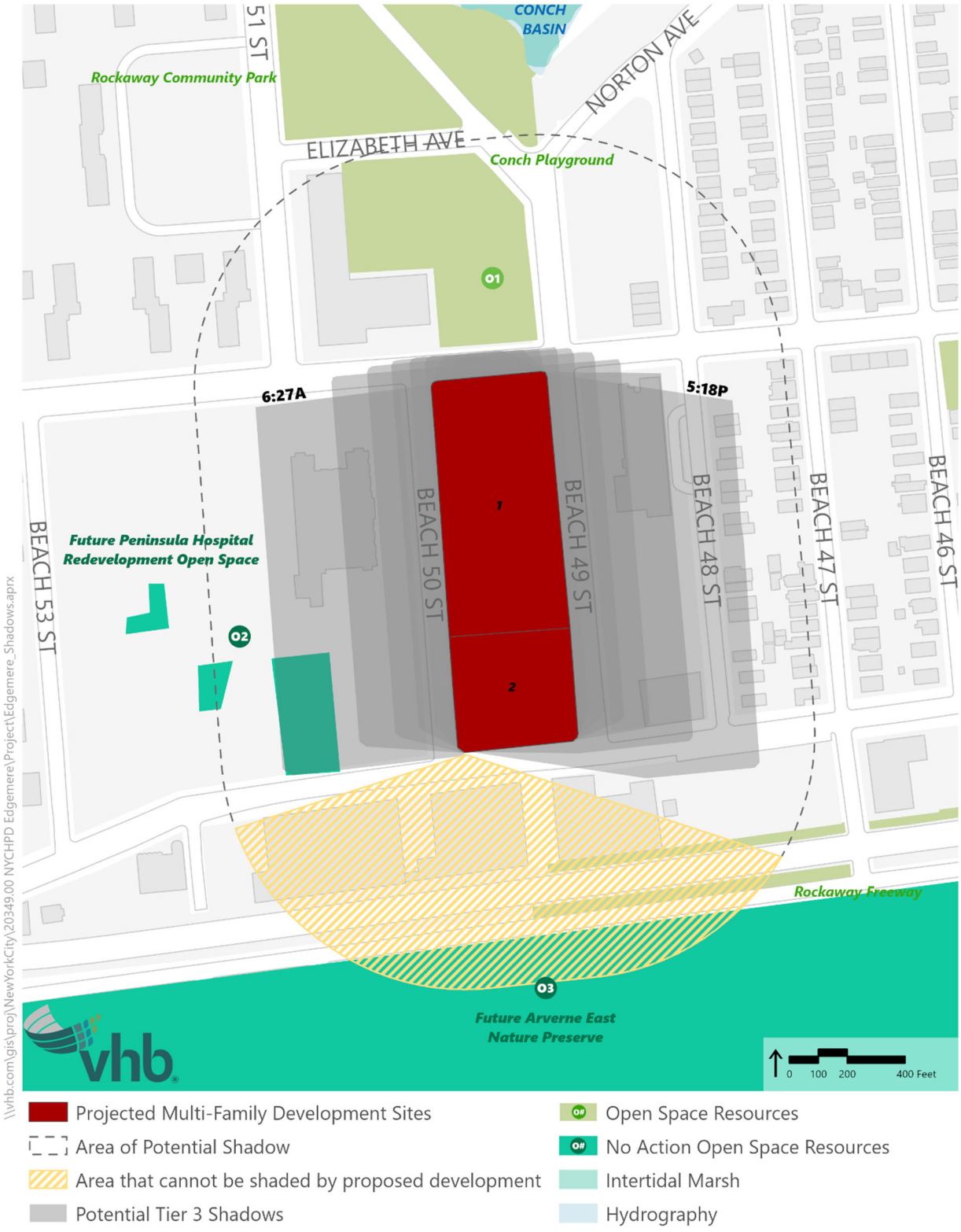
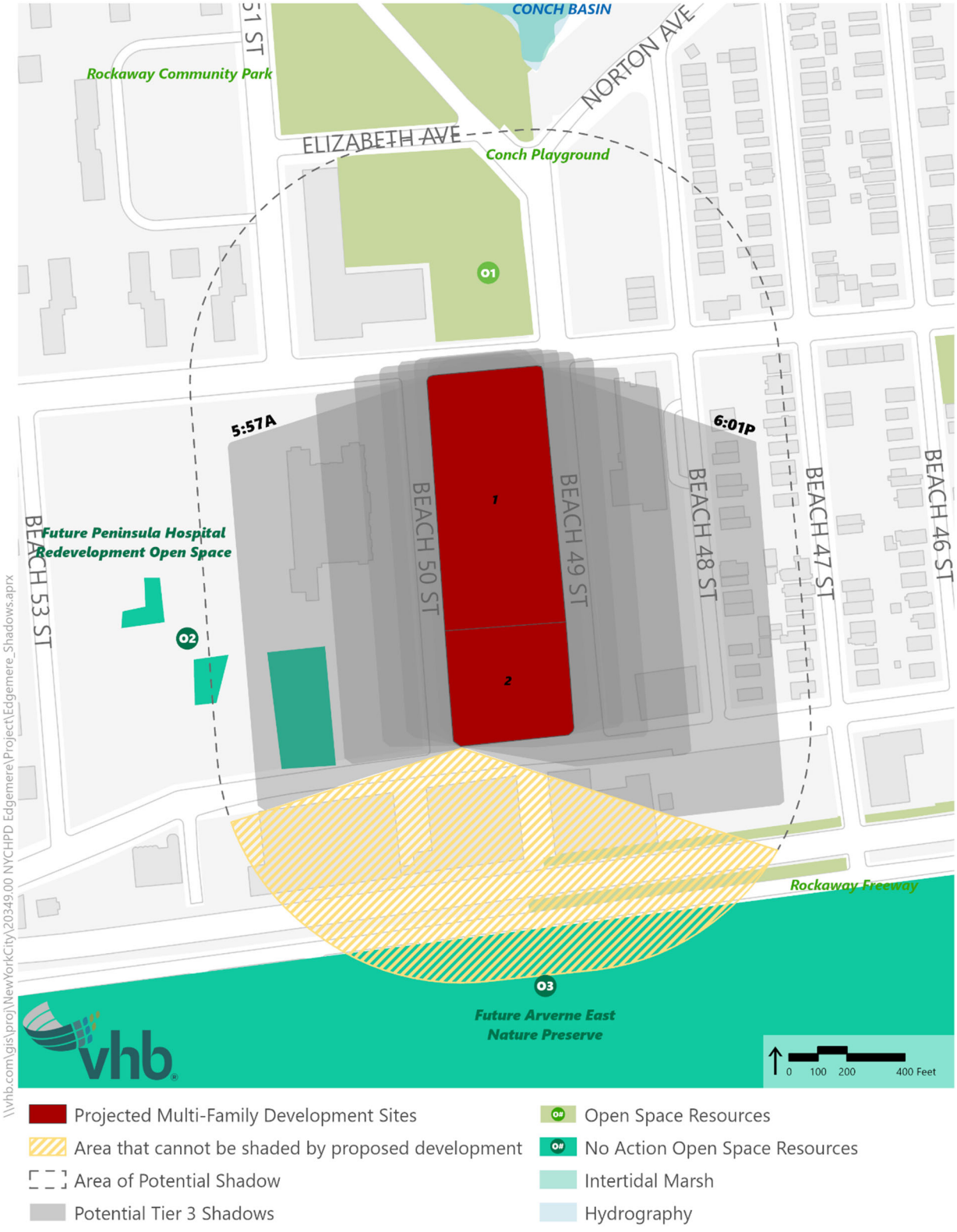


Figure 6-9 Tier 3 Screening June 21 Analysis Day: Projected Development Sites 1 and 2



O4 – Potential Arverne East Open Spaces

The Tier 3 screening results show that shadows from Projected Development Sites 3-7 could potentially reach some portion of the future Arverne East open spaces on the May 6th/August 6th and June 21st analysis days (see **Figure 6-12** and **Figure 6-13**, respectively).

Projected Development Site 7 could potentially cast shadow at the end of the analysis period on a potential future greenway space currently planned to be located between Beach 35th Street and Beach 36th Street on the May 6th/August 6th (**Figure 6-12**) and June 21st analysis days (**Figure 6-13**). Because the elevated subway A line and buildings to be developed as part of the Arverne East development would be located between the Projected Development Sites and this potential future open space, no significant adverse shadow impacts on this future resource would result from Projected Development Sites 3-7.

On the June 21st analysis day, Projected Development Sites 3-7 could potentially cast shadow on the northernmost portion of the urban farm proposed as part of the Arverne East development (**Figure 6-13**). Because the potential for shadow on this space would be limited to one analysis day, and since the elevated subway A line is located between the Projected Development Sites 3-7 and this potential future open space, no significant adverse impacts on this future resource would result from Projected Development Sites 3-7.

Figure 6-10 Tier 3 Screening December 21 Analysis Day: Projected Development Sites 3–7



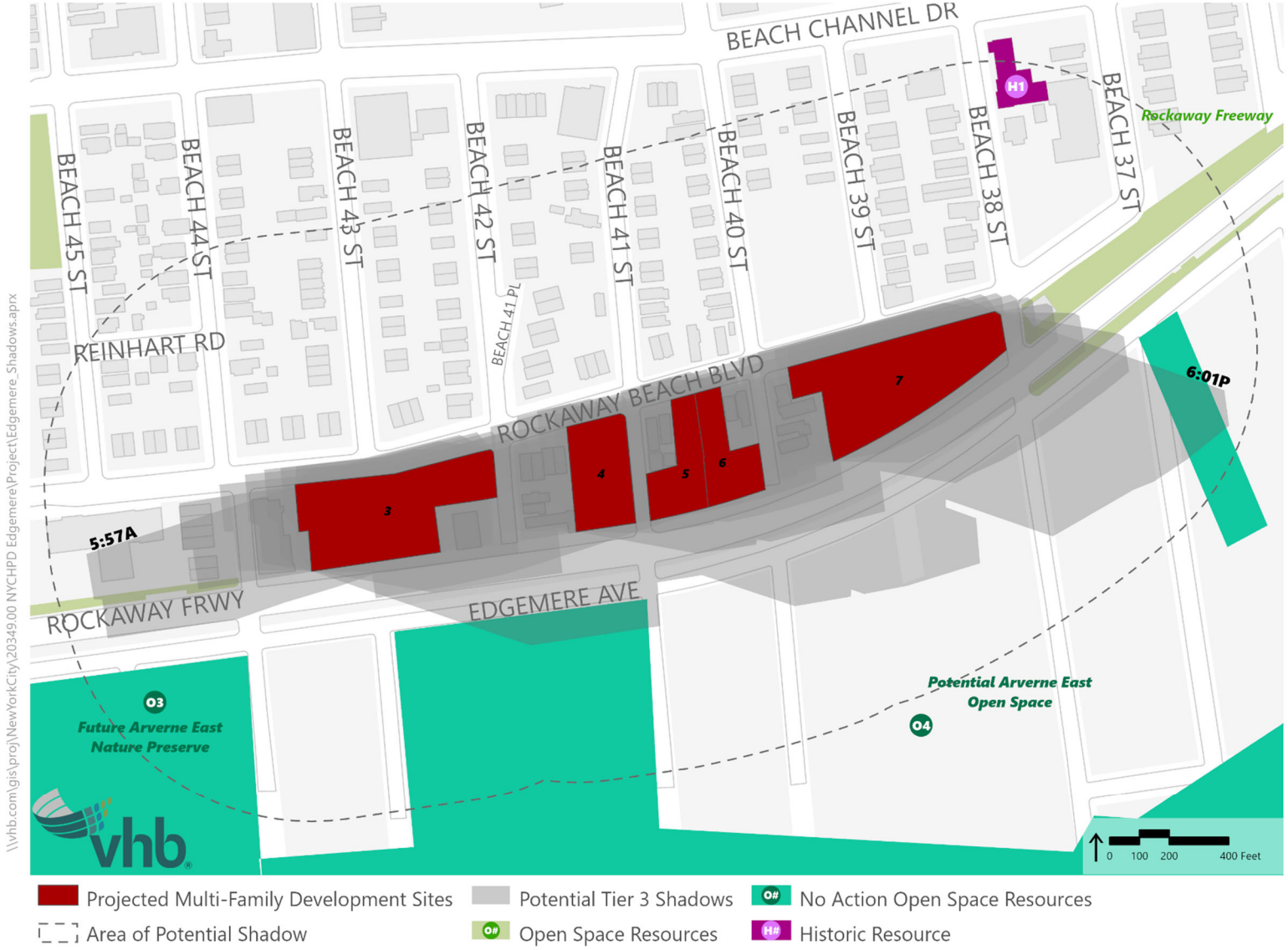
Figure 6-11 Tier 3 Screening March 21 Analysis Day: Projected Development Sites 3–7



Figure 6-12 Tier 3 Screening May 6 Analysis Day: Projected Development Sites 3–7



Figure 6-13 Tier 3 Screening June 21 Analysis Day: Projected Development Sites 3–7



Detailed Assessment

Based on the Tier 3 shadows screening, Conch Playground was identified for a detailed assessment.

No-Action Condition

In the future without the Proposed Actions (the No-Action condition), the Projected Development Sites would remain in their existing conditions as vacant lots.

As discussed above, there are development projects within the study area that could affect shadow conditions in the future. The development that may also cast shadow on Conch Playground, the Peninsula Hospital Site Redevelopment project, was included in the detailed analysis.

With-Action Condition

The Proposed Actions would facilitate a program of commercial and residential uses in the Project Area across multiple sites. It is expected that development on Projected Development Sites 1 through 7 would have a total building height of 106 feet including the bulkhead, as detailed in the Analysis Framework section above. Projected Development Site 1 is the site relevant to the detailed analysis of Conch Playground.

The detailed shadow analysis compares the future condition resulting from the Proposed Actions (With-Action condition) to the baseline condition (No-Action condition) to illustrate the shadows cast by existing or future buildings and distinguish the additional (incremental) shadow cast by the Proposed Actions. Any new shadows projected to be cast onto the identified resources from the Proposed Actions are considered "incremental shadows."

Modeling Results

Table 6-3 provides the modeled incremental shadow entry/exit times for the sunlight-sensitive resources. The start times shown in the table represent the time that incremental shadow would enter any portion of the open space, and the end time represents the time that the incremental shadows leave the open space.

Table 6-3 Detailed Analysis Summary of Incremental Shadow Entry/Exit Times

		Analysis Day			
			March 21/		
Map No.	Resource	Dec 21 8:51A- 02:53P	Sept 21 7:36A-4:29P	May 6/Aug 6 6:27A-5:18P	June 21 5:57A-6:01P
Open Space					
O3	Conch Playground	8:51A-02:53P 6 hours, 2 minutes	7:36A-3:50P 8 hours, 14 minutes	-	-

O1- Conch Playground

As described in the Tier 1 and 2 Screening section above, Conch Playground is located directly north of Projected Development Site 1 across Beach Channel Drive and is a 1.89-acre open space jointly operated between NYC Department of Parks and Recreation (DPR) and NYC Department of Education, as it is adjacent to Public School 105. This open space features play equipment, a spray shower, courts, seating, and paved paths—which comprise approximately 1.3 acres. The remainder of the playground, approximately 0.59 acres, consists of vegetation. The detailed analysis showed that the Playground could receive incremental shadow on the December 21st analysis day from 8:51 AM to 2:53 PM (a total duration of 6 hours and 2 minutes) and March 21st analysis day from 7:36 AM to 4:29 PM (a total duration of 8 hours and 14 minutes). Each analysis day is described below along with illustrative figures.

December 21st Analysis Day

On the December 21st analysis day, the detailed analysis shows that incremental shadow could shade the park from 8:51 AM to 2:53 PM for a total duration of approximately 6 hours (see **Figure 6-14** through **Figure 6-26**). The shadow would move from the western and southern side of the park at the beginning of the day, to cover the southern side of the park, and then the southeastern edge at the end of the day. This portion of the park that could be shaded contains play equipment, spray showers, black top area, and portions of paved paths and vegetation. At its greatest extent the shadow would cover approximately 36% of the park, and it would never eliminate sunlight entirely from the park.

The area within the detailed shadows sweep contains an active play area, spray showers (which would not be in use on the December analysis day), benches, pathways, planted areas, and a portion of blacktop area. The play equipment would be shaded for much of the day, but portions would receive sun in the morning and afternoon. Visitors would also be able to sit or play in the sun on the north side of the park that would be sun filled throughout the day.

The vegetation in the area is deciduous and is expected to be dormant during the winter season. Therefore, the incremental shadow is not expected to affect the viability of vegetation on this analysis day.

Therefore, it is not anticipated that significant adverse shadows impacts on Conch Playground would result from Projected Development Site 1.

Figure 6-14 O1 Conch Playground - December 21 – 8:51 AM



Figure 6-15 O1 Conch Playground - December 21 - 9:21 AM



Figure 6-16 O1 Conch Playground - December 21 - 9:51 AM



Figure 6-17 O1 Conch Playground - December 21 – 10:21 AM



Figure 6-18 O1 Conch Playground - December 21 - 10:51 AM



Figure 6-19 O1 Conch Playground - December 21 - 11:21 AM



Figure 6-20 O1 Conch Playground - December 21 –11:51 AM



Figure 6-21 O1 Conch Playground - December 21 - 12:21 PM



Figure 6-22 O1 Conch Playground - December 21 - 12:51 PM



Figure 6-23 O1 Conch Playground - December 21 – 1:21 PM



Figure 6-24 O1 Conch Playground - December 21 - 1:51 PM



Figure 6-25 O1 Conch Playground - December 21 - 2:21 PM



Figure 6-26 O1 Conch Playground - December 21 - 2:51 PM



March 21st/ September 21st Analysis Day

On the March 21st/ September 21st analysis day, the detailed analysis shows that incremental shadow could shade the park from 7:36 AM to 4:29 PM for a total duration of approximately 8 hours (see **Figure 6-27** through **Figure 6-43**). The incremental shadow would move from the southwestern edge of the park at the beginning of the day and move eastward over the course of the day to exit at the southeastern corner at the end of the day. This portion of the park that could be shaded contains a planted bed. At its greatest extent the shadow would cover approximately 6% of the park, and it would never eliminate sunlight entirely from the park.

The incremental shadow duration would be long, but the shadows area would be small in size, and the plantings in this area would still receive some sunlight in the morning and afternoon. As such, these shadows would not result in significant adverse impacts on the viability of the vegetation, nor would it reduce the usability of this resource.

Figure 6-27 O1 Conch Playground – March/September 21 – 7:36 AM



Figure 6-28 O1 Conch Playground - March/September 21 - 8:06 AM



Figure 6-29 O1 Conch Playground – March/September 21 - 8:36 AM



Figure 6-30 O1 Conch Playground – March/September 21 – 9:06 AM



Figure 6-31 O1 Conch Playground - March/September 21 - 9:36 AM

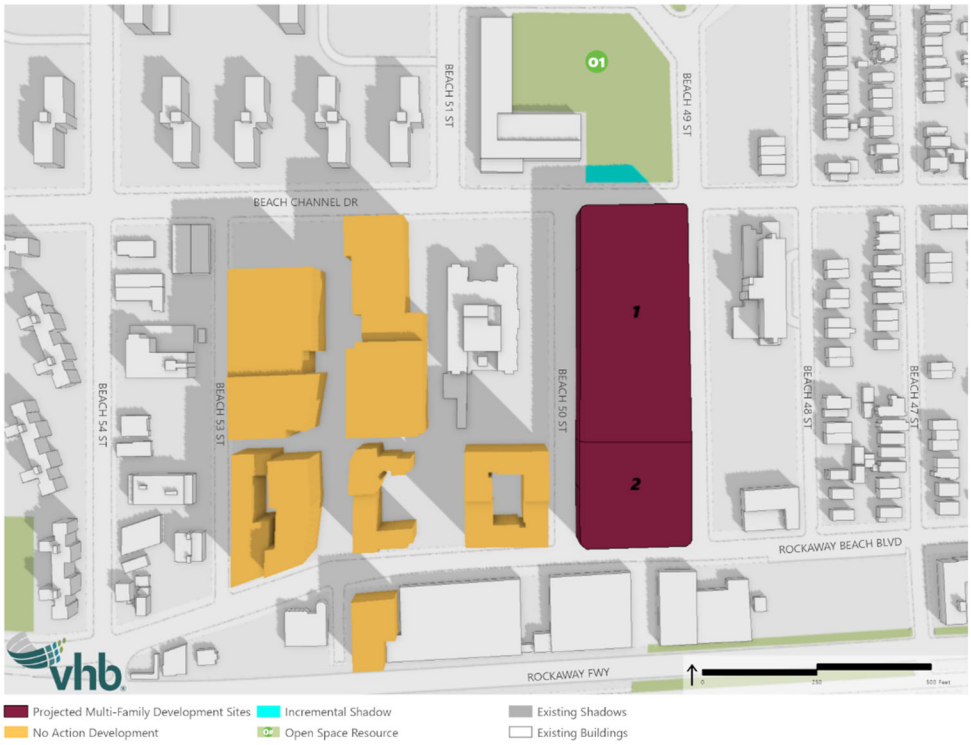


Figure 6-32 O1 Conch Playground – March/September 21 - 10:06 AM



Figure 6-33 O1 Conch Playground – March/September 21 – 10:36 AM

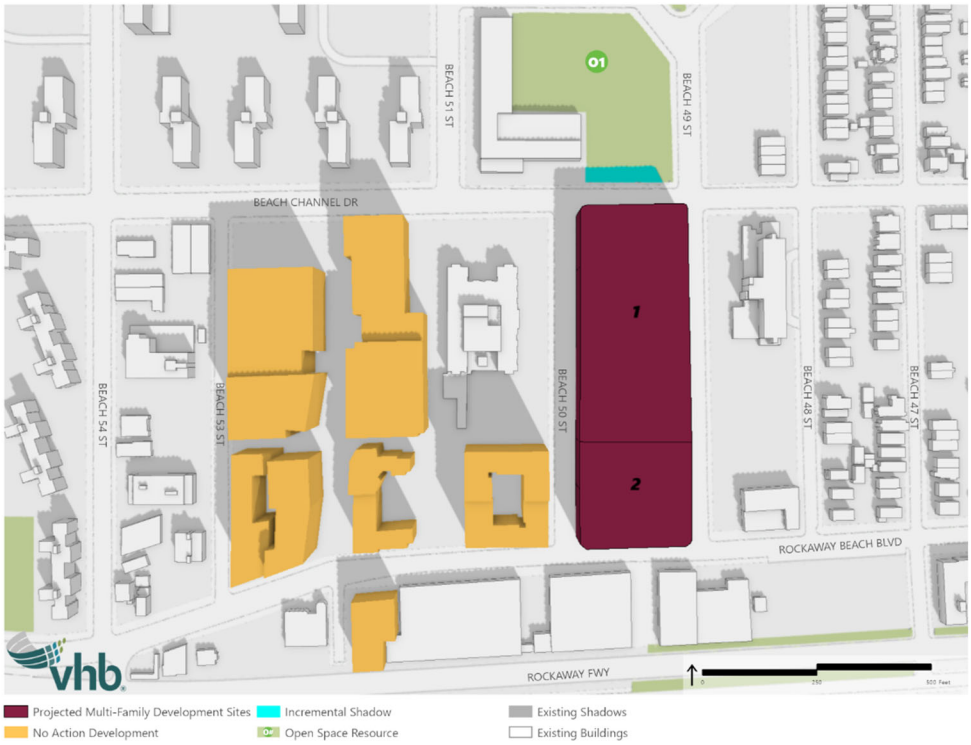


Figure 6-34 O1 Conch Playground - March/September 21 - 11:06 AM

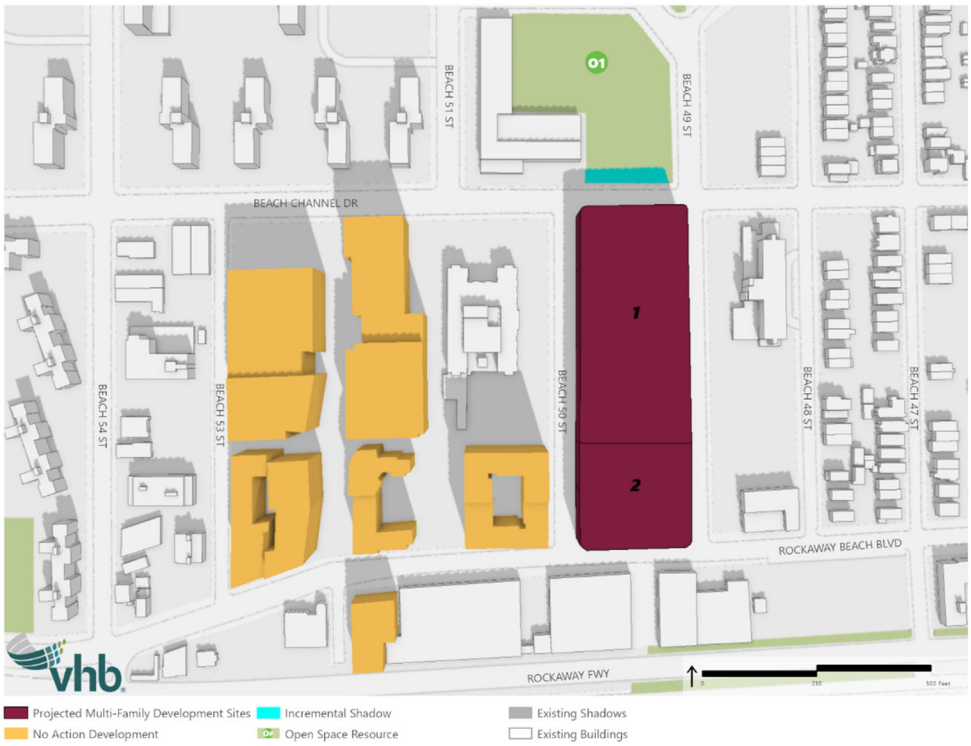


Figure 6-35 O1 Conch Playground – March/September 21 - 11:36 AM



Figure 6-36 O1 Conch Playground – March/September 21 – 12:06 PM



Figure 6-37 O1 Conch Playground - March/September 21 - 12:36 PM



Figure 6-38 O1 Conch Playground – March/September 21 - 1:06 PM



Figure 6-39 O1 Conch Playground - March/September 21 - 1:36 PM



Figure 6-40 O1 Conch Playground – March/September 21 - 2:06 PM



Figure 6-41 O1 Conch Playground – March/September 21 – 2:36 PM



Figure 6-42 O1 Conch Playground - March/September 21 - 3:06 PM



Figure 6-43 O1 Conch Playground – March/September 21 - 3:36 PM



7

Historic and Cultural Resources

This section assesses the potential for the Proposed Actions to result in significant adverse impacts on historic and cultural resources, including both archaeological and architectural resources. The analysis presented herein addresses the historic and cultural resources of the Projected Development Sites, Project Area, and Study Area for existing conditions. The analysis considers the No-Action condition and the With-Action condition for the Project Area in the 2031 analysis year.

Introduction

As described in **Chapter 1, Project Description**, the Proposed Actions would facilitate mid-rise development of multi-family housing and commercial amenities in those portions of the Project Area that are nearest to transit—namely along Beach Channel Drive, Rockaway Beach Boulevard, and Rockaway Freeway (Projected Multi-Family Development Sites (Sites 1-9) as well as in-fill development at Projected Residential Infill Sites (Sites 10-41). Together, these sites are referred to as the Projected Development Sites. Some of the Projected Development Sites consist of only one lot, but many of the Projected Development Sites contain multiple contiguous individual lots (see **Appendix B**). In total, the Projected Development Sites include 139 individual lots and two former street bed sections. The majority of the lots contain vacant land or parking facilities. Several lots contain existing housing or commercial buildings,

although a number of these buildings are vacant. **Figure 7-1** illustrates the locations of the Projected Development Sites within the overall Project Area.

The *2020 City Environmental Quality Review* (*CEQR) Technical Manual* recommends that a historic and cultural resources assessment be performed if a proposed action would result in any of the following actions: in-ground disturbance; new construction, demolition, or significant physical alteration of any building, structure, or object; the change in scale, visual prominence, or visual context of any building, structure, or object or landscape feature; or the screening or elimination of publicly accessible views, even if no known historic resources are located nearby. This analysis has been prepared in accordance with CEQR and in consultation with the New York City Landmarks Preservation Commission (LPC).

Principal Conclusions

LPC has indicated that there are no Projected Development Sites within the Project Area that have archaeological significance. Therefore, in the future, either with or without the Proposed Actions, there will be no impacts to archaeological resources, and no further analysis of archaeological resources is warranted.

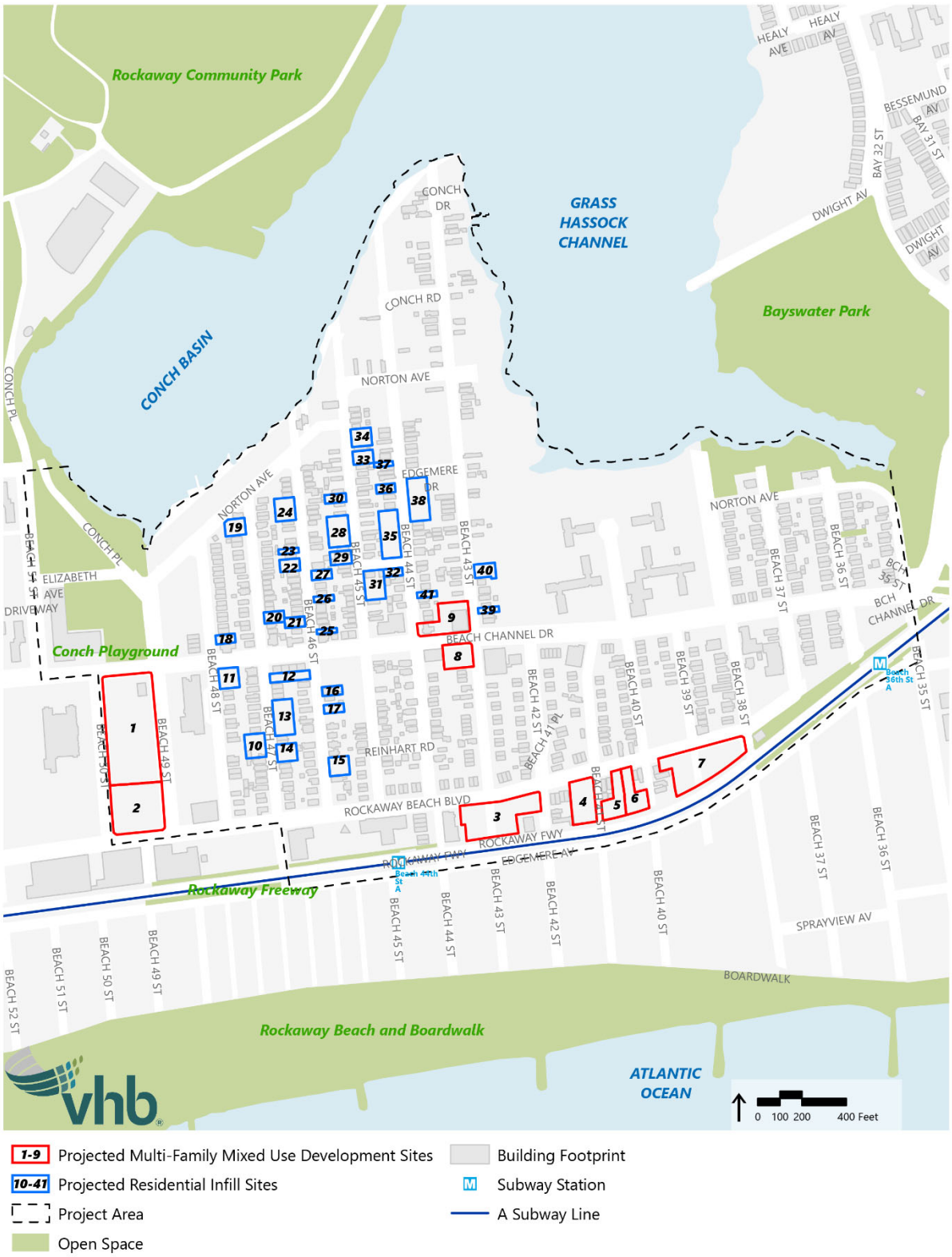
LPC has also indicated that there are no buildings or structures on the Projected Development Sites within the Project Area that have architectural significance. Therefore, in the future either with or without the Proposed Actions, there will be no impacts to architectural resources on any of the Projected Development Sites.

Lastly, LPC has indicated that no adverse impacts to any of the previously identified historic resources would be anticipated as a result of the Proposed Actions (Santucci 1/14/2021 and 8/12/2021, **Appendix B**). Therefore, no further analysis of architectural resources is warranted.

Methodology

The *2020 CEQR Technical Manual* notes that environmental review for historic and cultural resources includes a survey and planning process that helps protect New York City cultural heritage from the potential impacts of projects undergoing CEQR. Historic and cultural resources include both archaeological and architectural resources. Archaeological resources are physical remains, usually subsurface, of pre-contact, post-contact and historic periods—such as burials, foundations, artifacts, wells, and privies. Architectural resources generally include historically important buildings, structures, objects, sites, and districts. They may include bridges, canals, piers, wharves, and railroad transfer bridges that may be wholly or partially visible above ground.

Figure 7-1 Project Area Map



Locations of the Projected Development Sites within the overall Project Area. Source, VHB 2021

Consistent with CEQR guidance, historic and cultural resources consist of the following:

- Designated New York City landmarks, interior landmarks, scenic landmarks, and properties within designated New York City historic districts (or resources calendared for consideration by the LPC).
- Resources listed on, or formally determined eligible for inclusion on, the State and/or National Register of Historic Places (S/NR), or contained within a district listed on, or formally determined eligible for listing on, the S/NR.
- Resources recommended by the New York State Board for Historic Preservation for listing on the S/NR.
- National Historic Landmarks.
- Resources not identified by one of the programs listed above, but that meet their eligibility requirements.

Consultation with LPC was initiated by submitting a list and photographs of all the Projected Development Sites' block and lot numbers within the Project Area, tied to a map and photo key (**Appendix B**). The map also illustrated the recommended 400-foot-radius Study Area surrounding the Project Area. The LPC reviewed these blocks and lots as well as the 400-foot-radius Study Area for both archaeological and architectural resources and determined there were no properties with architectural or archaeological significance therein (Santucci 1/14/2021 and 8/12/2021, **Appendix B**).

Archaeological Resources

Archaeological resources are physical remnants, usually buried, of past human activities on a site. They can include archaeological resources associated with Native American populations that used or occupied a site and can include stone tools or refuse from tool-making activities, remnants of habitation sites, etc. These resources are also referred to as "precontact," since they were deposited before Native Americans' contact with European settlers. Archaeological resources can also include remains from activities that occurred during the historic period, which began with the European colonization of the New York area in the 17th century; such resources can include remains associated with European contact with Native Americans, battle sites, landfill deposits, structural foundations, and domestic shaft features such as cisterns, wells, and privies.

On sites where later development occurred, archaeological resources may have been disturbed or destroyed by grading, excavation, and infrastructure installation and street improvements. However, some resources do survive in urban environments despite extensive development. Deposits can be protected when covered with pavement (i.e., a parking lot) or with a building with a shallow foundation and no basement. In both scenarios, archaeological deposits can be sealed beneath the ground surface, protected from further disturbance.

The study area for archaeological resources is the area that would be disturbed for project construction, i.e., the Projected Development Sites. No archaeological sites have been previously documented within any of the Projected Development Sites or within the overall Edgemere neighborhood, according to the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP or SHPO), which maintains the State database of

archaeological resources. This lack of previously documented archaeological sites within the Edgemere neighborhood undoubtedly is due to the fact that this area was once under waters of Jamaica Bay, and only was landfilled in the first decades of the twentieth century.

LPC reviewed the Projected Development Sites and indicated that none of the Projected Development Sites have any archaeological significance (Santucci 1/14/2021 and 8/12/2021, **Appendix B**). Therefore, no further analysis of archaeological resources is warranted.

Architectural Resources

Generally, architectural resources should be surveyed and assessed if a proposed project would result in any of the following, whether any known historic resources are located near the site of the project:

- New construction, demolition, or significant physical alteration to any building, structure, or object;
- A change in scale, visual prominence, or visual context of any building, structure, object or landscape feature. Visual prominence is generally the way in which a building, structure, object, or landscape feature is viewed;
- Construction, including but not limited to, excavating vibration, subsidence, dewatering, and the possibility of falling objects;
- Additions to or significant removal, grading, or replanting of significant historic landscape features;
- Screening or elimination of publicly accessible views; and
- Introduction of significant new shadows or significant lengthening of the duration of existing shadows on an historic landscape or on an historic structure if the features that make the structure significant depend on sunlight.

As noted in the Methodology section, architectural resources are defined as buildings, structures, objects, sites, or districts that are:

- Listed on or Determined Eligible for the S/NR;
- National Historic Landmarks;
- New York Certified Landmarks and Historic Districts; and
- Properties that have been found by LPC to appear eligible for designation or considered for designation ("heard") by LPC at a public hearing.

The Study Area for architectural resources is determined based on a proposed action's area of potential effect on architectural resources, which accounts for both direct physical impacts and indirect impacts. Direct impacts include demolition of a resource and alterations to a resource that cause it to become a different visual entity. A resource could also be damaged by adjacent construction activities such as blasting, pile driving, falling objects, subsidence, collapse, or damage from construction machinery without proper protection measures. Adjacent construction is defined as any construction activity that would occur within 90 feet

of a historic resource, as defined in the New York City Department of Building (DOB) *Technical Policy and Procedure Notice (TPPN) #10/88*.[1]

Indirect impacts are contextual or visual impacts that could result from project development. As described in the *CEQR Technical Manual*, indirect impacts can result from a change in scale, visual prominence, or visual context of any building, structure, or object or landscape feature; screening or elimination of publicly accessible views; or introduction of significant new shadows or significant lengthening of the duration of existing shadows on a historic landscape or on a historic structure if the features that make the resource significant depend on sunlight. Significant adverse direct or indirect impacts can occur if a project would cause a change in the characteristics and features of a property that qualifies it for S/NR listing or for designation as a NYCL.

To account for potential direct and indirect impacts, the Study Area has been defined following the guidelines of the *CEQR Technical Manual* to include the Project Area and a 400-foot radius surrounding the Project Area (see **Figure 7-2**). This 400-foot radius is typically considered adequate for the assessment of historic resources, in terms of physical, visual, and historical relationships.

Criteria and Regulations

Once the Study Area was determined, an inventory of officially recognized ("designated and eligible") architectural resources was compiled. Criteria for listing on the S/NR are in the Code of Federal Regulations, Title 36, Part 63, and LPC has adopted these criteria for use in identifying architectural resources for CEQR review. Following these criteria, districts, sites, buildings, structures, and objects are eligible for the S/NR if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and: (1) are associated with events that have made a significant contribution to the broad patterns of history (Criterion A); (2) are associated with significant people (Criterion B); (3) embody distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C); or (4) may yield information important in prehistory or history (Criterion D). Properties that are younger than 50 years of age are ordinarily not eligible, unless they have achieved exceptional significance. Official determinations of eligibility are made by the OPRHP.

In addition, LPC designates historically significant properties in the City as NYCLs and/or Historic Districts, following the criteria provided in the Local Laws of the City of New York, New York City Charter, Administrative Code, Title 25, Chapter 3. Buildings, properties, or objects are eligible for landmark status when a part is at least 30 years old. Landmarks have a special character or special historical or aesthetic interest or value as part of the development, heritage, or cultural characteristics of the city, state, or nation. There are four types of landmarks: individual landmark, interior landmark, scenic landmark, and historic district.

[1] TPPN #10/88 was issued by DOB on June 6, 1988, to supplement Building Code regulations with regard to historic structures. TPPN #10/88 outlines procedures for the avoidance of damage to historic structures resulting from adjacent construction, defined as construction within a lateral distance of 90 feet from the historic resource.

Within the Study Area, architectural resources that were analyzed include NHLs, S/NR-listed properties or properties determined eligible for S/NR listing, NYCLs and Historic Districts, and properties determined eligible for landmark status. The identification of architectural resources was made in consultation with LPC (see **Appendix B** for LPC correspondence).

Once the architectural resources in the 400-foot Study Area were identified, the Proposed Actions were assessed for both direct physical impacts and indirect visual and contextual impacts on architectural resources. As noted above, the analysis presented in this chapter addresses the historic and cultural resources of the Projected Development Sites and Study Area for existing conditions. The analysis considers the No-Action condition and the With-Action condition for the Project Area in the 2031 analysis year, when the project is expected to be completed.

Existing Conditions

As noted in **Chapter 1, Project Description**, the Project Area encompasses a total of approximately 166 acres. Beach Channel Drive, Rockaway Beach Boulevard, and Rockaway Freeway transverse the Project Area from east to west. The elevated A subway line runs along Rockaway Freeway—the southern boundary of the Project Area—with stations at Beach 44th Street-Frank Avenue and Beach 36th Street. The Project Area is flanked by Rockaway Community Park and Bayswater Park to the northwest and northeast, respectively (both located outside the Project Area). Beyond the southern boundary of the Project Area is Rockaway Beach and the Atlantic shorefront.

Residential, open space, and vacant land uses dominate the Project Area, with some limited commercial uses. Built form throughout the neighborhood is dominated by low-density residential buildings (with one to four dwelling units in two to four stories, both attached and detached). The area is punctuated by a few low-rise commercial buildings, high-density residential buildings (namely NYCHA Beach 41st Street Houses, with buildings up to 13 stories), and recent mid-rise, multi-family, mixed-use developments (of up to eight stories). The presence of vacant land is a prevailing condition across the Project Area.

Within the Project Area, there are several subareas, each of which has a distinctive neighborhood geography. The first consists of the area directly along the Jamaica Bay waterfront, which is characterized by low-density, one- to two-family residences in detached and semi-detached buildings and vacant land. (the *Hazard Mitigation Area*).

The second subarea consists of low-density, one- to four-family residences in detached and semi-detached buildings and vacant land in the area that is generally bounded by Norton Avenue to the north, Beach 49th Street to the west, Beach Channel Drive to the south, and the NYCHA Beach 41st Street Houses to the east. It is also low-lying and may experience ponding from tidal flooding and rain events more frequently in the future due to increasing precipitation and sea level rise. (the *Limited Development Area*).

The third subarea, comprising the center of the Project Area, is located along and south of Beach Channel Drive and is bounded by Rockaway Beach Boulevard to the south, Beach 49th and 51st Street to the west and Beach 36th and 35th Street to the east. This sub-area today consists of low-density, one- to four-family residences in semi-detached and attached buildings as well as low-rise commercial buildings and vacant land (the *Neighborhood Infill Area*).

The fourth and final subarea, located along Rockaway Beach Boulevard and Beach 50th Street, consists of vacant land; surface parking; low-density, one- to four-family residences in semi-detached and attached buildings as well as low-rise commercial buildings; and recently constructed mid-rise, multi-family, mixed-use developments. This subarea is located nearest to the elevated A subway line, which runs along the southern boundary of the Project Area (the *Commercial Corridor*).

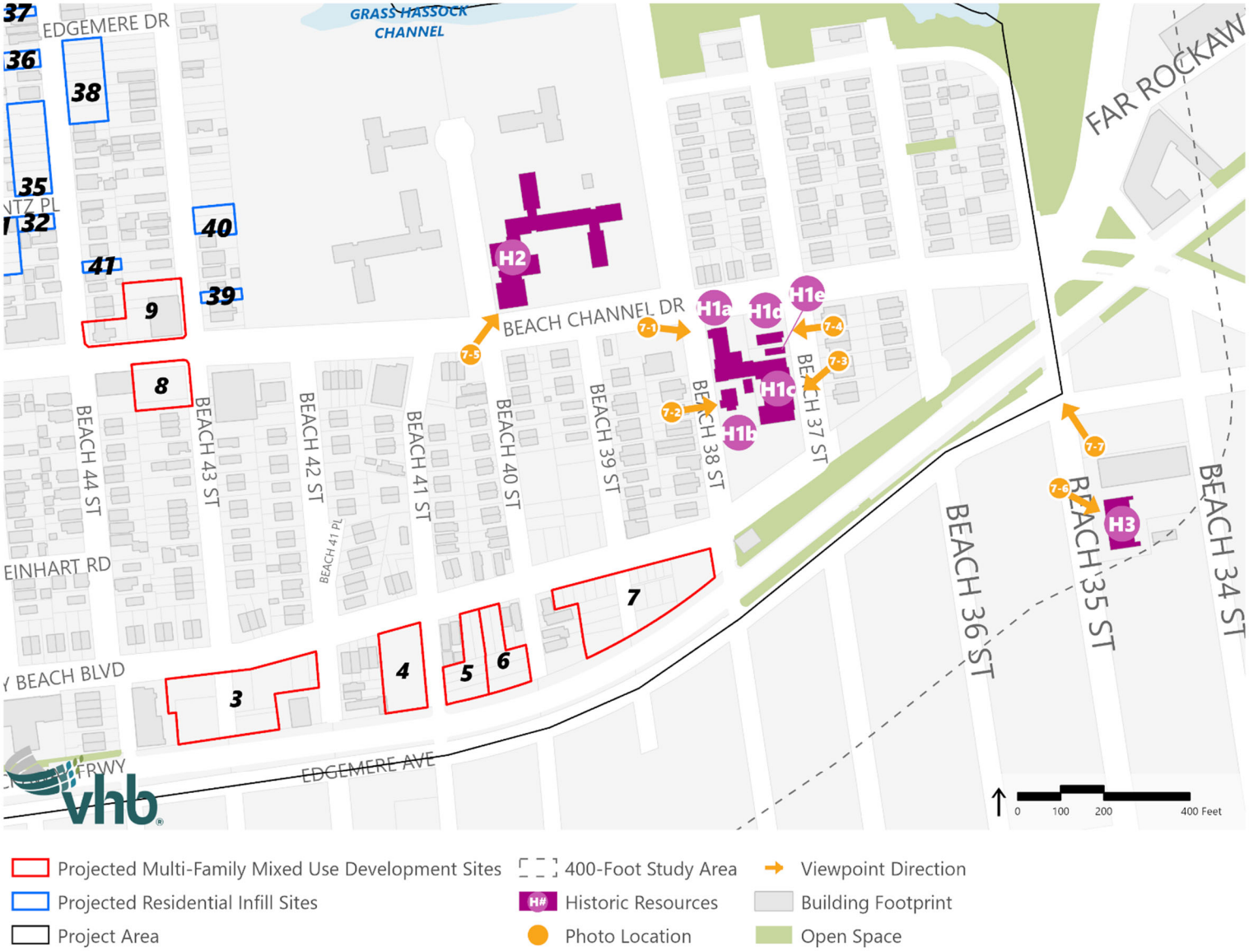
Review of the OPRHP's CRIS database indicates that there are two historic resources within the overall Project Area and one historic resource within the 400-foot radius Study Area. These resources are shown on **Figure 7-2** and summarized in **Table 7-1**, below. A description of each resource follows **Figure 7-2**.

Table 7-1 Architectural Resources

Map Reference Number	Photo Number	USN	Name	Address/Block/Lot	Status
H1a	**7-1**	08101.011946	St. Gertrude the Good Church and Complex	336 Beach 38th St. Block 15827, Lot 15	S/NR Eligible Building District
H1b	**7-2**	08101.011934	St. Gertrude the Good Church Rectory	336 Beach 38th St. Block 15827, Lot 12	S/NR Eligible as a contributing resource
H1c	**7-3**	08101.011947	St. Gertrude the Good Church Auditorium	307/321 Beach 37th St. Block 15827, Lot 31	S/NR Eligible as a contributing resource
H1d	**7-4**	08101.011949	St. Gertrude the Good Church Large bungalow	325 Beach 37th St. Block 15827, Lot 25	S/NR Eligible as a contributing resource
H1e	**7-4**	08101.011950	St. Gertrude the Good Church Small bungalow	323 Beach 37th St. Block 15827, Lot 29	S/NR Eligible as a contributing resource
H2	**7-5**	08101.011899	Housing Complex	38-20 Beach Channel Dr. Block 15955, Lot 3	S/NR Undetermined
H3	**7-6, 7-7**	08101.011161	P.S. 106Q	180 Beach 35th St. Block 15861, Lot 35	S/NR Eligible

Source: HPI 2021

Figure 7-2 Architectural Resources and Photo Locations Map



H1a-H1e. St. Gertrude the Good Church Complex (S/NR Eligible)

Table 7-1 indicates that the St. Gertrude the Good Church Complex—which is located on Block 15827 and bounded by Beach Channel Drive, Beach 37th Street, and Beach 38th Street—consists of several contributing buildings, including the church, the rectory, a large bungalow, a small bungalow, and an auditorium (**Photo 7-1** through **Photo 7-4**). The Determination of Eligibility for the Complex by Daria Merwin of the OPRHP stated:

> *Based on preliminary research, the Roman Catholic Church of St. Gertrude the Good complex south of Beach Channel Drive and between Beach 37th and 38th Streets in the Edgemere section of Far Rockaway appears to be eligible for the National Register under Criteria A (social history) and C (architecture). The period of significance is from establishment of the church at the site and reflects the time span in which the neighborhood transitioned from a summer resort to a year-round community through 1969, when hundreds of nearby bungalows were razed in the unbuilt Arverne Urban Renewal Area. The complex consists of the church (built 1911 and moved to the current site sometime between 1919 and 1924), the rectory and associated garage (circa 1925), a large and a small bungalow (both circa 1930), and an auditorium (1962). St. Gertrude's was established in 1911 as a "summer mission" to serve a burgeoning beach bungalow community along the Rockaway Peninsula. The building was initially located a short distance away on the south side of the Long Island Railroad tracks but moved to its present site prior to 1924. The church is Tudor Revival in style, and was built to the design of architects Edward A. Lehmann and Thomas O'Kane, Jr. The original one-story church building is rectangular in plan with a cross gabled side entrance. It has wide overhanging eaves and is faced with stucco and false timber framing. There is a sympathetic addition dating to circa 1975 to the rear of the church. The Rectory is a two-and-one-half-story residence, also in the Tudor Revival style with stucco and false half timbering that match the church. The bungalows are also clad in matching stucco with wood trim. The one-story brick auditorium was built on the southeast corner of the complex lot in 1962 to the design of architect John O'Malley. Although this is one of his lesser works, by the mid-1960s, O'Malley was arguably the most prolific architect for the Catholic Church in Brooklyn, Queens, and Long Island (Merwin, 2/1/2016).*

H2. Housing Complex Block 15955 (S/NR Undetermined)

The Housing Complex on Block 15955, which has not been evaluated for S/NR eligibility, was constructed in 1976 and therefore does not meet the 50-year age threshold for S/NR consideration (**Photo 7-5**).

H3. P.S. 106 Q (S/NR eligible)

The S/NR-eligible P.S. 106 Q, is within the 400-foot radius Study Area, but is located on the south side of the elevated Rockaway Freeway and as such is visually separated from the Project Area (**Photo 7-6** and **Photo 7-7**). The Determination of Eligibility for the Complex by Virginia L. Bartos of the OPRHP stated:

Based on the information submitted, it is the opinion of the State Historic Preservation Office that the PS 106 in Far Rockaway (Queens County) is architecturally and historically significant as an outstanding example of early twentieth century public architecture, designed circa 1929 for the NYC schools by Walter C. Martin. The school is a three-story brick building with a flat roof and stone neoclassic stone detailing such as full-height stone facings at the corners and on the first story and window surrounds. There is also a decorative cornice (Bartos 6/26/2006).

As noted in the Methodology section, LPC was contacted to review the Proposed Actions and the Projected Development Sites. LPC indicated that none of the Projected Development Sites have any structures of architectural significance (Santucci 1/14/2021 and 8/12/2021, **Appendix B**). Further, LPC identified the two historic resources within the overall Project Area and one historic resource within the 400-foot radius Study Area that are shown on **Figure 7-2** and listed in **Table 7-1**, above. The LPC indicated that there would be no adverse impacts to any of these historic resources anticipated as a result of the Proposed Actions (Santucci 1/14/2021 and 8/12/2021, **Appendix B**). Therefore, no further analysis of architectural resources is warranted.

Photo 7-1 St. Gertrude the Good Church and Complex



St. Gertrude the Good Church building and complex at 336 Beach 38th Street, Block 15827, Lot 15. View looking southeast. (Source: HPI, January 22, 2021)

Photo 7-2 St. Gertrude the Good Church Rectory



St. Gertrude the Good Church Rectory at 336 Beach 38th Street, Block 15827, Lot 12. View looking east. (Source: HPR, January 22, 2021)

Photo 7-3 St. Gertrude the Good Church Auditorium



St. Gertrude the Good Church Auditorium at 307-321 Beach 37th Street, Block 15827, Lot 31. View looking southwest (Source: HPR, January 22, 2021)

Photo 7-4 St. Gertrude the Good Church Large and Small Bungalows



St. Gertrude the Good Church Large Bungalow (right) and Small Bungalow (left) at 325 and 323 Beach 37th Street, Block 15827, Lots 25 and 29. View looking west. (Source: HPI, January 22, 2021)

Photo 7-5 Housing Complex



Housing complex at 38-20 Beach Channel Drive, Block 15955, Lot 3. View looking northeast. (Source: HPI, January 22, 2021)

Photo 7-6 P.S. 106 Q



P.S. 106 Q at 180 Beach 35th Street, Block 15861, Lot 35. View looking southeast. (Source: HPI, January 22, 2021)

Photo 7-7 Rockaway Freeway, from P.S. 106 Q



The Rockaway Freeway visually separating the Project Area from P.S. 106 Q at 180 Beach 35th Street, Block 15861, Lot 35. View looking north. (Source: HPI, January 22, 2021)

No-Action Condition

In the future without the Proposed Actions (No-Action condition), the Project Area is assumed to mostly remain unchanged from existing conditions and there would be no new development on the Projected Development Sites. However, the status of the previously identified historic resources could change. S/NR-eligible architectural resources could be listed in the Registers. It is also possible, given the Proposed Actions' analysis year of 2031, that additional sites could be identified as eligible historic resources in this time frame.

In the future without the Proposed Actions, changes to architectural resources identified above or to their settings could occur. For example, indirect impacts from future projects could include a change in scale, visual prominence, or visual context of any building, structure, or object or landscape feature; screening or elimination of publicly accessible views; or introduction of significant new shadows, or significant lengthening of the duration of existing shadows, on a historic structure if the features that make the resource significant depend on sunlight. It is also possible that some architectural resources could deteriorate or experience direct impacts through alteration or demolition, while others could be restored. In addition, future projects could accidentally damage architectural resources through adjacent construction.

Architectural resources that are listed in the S/NR or that have been found eligible for S/NR listing are given a measure of protection from the impacts of federally sponsored, or federally assisted, projects under Section 106 of the National Historic Preservation Act, and they are similarly protected against impacts resulting from state-sponsored or state-assisted projects under the State Historic Preservation Act. Although preservation is not mandated, federal agencies must attempt to avoid adverse impacts on such resources through a notice, review, and consultation process. However, private owners using private funds can alter or demolish their S/NR listed or eligible properties without such a review process.

Privately owned properties that are listed or eligible NYCLs are protected under the New York City Landmarks Law, which requires LPC review and approval before any alteration or demolition of those properties can occur, whether publicly or privately funded. All properties within NYCL-designated historic districts also require an LPC permit and approval prior to new construction, addition, enlargement, or demolition. The owners of the property may work with LPC to modify their plans to make them consistent with NYCL Law. Publicly owned resources are also subject to review by LPC before the start of a project. However, LPC's role in projects sponsored by other City or State agencies is generally advisory only. The New York City Building Code provides some measures of protection for all properties against accidental damage from adjacent construction by requiring that all buildings, lots, and service facilities adjacent to foundation and earthwork areas be protected and supported.

Last, as discussed in detail in **Chapter 2, Land Use, Zoning and Public Policy**, there is one proposed development project within the Project Area and two proposed development projects in the larger Study Area.

Within the Project Area, the Beach Green Dunes III project would be located between Beach 35th Street and Beach 36th Street on Beach Channel Drive (**Chapter 2**, **Figure 2-3**, **Table 2-1**). It would consist of a mixed-use, eight-story building with retail space and 138 affordable housing units, of which 31 will be allocated to seniors under the City Affordable Independent Residences for Seniors program.

Within the 400-foot Study Area, Edgemere Commons (CEQR No. 18DCP124Q) would be located between Beach 50th Street and Beach 53rd Street on Rockaway Beach Drive (**Chapter 2**, **Figure 2-3**, **Table 2-1**). The proposed actions would facilitate the redevelopment of the former 9.3-acre hospital site including approximately 72,000 sf of commercial uses and approximately 1,791 dwelling units across 11 buildings, 8 of which have an estimated build year of 2031.

Also within the 400-foot Study Area, the Arverne East project (CEQR No. 20HPD081Q) would be located between Beach 32nd Street and Beach 56th Place (**Chapter 2**, **Figure 2-3**, **Table 2-1**). This project would consist of the development of approximately 1,650 dwelling units, approximately 262,000 sf of commercial floor area, and approximately 150 hotel rooms, along with an urban farm and a nature preserve.

With-Action Condition

Archaeological Resources

LPC has indicated that there are no Projected Development Sites within the Project Area that have archaeological significance. Therefore, in the future with the Proposed Actions, there will be no impacts to archaeological resources, and no further analysis of archaeological resources is warranted.

Architectural Resources

LPC has indicated that there are no buildings or structures on the Projected Development Sites within the Project Area that have architectural significance. Therefore, in the future with the Proposed Actions, there will be no impacts to architectural resources on any of the Projected Development Sites.

LPC has also indicated that the Proposed Actions would not result in any anticipated adverse impacts to any of the previously identified historic resources existent within the Project Area and Study Area and shown in **Figure 7-2** and **Table 7-1** (Santucci 1/14/2021 and 8/12/2021, **Appendix B**). Therefore, no further analysis of architectural resources is warranted.

8

Urban Design and Visual Resources

An urban design assessment under CEQR considers whether and how a project may change the experience of a pedestrian in the project area. The assessment focuses on the components of a proposed project that may have the potential to alter the arrangement, appearance, and functionality of the built environment.

Introduction

According to the *2020 CEQR Technical Manual* (*CEQR Technical Manual*), urban design is defined as the totality of components—including streets, buildings, open spaces, wind, natural resources, and visual resources—that may affect a pedestrian's experience of public space. A visual resource is defined as the connection from the public realm to significant natural or built features, including views of the waterfront, public parks, landmark structures or districts, otherwise distinct buildings or groups of buildings, and natural resources.

Based on the *CEQR Technical Manual*, a preliminary assessment of urban design and visual resources is appropriate when there is the potential for a pedestrian to observe, from the street level, a physical alteration beyond that allowed by existing zoning. Examples include projects that permit the modification of yard, height, and setback requirements, and projects that result in an increase in built floor area beyond what would be allowed "as-of-right," or in the future No-Action condition.

As described in **Chapter 1, Project Description**, the Proposed Actions include zoning map amendments, zoning text amendments, amendments to the Edgemere Urban Renewal Plan, disposition of City-owned property, Urban Development Action Area designation and

project approval, a Mayoral Zoning Override to minimum required parking, and future construction financing from HPD, including an Article XI tax exemption on certain sites. In addition to the approvals described above, it is anticipated that some of the Projected Development Sites would be owned and managed in a community land trust (CLT) model. A CLT is a not-for-profit organization which owns and stewards land long term for the public's benefit. CLTs separate the ownership of their land from the ownership of structures on the land, typically entering long-term ground leases with homeowners, mutual housing associations, non-profit landlords or other tenants The Proposed Actions would facilitate the development of market-rate and affordable housing and community amenities to benefit the neighborhood in transit-oriented areas, discourage future development in areas of greater risk to coastal hazards through limited density, encourage development in areas further inland that are less vulnerable to flooding, and reduce the prevalence of vacant land throughout the Project Area.

Principal Conclusions

Urban Design

The Proposed Actions would not result in significant adverse impacts to urban design. The Proposed Actions would result in built forms and building types that are similar in height and bulk to the buildings that currently exist within the study area. The design of the Proposed Actions considers the issue of flooding and resiliency by limiting development near the Jamaica Bay waterfront (in the *Hazard Mitigation Area*) and encouraging development in the *Commercial Corridor*, where there are existing multi-family developments such as Beach Green Dunes. Compared to the No-Action condition, the With-Action condition would provide infill development on vacant lots, provide open space access to the waterfront and overall improve the urban design of the Project Area. These measures would activate the major roadways discussed below and introduce economy activity in an area that has been historically underdeveloped.

Visual Resources

Under the No-Action condition, views to Grass Hassock Channel and Conch Basin are partially visible from inland. The With-Action condition would allow a more direct view corridor to the Bay by decreasing the allowable building density along the waterfront. There is a possibility that views to Jamaica Bay would be improved because of potential open spaces located along the waterfront or new waterfront recreational uses that allow the public to better access the Bay. Therefore, there would be no significant adverse impact to visual resources due to the Proposed Actions.

Methodology

Per the *CEQR Technical Manual*, the urban design and visual resources assessment is conducted in three basic steps. First, a proposed action is reviewed to determine whether such an assessment is warranted, based on whether it would be expected to result in changes to elements particular to urban design—such as streets, buildings, visual resources, open space, natural features, and/or potential wind effects, and whether there is the

potential for a pedestrian to observe, from the street level, a physical alteration beyond that allowed by existing zoning. Pursuant to the *CEQR Technical Manual*, projects that permit modification of yard, height, and setback requirements, and projects that result in an increase in built floor area beyond what would be allowed as-of-right, or in the future without a proposed action, require preliminary analysis. When such changes, or "effects," could be expected with a proposed action, then a preliminary assessment of urban design and visual resources is conducted to determine which particular effects expected with the proposed action may warrant further investigation in a detailed analysis. A detailed analysis may be needed for projects or actions that potentially obstruct view corridors, compete with icons in the skyline, or make substantial alterations to the streetscape of a neighborhood by noticeably changing the scale of buildings. It is within the detailed analysis that the effects are characterized and a determination is made as to whether any changes to the urban design and visual resources of an area would alter the pedestrian's experience of public space in a significant way. The Proposed Actions would facilitate development of greater height and bulk and change land use designations in select areas within the Project Area. Therefore, a detailed analysis of the potential impacts of the Proposed Action on urban design and visual resources is warranted per *the CEQR Technical Manual* guidelines and is provided below. This analysis describes existing conditions and compares the future with and without the Proposed Action, to determine potential urban design and visual resource impacts.

Per the criteria listed in Section 230 of the *CEQR Technical Manual*, a pedestrian wind condition analysis is not warranted for the Proposed Action. The *CEQR Technical Manual* identifies wind as a concern when channelized wind pressure from between tall buildings and/or down washed wind pressure from parallel tall buildings causes winds that affect pedestrian comfort and safety. The Project Area is not located in a high wind location, such as directly along the waterfront, and would not create a uniform street wall that would result in channelization or downwash effects. Therefore, wind is not considered in this analysis.

Information pertinent to the assessment of the urban design and visual resources analysis includes data collected and analytical information prepared as part of other analyses included in this ~~DEIS~~FEIS, specifically: **Chapter 2, Land Use, Zoning, and Public Policy**; **Chapter 5, Open Space**; and **Chapter 7, Historic and Cultural Resources**. In addition, the study of existing urban design and visual resources conditions has been informed by field visits and photography, and future conditions without and with the Proposed Action also rely on computer imaging and graphic renderings. Photos included in this assessment were taken on November 24, 2020, December 9, 2020, and December 23, 2020.

Assessment Criteria

In general, an assessment of urban design is needed when a project may have effects on one or more of the elements that contribute to a pedestrian's experience of public space. The elements contributing to urban design are described in the *CEQR Technical Manual* as follows:

- **Streets:** For many neighborhoods, streets are the primary component of public space. The arrangement and orientation of streets define the location and flow of activity in an area, set street views, and create the blocks on which buildings and open spaces are organized. The apportionment of street space between cars, bicycles, transit, and

sidewalk is critical to making a successful streetscape, as is the careful design of street furniture, grade, materials used, and permanent fixtures, including plantings, streetlights, fire hydrants, curb cuts, or newsstands.

- **Buildings:** Buildings support streets. A building's streetwalls form the most common backdrop in the City for public space. A building's size, shape, setbacks, lot coverage, placement on the zoning lot and block, orientation of active uses, and pedestrian and vehicular entrances all play major roles in the vitality of the streetscape. The public realm also extends to building façades and rooftops, offering more opportunity to enrich the visual character of an area.
- **Open Space:** For the purpose of urban design, open space includes public and private areas such as parks, yards, cemeteries, parking lots and privately-owned public spaces.
- **Natural Features:** Natural features include vegetation and geologic, topographic, and aquatic features. Rock outcroppings, steep slopes or varied ground elevation, beaches, or wetlands may help define the overall visual character of an area.
- **Visual Resources:** A visual resource is the connection from the public realm to significant natural or built features, including views of the waterfront, public parks, landmark structures or districts, otherwise distinct buildings or groups of buildings, or natural resources.
- **Wind:** Channelized wind pressure from between tall buildings and downwashed wind pressure from parallel tall buildings may cause winds that jeopardize pedestrian safety.

As described in **Chapter 1, Project Description**, the Proposed Actions include zoning map and zoning text amendments. In the areas where those actions would be applicable, there would be physical alterations beyond what is allowed by existing zoning. Therefore, an urban design and visual resources analysis is warranted.

Study Area

Consistent with **Chapter 2, Land Use, Zoning, and Public Policy**, the area within 400 feet of the Project Area is defined as the study area for this analysis since the Project Area represents a large portion of the Edgemere neighborhood. As shown in **Figure 8-1**, the study area for this analysis is generally bounded by Beach 34th Street to the east, midway between Rockaway Freeway and the Rockaway Beach Boardwalk to the south, Beach 53rd Street to the west, and Jamaica Bay to the north.

Detailed Analysis

Existing Conditions

Figure 8-1 provides an aerial image of the Project Area with accompanied site-specific photos. **Figure 8-2** provides an aerial image of the 400-foot study area and provides a photo key for area photographs. This section provides a narrative of the existing development in the Project Area and in the study area. **Photo 8-1** through **Photo 8-36** show existing conditions of the Project Area and study area.

Urban Design: Streets, Buildings, Open Space, and Natural Features

Project Area

The Project Area is located in Queens, New York, on the eastern end of Rockaway Peninsula. Encompassing the neighborhood of Edgemere, the Project Area is located in Queens Community District 14 between the Far Rockaway and Bayswater neighborhoods to the east, the proposed Arverne East development and Nature Preserve site to the south, the Arverne neighborhood to the west, and Jamaica Bay to the north. The Project Area is generally bounded by Beach 35th Street to the east, Rockaway Freeway and Rockaway Beach Boulevard to the south, Beach 50th Street and Beach 51st Street to the west, and Jamaica Bay to the north. The Project Area encompasses a total of approximately 166 acres.

Many aspects of urban design are directly related to land use and zoning, particularly as types of buildings relate to land use. Urban design typically reflects the types of uses that are present in an area, which in the case of the Project Area, is predominantly residential, park, and vacant land uses, with some limited commercial uses. Zoning controls the types of land uses that may be located in an area, and it also controls the forms the development may take.

Projected Development Sites

Future development within the Project Area would introduce additional residential uses in the form of single-family homes and multifamily buildings as well as low-density commercial spaces. Projected Multi-Family Development Site 1 currently contains a fast-food restaurant and parking area (see **Photo 8-1** and **Photo 8-2**). Projected Multi-Family Development Site 2 contains parking but is largely vacant (see **Photo 8-3**). The remainder of the development sites are Projected Multifamily Development Sites 3-9 and Projected Residential Infill Sites 10-41, which are vacant lots with overgrown vegetation or contain untenanted and unoccupied buildings (see **Photo 8-4** to **Photo 8-17**).

Figure 8-1 Projected Development Sites Photograph Locations



Photo 8-1 Projected Multi-Family Development Site 1 (Lot 40)



Photo captured on November 24, 2020

Photo 8-2 Projected Multi-Family Development Site 1 (Lot 19)



Photo captured on November 24, 2020

Photo 8-3 Projected Multi-Family Development Site 2 (Lot 7)



Photo captured on November 24, 2020

Photo 8-4 Projected Multi-Family Development Site 3 (Lot 35)



Photo captured on December 23, 2020

Photo 8-5 Projected Multi-Family Development Site 4



Photo captured on December 9, 2020

Photo 8-6 Projected Multi-Family Development Site 5 (Lot 17)



Photo captured on December 9, 2020

Photo 8-7 Projected Multi-Family Development Site 6 (Lot 19)



Photo captured on December 23, 2020

Photo 8-8 Projected Multi-Family Development Site 7 (Lot 79)



Photo captured on December 4, 2020

Photo 8-9 Projected Multi-Family Development Site 8 (Lot 38)



Photo captured on December 9, 2020

Photo 8-10 Projected Multi-Family Development Site 9 (Lot 3)



Photo captured on December 23, 2020

Photo 8-11 Projected Multi-Family Development Site 9 (Lot 115)



Photo captured on December 23, 2020

Photo 8-12 Projected Residential Infill Site 16



Photo captured on December 9, 2020

Photo 8-13 Projected Residential Infill Site 19



Photo captured on December 9, 2020

Photo 8-14 Projected Residential Infill Site 18 (Lot 17)



Photo captured on December 9, 2020

Photo 8-15 Projected Residential Infill Site 30 (Lot 92)



Photo captured on December 23, 2020

Photo 8-16 Projected Residential Infill Site 33



Photo captured on December 23, 2020

Photo 8-17 Projected Residential Infill Site 39 (Lot 31)



Photo captured on December 23, 2020

Streets

The study area roadway network generally consists of three major roads—Beach Channel Drive, Rockaway Beach Boulevard, and Rockaway Freeway—that transverse the Project Area from east to west, and a grid of north south oriented streets that form blocks within the Project Area (see **Photo 8-18** to **Photo 8-20**). Some of these blocks are irregularly shaped due to the coastline, superblocks, and the constraint of the elevated A subway line that runs along Rockaway Freeway (**Photo 8-21)**. The subway line forms the southern boundary of the Project Area and has stations at Beach 44th Street-Frank Avenue and Beach 36th Street. Most north-south oriented streets are one-way streets, and some dead end at Rockaway Freeway. The larger east-west roads are two way and Beach Channel Drive also has the Q22 and QM17 bus routes and separated bike lanes. Most of the streets in the Project Area provide dual sided parking.

Photo 8-18 Facing east on Beach Channel Drive and Beach 47th Street



Photo taken on September 23, 2020

Photo 8-19 Facing east on Rockaway Beach Boulevard



Photo taken on September 23, 2020

Photo 8-20 Facing southwest on Rockaway Freeway between Beach 38th Street and Beach 39th Street



Photo taken on September 23, 2020

Photo 8-21 Facing southwest on elevated A Line (Beach 36th Street Station) on Rockaway Freeway and Beach 35th Street



Photo taken on September 23, 2020

Pedestrian amenities in the Edgemere neighborhood include sidewalks of varying quality and width, walking signals at some intersections along the east-west roads, and crosswalks at most intersections. Sidewalk and intersection quality is generally better in the central portion of the study area and deteriorates along the northern and southern edges of the study area (**Photo 8-22)**. There is no established commercial corridor in the area, so pedestrian volumes are relatively low.

Examples of street furnishing in the study area include street trees, bus stop and bike lane signs, and some bus shelters (**Photo 8-23**), although these amenities are not present on all streets.

Photo 8-22 Facing northwest on Conch place and Elizabeth Avenue



Photo taken on September 23, 2020

Photo 8-23 Sidewalk with street trees and grassed median on Beach 46th Street and Rockaway Beach Boulevard



Photo taken on September 23, 2020

Building Lots

Built form throughout the neighborhood is dominated by low-density residential buildings (with one-to-four dwelling units in two-to-four stories, including attached, semi-detached, and detached). Many of these buildings have pitched roofs, although some of the newer developments have flat roofs with accessible roof decks (**Photo 8-24**). Residences are required to have side yards and space for parking, so many are set back from the lot line with a small front yard or space for a vehicle and a driveway leading to a back yard. Some homes are also elevated out of the floodplain and have larger stoops leading up to an elevated first floor (**Photo 8-25**).

The other prevailing condition across the Project Area is the presence of vacant land. Much of the land in the northern portion of the study area and along Rockaway Beach Boulevard is vacant. The condition of these lots varies. Some lots are overgrown and unimproved or used for scrap or dumping. Some lots are cleaned but fenced in. Others have been converted into community garden space or side yards.

The low-density residential character of the neighborhood is punctuated by a few low-rise commercial buildings (**Photo 8-11**), high-density residential buildings (namely NYCHA Beach 41st Street Houses with buildings up to 13 stories, see **Photo 8-26**), and recent mid-rise, multi-family, mixed-use developments (of up to eight stories, see **Photo 8-27**). The high-rise buildings in the study area are characteristic of "Tower in the Park" development, with towers surrounded by open spaces, parking lots, and recreational facilities. The recent midrise, mixed use developments have ground floor retail with parking on the back side of the buildings away from the street.

Photo 8-24 Residential single-family building with an accessible flat roof located on Beach 40th Street



Photo taken on September 23, 2020

Photo 8-25 Elevated attached two-family house with parking on the ground floor located on Norton Avenue and Beach 48th Street



Photo taken on September 23, 2020

Photo 8-26 Facing north on Beach 41st Street NYCHA Houses



Photo taken on September 23, 2020

Photo 8-27 Beach Green Dunes: Facing west on Rockaway Beach Boulevard



Photo taken on September 23, 2020

Open Space and Natural Features

The Project Area is flanked by Rockaway Community Park (**Photo 8-28**) and Bayswater Park to the northwest and northeast, respectively (both located outside the Project Area). Beyond the southern boundary of the Project Area is Rockaway Beach and the Atlantic shorefront. Within the Project Area there are a few open space resources, including Conch Playground, Edgemere Farm (**Photo 8-29**), and the Edgemere Coalition Community Garden.

Natural features in the Project Area include the northern shoreline along the Jamaica Bay. This portion of Jamaica Bay is comprised of two water bodies, Conch Basin and Grass Hassock Channel, which are categorized largely as estuarine and marine deepwater. There

are also some estuarine and marine wetland areas along the coast of Grass Hassock Channel on the Edgemere Peninsula. These features are not accessible to the public from any point in the study area but can be viewed from a distance from some local streets such as Norton Avenue and Beach 43rd Street.

Photo 8-28 Southeast portion of Rockaway Community Park located on Almeda Avenue and Conch Place



Photo taken on September 23, 2020

Photo 8-29 Edgemere Farm located on Beach Channel Drive between Beach 45th Street and Beach 46th Street



Photo taken on September 23, 2020

Study Area

The study area extends beyond the Project Area by 400 feet into more of the Edgemere neighborhood. To the north the study area contains more of the above discussed water bodies. To the east the study area contains an interchange between Rockaway Freeway, Beach Channel Drive and Seagirt Boulevard. Rockway Freeway continues northeast and Beach Channel Drive turns with it, both leading towards Downtown Far Rockaway. The east-west oriented road turns into Seagirt Boulevard and runs along the southern portion of the peninsula. The study area also captures two other multifamily buildings, the Rockaway Seagirt Residences which also has commercial on the ground floor (**Photo 8-30**) and Seaview Towers (**Photo 8-31**). This portion of the study area also contains a section of Bayswater Park that has an open field with some walking paths and trees and a plaza with a seating area next to some courts.

Figure 8-2 Study Area Photographs



Photo 8-30 Rockaway Seagirt Residences facing northeast on Beach 35th Street and Beach Channel Drive



Photo taken on September 23, 2020

Photo 8-31 Seaview Towers facing east on Beach 35th Street and Rockaway Freeway



Photo taken on September 23, 2020

To the south the study area contains Rockaway Freeway and Edgemere Avenue, both two-way streets separated by a strip of grassy shoulder. The elevated subway line runs above Rockaway Freeway. South of Edgemere Avenue is occupied entirely by vacant land that is the location of the future Arverne East development, which is discussed under the No-Action condition section below.

The area within the study area outside of the Project Area to the west contains some transportation and manufacturing uses in the form of warehouse buildings and parking lots for vehicle storage in the southwest of the Project Area (**Photo 8-32** and **Photo 8-33**). Directly west is the Peninsula Nursing and Rehabilitation Center**,** a four-story brick building with a parking lot (**Photo 8-34**). The Center is surrounded by vacant land that will become the future Edgemere Commons development, discussed further under the No-Action condition. Within the study area to the northwest are the ocean bay apartments, multifamily residential buildings constructed in the tower in the park style surrounded by open space, parking lots, and recreational facilities.

Photo 8-32 MTA Bus Depot on Rockaway Beach Boulevard



Photo taken on September 23, 2020

Photo 8-33 FDNY Building on Rockaway Beach Boulevard



Photo taken on September 23, 2020

Photo 8-34 Peninsula Nursing and Rehabilitation Center



Photo taken on September 23, 2020

Visual Resources

As discussed above, the study area contains views to two water bodies that are part of the larger Jamaica Bay: Conch Basin and Grass Hassock Channel. The Bay is partially visible from various sidewalks in the study area, including Norton Avenue and the end of Beach 49th street (**Photo 8-35**). However, there are no clear sightlines to it under existing conditions (**Photo 8-36)**. Pedestrians must look through vacant, overgrown land and fences or past homes to view the bay, and nowhere in the study area is there direct access to the waterfront. The condition of these views will be discussed further under the No-Action and With-Action conditions.

Photo 8-35 Conch Basin: Facing north on Norton Avenue and Beach 49th Street



Photo taken on September 23, 2020

Photo 8-36 Facing northwest on the northern terminus of Beach 37th Street; Grass Hassock Channel in the background



Photo taken on September 23, 2020

No-Action Condition

In the future without the Proposed Actions (No-Action condition), the Project Area is assumed to mostly remain unchanged from existing conditions. The Projected Development Sites are assumed to remain vacant, with the exception of the existing 2,358 gsf of commercial space and 118 parking spaces on Projected Multi-Family Development Site 1 and 44 parking spaces on Projected Multi-Family Development Site 2 that would remain under existing conditions.

Urban Design: Streets, Buildings, Open Space, and Natural Features

Project Area and Study Area

Streets

The following transportation projects underway within the study area under the No-Action condition: the Edgemere Avenue reconstruction, the new streets and street raising as part of both the Arverne East Development and Edgemere Commons projects. There are also several pedestrian improvements planned by public entities. Overall, as No-Action developments are constructed, general improvements to sidewalks and sidewalk amenities such as street trees will be made to modern requirements, which will improve the pedestrian experience throughout the study area.

According to the Access to Opportunity Report issued in March 2019 by the Federal Highway Administration and NYC DOT,[1] the Edgemere Avenue reconstruction would involve reconstructing the roadway to include sidewalks, curb extensions, and parking on the

[1] The 2019 Access to Opportunity Report also mentioned the closure of Rockaway Freeway between Beach 35th Street and Beach 62nd Street to add street lighting, construct a protected bike and pedestrian path, new public open space, and increase accessibility to the A train. Because the design and timing of this potential project is uncertain, it is not included in this analysis.

southern side of the street as well as right-of-way redesign which is still being refined. This project will improve safety and access to the new open spaces proposed within the study area and to uses throughout the area.

As part of the Arverne East Development Project, the remains of streets from Beach 56th Place to Beach 38th Street that were previously de-mapped but are still physically present would be removed to make way for the new Nature Preserve, discussed below, and development. Streets would also be constructed within the Arverne East site and would be elevated above sea level. There are also a number of greenways and paths proposed that will include public pedestrian and bike paths leading to the Rockaway Beach Boardwalk and the ocean, that will improve access to the waterfront.

As part of the Peninsula Hospital Site Redevelopment (18DCP124Q), a privately owned, open internal street network will be constructed within the site. The first private street is an extension of the existing Beach 52nd Street, which currently terminates at Rockaway Beach Boulevard. The extension of Beach 52nd Street will proceed northward from Rockaway Beach Boulevard, cut through the center of the Project Site and terminate to Beach Channel Drive. The second will be a new east-west street named Peninsula Way that would extend between Beach 50th Street and Beach 53rd Street. The two new streets will break up the superblock and provide more access for pedestrians to the new development at the water. These streets would also be elevated as a flood protection measure.

Also mentioned in the Access to Opportunity Report, improvements will be made at Norton Avenue and Beach 35th Street to add a speed bump, crosswalks, pedestrian signage, and remove the guardrail to allow for pedestrian access to Bayswater Park. In the area from Beach 62nd Street to Beach 56th Street along Edgemere Avenue, there is land that contains irregular lots and is used for informal parking. The proposal under the Access to Opportunity Report includes landscaped area and a formalized parking area with improved drainage and sidewalks connecting to the elevated subway.

Buildings

Three new developments would take place under the No-Action condition by the build year. The Arverne East project, located to the south of Rockaway Freeway, would include a mixed-use development with affordable rental and homeownership opportunities throughout midscale to lower scale buildings. As planned, the area west of Beach 38th Street will have several one- to two-family attached and semi-detached homes. Density will increase moving eastward toward Beach 35th Street through the introduction of multi-family buildings with commercial and community facility uses on the ground floor. These buildings would range six to eight stories in height and would contribute to a more continuous streetwall along Edgemere Avenue and the west side of Beach 35th Street. Additional single and two-family homes that are semi-detached and multi-family buildings are proposed between Beach 35th Street and Beach 34th Street. All of the proposed development would be interspersed with newly mapped streets and new open spaces. Additional open spaces located west of Beach 38th Street would include a nature preserve, urban farm, dune preserve, greenways, parks, and plazas. The development will use resilient design strategies such as permeable pavement, rain gardens and bioswales, native plantings, and the densest development will be pulled back from the coast. Buildings and some streets will also be elevated.

The Peninsula Hospital Site Redevelopment (also known as Edgemere Commons) will also be underway. While the build year for that site is 2034, it is anticipated that much of the proposed development will be constructed and early phases of the development will be occupied by the 2031 build year for the Proposed Actions. The project is proposed to have mixed income housing; retail, including a new supermarket; community facility space; new open spaces; and parking. The tallest buildings will reach 19 stories or approximately 200 feet in height such that the overall development will be concentrated in density and bulk towards the center of the site with lower bulk in the peripheries to create a step-down effect. New private streets will be mapped to provide access and circulation throughout the site. The project will also feature resilient design measures such as the elevation of streets, bioswales, and other green and grey water systems as well as some plaza spaces.

Beach Green Dunes III will also be developed on Beach Channel Drive between Beach 35th Street and Beach 36th Street. It will contain 150,000 gsf of residential and commercial space and is expected to be built by 2022. The proposed building will reach seven stories on the side fronting the elevated NYCT A subway line and four stories on the side fronting Beach Channel Drive. The multi-family complex will provide infill development on a vacant lot and contribute to a more continuous streetwall along Beach Channel Drive.

Open Space and Natural Features

As mentioned above, there are several open spaces proposed within the study area under the No-Action condition. Under the Arverne East development new open spaces including a nature preserve, urban farm, dune preserve, greenways, parks, and plazas will be developed. The largest open space will be the Nature Preserve, a 35-acre area that will extend from Beach 44th Street to Beach 56th Place and will intersect the study area. There will also be about 3.3 acres of other open space throughout the Arverne East site, some of which could fall within the study area. The Peninsula Hospital Site Redevelopment will also include 24,000 sf of publicly accessible open space across the site, some of which will fall within the study area. This area is proposed to contain passive and active spaces including a pedestrian plaza and play space. Beach Green Dunes III will also introduce a transit plaza that will allow pedestrian entry and exit into the subway A line station at Beach 36th Street.

To address long term resilience and protection, the Integrated Hurricane Sandy General Reevaluation Report/Environmental Impact Statement, published in 2019 by the US Army Corps of Engineers (USACE), proposes a network of flood resiliency infrastructure throughout the neighborhood. The plan includes a composite seawall, beach restoration, reinforced dunes, a beach berm, enhanced access, and extension and new construction of groins along the Atlantic Ocean shorefront. Additionally, high frequency flooding risk reduction measures are recommended for Jamaica Bay in the Edgemere area. A combination of hard and green infrastructure is designed for the Bay to reduce future flood risk and economic costs of storm events (i.e., 5- to 10-year storms) and tidal inundation for buildings, infrastructure, and the coastal ecosystem, including anticipated sea level rise over the next 50 years. Project components in Edgemere will primarily include hybrid berms and floodwalls that would line the peninsula as landward as possible to minimize impact to wetlands and maximize protection to occupied properties. Outlets and pumps are integrated into the design as well. Natural and nature-based features are also incorporated into the proposed measures through a rock sill structure just off the existing shoreline to attenuate wave action and the

development of various marsh ecosystems. These resiliency efforts will change the urban design of the neighborhood and protect it from coastal flooding events into the future.

Visual Resources

Under the No-Action condition, there would be no changes to existing conditions that would affect views to or from visual resources in the study area.

With-Action Condition

The With-Action condition reflects the future conditions with the Proposed Actions. The RWCDS would result in approximately 1,313,659 gsf of new development on the Projected Development Sites. The land use actions included in this application include zoning map amendments, zoning text amendments, amendments to the Edgemere Urban Renewal Plan, disposition of City-owned property, Urban Development Action Area designation and project approval, a Mayoral Zoning Override to waive the minimum required parking, and future construction financing from HPD, including an Article XI tax exemption on certain sites. These actions are designed to mitigate long term flood risk, create affordable housing opportunities, and expand neighborhood commercial amenities alongside investments in coastal protection infrastructure and parks.

In addition to the approvals described above, it is anticipated that some of the Projected Development Sites would be owned and managed in a community land trust (CLT) model. A CLT is a not-for-profit organization which owns and stewards land long term for the public's benefit. CLTs separate the ownership of their land from the ownership of structures on the land, typically entering long-term ground leases with homeowners, mutual housing associations, non-profit landlords or other tenants

Urban Design: Streets, Buildings, Open Space, and Natural Features

Project Area and Study Area

Streets

Although specific measures have not been outlined, sidewalk maintenance and street tree plantings in and around the projected development sites that are currently vacant and overgrown, would be implemented consistent with the Builder's Pavement Plan requirement for new development.

Buildings

As discussed in **Chapter 1, Project Description**, the Proposed Actions would lead to zoning changes that would affect the experience of the streetscape and building form throughout the study area, but these changes differ depending on the subarea of the Project Area.

The first subarea corresponds to the proposed *Hazard Mitigation Area* and consists of the area directly along the Jamaica Bay waterfront, bordered to the north by Jamaica Bay, to the south by Norton Avenue, Edgemere Drive and parts of Blocks 15966, 15965 and 15960, and to the east by New York City Housing Authority (NYCHA) Beach 41st Street Houses. The *Hazard Mitigation Area* comprises the lowest-lying area of the Project Area and is

significantly more vulnerable to flooding and coastal hazards than the other three planning sub-areas. The HMA is roughly defined by the extent of the Federal Emergency Management Agency (FEMA) Coastal A sub-zone of the 100-year floodplain. The FEMA Coastal A sub-zone is at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms. During Superstorm Sandy, Edgemere was inundated with storm surge from this bayside edge. These risks are expected to increase due to climate change. Additionally, the *Hazard Mitigation Area* is vulnerable to twice daily tidal inundation in the future, based on projected sea level rise in the 2050s. The *Hazard Mitigation Area* is currently characterized by low-density, one- to two-family residences in detached and semi-detached buildings and vacant land. The Proposed Actions would limit future development to single-family detached residences and restrict the redevelopment of current and future City-owned URA sites following disposition to "Open Space." These restrictions on development would be facilitated by the establishment of the Special Coastal Risk District (SCRD), which limits development beyond the proposed zoning district.

The second subarea corresponds to the proposed *Limited Development Area*, which is adjacent to and inland of the *Hazard Mitigation Area* to the south. It is generally bounded by Norton Avenue to the north, Beach 49th Street to the west, Beach Channel Drive to the south, and the NYCHA Beach 41st Street Houses to the east. Though inland from the *Hazard Mitigation Area* and outside of the higher risk FEMA Coastal A sub-zone, the *Limited Development Area* is also low-lying and may experience ponding from tidal flooding and rain events more frequently in the future due to increasing precipitation and sea level rise. The *Limited Development Area* today consists of low-density, one- to four-family residences in detached and semi-detached buildings and vacant land. The establishment of the SCRD would restrict future development to one- to two-family detached buildings and facilitate development of vacant City-owned land beyond the proposed zoning district. Furthermore, lots less than 25 feet in width in this subarea are limited to single-family detached buildings.

The third subarea corresponds to the proposed *Neighborhood Infill Area,* generally comprising the center of the Project Area, is located along and south of Beach Channel Drive and is bounded by Rockaway Beach Boulevard to the south, Beach 49th and 51st Street to the west and Beach 36th and 35th Street to the east. Further inland of the *Limited Development Area*, the *Neighborhood Infill Area* is less exposed to coastal hazards and directly served by two key transportation infrastructure systems: the elevated subway line to the south and the Beach Channel Drive throughway, the route of key bus lines, to the north. This sub-area today consists of low-density, one- to four-family residences in semi-detached and attached buildings as well as low-rise commercial buildings and vacant land. The Proposed Actions would maintain current densities and land uses in this area and facilitate development of vacant City-owned land.

The fourth and final subarea corresponds to the proposed *Commercial Corridor*, located along Rockaway Beach Boulevard and Beach 50th Street, nearest to the elevated A subway line, which runs along the southern boundary of the Project Area. Today it consists of vacant land; surface parking; low-density, one- to four-family residences in semi-detached and attached buildings as well as low-rise commercial buildings; and recently constructed mid-rise, multi-family, mixed-use developments (see **Figure 8-3** to **Figure 8-9**). The Proposed Actions would permit and facilitate development of vacant City-owned land for affordable housing and commercial and community facilities in mixed-use, mid-rise buildings as well as development of vacant non-City-owned land for housing with MIH and/or commercial/

community facilities in mid-rise buildings. With MIH, the R6A underlying zoning district permits multi-family residential buildings with a maximum residential FAR of 3.6 and a 680-sf dwelling unit factor. Maximum building height is 80 ft (85 ft with qualifying ground floor) and 8 stories. This would be of a similar height and bulk to multifamily residences currently in the study area as well as those that are proposed for the Peninsula Hospital and Arverne East sites.

Figure 8-3 Projected Development Sites 1 and 2

No-Action Condition



With-Action Condition



View facing south on Beach Channel Drive and Beach 49th Street
Source: Studio V

Figure 8-4 Projected Development Site 3

No-Action Condition



With-Action Condition



View facing west on Rockaway Beach Boulevard and Beach 45th Street
Source: Studio V

Figure 8-5 Projected Development Site 4

No-Action Condition



With-Action Condition



View facing south on Rockaway Beach Boulevard and Beach 45th Street
Source: Studio V

Figure 8-6 Projected Development Sites 5 and 6

No-Action Condition



With-Action Condition



View facing west on Rockaway Beach Boulevard and Beach 40th Street
Source: Studio V

Figure 8-7 Projected Development Site 7

No-Action Condition



With-Action Condition



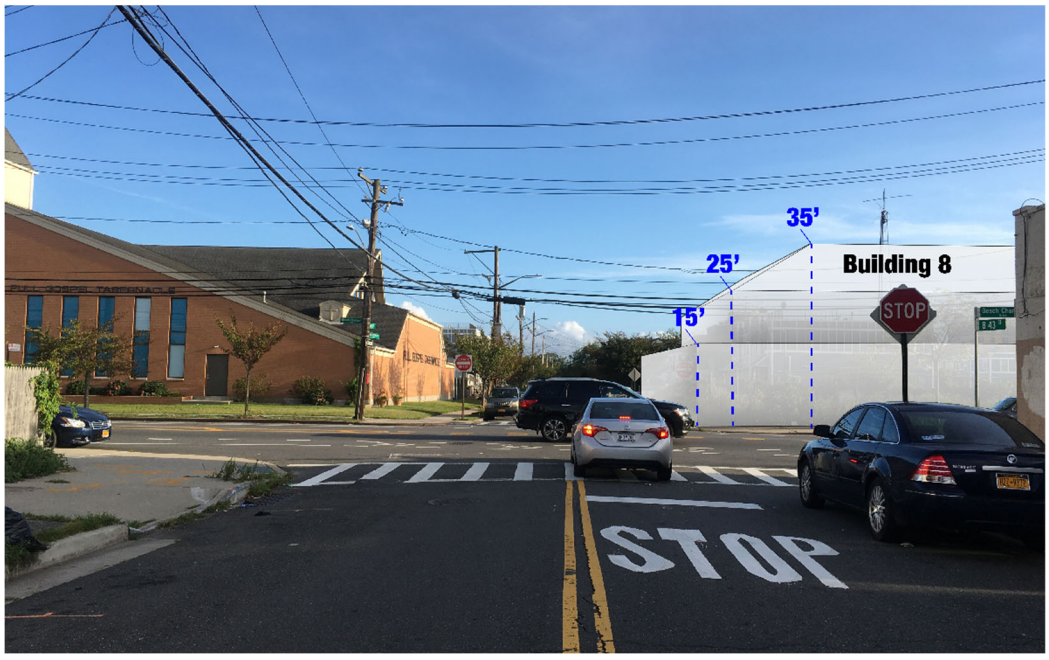
View facing east on Rockaway Beach Boulevard between Beach 39th Street and Beach 40th Street
Source: Studio V

Figure 8-8 Projected Development Site 8

No-Action Condition



With-Action Condition



View facing south on Beach 43rd Street and Beach Channel Drive
Source: Studio V

Figure 8-9 Projected Development Site 9

No-Action Condition



With-Action Condition



View facing east on Beach Channel Drive and Beach 44th Street
Source: Studio V

Open Space and Natural Features

As discussed above, the Proposed Actions would involve changes in land use designations. Specifically, "Open Space" land use designations are proposed (from "Residential" and "Residential/Open Space" for all Urban Renewal Area sites located within the *Hazard Mitigation Area*, including several additional parcels). This includes a 1.67-acre City-owned lot (Block 15973, Lot 1) that is reserved for future large-scale drainage infrastructure. These open spaces would be designed to aid in the absorption of water, which would reduce flood risk and redirect stormwater from City sewers and sewage treatment facilities. This change ensures that improvements to City-owned parcels in this area will be restricted to open space, recreational, or drainage uses. Additionally, this action would reduce the density of buildings in the northern coastal portion of the Project Area and encourage waterfront recreational uses. Therefore, the Proposed Actions would indirectly create the conditions for better access to the waterfront resources and open space within the northern portion of the study area. Under the With-Action condition there would be greater opportunity for waterfront connections to Jamaica Bay, as well as the creation of new open spaces throughout the study area.

Summary

Overall, the Proposed Actions would result in a change in the streetscape across the various zones of the Project Area.

Within the *Hazard Mitigation Area*, new residential improvements on private land will be limited to low density, single-family structures and improvements to public land will be restricted to open space, recreational, or drainage uses. In the *Limited Development Area*, vacant land would be redeveloped with one- and two-family detached homes of a lower density than existing development. The Proposed Actions would maintain current densities and land uses in this area and facilitate development of vacant City-owned land; thus encourage development that is at scale with the surrounding development, but with a lower parking requirement to encourage the redevelopment of vacant parcels in an area with sufficient on-street parking, public transit, and pedestrian infrastructure. The Proposed Actions for these zones would change the design and streetscape of the neighborhood in a way that is appropriate for mitigating risk is areas prone to coastal hazard and flooding, while providing more access to open space and natural features in the study area. These density changes would not adversely affect urban design in the Project Area and would reduce risk during future storm and flooding events.

The Proposed Actions in the *Commercial Corridor* would allow for greater density, increasing building bulk and height. However, the proposed density and height would be in character with existing multifamily and mixed-use developments in the study area, and those proposed under the No-Action condition on other sites. The Proposed Actions would also permit and facilitate development of vacant City-owned land for affordable housing and commercial and community facilities in mixed-use, mid-rise buildings as well as development of vacant non-City-owned land for housing with MIH and/or commercial/community facilities in mid-rise buildings. Therefore, no adverse impact is expected due to the Proposed Actions effects on urban design in the Project Area or study area.

Visual Resources

As discussed under the **Open Space** and **Natural Resources** section above, the Proposed Actions may indirectly improve the condition of open space in the study area and access to the waterfront by decreasing the allowable building density along the. Therefore, there is a possibility that views to Jamaica Bay would be improved because of potential open spaces located along the waterfront or new waterfront recreational uses that allow the public to better access the Bay. Therefore, there would be no significant adverse impact to visual resources due to the Proposed Actions.

Because Conch Basin and Grass Hassock Channel abut the northern edge of the *Hazard Mitigation Area*, the Proposed Actions would limit residential development along the waterfront by reducing the allowable bulk and density of future buildings, change land use designations from Residential to Open Space, and establish a C3A district. As described above, under existing conditions, Conch Basin and Grass Hassock Channel are partially visible from inland. The land use changes introduced by the Proposed Actions would allow a more direct view corridor to the Bay without the presence of vacant land or private residences.

9

Natural Resources

This section assesses the potential impacts of the Proposed Actions on natural resources, which are defined in the *2020 CEQR Technical Manual* 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

According to the *2020 CEQR Technical Manual* (*CEQR Technical Manual*), a natural resources assessment considers species in the context of the surrounding environment, habitat, or ecosystem and examines a project's potential to impact those resources. Both direct and indirect effects to natural resources are to be considered when evaluating the need for a natural resources assessment. Direct effects are defined in the *CEQR Technical Manual* as: "*…activities that directly alter the condition of a resource*." Potentially relevant direct effects of the Proposed Actions include the following:

- Removal of vegetation;
- Changing one habitat type to create another;
- Development of roadways, parking lots, buildings, and other paved surfaces on previously vegetated or unpaved surfaces;

› Introduction of buildings or structures that cast prolonged shadows on a natural resource, or otherwise alter its microclimate.

As defined in the *CEQR Technical Manual*, 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*." Potentially relevant indirect effects of the Proposed Actions include the following:

› A change in on-site conditions that would decrease the quality of surface water that currently supports a natural resource;

› A change in on-site conditions that would alter the amount of light that reaches natural re-sources on or near the site;

› A change that would increase the frequency of bird collisions with built structures due to increase in height, architectural design, or lighting infrastructure.

Since the Proposed Actions have the potential to result in the direct and indirect effects to natural resources described above, a natural resources assessment was performed to determine if there could be significant adverse impacts to onsite or offsite natural resources.

Principal Conclusions

Potentially relevant direct effects to natural resources under the With-Action condition would be limited to the 41 Projected Development Sites, which consist of disturbed, upland habitats that are designated as unranked cultural communities by the NYNHP due to their artificial origin, disturbed conditions, and wide distribution throughout New York State. Under the With-Action condition, these existing communities would be replaced with the same and other unranked cultural community types and would support a similar flora of common trees, shrubs, and herbaceous plants. Following development under the With-Action condition, it is anticipated that the majority of the urban-adapted wildlife fauna that currently utilizes the Projected Development Sites will persist, though at proportionally lower species population densities due to the expected decrease in vegetated habitat. However, due to the phased nature of the proposed development activities and the continued proliferation of available successional and developed habitats within and beyond the Project Area, the overall effect on regional wildlife populations and wildlife species diversity is expected to be minimal. As the Projected Development Sites do not provide significant habitat to support the rare/protected species that are known to occur within the region surrounding the Project Area, direct effects to rare/protected species under the With-Action condition would be minimal. As wetlands and surface waters do not occur at or adjacent to any of the Projected Development Sites, direct effects to these resources would not occur.

Potentially relevant indirect effects to the surface waters and wetlands of Conch Basin and Norton Basin that occur beyond the northern boundary of the Project Area were analyzed through the context of the various federal, New York State, and New York City regulatory agencies and advisory programs pertaining to the Jamaica Bay estuarine complex. Based on these analyses, no potentially relevant indirect effects to Conch Basin and Norton Basin would occur under the With-Action condition.

Based on the foregoing, no significant adverse impacts to natural resources are anticipated as a result of the With-Action condition.

Methodology

The scope of this analysis encompasses natural resources within the 41 Projected Development Sites specifically, as well as natural resources within the surrounding Project Area, where relevant to the Proposed Actions. In accordance with *CEQR Technical Manual* guidelines, this analysis includes a desktop review of government agency records and data for natural resources within and in the vicinity of the Project Area, including those of the United States Fish and Wildlife Service (USFWS), National Oceanographic and Atmospheric Administration (NOAA), United States Army Corps of Engineers (USACE), New York State Department of Environmental Conservation (NYSDEC), New York Natural Heritage Program (NYNHP), the New York State Department of State (NYSDOS) and the New York City Department of Environmental Protection (NYCDEP). Additionally, ecological field surveys were conducted on September 17 and 18, 2020. The field surveys included habitat characterization, plant and wildlife species inventories and rare/protected species observations for the 41 Projected Development Sites, as well as an as an assessment of wetlands/surface waters that adjoin the Project Area. Based on the results of the existing natural resources review, this analysis further includes an assessment of the potential for the Proposed Actions to result in significant adverse impacts to natural resources at the Projected Development Sites, Project Area, and the adjoining wetlands and surface waters.

Preliminary Assessment

Existing Conditions

Ecological Communities and Vegetation

Ecological succession is the process by which a vegetated community progresses through stages over time, following clearing or other disturbance.[1] As documented during the September 2020 field surveys, the majority of the Projected Development Sites support vegetation that has colonized the properties following the cessation of historical land uses. The observed flora at these locations is dominated primarily by herbaceous plants indicative of early successional stages, although some of the Projected Development Sites also support varying amounts of shrubs, vines and/or scattered trees that are indicative of mid-successional stages. The vegetated conditions at many of the Projected Development Sites appear to be artificially maintained in an early successional state due to periodic landscaping practices (e.g., mowing, pruning, etc.). Although trees occur individually or in small groupings at some of the locations, none of the Projected Development Sites support wooded conditions. A limited number of the Projected Development Sites are partially or completely developed with unvegetated, impervious surfaces (i.e., buildings and pavement).

Qualitative refinement of the existing conditions described above occurred through review of the NYNHP publication *Ecological Communities of New York State* (*ECNYS*).[2] This guidance provides detailed descriptions and includes global and state rarity rankings for many

[1] The Pennsylvania State University. Available online at: https://www.dept.psu.edu/nkbiology/naturetrail/succession.htm Accessed December 17, 2020.

[2] Edinger, G.J., et al. (editors). 2014. *Ecological Communities of New York State*. Second Edition. New York Natural Heritage Program, NYSDEC.

communities found within New York State. Utilizing *ECNYS*, the vegetated conditions that occur at the majority of the Projected Development Sites are representative of the Urban Vacant Lot ecological community, which is defined in *ECNYS* as:

"A*n open site in a developed, urban area that has been cleared, either for construction or following the demolition of a building. Vegetation may be sparse, with large areas of exposed soil, and often with rubble or other debris. Characteristic trees are often naturalized non-native species such as Norway Maple (Acer plantanoides), White Mulberry (Morus alba) and Tree-of-heaven (Ailanthus altissima)…*"

The Urban Vacant Lot community description is commonly used to categorize disturbed, vacant sites located within developed urban settings. As such, the community has not been assigned a rarity ranking by the NYNHP. Instead, is designated as an unranked "cultural" community, due to its artificial origin, disturbed conditions, and wide distribution throughout New York State.

The buildings and pavement that occur at some of the Projected Development Sites are indicative of the *ECNYS* Urban Structure Exterior and Paved Road/Path communities, which describe the unvegetated, impervious surfaces that characterize these artificial structures/ surfaces. Due to these conditions, both are designated as unranked cultural communities by the NYNHP.

A summary of the three *ECNYS* ecological communities that occur at the Projected Development Sites is provided in **Table 9-1**.

Table 9-1 Ecological Communities

Ecological Community	Rarity Ranking	Community Distribution	Projected Development Sites
Urban Vacant Lot	Unranked	Throughout NYS	1,3,4,5,6,7,8,10,11,12,13,14,15, 16,17,18,19,20,21,22,23,24,25, 26,27,28,29,30,31,32,33,34,35, 36,37,38,39,40,41
Urban Structure Exterior	Unranked	Throughout NYS	1,9,16,30
Paved Road/Path	Unranked	Throughout NYS	1,2,9,10,16,22,30

Notes: Community descriptions taken from *Ecological Communities of New York State*, Second Edition (2014).

As noted in **Table 9-1**, the Urban Vacant Lot community occurs at 39 of the 41 Projected Development Sites, while the Urban Structure Exterior and Paved Road/Path communities are limited to four and seven of the Projected Development Sites, respectively. As observed during the field surveys, the three communities also occur commonly within and beyond the Project Area and represent the dominant land cover types within the urban landscape that characterizes much of the eastern portion of the Rockaway Peninsula. Due to impermeable surfaces and unvegetated conditions, the Urban Structure Exterior and Paved Road/Path communities are of little overall significance from an ecological perspective, while the disturbed vegetated conditions of the Urban Vacant Lot communities provide a limited degree of habitat functionality and vegetative species diversity.

With respect to individual plant species, the majority of vegetation at the 41 Projected Development Sites is comprised of common "weedy" herbaceous plants that are

characteristic of early successional communities (a complete flora inventory is included in **Appendix C**. To a lesser extent, shrubs and woody vines are prevalent at some of the Projected Development Sites, particularly along perimeter fence lines. The dominant vegetative species observed across the Projected Development Sites during the field surveys include non-native/invasive species such as Mugwort (*Artemesia vulgaris*), Japanese Knotweed (*Polygonum cuspidatum*), Multiflora Rose (*Rosa multiflora*), Asiatic Bittersweet (*Celastrus orbiculatus*), and Japanese Honeysuckle (*Lonicera japonica*), as well as native species such as Queen Anne's Lace (*Daucus carota*), Seaside Goldenrod (*Solidago sempervirens*), Alfalfa (*Medicago sativa*), Red Clover (*Trifolium pratense*), Large Crabgrass (*Digitaria sanguinalis*), Winged Sumac (*Rhus copallinum*) and Poison Ivy (*Toxicodendron radicans*). Several of the Projected Development Sites support scattered individual trees or small patches of trees, including the non-native/invasive species Tree-of-heaven (*Ailanthus altissima*), White Mulberry (*Morus alba*), Autumn Olive (*Elaeagnus umbellata*) and Black Locust (*Robinia pseudoacacia*), as well native trees such as Black Cherry (*Prunus serotina*), Red Mulberry (*Morus rubrum*), Eastern Cottonwood (*Populus deltoides*) and Hackberry (*Celtis occidentalis*).

Wildlife

Based on the existing habitat conditions described above, the observed and expected terrestrial wildlife fauna of the Projected Development Sites and surrounding Project Area are characterized by a limited number of common species that are adapted to disturbed habitats located in urban settings with high levels of human presence and activity. The observed and expected fauna of the Projected Development Sites was compiled from field observations and desktop review of the following databases:

- New York State Breeding Bird Atlas (2003-2005)[3]
- National Audubon Society Christmas Bird Count[4]
- Cornell Lab of Ornithology eBird database[5]
- New York State Amphibian and Reptile Atlas Project[6]

The observed and expected fauna is comprised primarily of avian species that occur within early successional habitats and urban settings. Characteristic birds such as Song Sparrow (*Melospiza melodia*), House Sparrow (*Passer domesticus*), European Starling (*Sturnus vulgaris*), Mourning Dove (*Zenaida macroura*), Pigeon (*Columba livia*), Northern Mockingbird (*Mimus polyglottos*), American Robin (*Turdus migratorius*), Northern Cardinal (*Cardinalis cardinalis*), Carolina wren (*Thryothorus ludovicianus*), Common Yellowthroat (*Geothlypis trichas*), Gray Catbird (*Dumetella carolinensis*) and Blue Jay (*Cyanocitta cristata*) were observed (i.e., seen and/or heard) with frequency at the Projected Development Sites during the field surveys. Additional observed and expected birds are included in the field survey bird inventory and the above-referenced avian databases (see **Appendix C**).

[3] McGowan, K.J. and K. Corwin, eds. 2008. *The Atlas of Breeding Birds in New York State*. Cornell University Press. Data also available online at http://www.dec.ny.gov/animals/51030.html Accessed December 10, 2020.

[4] National Audubon Society. *Christmas Bird Count*. Available online at: http://netapp.audubon.org/cbcobservation/ Accessed December 9.2020.

[5] Cornell Lab of Ornithology. *eBird*. Available online at: https://ebird.org/explore. Accessed December 10, 2020.

[6] New York State Department of Environmental Conservation New York State Amphibian and Reptile Atlas Project. Available online at: http://www.dec.ny.gov/animals/7140.html. Accessed January 18, 2021.

The observed and expected mammal species at the Projected Development Sites includes a limited number of species adapted to developed urban surroundings, such as Raccoon (*Procyon lotor*), Virginia Opossum (*Didelphis virginiana*), Eastern Gray Squirrel *(Sciurus carolinensis*), Eastern Cottontail (*Sylvilagus floridanus*), Norway Rat (*Rattus norvegicus*), and feral cats (*Felis catus*). Small rodent species (e.g., several species of mice, moles and shrews) are expected to be the most abundant mammals at the Projected Development Sites. However, due to their diminutive sizes and predominantly subterranean life histories, these species are not easily observed.

According to the above-referenced New York State Amphibian and Reptile Atlas Project database, 16 amphibian and reptile species have been documented for the United States Geological Survey Far Rockaway, New York Topographic Map Quadrangle that includes the Projected Development Sites (see database list in **Appendix B**). However, due to disturbed conditions, a lack of permanent fresh surface waters and surrounding urban development, the Projected Development Sites do not represent a significant habitat for herpetofauna (amphibians and reptiles). The Projected Development Sites provide potential habitat for a limited number of herpetofauna species adapted to these conditions, including brown snake (*Storeria dekayi*) and eastern garden snake (*Thamnophis sirtalis sirtalis*).

Beyond the Projected Development Sites, the waters of Conch Basin and Norton Basin along the northern boundary of the Project Area have been designated by NOAA as Essential Fish Habitat, which is defined as "*those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.*" According to the NOAA Essential Fish Habitat Mapper,[7] Conch Basin and Norton Basin are listed as Essential Fish Habitat for 18 fish species (see **Appendix C**). The 18 species and their respective life stages are summarized in **Table 9-2**.

[7] National Oceanic and Atmospheric Administration. Available online at: https://www.habitat.noaa.gov/protection/efh/efhmapper/. Accessed January 18, 2021.

Table 9-2 Essential Fish Habitat Species

Scientific Name	Common Name	Life Stages
Pseudopleuronectes americanus	Winter Flounder	Eggs, Larvae, Juvenile, Adult
Leucoraja erinacea	Little Skate	Juvenile, Adult
Clupea harengus	Atlantic Herring	Larvae, Juvenile, Adult
Gadus morhua	Atlantic Cod	Adult
Urophycis chuss	Red Hake	Eggs, Larvae, Juvenile, Adult
Limanda ferruginea	Yellowtail Flounder	Adult
Lophius spp.	Monkfish	Eggs, Larvae, Adult
Scophthalmus aquosus	Windowpane Flounder	Eggs, Larvae, Juvenile, Adult
Leucoraja ocellata	Winter Skate	Juvenile, Adult
Raja eglanteria	Clearnose Skate	Juvenile, Adult
Carcharodon carcharias	White Shark	Neonate
Stenotomus chrysops	Scup	Eggs, Larvae, Juvenile, Adult
Loligo pealeii	Longfin Inshore Squid	Eggs
Scomber scombrus	Atlantic Mackerel	Juvenile, Adult
Pomatomus saltatrix	Bluefish	Juvenile, Adult
Peprilus triacanthos	Atlantic Butterfish	Larvae, Juvenile, Adult
Paralichthys dentatus	Summer Flounder	Larvae, Juvenile, Adult
Centropristis striata	Black Sea Bass	Juvenile

As shown in **Table 9-2**, Conch Basin and Norton Basin occur within the known range of the 18 listed fish species, and the waters and substrates within these features represent suitable habitat for one for more of the species life stages.

Rare/Protected Species

According to correspondence from the NYNHP, multiple records for New York State listed wildlife, plants and significant natural communities exist for the Project Area vicinity (see **Appendix C**). Records for federally listed terrestrial and marine species for the Project Area vicinity are detailed in the USFWS Information for Planning and Consultation report and the NOAA Section 7 Mapper report, respectively (see **Appendix C**). A summary of the NYNHP, USFWS and NOAA records for the Project Area vicinity is provided in **Table 9-3**.

Table 9-3 NYNHP, USFWS and NOAA Records

Record Type	Scientific Name	Common Name	Listing Type[1]	Record Year	Record Location	Species Habitat[2]
Bird	*Sternula antillarum*	Least Tern	NYS (E)	None provided	Offsite (south of the Rockaway Beach boardwalk)[3]	Shorelines and adjacent waters
Bird	*Charadrius melodus*	Piping Plover	Federal (T) NYS (E)	None provided	Offsite (south of the Rockaway Beach boardwalk)[3]	Shorelines and adjacent waters
Bird	*Sterna hirundo*	Common Tern	NYS (T)	None provided	Offsite (south of the Rockaway Beach boardwalk)[3]	Shorelines and adjacent waters
Bird	*Sterna dougallii*	Roseate Tern	Federal (E) NYS (E)	None provided	None provided	Shorelines and adjacent waters
Bird	*Calidris canutus rufa*	Red Knot	Federal (T)	None provided	None provided	Shorelines and adjacent waters
Marine Reptile	*Chelonia mydas*	Green Sea Turtle	Federal (E/T) NYS (T)	None provided	None provided	Marine waters
Marine Reptile	*Lepidochelys kempii*	Kemp's Ridley Sea Turtle	Federal (E) NYS (E)	None provided	None provided	Marine waters
Marine Reptile	*Dermochelys coriacea*	Leatherback Sea Turtle	Federal (E) NYS (E)	None provided	None provided	Marine waters
Marine Reptile	*Caretta caretta*	Loggerhead Sea Turtle	Federal (T) NYS (T)	None provided	None provided	Marine waters
Fish	*Acipenser oxyrinchus*	Atlantic Sturgeon	Federal (E) NYS (P)	None provided	None provided	Marine waters
Butterfly	*Pontia protodice*	Checkered White	NYS (SC)	1990	Off-site (Arverne East at Beach 44th Street)	Grasslands, and vacant lots that contain the species foodplants
Plant	*Amaranthus pumilus*	Seabeach Amaranth	Federal (T) NYS (T)	2018	Offsite (Arverne-By-The-Sea)	Maritime beaches
Plant	*Polygonum glaucum*	Seabeach Knotweed	NYS (R)	2002	Offsite (Arverne-By-The-Sea)	Maritime beaches, salt marsh edges

Table 9-3 NYNHP, USFWS and NOAA Records

Record Type	Scientific Name	Common Name	Listing Type[1]	Record Year	Record Location	Species Habitat[2]
Plant	*Cenchrus tribuloides*	Dune Sandspur	NYS (T)	2018	Offsite (Arverne-By-The-Sea)	Dunes, beaches
Plant	*Bouteloua curtipendula var. curtipendula*	Side Oats Gramma	NYS (E)	2018	Offsite (Norton Basin shoreline)	Disturbed/ abandoned areas with dry soils
Plant	*Cyperus schweinitzii*	Schweinitz's Flat Sedge	NYS (R)	2018	Offsite (Norton Basin shoreline)	Dunes, sandy shores
Plant	*Cyperus retrorsus*	Reflexed Flat Sedge	NYS (E)	2018	Offsite (Rockaway Community Park)	Dunes, shorelines, salt marsh edges
Community	N/A	Marine Back-barrier Lagoon	N/A	N/A	Northern edge of Project Area	N/A
Community	N/A	Marine Intertidal Gravel/Sand Beach	N/A	N/A	Offsite (Arverne East)	N/A
Community	N/A	Maritime Beach	N/A	N/A	Offsite (Arverne East)	N/A
Community	N/A	Low Salt Marsh	N/A	N/A	Offsite (within 0.25 mile northwest of Project Area)	N/A

[1] E=Endangered T=Threatened SC=Special Concern P=Protected R=Rare
[2] Source: New York Natural Heritage Program.
[3] According to USFWS and NYC Parks technical staff (April 2020), monitored piping plover, least tern and common tern nesting/foraging areas in the Edgemere area occur along Atlantic Ocean beaches to the south of the Rockaway Beach boardwalk, and therefore are located beyond the Project Area.

As shown in **Table 9-3**, with the exception of the Marine Back-barrier Lagoon community record, none of the NYNHP, USFWS or NOAA records are reported from locations within the Project Area—either because the records were reported from offsite locations or because a location was not provided by the agency. The latter category of non-site-specific records includes two USFWS shorebird listings (roseate tern and red knot), as well as NOAA listings for four sea turtles (Kemp's Ridley Sea Turtle, Green Sea Turtle, Leatherback Sea Turtle and Loggerhead Sea Turtle) and one fish (Atlantic Sturgeon). For these records, the Project Area is located within the general surrounding area of the marine waters and shoreline communities where these seven species have been documented.

The Marine Back-barrier Lagoon community record is for the subtidal and intertidal waters of Conch Basin and Norton Basin that occur along the northern edge of the Project Area, which have been designated as a Significant Natural Community by the NYNHP. Significant Natural Communities are defined as community types that are either rare in New York State or are

high-quality examples of more common community types that occur in New York State. It is important to note that the Significant Natural Community designation is non-regulatory and does not include legal protections. However, as detailed in the Wetlands and Surface Waters section below, Conch Basin and Norton Basin receive legal protections under the New York State and federal regulations of the NYSDEC and USACE, respectively. Due to their locations well-inland from Conch Basin and Norton Basin, the Marine Back-barrier Lagoon community does not occur on or adjacent to any of the 41 Projected Development Sites.

As shown by the species habitat descriptions included in **Table 9-3**, the majority of records for the Project Area vicinity are for species that inhabit aquatic, wetland and shoreline habitat types that occur either along the northern boundary of the Project Area (i.e., Conch Basin and Norton Basin), or well beyond the southern boundary of the Project Area (i.e., the Atlantic Ocean and adjacent beaches). As documented in the Ecological Communities and Vegetation section, these habitat types do not occur at or adjacent to any of the Projected Development Sites.

Of the remaining species listed in **Table 9-3**, two are known to occur within early successional habitat types that exist at many of the Projected Development Sites and surrounding Project Area. These are Checkered White and Side Oats Gramma, which are butterfly and plant species, respectively, that are associated with disturbed successional habitats, including abandoned/vacant lots. Pursuant to 6 NYCRR § 182, Checkered White is listed as a Special Concern species by the NYSDEC. The Special Concern category is a listing reserved for:

"*…those native species which are not yet recognized as endangered or threatened, but for which documented evidence exists relating to their continued welfare in NY State. The Special Concern category exists within NYSDEC rules and regulations, but such designation does not provide any additional protection.*" [8]

Checkered White habitat includes vacant lots with vegetation that includes the species foodplants. Although the record for Checkered White is from a location beyond the Project Area, the Projected Development Sites are vacant lots that provide potential habitat for this species.

Side Oats Gramma is a New York State Endangered grass species. Pursuant to 6 NYCRR § 193.3(e), it is a violation to remove or otherwise damage a New York State Endangered plant without property owner permission:

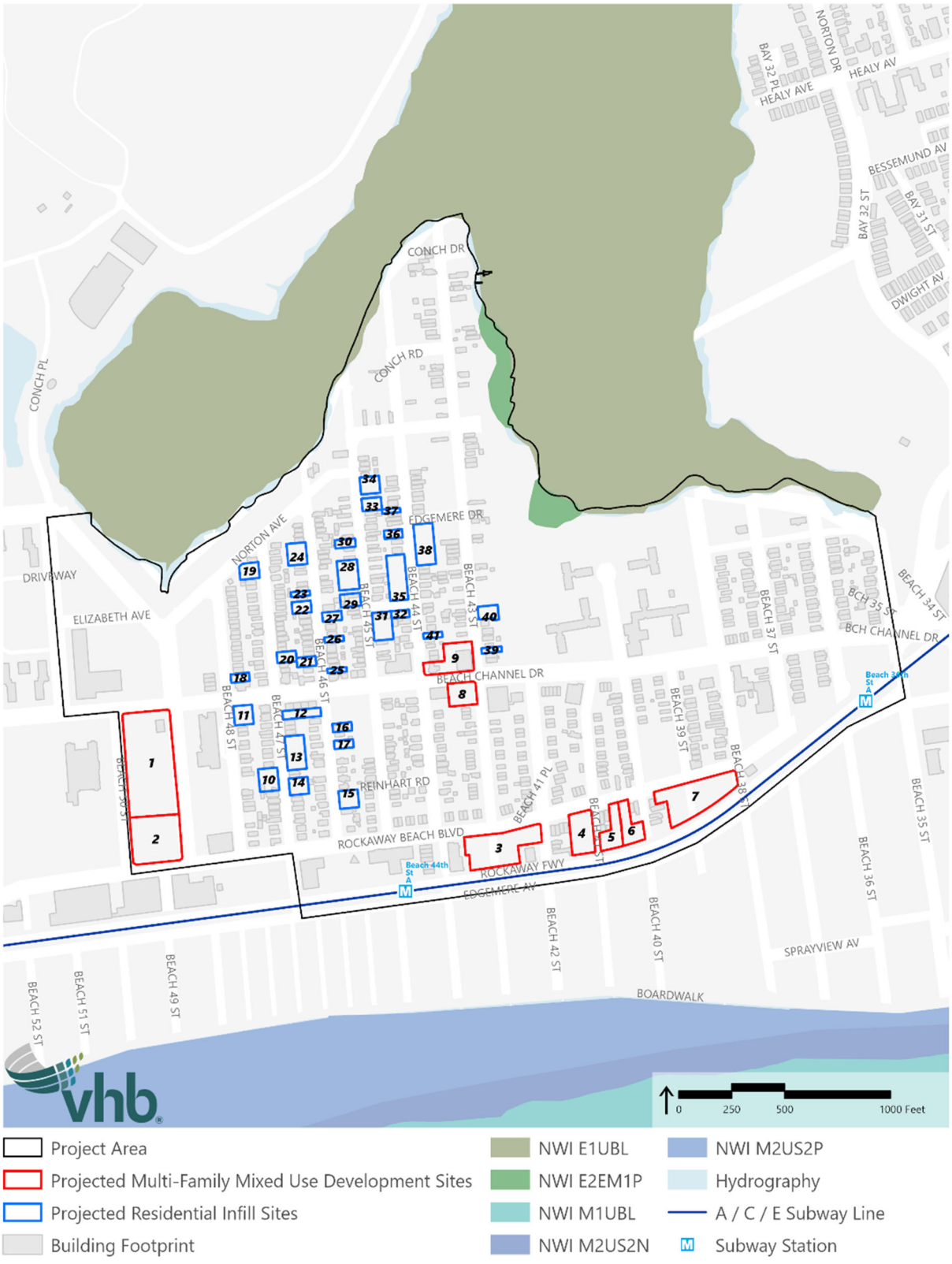
"*It is a violation for any person, anywhere in the State, to pick, pluck, sever, remove, damage by the application of herbicides or defoliants, or carry away, without the consent of the owner, any protected plant.*"

Habitat for Side Oats Gramma includes abandoned sites with disturbed, dry soils. Although the record for Side Oats Gramma is from a location beyond the Project Area, the Projected Development Sites provide potential habitat for this species.

Neither Side Oats Gramma nor Checkered White was observed within the Projected Development Sites and surrounding Project Area during the field surveys, which were conducted during the late summer season when both species are readily identifiable, if present. However, it is important to note that interior access to some of the Projected Development Sites was not possible due to perimeter security fences.

[8] New York State Department of Environmental Conservation Endangered and Threatened Species List. Available online at: www.dec.ny.gov/docs/administration_pdf/lpendangerfs.pdf. Accessed January 12, 2021.

Figure 9-1 National Wetlands in Project Area



Wetlands and Surface Waters

As shown on the USFWS National Wetland Inventory, Conch Basin and Norton Basin include tidal wetland and surface water communities that occur along the northern boundary of the Project Area, but do not occur on or adjacent to any of the Projected Development Sites (see **Figure 9-1**). Both Conch Basin and Norton Basin are part of Jamaica Bay, which is an approximately 10,000-acre estuarine complex comprised of extensive open water habitats, as well as numerous islands, tidal creeks, marshes, mudflats, brackish and freshwater wetlands, coastal woodlands and maritime shrublands. The Jamaica Bay estuarine complex drains a surrounding watershed of approximately 142 square miles that include portions of Brooklyn, Queens, and Nassau County. In addition to representing an important recreational and open space resource, these largely undeveloped features represent habitat for extensive inventories of birds, mammals, amphibians, reptiles, insects, finfish, shellfish, and other marine invertebrates.

As described in **Chapter 1, Project Description**, in 2019, the USACE's architectural engineering consultants initiated design of the Back Bay High Frequency Flood Risk Reduction Features project for waterfront areas along the southern shoreline of Jamaica Bay, including the northern portion of the Project Area along Conch Basin and Norton Basin. The project proposes a combination of hard and green infrastructure designed to reduce future flood risk and the economic costs of storm events and tidal inundation for buildings, infrastructure, and the coastal ecosystem. Project components proposed for the Project Area in the vicinity of Conch Basin and Norton Basin include berms, hybrid berms, rock sill structures, marsh restoration, and floodwalls. The Back Bay High Frequency Flood Risk Reduction Features project would occur independent of the Proposed Actions.

Actions that occur within or would otherwise affect Jamaica Bay and its resident habitats, flora, and fauna are subject to review and/or regulation by several New York City, New York State, and federal regulatory and advisory programs, as detailed below.

Jamaica Bay Watershed Protection Plan

The Jamaica Bay Watershed Protection Plan (JBWPP) was originally issued by the NYCDEP in 2007 and updated in 2014. JBWPP priorities include water quality improvements, ecological restoration and enhancing valuable natural resources within the Jamaica Bay Watershed through multiple initiatives with government partner agencies, environmental advocates, educational institutions and community groups. Ongoing JBWPP initiatives include wastewater treatment plant upgrades, oyster and ribbed mussel pilot restoration projects, wetland restoration, green infrastructure projects and GIS mapping. The JBWPP further mandates that NYCDEP work with the Mayor's Office of Environmental Coordination to review and track proposed development projects within the Jamaica Bay Watershed.

New York City Waterfront Revitalization Plan

The New York City Waterfront Revitalization Program (WRP) establishes the City's policies for waterfront planning, preservation and development projects. The goal of the WRP is to maximize the benefits derived from economic development, environmental conservation and public use of the waterfront, while minimizing any potential conflicts among these objectives. The WRP is authorized by the New York State Waterfront Revitalization of Coastal Areas and Inland Waterways Act. The New York City Department of Planning is responsible for

administering the WRP. As the entire Project Area is located within the New York City Coastal Zone, the Proposed Actions are subject to consistency review with the applicable New York City WRP policies, as discussed in **Chapter 2, Land Use, Zoning, and Public Policy**.

Both Conch Basin and Norton Basin are included within the Jamaica Bay Special Natural Waterfront Area, which was established and mapped by the New York City Department of Planning as part of the WRP, as described above. Special Natural Waterfront Areas are large areas with significant open spaces and concentrations of natural resources, including wetland habitats and buffer areas. Pursuant to WRP Policy 4.1, it is the stated goal of the WRP to protect and restore the ecological quality and component habitats and resources within Special Natural Waterfront Areas.[9]

Significant Coastal Fish and Wildlife Habitat

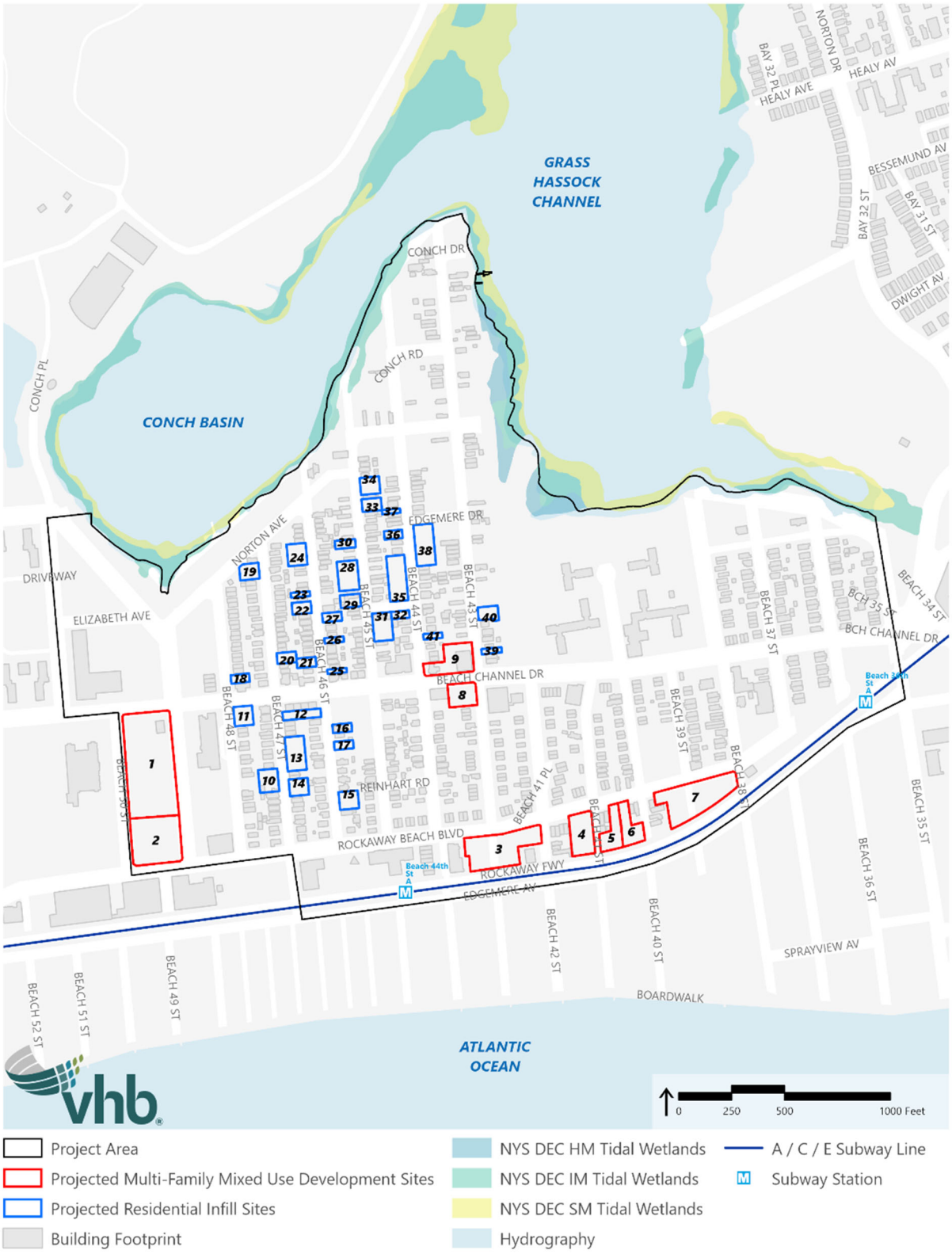
Conch Basin and Norton Basin are also included within the Jamaica Bay Significant Coastal Fish and Wildlife Habitat (SCFWH), as designated by the NYSDOS. SCFWHs are established and mapped by the NYSDOS based upon recommendations from the NYSDEC. For each SCFWH, the NYSDEC creates a habitat narrative that provides specific information regarding the fish and wildlife resources that depend on the designated area. To assist in evaluating the impacts of proposed activities, the narrative also lists the threats to these resources.[10] The NYSDEC habitat narrative for Jamaica Bay, inclusive of Conch Basin and Norton Basin, identifies the following threats to existing fish and wildlife resources:

- Any activity that would further degrade the water quality in Jamaica Bay, including chemical contamination, oil spills, excessive turbidity, waste disposal and sewage discharges;
- Alteration of tidal patterns;
- Excavation of new navigation channels;
- Elimination of salt marsh and shallow areas through excavation or filling;
- Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development; and
- Unregulated dredge spoil disposal.

[9] New York City Department of Planning Waterfront Revitalization Plan. Available online at: https://www1.nyc.gov/assets/planning/download/pdf/planning-level/waterfront/wrp/wrp-2016/nyc-wrp-partII.pdf#page=21 Accessed January 18, 2021.

[10] New York State Department of State Office of Planning and Development. Available online at: https://www.dos.ny.gov/opd/programs/consistency/scfwhabitats.html. Accessed January 18, 2021.

Figure 9-2 NYCDEC Tidal Wetlands in Project Area



Tidal Wetlands Act

Conch Basin, Norton Basin, and adjoining marsh habitats are mapped as tidal wetlands by the NYSDEC (see **Figure 9-2**) and therefore are regulated under the Tidal Wetlands Act (Article 25 of the New York State Environmental Conservation Law) and its implementing regulations (6 NYCRR § 661). Pursuant to these regulations, a permit is required for many land uses and activities within regulated tidal wetlands and/or tidal wetland adjacent areas, which in New York City extend up to 150 feet landward from the tidal wetland boundary. However, pursuant to 6 NYCRR § 661.4(b)(1)(ii), there are certain exceptions that can limit the NYSDEC's adjacent area jurisdiction to less than 150 feet, including:

"…the seaward edge of the closest lawfully and presently existing (i.e., as of August 20, 1977), functional and substantial fabricated structure (including, but not limited to, paved streets and highways, railroads, bulkheads and sea walls, and rip-rap walls) which lies generally parallel to said most tidal wetland landward boundary and which is a minimum of 100 feet in length as measured generally parallel to such most landward boundary, but not including individual buildings…"

Based on the above regulation, the NYSDEC's jurisdiction within the Project Area may be less than 150 feet from the tidal wetland boundary where roads, bulkheads, or other structures meeting the above qualifications occur. Based on these considerations, the 41 Projected Development Sites appear be located beyond the NYSDEC's tidal wetland jurisdictional area. A jurisdictional determination from the NYSDEC would be required to confirm these preliminary findings. Any regulated activity proposed for those portions of the Project Area located within the NYSDEC's tidal wetland jurisdiction is subject to review and permitting under the Tidal Wetlands Act and its implementing regulations, which are designed to preserve and protect the present and future values of tidal wetlands.

Protection of Waters Program

Conch Basin and Norton Basin are also regulated by the NYSDEC under the Protection of Waters Program (Article 15, Title 5 of the New York State Environmental Conservation Law) and its Implementing regulations (6 NYCRR § 608). The NYSDEC administers the Protection of Waters Program to preserve and prevent undesirable impacts to surface waters, including regulating and requiring permits for excavation or placement of fill in navigable waters.

Clean Water Act

Conch Basin and Norton Basin are subject to regulation under Section 404 of the federal Clean Water Act (CWA), which is a program that regulates the discharge of dredged or fill material into navigable waters and other regulated waters, including wetlands (collectively referred to as "waters of the United States"). Activities in waters of the United States regulated under this program include fill for development, water resource projects, infrastructure development, and mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities). Permitting pursuant to Section 404 of the CWA is administered by the USACE. Jurisdictional determinations for waters of the United States are made by the USACE pursuant to the final Navigable Waters Protection Rule (NWPR), which defines "waters of the United States" and

establishes federal regulatory authority over regulated waters under the CWA. Pursuant to Section 401 of the CWA, applicants for certain discharges to navigable waters in New York State must also obtain a Water Quality Certification from the NYSDEC.

Rivers and Harbors Act of 1899

Conch Basin and Norton Basin are also subject to regulation by the USACE under Section 10 of the Rivers and Harbors Act of 1899, which requires USACE authorization for the construction of any structure in or over any navigable water of the United States, including pilings, piers, bulkheads, or bridge abutments at or below the mean high water line. Other regulated actions include excavation or deposition of materials, placement of obstructions, or alteration of navigable waters of the United States.

Jamaica Bay Wildlife Refuge

The majority of the Jamaica Bay estuarine complex is managed by the National Parks Service as the Jamaica Bay Wildlife Refuge, which is part of the larger Gateway National Recreation Area. The refuge is an important habitat for many species, including 325 resident and migratory bird species that have been reported from the area, including waterfowl, wading birds, shorebirds, raptors, and passerine birds.[11] Though part of the same estuarine complex and located proximate to the refuge boundary, Conch Basin and Norton Basin are not located within the Jamaica Bay Wildlife Refuge.

No-Action Condition

In the future without the Proposed Actions (No-Action condition), the Project Area is assumed to remain mostly unchanged from existing conditions, and the Projected Development Sites are assumed to remain unaltered. Under this scenario, the vegetation at those Projected Development Sites that continue to receive periodic landscaping (e.g., mowing, pruning, etc.). will remain in an early successional state dominated by herbaceous plant species. In the absence of continued landscaping practices and/or other natural or artificial disturbances, the Projected Development Sites will progress to later successional stages (i.e., shrub- and tree-dominated communities) over time. Due to their ability to outcompete native vegetation, the non-native/invasive plant species that currently occur at the Projected Development Sites will likely become more dominant with the progression of time. It is expected that the wildlife fauna of the Projected Development Sites would continue to be characterized by a limited number of common species that are adapted to disturbed habitats in urban settings with high levels of human presence and activity.

With respect to the Project Area beyond the Projected Development Sites, it is expected that USACE's Back Bay High Frequency Flood Risk Reduction Features project that is currently in design will be initiated for waterfront areas along the northern portion of the Project Area. Implementation of the project would result in a combination of berms, hybrid berms, rock sill structures, marsh restoration, and floodwalls to be installed along Conch Basin and Norton Basin in an effort to reduce future flood risk.

[11] U.S. Department of the Interior National Park Service. Gateway National Recreation Area. Available online at: Gateway National Recreation Area (U.S. National Park Service) (nps.gov) Accessed January 18, 2021.

With-Action Condition

Ecological Communities and Vegetation

Under the With-Action condition, the 41 Projected Development Sites would be developed with residential or commercial uses over a ten-year period. As such, the primary impact of the With-Action condition to natural resources would be the clearing of the three existing ecological communities and vegetation at the Projected Development Sites. The Urban Vacant Lot community occurs at 39 of the 41 Projected Development Sites, while the Urban Structure Exterior and Paved Road/Path communities are limited to four and seven of the Projected Development Sites, respectively. The three communities are designated as unranked cultural communities by the NYNHP, due to their artificial origin, disturbed conditions and wide distribution throughout New York State. Due to impermeable surfaces and unvegetated conditions, the Urban Structure Exterior and Paved Road/Path communities are insignificant from an ecological perspective, while the disturbed vegetated conditions of the Urban Vacant Lot communities provide a limited degree of habitat functionality and vegetative species diversity. Following clearing and development of the Projected Development Sites under the future With-Action condition, the three existing ecological communities would continue to occur commonly within the Project Area and continue to represent the dominant land cover types within the urban landscape that characterizes the developed portions of the eastern Rockaway Peninsula. Similarly, the existing flora of the Projected Development Sites—which is comprised of common native and non-native herbaceous plants, shrubs, and trees—would continue to proliferate within and beyond the Project Area.

The conversion of the Projected Development Sites to residential and commercial uses would result in the creation of new Urban Structure Exterior and Paved Road/Path communities. It is anticipated that the land surfaces at the Projected Development Sites that are not occupied by buildings and pavement would be planted with landscaped habitats comprised of lawns and ornamental trees, shrubs and herbaceous plants. These landscaped cultural habitats are described by the ECNYS Mowed Lawn and Mowed Lawn with Trees ecological communities. Similar to existing conditions, both communities are designated as unranked cultural communities by the NYNHP.

Based on the above, under the With-Action condition, the Projected Development Sites would be characterized by buildings and paved surfaces surrounded by landscaped surfaces. As compared to the No-Action condition, the overall effect would be a cumulative increase in non-vegetated, impervious surfaces at the Projected Development Sites, with a corresponding decrease in pervious, vegetated surfaces. The projected turf grass lawns and associated landscaped elements on the Projected Development Sites would be comprised primarily of a limited number of ornamental trees, shrubs and herbaceous plants, resulting in an anticipated nominal decrease in overall vegetative species diversity, as compared to the No-Action condition. However, it is anticipated that many of the early successional herbaceous plant species that currently occur at the Projected Development Sites would colonize and persist at the sites following development.

Additionally, the Proposed Actions would limit future development in areas of greater risk to coastal hazards (in the *Hazard Mitigation Area* and *Limited Development Area*). These areas

are located either directly adjacent to or within close proximity of the Jamaica Bay waterfront. Within the waterfront *Hazard Mitigation Area*, many of the currently vacant lots will be restricted to open space improvements as a result of the Proposed Actions. This restriction is applicable to all City-owned land within the defined *Hazard Mitigation Area* and would be achieved through amendments to the Edgemere Urban Renewal Plan. By retreating development from the waterfront, the Proposed Actions seek to limit overall density which would place less pressure on storm runoff, noise pollution, and other environmental factors on the ecological system. Furthermore, the Proposed Actions seek to facilitate the improvement and expansion of open spaces in waterfront areas, which could support the health of the ecological systems of Jamaica Bay.

Based on the foregoing, implementation of the With-Action condition would not result in significant adverse impacts to overall habitat diversity and overall vegetative species diversity within the Project Area and surrounding region.

Wildlife

As described above, the With-Action condition would result in clearing of the existing habitats at the Projected Development Sites for residential and commercial development. The immediate effect of clearing would be the displacement of resident wildlife from the Urban Vacant Lot communities that occur at most of the Projected Development Sites. The majority of observed and expected wildlife at the Projected Development Sites are generally mobile species (e.g., birds and small mammals), that would be displaced to other developed and undeveloped habitats that occur within and beyond the Project Area. In analyzing the overall potential impacts of the With-Action condition on local and regional wildlife populations due to displacement, it is noteworthy that many factors influence wildlife population densities other than resource availability alone—including disease, parasites, predation, weather, human disturbances, and other factors. Therefore, it is possible that wildlife species populations may already be below the theoretical carrying capacity of the Projected Development Sites, due to one or more limiting factors. For example, the urban surroundings, high levels of human activity and documented presence of non-native/invasive plant species are likely limiting factors for certain wildlife species at the Projected Development Sites.

Notwithstanding the above, under the assumption that resource availability is the only limiting factor affecting population density, in the short-term, it is anticipated that developed and undeveloped habitats that occur within and beyond the Project Area would experience a temporary increase in wildlife populations during the clearing/grading and construction activities at the Projected Development Sites, due to emigration of displaced wildlife. Subsequently, it is anticipated that inter- and intra-species competition for available resources within these surrounding habitats would result in a net decrease in local population size for most species until equilibrium between wildlife populations and available resources is achieved.

Significantly, as development would be phased over a ten-year period at the 41 Projected Development Sites, rather than simultaneously during a single phase, it is not anticipated that displacement of wildlife from the affected sites would place undue pressure on wildlife habitats and resources within and beyond the Project Area.

Following development under the With-Action condition, it is anticipated that the majority of the urban-adapted wildlife fauna that currently inhabits or otherwise utilizes the Projected Development Sites would return, though at proportionally lower species population densities due to the expected decrease in vegetated habitat at most of the Projected Development Sites. However, due to the phased nature of the proposed development activities and the continued proliferation of available successional and developed habitats within and beyond the Project Area, the overall effect on regional wildlife populations and wildlife species diversity is expected to be minimal.

With respect to avian species, the proposed residential and commercial structures may increase the potential for fatalities of local and migratory birds due to collisions with transparent or reflective building surfaces. However, these conditions can be minimized through various structural and non-structural means, including those required for construction of new buildings by New York City law. Pursuant to an amendment to Section 1403.8 of the New York City Building Code, effective January 10, 2020, the exterior wall envelope and associated openings on all new construction up to 75 feet above grade must be comprised of "bird friendly" materials.[12]

As noted in **Existing Conditions**, the waters of Conch Basin and Norton Basin that occur along the northern boundary of the Project Area are listed by NOAA as Essential Fish Habitat for one or more life stages of 18 fish species. As all the 41 Projected Development Sites are inland sites that are not located on or adjacent to Conch Basin or Norton Basin, no direct effects to Essential Fish Habitat within either surface water would occur as a result of the With-Action condition.

Potentially relevant indirect effects from the With-Action condition to Essential Fish Habitat within Conch Basin and Norton Basin include changes that might alter the amount of light or decrease surface water quality. Based on the results of the Tier 1 and Tier 2 Screenings of the shadows assessment (**Chapter 6, Shadows),** Conch Basin and Norton Basin would not be affected by project-generated shadows. With respect to potential water quality effects, as detailed in **Chapter 11, Water and Sewer Infrastructure**, sanitary waste from the Projected Development Sites would be conveyed to the NYCDEP Rockaway Wastewater Treatment Plant and stormwater would be managed in accordance with applicable NYCDEP regulatory standards. The Projected Development Sites would incorporate low-flow plumbing fixtures to reduce sanitary flow in accordance with the New York City Plumbing Code. In addition, stormwater Best Management Practice (BMP)s would be required as part of the NYCDEP site connection approval process for each of the Projected Development Sites, and NYCDEP would establish required stormwater release rate. Stormwater could also 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 would be determined in consultation with NYCDEP.

Based on the foregoing analyses, no significant adverse impacts to wildlife are anticipated as a result of the With-Action condition.

[12] The New York City Council - File #: Int 1482-2019 (nyc.gov)

Rare/Protected Species

As summarized in **Existing Conditions**, the majority of NYNHP, USFWS and NOAA species records for the Project Area vicinity are documented from offsite locations and/or are for species that require habitats that do not occur within or adjacent to the Projected Development Sites. However, the disturbed successional conditions that occur at the majority of the Projected Development Sites represent habitat for the Checkered White butterfly and Side Oats Gramma grass species. Checkered White is listed as a Special Concern species by the NYSDEC, which is a category reserved for species that are not recognized as Endangered or Threatened and therefore does not provide any explicit species protections. As a New York State Endangered grass species, Side Oats Gramma receives protection against removal or damage only if such actions are not authorized by the property owner.

Although the Projected Development Sites represent potential habitat for Checkered White and Side Oats Gramma, it is important to note that the records for both species are from offsite locations. Furthermore, neither species were observed at the accessible portions of the Projected Development Sites during the field surveys. Taking these factors into account, and given the proliferation of disturbed successional habitats within and beyond the Project Area, implementation of the With-Action condition does not represent a significant threat to either species.

The Marine Back-barrier Lagoon community that occurs along the northern boundary of the Project Area is listed as a Significant Natural Community by the NYNHP, which is a non-regulatory designation that does not include legal protections. As the Marine Back-barrier Lagoon community does not occur on or adjacent to any of the 41 Projected Development Sites, no significant adverse impacts to the community are anticipated as a result of the Future With-Action condition. However, it is important to note that, independent of the Future With-Action condition, the USACE's Back Bay High Frequency Flood Risk Reduction Features project that is currently in design may result in temporary or permanent impacts to the community through installation of flood control structures along Conch Basin and Norton Basin.

Potentially relevant Indirect effects to documented or potential rare/protected species habitat within Conch Basin and Norton Basin include changes that would alter the amount of light or decrease surface water quality. Based on the results of the Tier 1 and Tier 2 Screenings of the shadows assessment (**Chapter 6, Shadows**), Conch Basin and Norton Basin would not be affected by project-generated shadows. With respect to potential water quality effects, as detailed in **Chapter 11, Water and Sewer Infrastructure**, sanitary waste from the Projected Development Sites would be conveyed to the NYCDEP Rockaway Wastewater Treatment Plant and stormwater would be managed in accordance with applicable NYCDEP regulatory standards. The Projected Development Sites would incorporate low-flow plumbing fixtures to reduce sanitary flow in accordance with the New York City Plumbing Code. In addition, stormwater Best Management Practice (BMP)s would be required as part of the NYCDEP site connection approval process for each of the Projected Development Sites, and NYCDEP would establish required stormwater release rate. Stormwater could also 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 would be determined in consultation with NYCDEP.

Based on the foregoing analyses, no significant adverse impacts to rare/protected species are anticipated as a result of the With-Action condition.

Wetlands and Surface Waters

As the Projected Development Sites are not located on or adjacent to any wetlands or surface waters, implementation of the With-Action condition would not result in direct effects to these resources. Potentially relevant direct and indirect effects to Conch Basin and Norton Basin are analyzed below through the context of the New York City, New York State and federal regulatory and advisory programs that pertain to Jamaica Bay, as identified in **Existing Conditions**.

Jamaica Bay Watershed Protection Plan

The JBWPP mandates that NYCDEP work with the Mayor's Office of Environmental Coordination to review and track proposed development projects within the Jamaica Bay Watershed. As the Project Area is located within the Jamaica Bay Watershed boundary, the Proposed Actions will be subject to review and tracking according to the required JBWPP tracking form.

New York City Waterfront Revitalization Plan

As the entire Project Area is located within the New York City Coastal Zone and the northern portion of the Project Area occurs along the Jamaica Bay Special Natural Waterfront Area, the Proposed Actions are subject to consistency review with the applicable New York City WRP policies. As detailed in the completed WRP Consistency Assessment, the Proposed Actions would be consistent with WRP policies (see **Appendix A**).

Significant Coastal Fish and Wildlife Habitat

The Jamaica Bay SCFWH narrative prepared by the NYSDEC identifies multiple threats to existing fish and wildlife resources within the bay, including actions such as alteration of tidal patterns, excavations of new channels, elimination of salt marshes and shallows through excavation or filling, construction of shoreline structures in previously undisturbed areas, and unregulated dredge soil disposal. It is important to note that no such actions are proposed as part of the With-Action condition, under which physical disturbance of existing habitats would be limited to the upland areas of the 41 Projected Development Sites. Independent of the Future With-Action condition, the USACE's Back Bay High Frequency Flood Risk Reduction Features project that is currently in design may result in construction of shoreline structures in previously undisturbed areas through installation of flood controls along Conch Basin and Norton Basin.

The threats identified by the NYSDEC also includes any activity that would further degrade the water quality in Jamaica Bay, including sewage discharges. As described in **Chapter 11, Water and Sewer Infrastructure**, sanitary waste from the Projected Development Sites would be conveyed to the NYCDEP Rockaway Wastewater Treatment Plant, and no direct

discharges of sewage to Conch Basin or Norton Basin would occur as a result of the With-Action condition. The Projected Development Sites would incorporate low-flow plumbing fixtures to reduce sanitary flow in accordance with the New York City Plumbing Code. In addition, stormwater Best Management Practice (BMP)s would be required as part of the NYCDEP site connection approval process for each of the Projected Development Sites, and NYCDEP would establish required stormwater release rate. Stormwater could also 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 would be determined in consultation with NYCDEP.

Other potential threats to Jamaica Bay from the Projected Development Sites include the potential for shading of surface waters or adjoining wetlands. Based on the results of the Tier 1 and Tier 2 Screenings of the shadows assessment (**Chapter 6, Shadows**), Conch Basin and Norton Basin would not be affected by project-generated shadows.

Tidal Wetlands Act

NYSDEC-regulated tidal wetlands and tidal wetland adjacent areas include Conch Basin, Norton Basin and landward portions of the Project Area located a maximum of 150 feet landward from the tidal wetland boundary/mean high water. However, subject to NYSDEC review and verification, the NYSDEC's jurisdiction within the Project Area may be less than 150 feet where roads, bulkheads or other structures meeting certain qualifications occur. Based on these considerations, the 41 Projected Development Sites appear be located beyond the NYSDEC's tidal wetland jurisdictional area. A jurisdictional determination from the NYSDEC would be required to confirm these preliminary findings. Any regulated activity proposed for those portions of the Project Area located within the NYSDEC's tidal wetland jurisdiction is subject to review and permitting under the Tidal Wetlands Act and its implementing regulations, which are designed to preserve and protect the present and future values of tidal wetlands.

Protection of Waters Program

Conch Basin and Norton Basin are also regulated by NYSDEC under the Protection of Waters Program and its Implementing regulations. NYSDEC administers the Protection of Waters Program to preserve and prevent undesirable impacts to surface waters, including regulating and requiring permits for excavation or placement of fill in navigable waters. The proposed development activities of the With-Action condition would be limited to the Projected Development Sites, and excavation, placement of fill, or other impacts to regulated waters are not proposed. As such, a Protection of Waters Permit would not be required to implement the With-Action condition.

Clean Water Act

Conch Basin and Norton Basin are subject to USACE regulation under Section 404 of the federal CWA, which is a program that regulates the discharge of dredged or fill material into waters of the United States. The proposed development activities of the With-Action condition would be limited to the Projected Development Sites, and the discharge of dredged

or fill material to regulated waters, or other regulated activities, are not proposed. As such, a Section 404 Permit would not be required to implement the With-Action condition.

Rivers and Harbors Act of 1899

Conch Basin and Norton Basin are also subject to regulation by the USACE under Section 10 of the Rivers and Harbors Act of 1899, which requires USACE authorization for the construction of any structure in or over any navigable water of the United States, including pilings, piers, bulkheads, or bridge abutments at or below the mean high water line. Other regulated actions include excavation or deposition of materials, placement of obstructions and alteration of navigable waters of the United States. The proposed development activities of the With-Action condition would be limited to the Projected Development Sites, and the regulated activities described above are not proposed. As such, a USACE Rivers and Harbors Act Permit would not be required to implement the With-Action condition.

Jamaica Bay Wildlife Refuge

The majority of the Jamaica Bay estuarine complex is managed by the National Parks Service as the Jamaica Bay Wildlife Refuge, which is part of the larger Gateway National Recreation Area. Though part of the same estuarine complex and located proximate to the refuge boundary, Conch Basin and Norton Basin are not located within the Jamaica Bay Wildlife Refuge.

Based on the foregoing analyses, no significant adverse impacts to wetlands and surface waters are anticipated as a result of the With-Action condition.

10

Hazardous Materials

This chapter provides an evaluation of the potential presence of hazardous materials present in soil, groundwater, and/or soil vapor that could be encountered as a result of the Proposed Actions. As indicated in the *2020 CEQR Technical Manual*, the primary goal of a hazardous materials assessment is to determine whether a proposed action would lead to a potential increased exposure of hazardous materials to people or the environment, and furthermore whether the increased exposure would lead to significant public health impacts or environmental damage.

Introduction

The New York City Department of Housing Preservation and Development (HPD) is proposing a series of land use actions including zoning map and zoning text amendments (collectively the Proposed Actions) within the Edgemere neighborhood of Queens Community District 14. The Edgemere Project Area (Project Area) is generally bounded by Jamaica Bay to the north, Beach 35th Street to the east, the Rockaway Freeway and Rockaway Beach Boulevard to the south, and Beach 50th Street and Beach 51st Street to the west. The Project Area consists of approximately 166 acres of aggregate area on the Rockaway Peninsula. Within the larger Project Area, the RWCDS identified 41 Projected Development Sites—including seven multi-family residential, two commercial, and 32 residential in-fill development sites. This hazardous materials assessment will determine

which, if any, of these 41 Projected Development Sites may contain contaminated materials due to current or historical uses on or off-site, such that the property would require the placement of an institutional control for hazardous materials (i.e., a Land Disposition Agreements [LDA] or (E) Designation).

A hazardous materials (E) Designation is an institutional control that can be placed on a property as a result of CEQR review of a zoning action. An (E) Designation is a mechanism to ensure that testing for and mitigation and/or remediation of hazardous materials are completed prior to or as a part of the future development of a site, thereby limiting or eliminating the potential for a hazardous materials impact and to ensure for the protection of human health and the environment. Generally, redevelopment of a Site with an (E) Designation for hazardous materials will require review from New York City Mayor's Office of Environmental Remediation (OER) and documentation of hazardous materials exposure mitigation prior to the issuance of New York City Department of Buildings (DOB) development permits.

For sites under City control, an LDA is typically used to ensure that testing for and mitigation and/or remediation of hazardous materials are completed prior to or as part of the future development of a site.

Principal Conclusions

The Proposed Actions would not result in significant adverse impacts related to hazardous materials. The hazardous materials assessment identified environmental conditions at various Projected Development Sites and neighboring sites consistent with the listed uses and environmental conditions provided in Appendix A of Title 15, Chapter 24 of the Rules of the City of New York. Under the Proposed Actions, these Projected Development Sites identified with the potential for environmental concerns would be assigned institutional control measures including (E) Designations and LDAs. The OER (or in the case of City-owned lots, DEP) would provide regulatory oversight of the environmental scope, including investigations and remediation during the development process and prior to occupancy. In summary, the Proposed Actions may increase exposure pathways for hazardous materials due to various environmental conditions identified during the analyses. However, all sites assigned institutional controls would be required to be developed under regulatory oversight. This would ensure investigation, mitigation, and remediation of any hazardous materials under the Proposed Actions would be completed in a safe, and comprehensive manner to the maximum extent practicable. **Table 10-1** provides a summary of environmental conditions and recommended institutional controls, if any, for all Projected Development Sites.

Table 10-1 Projected Development Site Environmental Conditions and Recommendations

Site No.	Tax Block	Tax Lot	Address	Existing Zoning	Sanborn Maps	City Directory	Environmental Databases	Site Inspection	Onsite Environmental Concern	Offsite Environmental Concern[1]	Recommendation
1	15841	19R	19 Beach 50th St	R5, C8-1, C1-2	x		x		Dc	BCP, Sp	E
		40	Beach Channel Dr	R5, C1-2	x		x			Dc, G, BCP, Sp	E
		50	49-01 Beach Channel Dr	R5, C1-2	x		x		G	BCP, Sp	E
2	15841	3	Rockaway Beach Blvd	CB-1	x		x			G, Sp, A	E
		5	Rockaway Beach Blvd	CB-1	x		x			G, Sp, A	E
		7	Rockaway Beach Blvd	CB-1	x		x			G, Sp, A	E
		8	Rockaway Beach Blvd	CB-1	x		x			G, Sp, A	E
		10	Rockaway Beach Blvd	CB-1	x		x			G, Sp, A	E
		14	Beach 50th St	CB-1	x		x			G, Sp, A	E
		70	Beach Channel Dr	CB-1	x		x			G, Sp, A	E
3	15852	64	Rockaway Beach Blvd	C4-3A	x		x			GS, GT, Es	LDA*
		68	Beach 43rd St	C4-3A	x		x			GS, GT, Es, RR	LDA*
	15851	33	Rockaway Beach Blvd	R4	x		x			GS, GT, Es	LDA
		35	Rockaway Beach Blvd	R4	x		x		GS, GT	Es	E
		40	Rockaway Beach Blvd	R4	x		x			GS, GT, Es	E
		42	Rockaway Beach Blvd	R4	x		x			GS, GT, Es	LDA
		44	Beach 42nd St	R4	x		x			GS, GT, Es	E
		58	216 Beach 43rd St	R4	x		x			GS, GT, Es, RR	LDA
		59	Beach 43rd St	R4	x		x			GS, GT, Es	LDA
4	15850	6	Beach 41st St	R4	x		x			GS, A, Es, M, RR	LDA
5	15849	6	Beach 41st St	R4	x					A, M, R	LDA
		8	Beach 41st St	R4	x					A, M	LDA
		9	Beach 41st St	R4	x					A, M	LDA
		10	Beach 41st St	R4	x					A, M	LDA
		17	Rockaway Beach Blvd	R4	x					A, M	E
		18	Rockaway Beach Blvd	R4	x					A, M	LDA

Table 10-1 Projected Development Site Environmental Conditions and Recommendations

Site No.	Tax Block	Tax Lot	Address	Existing Zoning	Sanborn Maps	City Directory	Environmental Databases	Site Inspection	Onsite Environmental Concern	Offsite Environmental Concern[1]	Recommendation
6	15849	19	Rockaway Beach Blvd	R4	x					A, M	LDA
		20	Rockaway Beach Blvd	R4	x					A, M	LDA
		27	Beach 40th St	R4	x					A, M	LDA
		28	Beach 40th St	R4	x					A, M	LDA
		29	Beach 40th St	R4	x					A, M, RR	LDA
7	15847	79	Beach 39th St	R4	x					GT, RR	LDA
		80	2-04 Beach 39th St	R4						GT, RR	LDA
		81	Beach 39th St	R4	x					GT, RR	LDA
		82	Beach 39th St	R4						GT, RR	LDA
		83	Beach 39th St	R4	X					GT, RR	LDA
		84	Rockaway Beach Blvd	R4						GT, RR	LDA
		85	Rockaway Beach Blvd	R4						GT, RR	LDA
		86	Rockaway Beach Blvd	R4						GT, RR	LDA
		87	Rockaway Beach Blvd	R4						GT, RR	LDA
		88	Rockaway Beach Blvd	R4	x					GT, RR	LDA
		89	Rockaway Beach Blvd	R4	x				GT	RR	LDA
	15848	52	Rockaway Beach Blvd	R4						RR	LDA
		54	Rockaway Beach Blvd	R4						RR	LDA
		55	Rockaway Beach Blvd	R4						RR	E
		57	Rockaway Beach Blvd	R4						RR	LDA
		58	Rockaway Beach Blvd	R4						RR	LDA
		60	Rockaway Beach Blvd	R4						RR	LDA
		62	2-19 Beach 39th St	R4						RR	LDA
		63	Beach 39th St	R4						RR	LDA
		65	Beach 39th St	R4						RR	LDA
		67	Beach 39th St	R4						RR	LDA

Table 10-1 Projected Development Site Environmental Conditions and Recommendations

Site No.	Tax Block	Tax Lot	Address	Existing Zoning	Sanborn Maps	City Directory	Environmental Databases	Site Inspection	Onsite Environmental Concern	Offsite Environmental Concern[1]	Recommendation
8	15834	38	363 Beach 43rd St	R4, C1-2			x			Dc	LDA
		42	357 Beach 43rd St	R4, C1-2			x			Dc	LDA
9	15965	114	415 Beach 43rd St	R4			x			Dc	E
		112	415 Beach 43rd St	R4			x			Dc	E
		111	415 Beach 43rd St								E
		3	402 Beach 44th St	R4			x			Dc	E
		115	43-00 Beach Channel Dr	R4, C1-2			x			Dc	E
10	15839	51	335 Beach 47th St	R4							
11	15839	26	47-15 Beach Channel Dr	R4			X			GT	E
12	15838	25	Beach 47th St	R4							
		37	Beach 46th St	R4							
13	15838	13	Beach 47th St	R4							
		15	Beach 47th St	R4							
		17	Beach 47th St	R4							
		19	Beach 47th St	R4							
		20	Beach 47th St	R4							
14	15838	7	Beach 47th St	R4							
		9	Beach 47th St	R4							
15	15837	9	Beach 46th St	R4	x					GT	LDA
		10	Beach 46th St	R4	x					GT	LDA
		12	Beach 46th St	R4	x					GT	LDA
16	15837	27	354 Beach 46th St	R4							
17	15837	23	Beach 46th St	R4							
18	15972	3	Beach 48th St	R4			x			GT, Dc	E
19	15972	33	Beach 47th St	R4							

Table 10-1 Projected Development Site Environmental Conditions and Recommendations

Site No.	Tax Block	Tax Lot	Address	Existing Zoning	Sanborn Maps	City Directory	Environmental Databases	Site Inspection	Onsite Environmental Concern	Offsite Environmental Concern[1]	Recommendation
20	15969	6	414 Beach 47th St	R4							
		7	416 Beach 47th St	R4							
21	15969	73	413 Beach 46th St	R4							
22	15969	59	439 Beach 46th St	R4							
		60	431 Beach 46th St	R4							
23	15969	57	443 Beach 46th St	R4							
24	15969	47	Beach 46th St	R4							
		48	Beach 46th St	R4							
		49	Beach 46th St	R4							
		50	Beach 46th St	R4							
25	15968	5	405 Beach 46th St	R4							
26	15968	11	Beach 46th St	R4				x		A	LDA
27	15968	16	430 Beach 46th St	R4				x		A	LDA
		17	432 Beach 46th St	R4				x		A	LDA
28	15968	84	455 Beach 45th St	R4							
		85	453 Beach 45th St	R4							
		86	451 Beach 45th St	R4							
		87	Beach 45th St	R4							
		88	447 Beach 45th St	R4							
		89	445 Beach 45th St	R4							
		90	443 Beach 45th St	R4							
29	15968	92	439 Beach 45th St	R4							
		94	435 Beach 45th St	R4							
30	15968	79	Beach 45th St	R4							
		80	463 Beach 45th St	R4							

Table 10-1 Projected Development Site Environmental Conditions and Recommendations

Site No.	Tax Block	Tax Lot	Address	Existing Zoning	Sanborn Maps	City Directory	Environmental Databases	Site Inspection	Onsite Environmental Concern	Offsite Environmental Concern[1]	Recommendation
31	15967	10	Beach 45th St	R4							
		111	Beach 45th St	R4							
		12	Beach 45th St	R4							
		13	Beach 45th St	R4							
		14	428 Beach 45th St	R4							
32	15967	18	429 Beach 44th St	R4							
33	15966	23	480 Beach 45th St	R4							
		25	482 Beach 45th St	R4							
34	15966	27	Beach 45th St	R4							
		28	504 Beach 45th St	R4							
		29	506 Beach 45th St	R4							
		30	Beach 45th St	R4							
35	15966	72	Beach 44th St	R4							
		74	Beach 44th St	R4							
		75	Beach 44th St	R4							
		76	447 Beach 44th St	R4							
		77	Beach 44th St	R4							
		78	Beach 44th St	R4							
		79	441 Beach 44th St	R4							
		80	439 Beach 44th St	R4							
		81	437 Beach 44th St	R4							
36	15966	66	465 Beach 44th St	R4							
37	15966	61	477 Beach 44th St	R4							

Table 10-1 Projected Development Site Environmental Conditions and Recommendations

Site No.	Tax Block	Tax Lot	Address	Existing Zoning	Sanborn Maps	City Directory	Environmental Databases	Site Inspection	Onsite Environmental Concern	Offsite Environmental Concern[1]	Recommendation
38	15965	29	Beach 44th St	R4							
		31	Beach 44th St	R4							
		34	Beach 44th St	R4							
		35	Beach 44th St	R4							
		36	466 Beach 44th St	R4							
		37	468 Beach 44th St	R4							
		38	Beach 44th St	R4							
39	15960	7	408 Beach 43rd St	R4			x			Dc	LDA
40	15960	15	420 Beach 43rd St	R4							
		16	422 Beach 43rd St	R4							
		17	424 Beach 43rd St	R4							
41	15965	12	416 Beach 44th St	R4							

Notes:
x = Potential environmental hazard identified during review
E = (E) Designation
LDA = Land Disposition Agreement
E* = An existing (E) Designation has been assigned to this Lot
[1] 400-foot buffer
Gs = Gas station/filling station
Dc = Dry cleaner
M = Manufacturing
I = Industrial
C = Coal yard
G = Garage/Parking
A = Auto repair/service/sales/towing
GT = Bulk Storage tank
ES = Electrical Substation
RCRA = Resource Conservation and Recovery Act Site
Sp = Spill
BCP = Brownfeild Cleanup Program Site
Mw = Monitoring well
Fp = Fill port
Vp = Vent pipe
Dr = Unlabeled drum
FH = Firehouse/station
RR = Railroad

Methodology

In order to determine whether the Proposed Actions may increase the potential for significant impacts at the Projected Development Sites, an environmental review was conducted of current and historical environmental resources. Chapter 12 of the *CEQR Technical Manual* (Hazardous Materials) and Section 24-04 of the Rules of New York describe this review process, which includes reviewing historical documentation for past or current uses that may have affected the Projected Development Sites or an adjacent site.

Appendix A of Title 15, Chapter 24 of the Rules of the City of New York (Contamination of Tax Lot by Hazardous Materials or Hazardous Waste; Placement and Removal of an (E) Designation on a Tax Lot in Connection with Zoning Map Amendment) provides a list of types of facilities, activities or conditions that could lead to an environmental condition and a site receiving an institutional control. For the Projected Development Sites, or neighboring properties, with indications of uses listed in Appendix A of Title 15, Chapter 24, the environmental condition was considered the equivalent of a Recognized Environmental Condition (REC), as defined under the American Society for Testing and Materials (ASTM) E1527-13 and placement of an (E) Designation or equivalent institutional control was recommended. In addition, if neighboring properties within a 400-foot buffer zone surrounding each Projected Development Site contained evidence of historic site use or environmental conditions that could reasonably have impacted the Projected Development Site, placement of an (E) Designation or equivalent institutional control on the affected Projected Development Site was recommended.

As per the *CEQR Technical Manual*, for projects covering a large geographic area (e.g. the Proposed Actions), portions of the typical scope for a Phase I Environmental Site Assessment (ESA) may not be possible. As such, this hazardous materials assessment included a comprehensive review of the following environmental resources.

Regulatory Databases

For each Projected Development Site, federal, State, and local environmental database records were reviewed to identify evidence of historic use, generation, storage, disposal or release of hazardous substances that may have impacted the site. Environmental Data Resources, Inc. (EDR) of Milford, Connecticut, conducted the search of the regulatory database records and provided the records in the form of a regulatory agency database radius report. The regulatory databases were reviewed separately for each Projected Development Site and the 400-foot radius around each. The list below summarizes the relevant federal, State and local environmental databases reviewed.

- Federal National Priorities List (NPL)
- Federal Delisted NPL Site List
- NPL LIENS Federal Superfund Liens
- Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) List
- Federal CERCLIS No Further Remedial Action Planned (NFRAP) List

- Federal Resource Conservation and Recovery Act (RCRA) Corrective Action Report (CORRACTS) List
- Federal RCRA non-CORRACTS Treatment, Storage or Disposal (TSD) Facilities List
- Federal RCRA Generators Lists (Large, Small, NonGen and Conditionally Exempt)
- Federal Institutional Control/Engineering Control Registries
- Federal Emergency Response Notification System (ERNS)
- VAPOR REOPENED Vapor Intrusion Legacy Site List
- New York State Spills (NY Spills)
- Inactive Hazardous Waste Disposal Sites in New York State (SHWS)
- Hazardous Substance Waste Disposal Site Inventory (HSWDS)
- Solid Waste Facility/Landfill (SWF/LF)
- Leaking Storage Tanks Incidents Report (LTANKS)
- Registered Aboveground/Underground Storage Tanks (ASTs/USTs)
- CBS UST Chemical Bulk Storage Database
- MOSF UST Major Oil Storage Facilities Database
- CBS AST Chemical Bulk Storage Database
- Institutional and Engineering Controls (INST CNTRL/ENG CNTRL)
- Manufactured Gas Plant Sites (Coal Gas)
- New York Drycleaners Database
- New York State Voluntary Cleanup Program (VCP)
- New York State Brownfields Cleanup Program
- EDR Manufactured Gas Plants (MGP)
- EDR Historic Auto Repair
- EDR Historic Dry Cleaner

In addition to the above list, other readily available resources were used as applicable.

Historic Sanborn Fire Insurance Maps

Historical Sanborn Fire Insurance Maps were reviewed to determine historical use at each of the Projected Development Sites and neighboring properties to evaluate the potential for impact from hazardous materials. The Sanborn map review for the sites included an examination of all available maps starting in 1901 through 2006. Historical Sanborn Fire Insurance Maps.

City Directories

City directories listings for the Projected Development Sites and surrounding parcels for the years 1922 through 2017 were provided by EDR and reviewed to determine potential site tenants/uses which could result in the potential presence of environmental contamination at the respective sites.

Site Reconnaissance

As per the *CEQR Technical Manual*, for projects covering a large geographic area (e.g., the Proposed Actions), portions of the typical scope for a Phase I ESA may not be possible, including a full site reconnaissance. As such, site reconnaissance was performed from the property boundaries for each of the Projected Development Sites.

Assessment

Existing Conditions

General Conditions

According to Sanborn Fire Insurance Maps and City Directories, the Project Area has remained largely residential throughout its developed history, with some accessory commercial and light industrial operations dispersed throughout. According to Sanborn Fire Insurance Maps, development in the Project Area began prior to 1901, and generally consisted of scattered single-family dwellings and beachside bathhouses developed along the existing Long Island Railroad Corridor (present day elevated Metro Transit Authority [MTA] subway lines). By 1933, vacant properties within the Project Area had largely been filled with single or multi-family dwellings. In this same time, scattered accessory commercial operations were developed along the main transportation corridors, including Beach Channel Drive and Rockaway Beach Boulevard. These commercial-use developments generally included filling stations, automotive repair, and dry-cleaners, with a few light manufacturing operations at select neighboring sites. The Project Area remained largely unchanged until the 1980's when redevelopment of the area saw large swaths of beachside bathhouses and small dwellings throughout the Project Area demolished. The majority of these properties were never redeveloped and remain vacant to present day.

Based on documentation obtained from the EDR Radius Report, Project Area geology is expected to generally consist of a five-foot top layer of urban fill consisting of brown to gray, fine to coarse sand with trace quantities of brick, concrete, gravel and asphalt fragments. This is then underlain by a native soil generally consisting of fine to medium-grained, light brown to gray sand with intervals of gravel and silt. Additionally, several historic environmental investigations summarized within the EDR Radius Report noted organic materials from former marsh deposits in deeper intervals (20ft below ground surface [bgs]). The current New York City Housing Authority (NYCHA) site located along the northern border of the Project Area was formerly a marsh and/or swamp area as late as the 1950's.

Building on former swamp or marshland (e.g., the northern boundary of the Project Area), can potentially increase exposure to methane as identified in Chapter 12 of the *CEQR Technical Manual*. Soil vapors from hazardous materials and/or marsh-derived methane may migrate through the subsurface along preferential pathways (e.g., any existing building foundations, utility conduits, or duct work) and accumulate beneath any existing concrete slabs or basements leading to an increased exposure risk. However, this is not expected to affect any of the Projected Development Sites.

Groundwater depth is variable throughout the Project Area, ranging from approximately 5 to 8 feet bgs. A groundwater divide is present within the Project Area splitting groundwater flow to the north and south. Based on historic groundwater sampling data from sites within the Project Area, the groundwater divide generally extends east to west approximately equidistant between Rockaway Beach Blvd and Rockaway Freeway. Additionally, given the Project Area's proximity to Jamaica Bay and the Atlantic Ocean, groundwater flow and elevation is expected to be tidally influenced.

The current and former uses of the Project Area indicate the potential for several environmental contaminants of concern, including those listed within Appendix A of Title 15, Chapter 24. Auto repair and filling stations that currently and formerly operated in the Project Area, are associated with subsurface impacts from petroleum related compounds, including volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). Chlorinated solvents are contaminants of concern due to certain historic manufacturing and dry-cleaning operations in the area.

Projected Development Site(s) Conditions

Similar to the general development of the Project Area, the Projected Development Sites historically were largely developed as single or multi-family residential properties. A few Projected Development Sites along the primary transportation corridors were historically utilized or had neighboring properties utilized for commercial and light manufacturing operations, including fill stations, automobile repair, ice manufacturing, drycleaners, and accessory MTA infrastructure (e.g., substations, bus repair facilities, etc.). The majority of the Projected Development Sites had historic buildings demolished in the 1980's and remain vacant to present day.

Several Projected Development Sites have historic site-use or environmental conditions listed within Appendix A of Title 15, Chapter 24. Historic hazardous materials use at these sites, including VOCs, SVOCs, chlorinated solvents, and metals, may have affected subsurface conditions at the site(s), including soil, groundwater, and/or soil vapor. Similarly, several Projected Development Sites have historic neighboring site-use associated with hazardous materials as listed in Appendix A of Title 15, Chapter 24. Given the variable flow direction and likely tidal influence of groundwater throughout the Project Area, contaminant fate and transport are not fully known at this time. However, it is inferred that Projected Development Sites within a reasonable distance (allowing for potential migration through groundwater flow), and downgradient or cross-gradient from neighboring properties with a history of contaminant exposure, could have been impacted by hazardous materials—including impacts to soil, groundwater and/or soil vapor.

Future without the Proposed Actions (No-Action Condition)

Under the No-Action condition, the Projected Development Sites are assumed to remain unchanged from existing conditions.

Without the Proposed Actions, the City-owned Projected Development Sites may remain undeveloped. Any subsurface contamination at undeveloped sites would remain largely in place and any hazardous source material would generally migrate with groundwater flow.

Vacant properties would remain vulnerable to ongoing dumping of unknown materials that could expose Projected Development Sites to additional contaminants.

While it is assumed that privately-owned Projected Development Sites will remain vacant in the No-Action condition, should they be redeveloped as of-right under existing zoning, any construction activity involving soil disturbance could potentially create or increase pathways for human exposure to any subsurface hazardous materials present. NYSDEC regulatory requirements pertaining to any identified petroleum tanks and/or spills, requirements for disturbance and handling of suspect LBP, asbestos-containing material and PCB-containing material, and requirements for off-site disposal of soil/fill, would need to be followed.

However, under the No-Action condition, hazardous materials (E) Designations and other equivalent institutional controls would not be applied to any of the Projected Development Sites and as such, construction activity involving soil disturbance, should any occur, may not be conducted in accordance with the best practices and procedures of OER. These procedures include preparation of a Phase I and Phase II ESA, a Remedial Investigation Report (RIR), Remedial Action Work Plan (RAWP), Construction Health and Safety Plan (CHASP), and site remediation conducted with the regulatory oversight of OER. As such, absent the Proposed Actions, investigation, mitigation, and remediation of any potential hazardous materials may be less stringent, comprehensive, and protective of human health and the environment.

Future with Proposed Actions (With-Action Condition)

The Proposed Actions would not result in significant adverse impacts related to hazardous materials. The hazardous materials assessment identified environmental conditions at certain Projected Development Sites and neighboring sites consistent with the listed uses and environmental conditions provided in Appendix A of Title 15, Chapter 24, and are generally considered the equivalent of a REC as defined under ASTM E1527-13 for the presence or likely presence of hazardous materials. Under the Proposed Actions, the Projected Development Sites and neighboring sites identified with environmental conditions would be assigned institutional control measures, including hazardous materials (E) Designations (E-655) for privately-owned Projected Development Sites and LDAs for hazardous materials for City-owned sites. The hazardous materials analyses provided in **Table 10-1** provides a list of environmental conditions and institutional control recommendations for Projected Development Sites.

Generally, applying an (E) Designation or an LDA to a Projected Development Site provides a mechanism for regulatory oversight for future remedial action as a pre-construction requirement that would reduce or eliminate, to the maximum extent practicable, the potential for future risk or exposure as it relates to hazardous materials. Compliance in association with the hazardous materials (E) Designation on the Development Site would be conducted under the administration of OER.

The (E) Designation process generally begins with the evaluation of RECs and/or areas of concern (AOCs) that may require additional investigation. Any potential RECs or AOCs identified would follow the (E) Designation protocol for additional investigation and potential remedial action. The applicable text for the (E) Designation (E-655) to be applied to Lots as designated in **Table 10-1** would be as follows:

Task 1: Sampling Protocol

The applicant submits to OER, for review and approval, a Phase I of the site along with a soil, groundwater and soil vapor testing protocol, including a description of methods and a site map with all sampling locations clearly and precisely represented. If site sampling is necessary, no sampling should begin until written approval of a protocol is received from OER. The number and location of sample sites should be selected to adequately characterize the site, the specific source of suspected contamination (i.e., petroleum-based contamination and non-petroleum-based contamination), and the remainder of the site's condition. The characterization should be complete enough to determine what remediation strategy (if any) is necessary after review of the sampling data. Guidelines and criteria for selecting sampling locations and collecting samples are provided by OER upon request.

Task 2: Remediation Determination and Protocol

A written report with findings and a summary of the data must be submitted to OER after completion of the testing phase and laboratory analysis for review and approval. After receiving such results, a determination is made by OER if the results indicate that remediation is necessary. If OER determines that no remediation is necessary, written notice shall be given by OER.

If remediation is indicated from the test results, a proposed Remedial Action Work Plan (RAWP) must be submitted to OER for review and approval. The applicant must complete such remediation as determined necessary by OER in accordance with the approved RAWP. The applicant should then provide proper documentation that remedial action has been satisfactorily completed.

An OER-approved construction-related Health and Safety Plan (CHASP) would be implemented during evacuation and construction and activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil and/or groundwater. This plan would be submitted to OER for review and approval prior to implementation.

Similar requirements for City-owned Development Sites would be followed under an LDA between HPD and the future developer(s). These requirements entail submission Phase II ESA Work Plans, Phase II ESA Reports and RAWPs and CHASPs for each respective City-owned Development Site for review and approval by DEP.

Overall, under the Proposed Actions, the majority of the 41 Projected Development Sites would be expected to be redeveloped as a part of the larger urban renewal of the Project Area. At sites identified with potential subsurface contamination from hazardous materials, construction activity involving soil disturbance may create or increase pathways for exposure to potential subsurface impacts. However, as previously stated, by placing an institutional control on these sites, the potential for an adverse impact to human health and the environment resulting from the Proposed Actions would be largely mitigated or avoided altogether. These measures would ensure investigation, mitigation, and remediation of any hazardous materials under the Proposed Actions would be completed in a safe, and comprehensive manner. In addition to applying institutional controls in support of regulatory oversight for the respective Development Sites, regulatory requirements relating to asbestos, lead-based paint and PCBs in building materials would also be followed for any

remaining buildings as part of standard demolition practices on all Development Sites. Given these procedures, the With-Action condition would not result in any significant adverse impacts with respect to hazardous materials for the respective Development Sites.

11

Water and Sewer Infrastructure

This chapter evaluates the potential for the Proposed Actions to result in significant adverse impacts on the City's water supply, as well as its wastewater and stormwater conveyance and treatment infrastructure.

Introduction

The Department of Housing Preservation and Development (HPD) is proposing a series of land use actions (collectively the Proposed Actions) to implement recommendations of the Resilient Edgemere Community Initiative, an interagency, community-based effort to align New York City's Sandy Recovery and rebuilding investments in Edgemere with a long-term comprehensive community vision. The Resilient Edgemere Community Initiative builds on past planning efforts, such as creation of the Edgemere Urban Renewal Area in 1997. In 2017, the City released the Resilient Edgemere Community Plan, a vision for the future of Edgemere with the following goals:

- Protect the neighborhood from flooding;
- Create resilient housing and maintain the neighborhood's low density feel;
- Improve streets and transit; and
- Increase neighborhood amenities.

In order to successfully implement these four community goals, changes to existing land use, zoning, and the Edgemere Urban Renewal Area and Plan are needed. The Proposed Actions would facilitate the development of affordable housing and community amenities to benefit the neighborhood in transit-oriented areas, as well as discourage future development in

areas of greater risk to coastal hazards. These actions would work in concert to leverage investments in local public infrastructure, housing, and coastal protection, while laying the groundwork for long-term coastal resilience and community development.

The Project Area is located in Queens, New York, on the eastern end of Rockaway Peninsula. Encompassing the neighborhood of Edgemere, the Project Area is located in Queens Community District 14 between the Far Rockaway and Bayswater neighborhoods to the east, the Arverne East proposed development and Nature Preserve site to the south (and further south to the Rockaway Beach and Atlantic shorefront), the Arverne neighborhood to the west, and Jamaica Bay to the north. The Project Area is generally bounded by Beach 35th Street to the east, Rockaway Freeway and Rockaway Beach Boulevard to the south, Beach 50th Street and Beach 51st Street to the west, and Jamaica Bay to the north.

In total, the reasonable worst-case development scenario (RWCDS) for the Proposed Actions is expected to result in 1,222 residential units in approximately 1,313,659 gsf, including up to 465 affordable units; approximately 115,849 gsf of local retail uses; and approximately 640 new parking spaces. The Proposed Actions would result in the redevelopment of a combined area of over 3-acres across 32 proposed residential infill sites and nine proposed multi-family developments throughout the neighborhood of Edgemere, Queens.

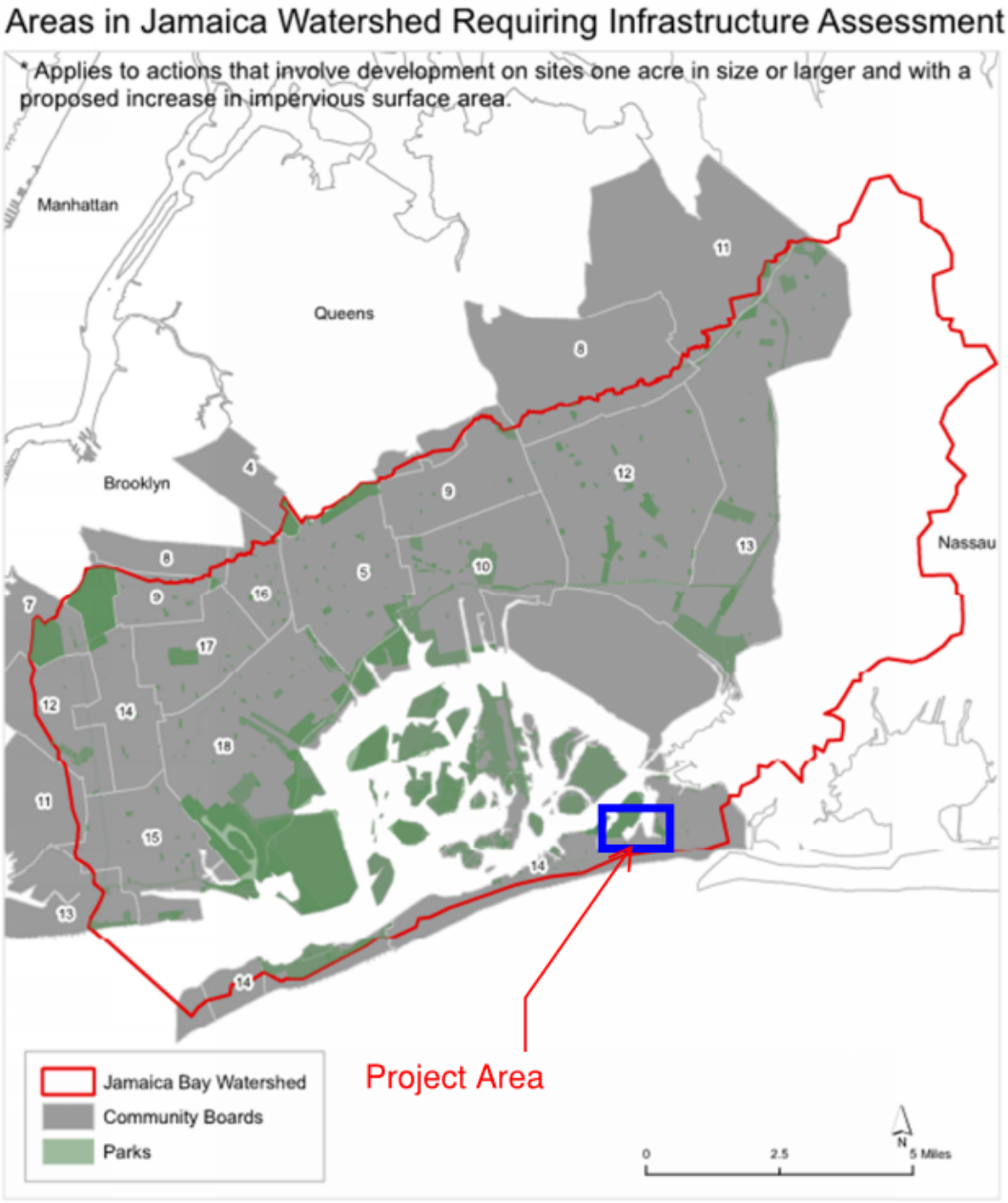
According to the *CEQR Technical Manual*, discretionary actions that would increase density or change drainage conditions may warrant a water and sewer infrastructure analysis. Specifically, development that would result in an exceptionally large demand for water (more than a million gallons per day (mgd)) or that is located in an area that experiences low water pressure require an analysis of potential impacts on the water supply system. Additionally, developments located in a separately sewered area and would exceed the incremental development of residential units or commercial space per site may warrant a sewer infrastructure analysis. Also, development on a site that is one acre or larger located within the Jamaica Bay watershed may warrant a sewer infrastructure analysis.

The Project Area is located in a region that may experience low water pressure. In addition, the Projected Development Sites cover an area greater than one acre and would increase impervious surfaces; the Project Area is also located in the Jamaica Bay watershed (see **Figure 11-1**). Additionally, the RWCDS exceeds the incremental development of residential and commercial space set forth in the *CEQR Technical Manual* for areas of the city with separate systems. An analysis of the Proposed Actions' potential impacts on the City's water demand and wastewater conveyance is provided in this chapter.

Principal Conclusions

The Proposed Actions may have an adverse impact on the City's water and sewer infrastructure. Although the increased water demand is below the 1 mgd threshold, the Project Area is located within an area that experiences low water pressure (Rockaway Peninsula). Based on the *CEQR Technical Manual*, the Proposed Actions create a new demand for treatment of sewage, in comparison to the No-Action condition, that would be considered significant. Therefore, both the water and sewer infrastructure are subject to an analysis.

Figure 11-1 Jamaica bay Watershed



Water Supply

New York City consumes approximately 1.3 billion gallons of water per day from a reservoir system with a total storage capacity of approximately 550 billion gallons.[1, 2] The total water usage as a result of the Proposed Actions is calculated to equal approximately 0.396 mgd, which is an increment of approximately 0.394 mgd, compared to the No-Action condition

[1] Source: New York City's Wastewater Treatment System, New York City Department of Environmental Protection; https://www1.nyc.gov/site/dep/water/

[2] Source: 2020 *CEQR Technical Manual.*

projected demand of approximately 0.002 mgd. The total water usage would result in less than 1 mgd. However, the Proposed Actions are located in an area that experiences low water pressure (Rockaway Peninsula) and meets the *CEQR Technical Manual* threshold requiring a detailed analysis.

Sanitary Sewage

Sanitary sewage generated by the Proposed Actions would discharge to the Rockaway wastewater treatment plant (WWTP), which has a State Pollutant Discharge Elimination System (SPDES)-permitted dry weather flow capacity of 45 mgd.[3] The average monthly flow to Rockaway WWTP over a 12-month period is 22 mgd.[4] The Proposed Actions have the potential to result in a total generation of 0.380 mgd of sanitary sewage discharge, an increment of 0.379 mgd over the No-Action total sewage generation, which is estimated at 0.001 mgd. This incremental increase in sanitary flow would represent approximately 0.80 percent of Rockaway WWTP's SPDES-permitted capacity. The projected increase in sanitary sewage would not cause the Rockaway WWTP to exceed its operational capacity or SPDES-permitted capacity, but the Proposed Actions would exceed the incremental development of residential and commercial space per site. Sites 1, 2, 3, 7 all exceed limit of 100 residential units per site and are located within an R-6A zoning district.

Stormwater Drainage and Management

The Project Area is served by a separate sanitary sewer system. Stormwater is collected and drained into the Jamaica Bay through various outlets. As previously noted, the total area to be redeveloped within the Project Area exceeds one acre and is located in the Jamaica Bay watershed.

Methodology

This analysis begins with a description of the water supply, wastewater, and stormwater conveyance systems. The water demand, sewage generation, and stormwater runoff are then calculated for the existing No-Action, and With-Action conditions. These numbers are determined from the *CEQR Technical Manual*, NYC Department of Environmental Protection (NYCDEP) flow matrix calculations, and information gathered on the Rockaway Wastewater Treatment Plant (WWTP) in order to determine the potential for adverse impacts to the existing sewer and water infrastructure.

Existing Conditions

The Project Area is comprised predominantly of vacant land and residential units. The area also contains a few low-rise commercial buildings, high-density residential buildings (namely NYCHA Beach 41st Street Houses, with buildings up to 13 stories), and recently constructed mid-rise, multi-family, mixed-use developments (of up to eight stories). The Proposed Actions would occupy approximately 3 acres of the neighborhood and would be spread

[3] Source: New York City's Wastewater Treatment System, New York City Department of Environmental Protection.

[4] 12-month period through December 2020

across 41 sites. **Table 11-1** contains a summary of each site's Tax Block and Lot information, in addition to a brief description of their existing land uses.

Water Supply

The New York City water supply system consists of a network of reservoirs, lakes, and aqueducts extending north into the Catskill region, and a grid of underground distribution mains that distributes water within the City. Approximately 1.3 billion gpd of water are consumed by New York City through this water supply system.

Most of New York City obtains water from three surface water supply systems operated by NYCDEP – Delaware, Catskill, and Croton. The watersheds of the three systems cover almost 2,000 square miles, with 19 reservoirs and three control lakes, which have a combined storage capacity of approximately 550 billion gallons.

Two of the three surface water systems, the Delaware and Catskill systems, collect water from watershed areas in the Catskill Mountains and deliver it to the Hillview Reservoir in Yonkers. From there, it is distributed to the City through three tunnels: City Tunnel 1, which runs through the Bronx and Manhattan to Brooklyn; City Tunnel 2, which goes through the Bronx, Queens, and Brooklyn (and from there through the Richmond Tunnel to Staten Island); and City Tunnel 3 (Stage 1), which goes through the Bronx and Manhattan and ends in Queens. Stage 2 of City Tunnel 3 is currently under construction in Queens and Brooklyn.

The third surface water system, the Croton system, collects water from watershed areas in Dutchess, Putnam, and Westchester Counties and delivers it to the Jerome Park Reservoir in the Bronx. From there, it is distributed to the Bronx and Manhattan through the New Croton Aqueduct.

Once in the City, the aqueducts distribute water into a network of water mains. Water mains up to 96 inches in diameter feed smaller mains, such as 20-, 12-, and 8-inch mains, which deliver water to their final destination, including to fire hydrants along many of the City's streets. Nearly all of the water reaches consumers by gravity alone, with roughly four percent (generally located at the outer limits of the system where in-line pressure is lowest, at high elevations, or at pressure extremity such as Far Rockaway) being pumped to its final destination. Water pressure throughout the City's water supply system is monitored and controlled by pressure regulators.

It is estimated that the existing uses on the Projected Development Sites consume approximately 1,843 gpd as shown in **Table 11-1**. As described in **Table 1-1, Projected Development Site Assumptions**, only four sites in the Project Area have active uses that have an existing demand for water and waste water generation (Sites 1, 16, 29 and 31).

Table 11-1 Existing Water Consumption and Sewage Generation in the Project Area

Projected Development Sites	Existing Land Use(s)	Area (sf)	Dwelling Units	Domestic Water/Wastewater Generation (gpd)	Air Conditioning (gpd)
Multi-Family					
Site 1	Commercial	2,358	-	967	401
Site 16	One & Two Family Building	-	1	292	-
Site 29	One & Two Family Building	-	1	292	-
Site 31	One & Two Family Building	-	1	292	-
	Water Consumption Subtotals			1,843	401
	Sewage Generation Subtotal			1,442	
	Total Water Consumption			1,843	
	Total Wastewater Generation			1,442	

Water consumption and wastewater generation rates were derived from the *CEQR Technical Manual* and are provided in **Table 11-2**.

Table 11-2 Water Consumption and Wastewater Generation Rates

	Rate			
Land Use	Domestic	Units	Air Conditioning	Units
Residential	100	gpd/person	0.00	gpd/sf
Retail	0.24	gpd/sf	0.17	gpd/sf
Commercial Office	0.10	gpd/sf	0.17	gpd/sf

Notes: Consumption rates obtained from the 2020 *CEQR Technical Manual* Table 13-2 "Water Usage and Sewage Generation Rates for Use in Impact Assessment"

Conveyance System

The Project Area is located in a part of New York City served by a separated sanitary sewer system with stormwater discharging into the Jamaica Bay via three discharge points:

- An existing 7-foot wide by 4-foot high box culvert discharges into the Jamaica Bay north of Beach 42nd Street. The stormwater is collected from catch basins and fed into a sewer line on Beach Channel Drive from Beach 40th Street to Beach 45th Street.
- Another discharge point is an 8.5-foot wide by 5-foot high box culvert that discharges north of Beach 49th Street. The storm water is collected from catch basins and fed into a sewer line on Beach Channel Drive from Beach 46th Street to Beach 49th Street.

› The last discharge point is a 54-inch pipe that discharges north of Beach 38th Street. The street's stormwater is collected from catch basins and fed into a sewer line on Beach Channel Drive from Beach 43rd to Beach 37th Street.

At the Rockaway WWTP, wastewater is fully treated by physical and biological processes before it is discharged into the Jamaica Bay. The quality of the treated wastewater (effluent) is regulated by a State Pollutant Discharge Elimination System (SPDES) permit issued by the New York State Department of Environmental Conservation (NYSDEC), which establishes limits for effluent parameters (i.e., suspended solids, fecal coliform bacteria, and other pollutants). Since the volume of flow to a WWTP affects the level of treatment a plant can provide, the maximum permitted capacity for the Rockaway WWTP is 45 mgd. Within the project area stormwater is sent untreated through the separate sewer system and outfalls to Jamaica Bay located to the north.

Sanitary Flows

For purposes of analysis, the amount of sanitary sewage is estimated as all water demand generated by the existing uses on the Projected Development Sites except water used by air conditioning, which is typically not discharged to the sewer system. The existing buildings generate an estimated 1,442 gpd of daily sanitary sewage with a total water demand of 1,843 gpd, as shown in **Table 11-1**.

Stormwater Flows

Connecting to the City's sewer system requires NYCDEP certification prior to the issuance of a building permit. This review for site connection approval is conducted to ensure sufficient capacity is available at the sewer fronting the new development, as well as the downstream sewer. With the implementation of the Unified Stormwater Rule, which is currently in progress, on-site requirements for areas in both combined and separate sewer systems (across city and state agencies) would be consolidated. The Project Area consists of 3 residential units, approximately 2,358 of commercial retail space, a parking lot, and vacant land. The surface cover type across the Projected Development Sites in the Existing Condition consists mostly of grassland. **Table 11-3** summarizes the existing surfaces and surface areas at the Projected Development Sites, as well as the weighted runoff coefficient (the fraction of precipitation that becomes surface runoff for each surface type).

Table 11-3 Existing Surface Coverage

Surface Type	Roof	Pavement and Walkways	Other	Grass and Soft Scape	Total
Area (%)	2%	12%	0%	86%	100%
Surface Area (sf)	10,259	58,114	0	431,573	499,946
Runoff Coefficient[1]	1.00	0.85	0.85	0.20	0.29

Notes:
[1] Runoff coefficients for each surface type as per NYCDEP

The NYCDEP Flow Volume Calculation Matrix was completed for the existing conditions and the With-Action condition. The calculations from the Flow Volume Calculation Matrix help to determine the change in wastewater flow volumes and include four rainfall volume scenarios with varying durations. As discussed above, the Project Area has separate sanitary sewer infrastructure, and stormwater drains into the Jamaica Bay. The existing stormwater runoff is calculated in the table below; however, the accumulated stormwater, existing and proposed, would not contribute to any increase in flow towards the Rockaway WWTP.

As shown in **Table 11-4**, the total direct drainage rainfall volume under existing conditions could range between 0.00 mgd to 0.06 mgd. The total daily sanitary flow to the Rockaway WWTP, in existing conditions, is 0.001 mg.

Table 11-4 NYCDEP Flow Volume Matrix – Existing Conditions

Rainfall (inches)[1]	Duration (hours)	Total Area (acres)[2]	Weighted Runoff Coefficient[3]	Stormwater Runoff – Direct Drainage (MG)[4]	Sanitary to WWTP (MG)[5]
0.00	3.80	3.06	0.29	0.000	0.001
0.40	3.80	3.06	0.29	0.010	0.001
1.20	11.30	3.06	0.29	0.030	0.001
2.50	19.50	3.06	0.29	0.060	0.001

Notes:

[1] Storm event rainfalls per NYCDEP Volume Calculation Matrix.
[2] Total surface area onsite for Projected Development sites within subcatchment area.
[3] Runoff coefficients for surface type area as per NYCDEP.
[4] Stormwater runoff derived from NYCDEP Volume Calculation Matrix.
[5] Sanitary volumes derived using methodology and consumption rates per the 2020 *CEQR Technical Manual*.
MG = million gallons

No-Action Condition

As described in **Chapter 1, Project Description**, absent the Proposed Actions, the Project Area is assumed to mostly remain unchanged from existing conditions.

Sanitary Flows

Table 11-5 summarizes the water and sewage generation in the Project Area under future No-Action conditions, which are the same as in existing conditions.

Table 11-5 No-Action Water Consumption and Sewage Generation

Projected Development Sites	Land Use	Area (sf)	Dwelling Units	Domestic Water/Wastewater Generation (gpd)	Air Conditioning (gpd)
Site 1	Commercial	2,358	-	967	401
Site 16	One & Two Family Building	-	1	292	-
Site 29	One & Two Family Building	-	1	292	-
Site 31	One & Two Family Building	-	1	292	401
	Water Consumption Subtotals			1,843	401
	Sewage Generation Subtotal			1,442	
	Total Water Consumption			1,843	
	Total Wastewater Consumption			1,442	

Stormwater Flows

Since the No-Action conditions would remain unchanged as compared to existing conditions, the surface areas and the weighted runoff coefficient would remain as shown in **Table 11-3.**

The Future With the Proposed Actions

The With-Action condition would result in the development of 115,849 gsf commercial retail space and 1,222 residential units on sites that are currently vacant or underutilized. The results of the analysis of the With-Action condition on water and sewer infrastructure is described below.

Sanitary Flows

As shown in **Table 11-6**, the With-Action condition is expected to have a total water demand of 396,406 gpd, generating approximately 379,994 gpd of daily sanitary sewage.

Table 11-6 With-Action Water Consumption and Sewage Generation

Land Use	Area (sf)	Dwelling Units	Domestic Water/Wastewater Generation (gpd)	Air Conditioning (gpd)
Site 1 (Residential/Commercial)	18,442	387	120,565	3,135
Site 2 (Residential/Commercial)	21,300	162	56,037	3,621
Site 3 (Residential/Commercial)	14,753	172	56,273	2,508
Site 4 (Residential/Commercial)	6,303	73	23,900	1,072
Site 5 (Residential/Commercial)	4,898	57	18,652	833
Site 6 (Residential/Commercial)	4,664	54	17,680	793
Site 7 (Residential/Commercial)	14,935	174	54,392	2,539
Site 8 (Residential/Commercial)	2,997	7	3,273	509
Site 9 (Residential/Commercial)	5,891	14	5,662	1,001
Site 10 (Residential)	-	5	1,460	-
Site 11 (Residential)	-	4	1,168	-
Site 12 (Residential)	-	4	1,168	-
Site 13 (Residential)	-	8	2,336	-
Site 14 (Residential)	-	4	1,168	-
Site 15 (Residential)	-	4	1,168	-
Site 16 (Residential)	-	2	584	-
Site 17 (Residential)	-	2	584	-
Site 18 (Residential)	-	2	584	-
Site 19 (Residential)	-	5	1,460	-
Site 20 (Residential)	-	3	876	-
Site 21 (Residential)	-	3	876	-
Site 22 (Residential)	-	4	1,168	-
Site 23 (Residential)	-	1	292	-
Site 24 (Residential)	-	8	2,336	-
Site 25 (Residential)	-	1	292	-
Site 26 (Residential)	-	2	584	-
Site 27 (Residential)	-	3	876	-
Site 28 (Residential)	-	11	3,212	-
Site 29 (Residential)	-	4	1,168	-
Site 30 (Residential)	-	1	292	-
Site 31 (Residential)	-	6	1,752	-
Site 32 (Residential)	-	2	584	-
Site 33 (Residential)	-	2	584	-
Site 34 (Residential)	-	3	876	-
Site 35 (Residential)	-	11	3,212	-
Site 36 (Residential)	-	2	584	-
Site 37 (Residential)	-	1	292	-
Site 38 (Residential)	-	9	2,628	-
Site 39 (Residential)	-	1	292	-
Site 40 (Residential)	-	2	584	-
Site 41 (Residential)	-	2	584	-
Water Consumption Subtotals			379,994	15,888
Sewage Generation Subtotal			379,994	
Total Water Consumption			396,406	
Total Wastewater Consumption			379,994	

The incremental sanitary sewage generated by the With-Action condition, as compared with the No-Action development, would be 378,151 gpd. This incremental increase in sewage generation would be approximately 0.84 percent of the Rockaway WWTP capacity of 45 mgd.

In accordance with the New York City Plumbing Code (Local Law 33 of 2007), development at the Projected Development Sites would be required to utilize low-flow plumbing fixtures, which would reduce sanitary flows to the plant. Therefore, the With-Action condition would not result in a significant adverse impact to the City's sanitary sewage conveyance and treatment system.

Stormwater Flows

The With-Action condition would result in the development of sites that are currently vacant and underutilized; therefore, the surface coverage from **Table 11-3** would increase as compared to No-Action conditions. Provided in **Table 11-3,** is the NYCDEP Flow Volume Calculation Matrix for the With-Action Conditions.

Table 11-7 NYCDEP Flow Volume Matrix – With-Action Condition

Rainfall (inches)[1]	Duration (hours)	Total Area (acres)[2]	Weighted Runoff Coefficient[3]	Stormwater Runoff - Direct Drainage (MG)[4]	Sanitary to WWTP (MG)[5]
0.00	3.80	3.06	0.67	0.000	0.380
0.40	3.80	3.06	0.67	0.020	0.380
1.20	11.30	3.06	0.67	0.070	0.380
2.50	19.50	3.06	0.67	0.140	0.380

Notes:
[1] Storm event rainfalls per NYCDEP Volume Calculation Matrix.
[2] Total surface area onsite for Projected Development sites within subcatchment area.
[3] Runoff coefficients for surface type area as per NYCDEP.
[4] Stormwater runoff derived from NYCDEP Volume Calculation Matrix.
[5] Sanitary volumes derived using methodology and consumption rates per the 2020 *CEQR Technical Manual.*
MG = million gallons

As shown in **Table 11-7**, in the With-Action condition, the total direct drainage rainfall volume could be between 0.00 mgd and 0.14 mgd. The total daily sanitary flow to the Rockaway WWTP would be approximately 0.380 mgd.

Table 11-8 compares the estimated stormwater runoff under existing and With-Action conditions using the NYCDEP Flow Volume Calculation Matrix. As shown in the table, depending on the rainfall volume and duration, the With-Action increment to Jamaica Bay could be between 0.000 and 0.140 mgd. Typically, an increase of 5.0 percent or more at the site over existing conditions would warrant further review by NYCDEP, in which the implementation of Best Management Practices (BMPs) would help reduce that increase.

Table 11-8 Existing and With-Action Stormwater Volume Discharged to Jamaica Bay

		Total Volume to Stormwater Discharged to Jamaica Bay (MG)		
Rainfall (inches)[1]	Duration (hours)	Existing Conditions	With-Action Condition	Increment
0.00	3.80	0.000	0.000	0.000
0.40	3.80	0.010	0.020	0.010
1.20	11.30	0.030	0.070	0.040
2.50	19.50	0.060	0.140	0.080

The Flow Volume Matrix calculations do not reflect the use of any sanitary and stormwater source control BMPs to reduce sanitary flow and stormwater runoff volumes to the separate sewer system. As noted above, development at the Projected Development Sites would incorporate low flow plumbing fixtures to reduce sanitary flow in accordance with the New York City Plumbing Code. In addition, stormwater BMPs would be required as part of the NYCDEP site connection approval process for each of the Projected Development Sites, and NYCDEP would establish required stormwater release rate. Based on the NYCDEP Guidelines for the Criteria for Detention Facility Design, dated November 19, 2012, for new developments, the required stormwater release rate for the Projected Development Sites would be the greater of 0.25 cubic feet per second (cfs) or 10 percent of the allowable flow, unless the allowable flow is less than 0.25 cfs, in which case the stormwater release rate is equal to the allowable flow.[5] To achieve this release rate, 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 would be determined in consultation with NYCDEP.

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 NYCDEP, would reduce the overall volume of sanitary sewer discharge and stormwater runoff as well as the peak stormwater runoff rate from the Projected Development Sites. Sewer conveyance near the Projected Development Sites and the treatment capacity at the Rockaway WWTP is enough to handle wastewater flow resulting from the Proposed Actions. Additionally, the Proposed Actions would involve changes in land use designations. Specifically, "Open Space" land use designations are proposed (from "Residential" and "Residential/Open Space" for all Urban Renewal Area sites, including several additional parcels). This includes a 1.67-acre City-owned lot (Block 15973, Lot 1) that is reserved for future large-scale drainage infrastructure. These open spaces would be designed to aid in the absorption of water, which would reduce flood risk and redirect stormwater from City sewers and sewage treatment facilities. Therefore, there would be no significant adverse impacts on wastewater treatment or stormwater conveyance infrastructure.

[5] Source: https://www1.nyc.gov/assets/dep/downloads/pdf/about/water-and-sewer-forms/criteria-determination-detention-facility-volume.pdf

12

Transportation

This chapter assesses the potential for the Proposed Actions to result in significant adverse impacts on traffic operations and mobility, public transportation facilities and services, pedestrian elements and flow, safety of all roadway users (pedestrians, cyclists, transit users, and motorists), and on- and off- street parking.

Introduction

The Project Area is located in the Edgemere neighborhood of Queens, NY, on the eastern end of Rockaway Peninsula. The Project Area is generally bounded by Beach 35th Street to the east, Rockaway Freeway and Edgemere Avenue to the south, Beach 50th Street and Beach 51st Street to the west, and Jamaica Bay to the north (see **Figure 12-1**).

The Proposed Actions would facilitate mid-rise development of multi-family housing and commercial amenities in those portions of the Project Area that are nearest to transit—namely along Beach Channel Drive, Rockaway Beach Boulevard, and Rockaway Freeway. **Table 12-1** summarizes the Reasonable Worse Case Development Scenario (RWCDS) under both No-Action and With-Action conditions. According to the RWCDS, the Proposed Actions would result in an increase of 1,222 dwelling units (DUs), 113,491 gross square feet (gsf) of commercial space and 478 parking spaces on 41 Projected Development Sites. For travel demand forecasting purposes, the commercial space is assumed to be local retail use.

Figure 12-1 Project Location

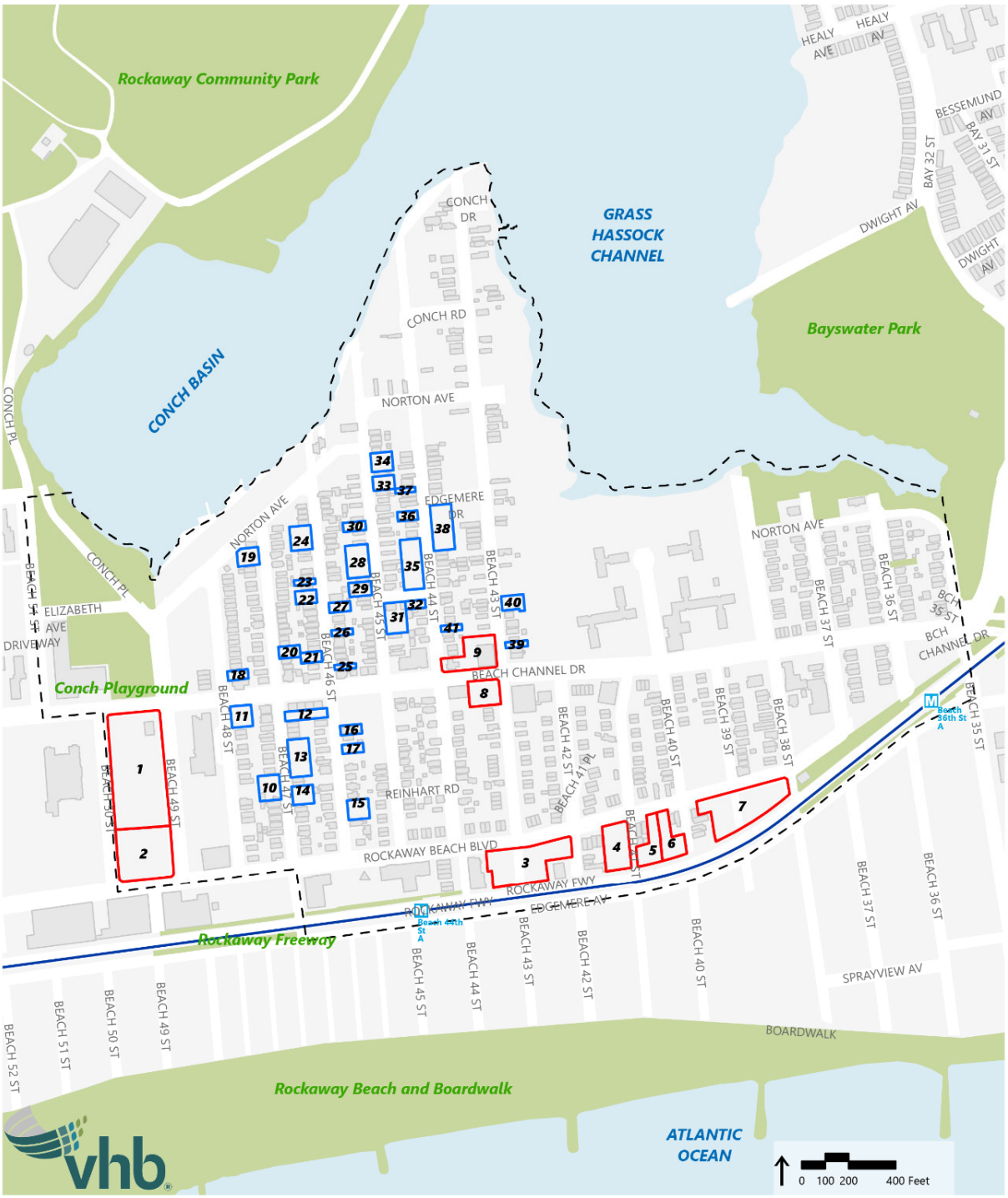


Table 12-1 Development Increment for Analysis

	No-Action Condition			With-Action Condition			Analysis Increment		
Site	Residential (DUs)	Commercial (gsf)	Parking Spaces	Residential (DUs)	Commercial (gsf)	Parking Spaces	Residential (DUs)	Commercial (gsf)	Parking Spaces
1	-	2,358	118	387	24,690	170	387	22,602	52
2	-	-	44	162	25,560	71	162	25,560	27
3	-	-	-	172	17,704	86	172	17,704	86
4	-	-	-	73	7,564	37	73	7,564	37
5	-	-	-	57	5,877	29	57	5,877	29
6	-	-	-	54	5,597	27	54	5,597	27
7	-	-	-	174	17,921	87	174	17,921	87
8	-	-	-	7	3,596	4	7	3,596	4
9	-	-	-	14	7,069	7	14	7,069	7
10 to 41	-	-	-	122	-	122	122	-	122
Total	**0**	**2,358**	**162**	**1,222**	**115,849**	**640**	**1,222**	**113,491**	**478**

Note: Due to rounding, overall totals may be slightly different than the sum of individual site programs

Principal Conclusions

A detailed transportation analysis determined that the Proposed Actions would result in significant adverse impacts related to traffic, buses and safety. The Proposed Actions would not result in subway station and subway line-haul impacts nor pedestrian impacts. A parking analysis determined that there would be sufficient off-street parking availability to accommodate demand generated by the Proposed Actions during the weekday AM, midday, and PM periods. Shortfalls forecasted for the weekday overnight and Saturday peak periods would be fully accommodated by on-street parking spaces projected in the future.

Overall, of the 27 intersections analyzed, the Proposed Actions would result in significant adverse traffic impacts at 13 intersections (at 27 movements) during the weekday AM peak hour, 12 intersections (at 17 movements) during the weekday midday peak hour, 13 intersections (at 22 movements) during the weekday PM peak hour, and 11 intersections (at 14 movements) during the Saturday peak hour. The identification and evaluation of traffic capacity improvements needed to mitigate these impacts are presented in **Chapter 19, Mitigation**.

A line-haul analysis of the Q22 local bus route indicated that the Proposed Actions would result in a significant impact to the eastbound and westbound directions of this route during both the weekday AM and PM commuter peak hours. Measures needed to mitigate these impacts are presented in **Chapter 19, Mitigation**.

No intersection in the study area is classified as a high crash location according to *2020 CEQR Technical Manual* guidelines. As there is currently no marked crossing on Rockaway Beach Boulevard between Beach ~~39th~~45th Street and Beach 53rd Street, it is likely that pedestrians en route to and from ~~projected developments sites~~Projected Developments Sites 1 and 2 would choose to cross Rockaway Beach Boulevard at a proximate location where a marked crosswalk is not present~~. These locations would include~~, such as at the intersection

of Rockaway Beach Boulevard ~~intersections at the following cross-streets: Beach 40th Street, Beach 41st Street, Beach 42nd Street, Beach 44th Street, Beach 47th Street and~~ at Beach 49th Street. There is a potential for a significant pedestrian safety impact at ~~these locations~~this location. Measures needed to mitigate the potential for safety impacts are presented in **Chapter 19, Mitigation**.

Methodology

According to the *2020 CEQR Technical Manual* procedures for transportation analysis, a two-tiered screening process is undertaken to determine whether a quantified analysis is necessary. The first step, the Level 1 (Trip Generation) screening, determines whether the volume of peak hour person and vehicle trips generated by the Proposed Actions would remain below the minimum thresholds for further study. These thresholds are:

- 50 peak hour vehicle trip ends;
- 200 peak hour subway/rail or bus transit riders; and
- 200 peak hour pedestrian trips.

If the Proposed Actions result in increments that would exceed any of these thresholds, a Level 2 (Trip Assignment) screening assessment is performed. Under this assessment, action-generated trips that exceed Level 1 thresholds are assigned to and from the development sites through their respective networks (streets, bus and subway lines, sidewalks, etc.) based on expected origin-destination patterns and travel routes.

Level 1 Screening Assessment

The travel demand factors used to calculate the projected number of trips were obtained primarily from the *2020 CEQR Technical Manual*, American Community Survey (ACS) journey-to-work data, New York City Department of Transportation (NYCDOT) survey data, and the 2018 *Peninsula Hospital Site Redevelopment FEIS*. **Table 12-2** provides the travel demand assumptions used for the weekday AM, midday and PM peak hours, and the Saturday peak hour.

Table 12-2 Travel Demand Characteristics

Rates	Residential	Local Retail
Person Trip Gen Rate (Weekday/Saturday)	8.18/9.08[1]	205.0/240.0[2]
	per dwelling unit	per 1,000 sf
Temporal Distribution		
AM Peak Hour	9%[1]	3%[2]
Midday Peak Hour	6%[1]	19%[2]
PM Peak Hour	8%[1]	10%[2]
Saturday Peak Hour	8%[1]	10%[2]
Modal Split (All Periods)		
Auto	46.8%[3]	33.0%[5]
Taxi	1.0%[3]	0.0%[5]
Bus	14.1%[3]	6.0%[5]
Subway	32.1%[3]	2.0%[5]
Walk	6.0%[3]	59.0%[5]
Vehicle Occupancy (AM, Midday and PM/Saturday)		
Auto	1.09/1.09[3]	2.0/2.0[4]
Taxi	1.40/1.30[4]	2.0/2.0[4]
Directional Split (In/Out)		
AM Peak Hour	22%/78%[1]	50%/50%[4]
Midday Peak Hour	50%/50%[1]	50%/50%[4]
PM Peak Hour	63%/37%[1]	50%/50%[4]
Saturday Peak Hour	51%/49%[1]	55%/45%[4]
Delivery Trip Gen Rate (Weekday/Saturday)		
	0.06/0.02[2]	0.35/0.04[2]
	per dwelling unit	per 1,000 sf
Delivery Temporal Distribution		
AM Peak Hour	12%[2]	8%[2]
Midday Peak Hour	9%[2]	11%[2]
PM Peak Hour	2%[2]	2%[2]
Saturday Peak Hour	9%[2]	11%[2]
Directional Split (In/Out) - 50%/50%[2]		

[1] NYCDOT residential survey data

[2] *2020 CEQR Technical Manual*

[3] ACS journey-to-work (2014-2018) data for Queens Tracts 964, 972.02, 972.03, 72.04, 992, 998.01, 998.02 and 1008.~~02~~02h

[4] *2018 Peninsula Hospital Site Redevelopment FEIS*

[5] NYCDOT Queens local retail survey data; adjusted in consultation with NYCDOT

Residential

For the residential use, trip generation rates, temporal distributions and directional distributions were obtained from NYCDOT residential survey data. The trip generation rates used were 8.18 daily person trips per DU for weekday and 9.08 daily person trips per DU for Saturday. For the temporal distributions, 9 percent, 6 percent, 8 percent, and 8 percent were used for the weekday AM, midday, PM, and Saturday peak hours, respectively. For the directional distributions, 22 percent "in" for the weekday AM peak hour, 50 percent "in" for the weekday midday peak hour, 63 percent "in" for the weekday PM peak hour, and 51 percent "in" for the Saturday peak hour were used. Modal splits of 46.8 percent by auto, 1.0 percent by taxi, 14.1 percent by bus, 32.1 percent by subway, and 6.0 percent by walk for all peak hours were based on 2014-2018 ACS journey-to-work data for Queens census tracts 964, 972.02, 972.03, 972.04, 992, 998.01, 998.02 and 1008.02. For all peak hours, the auto vehicle occupancy rate of 1.09 was based on the ACS journey-to-work data. For the weekday and Saturday peak hours, the taxi vehicle occupancy rates of 1.40 and 1.30, respectively, were based on the *Peninsula Hospital Site Redevelopment FEIS*.

For residential delivery trips, trip generation rates of 0.06 and 0.02 daily delivery trips per DU for weekday and Saturday, respectively, and temporal distributions of 12 percent, 9 percent, 2 percent, and 9 percent for the weekday AM, midday, PM, and Saturday peak hours, respectively, were obtained from the *CEQR Technical Manual*.

Local Retail

For the local retail use, trip generation rates of 205 daily person trips per 1,000 square feet (sf) for weekday and 240 daily person trips per 1,000 sf for Saturday were obtained from the *CEQR Technical Manual*. Temporal distributions of 3 percent, 19 percent, 10 percent, and 10 percent, for the weekday AM, midday, PM, and Saturday peak hours, respectively, were also obtained from the *CEQR Technical Manual*. Modal splits of 33 percent by auto, 6 percent by bus, 2 percent by subway, and 59 percent by walk for all periods were based on NYCDOT Queens local retail survey data which were adjusted to reflect local characteristics. For both the weekday peak hours and the Saturday peak hour, auto and taxi vehicle occupancy rates of 2.00 were based on the *Peninsula Hospital Site Redevelopment FEIS*. Directional distributions of 50 percent "in" for the weekday AM, midday, and PM peak hours; and 55 percent "in" for the Saturday peak hour were also based on the *Peninsula Hospital Site Redevelopment FEIS*.

For retail delivery trips, trip generation rates of 0.35 and 0.04 daily delivery trips per 1,000 sf for weekday and Saturday, respectively, and a temporal distribution rate of 8 percent, 11 percent, 2 percent, and 11 percent for the weekday AM, midday, PM and Saturday peak hours, respectively, were obtained from the *CEQR Technical Manual*.

Level 1 Screening Results

The number of person trips forecasted to be generated as a result of the Proposed Actions are provided in **Table 12-3.**

Table 12-3 Trip Generation Summary – Person Trips

	AM Peak Hour			Midday Peak Hour			PM Peak Hour			Saturday Peak Hour		
Mode	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Auto	204	448	652	864	864	1,728	619	516	1,135	705	603	1,308
Taxi	1	5	6	1	1	2	5	1	6	4	4	8
Bus	45	114	159	171	171	342	135	107	242	149	133	282
Subway	64	229	293	136	136	272	184	115	299	170	161	331
Walk	220	245	465	1,321	1,321	2,642	714	704	1,418	910	746	1,656
Total	**534**	**1,041**	**1,575**	**2,493**	**2,493**	**4,986**	**1,657**	**1,443**	**3,100**	**1,938**	**1,647**	**3,585**

Transit and Pedestrians

As shown in **Table 12-3**, the Proposed Actions are projected to generate the following number of peak hour transit trips:

- During the weekday AM peak hour, the Proposed Actions would generate an increase of 159 bus trips and 293 subway trips.
- During the weekday midday peak hour, the Proposed Actions would generate an increase of 342 bus trips and 272 subway trips.
- During the weekday PM peak hour, the Proposed Actions would generate an increase of 242 bus trips and 299 subway trips.
- During the Saturday peak hour, the Proposed Actions would generate an increase of 282 bus trips and 331 subway trips.

Transit analyses generally examine conditions only during the commuter peak periods (weekday AM and PM) when overall transit demand and the potential for significant adverse impacts are typically highest. Therefore, as the Proposed Actions are expected to generate over 200 subway trips in the weekday AM and PM peak hours, and over 200 bus trips in the weekday PM peak hour, Level 2 trip assignments are necessary to determine if detailed subway and bus analyses are warranted per *CEQR Technical Manual* guidelines.

Pedestrian trips include walk-only trips to and from the Projected Development Sites plus walking connections between the development sites and bus stops and subway stations. New pedestrian trips are expected to total 917 pedestrian trips in the weekday AM peak hour, 3,256 pedestrian trips in the weekday midday peak hour, 1,959 pedestrian trips in the weekday PM peak hour, and 2,269 pedestrian trips in the Saturday peak hour.

As the number of incremental pedestrian peak hour trips is expected to exceed the threshold of 200 pedestrian trips per hour, a Level 2 trip assignment is necessary to determine if detailed pedestrian analyses are warranted per *CEQR Technical Manual* guidelines.

Traffic and Parking

Table 12-4 summarizes the total peak hour vehicular volumes ("ins" plus "outs") projected to be generated by the Proposed Actions. These volumes include trips via autos, taxis (balanced assuming no overlap between inbound and outbound trips for this area per *CEQR Technical Manual* guidelines), and commercial delivery vehicles. The hourly vehicle trips generated by

the Proposed Actions would be 526 vehicles per hour (vph) during the weekday AM peak hour, 986 vph in the weekday midday peak hour, 735 vph in the weekday PM peak hour, and 851 vph in the Saturday peak hour. The volume of vehicle trips generated by the Proposed Actions would exceed the 50-vehicle trip threshold during all peak hours; therefore, a Level 2 trip assignment is necessary to determine if a detailed traffic and parking analysis is warranted per *CEQR Technical Manual* guidelines.

Table 12-4 Trip Generation Summary – Vehicle Trips

	AM Peak Hour			Midday Peak Hour			PM Peak Hour			Saturday Peak Hour		
Mode	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Auto	142	366	508	490	490	980	410	315	725	445	390	835
Taxi	5	5	10	2	2	4	5	5	10	8	8	16
Delivery	4	4	8	1	1	2	0	0	0	0	0	0
Total	**151**	**375**	**526**	**493**	**493**	**986**	**415**	**320**	**735**	**453**	**398**	**851**

Level 2 Screening Assessment

As shown above, the number of trips expected to be generated by the Proposed Actions would exceed the *2020 CEQR Technical Manual* Level 1 screening thresholds for vehicle, subway, bus, and pedestrian trips. These incremental trips were assigned through the surrounding transit and street networks based on existing transit services and routes to and from Projected Development Sites.

Traffic

The assignments of auto and taxi trips reflect the surrounding street network configuration and are based on anticipated trip origins and routes to the Projected Development Sites via nearby arterial connections and major local streets. Delivery trips were assigned along NYCDOT-designated through and local truck routes into the Rockaway Peninsula (i.e., Rockaway Boulevard, the Cross Bay Veterans Memorial Bridge, and the Marine Parkway Bridge) then routed to Beach Channel Drive, which is the only designated truck route in the Edgemere neighborhood.

Residential use vehicle assignments were based on 2012-2016 AASHTO CTPP journey-to-work data for Queens Tracts 964, 972.02, 972.03, 72.04, 992, 998.01, 998.02 and 1008.02. Based on the CTTP data, 56 percent of trips were assumed destined for other Queens neighborhoods, 14 percent for Brooklyn, 5 percent for Manhattan, 1 percent of trips for the Bronx, 22 percent for Long Island, and 2 percent for other areas – e.g., New Jersey, Staten Island, Westchester County, Rockland County and Orange. Approximately two-thirds of the trips were assigned to local streets and arterials en route to and from major highways and bridges into the Rockaway Peninsula, while one-third were assigned to local streets en route to and from neighboring areas in the peninsula. Approximately 41 percent of trips were assigned via the Cross Bay Bridge, 12 percent via the Marine Parkway Bridge, and 14 percent via the Nassau Expressway, while the remaining 33 percent of trips were assigned to local arterials that extend through the peninsula.

The local retail use is expected to serve the local community. Therefore, local retail trips were generally assigned based on the distribution of population densities within the immediate surrounding areas (approximately a half-mile radius of the rezoning area).

Selection of Analysis Locations

As access into and out of the study area is limited to specific entry/exit and approach/ departure routes, traffic volumes are expected to concentrate and travel along the primary eastbound/westbound corridors such as Beach Channel Drive and Rockaway Beach Boulevard to and from the Projected Development Sites. As is typically done for area-wide rezoning analyses, key representative intersections were selected for detailed analysis. These locations include intersections likely to be used by concentrations of incremental traffic adjacent to the Projected Development Sites as well as critical intersections that serve as points of entry into the Edgemere neighborhood. Incremental traffic volumes at these representative intersections for the weekday AM, midday and PM peak hours, and the Saturday peak hour are shown in **Figure 12-2** through **Figure 12-5**. Overall, the 27 intersections shown in **Figure 12-6** and listed below are analyzed within this chapter:

- Beach Channel Dr/Seagirt Blvd and Beach 35th St
- Beach Channel Dr and Beach 37th St
- Beach Channel Dr and Beach 40th St
- Beach Channel Dr and Beach 44th St
- Beach Channel Dr and Beach 49th St
- Beach Channel Dr and Beach 50th St
- Beach Channel Dr and Beach 62nd St
- Arverne Blvd/Rockaway Blvd and Beach 54th St
- Arverne Blvd and Beach 56th St (the signalized intersection)
- Arverne Blvd and Beach 59th St
- Rockaway Beach Blvd and Beach 38th St
- Rockaway Beach Blvd and Beach 41st St
- Rockaway Beach Blvd and Beach 44th St
- Rockaway Beach Blvd and Beach 49th St
- Rockaway Beach Blvd and Beach 50th St
- Rockaway Beach Blvd and Beach 56th St
- Rockaway Beach Blvd and Beach 59th St
- Rockaway Freeway and Beach 44th St
- Rockaway Freeway and Beach 54th St
- Rockaway Freeway and Beach 56th St
- Rockaway Freeway and Beach 59th St
- Seagirt Blvd and Rockaway Freeway
- Seagirt Blvd/Edgemere Ave and Beach 32nd St
- Edgemere Ave and Beach 38th St

- Edgemere Ave and Beach 41st St
- Edgemere Ave and Beach 44th St
- Edgemere Ave and Beach 54th St

Figure 12-2 Traffic Volume Increment – AM Peak Hour

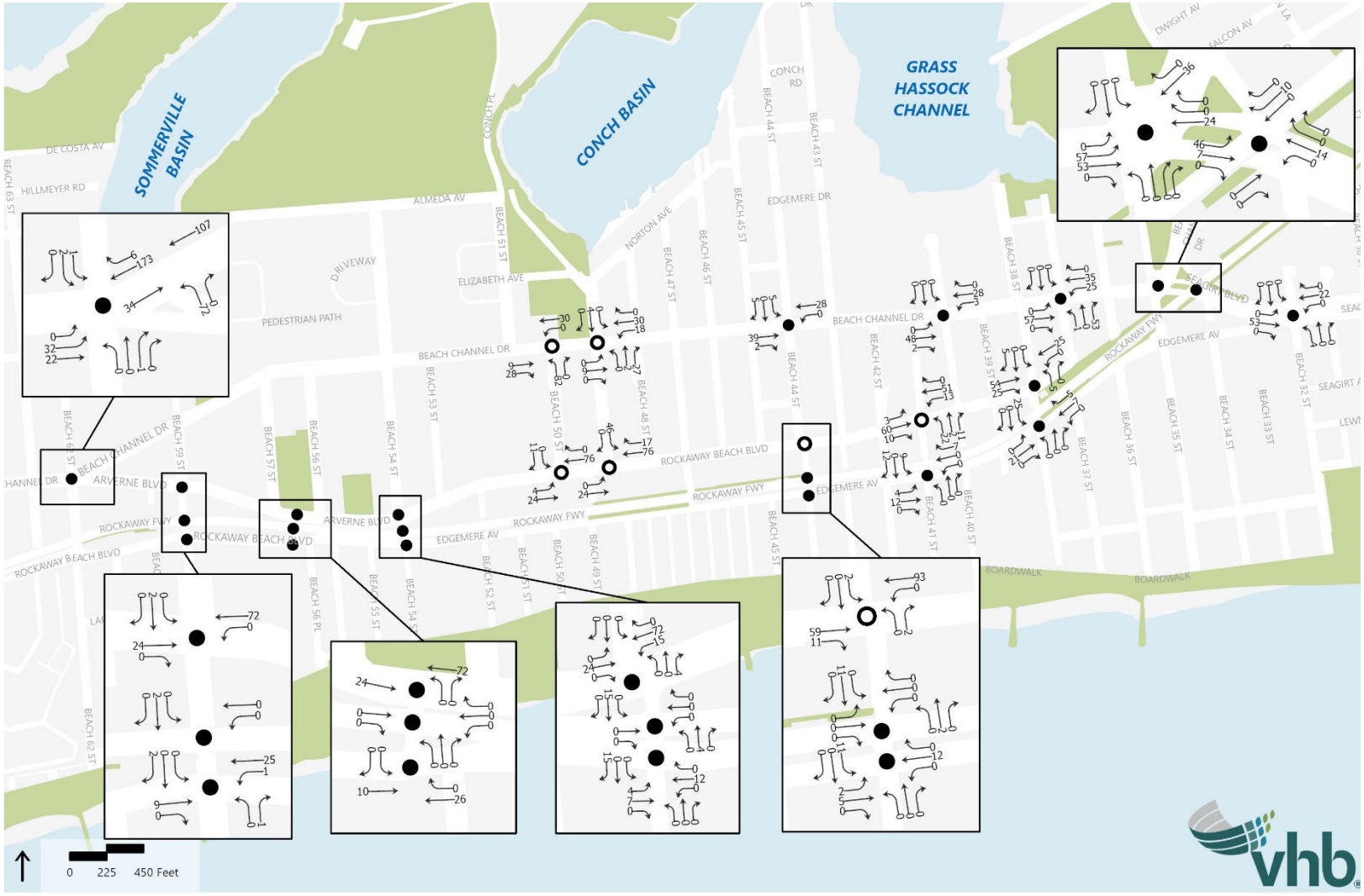


Figure 12-3 Traffic Volume Increment – Midday Peak Hour

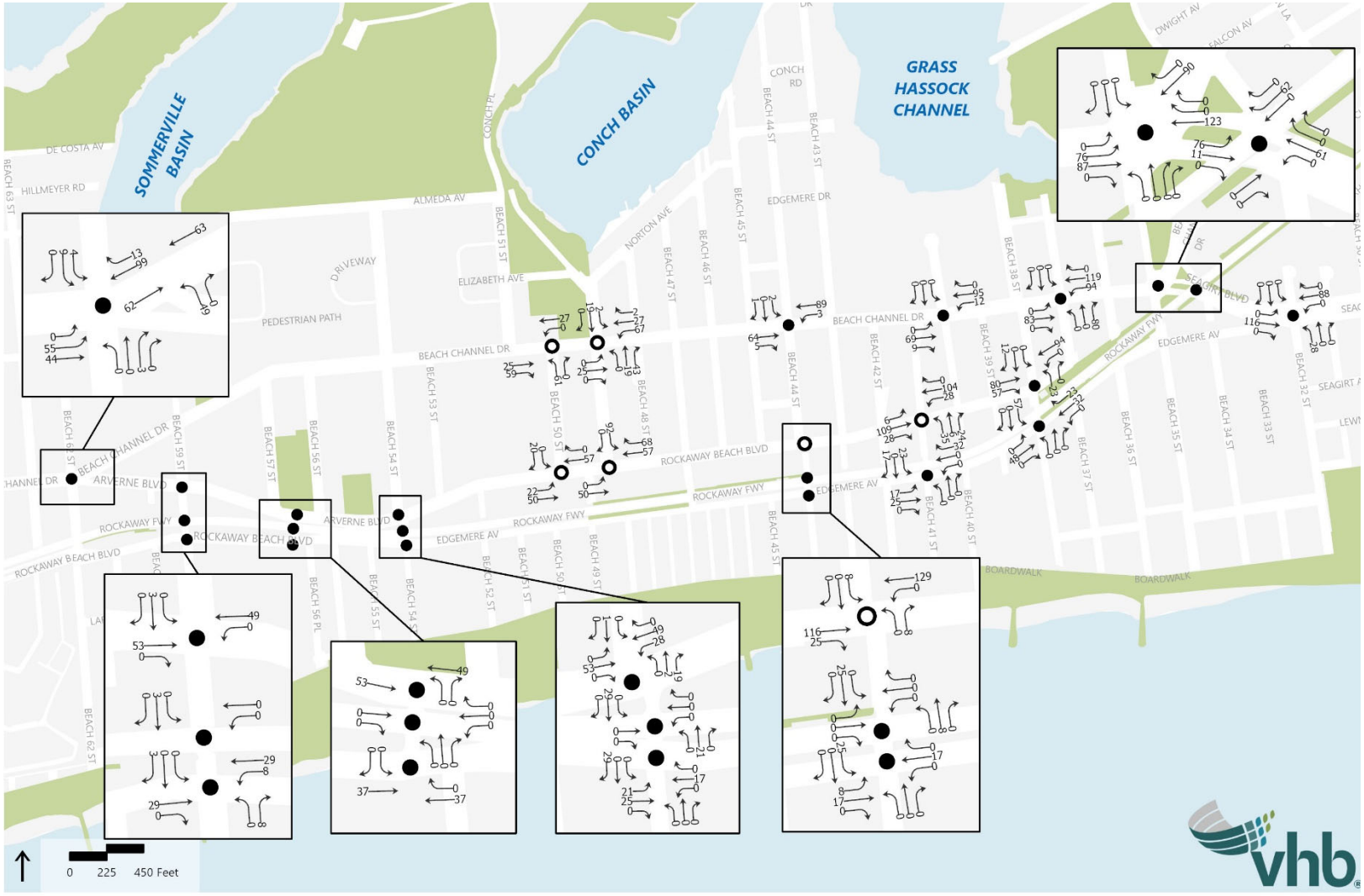


Figure 12-4 Traffic Volume Increment – PM Peak Hour

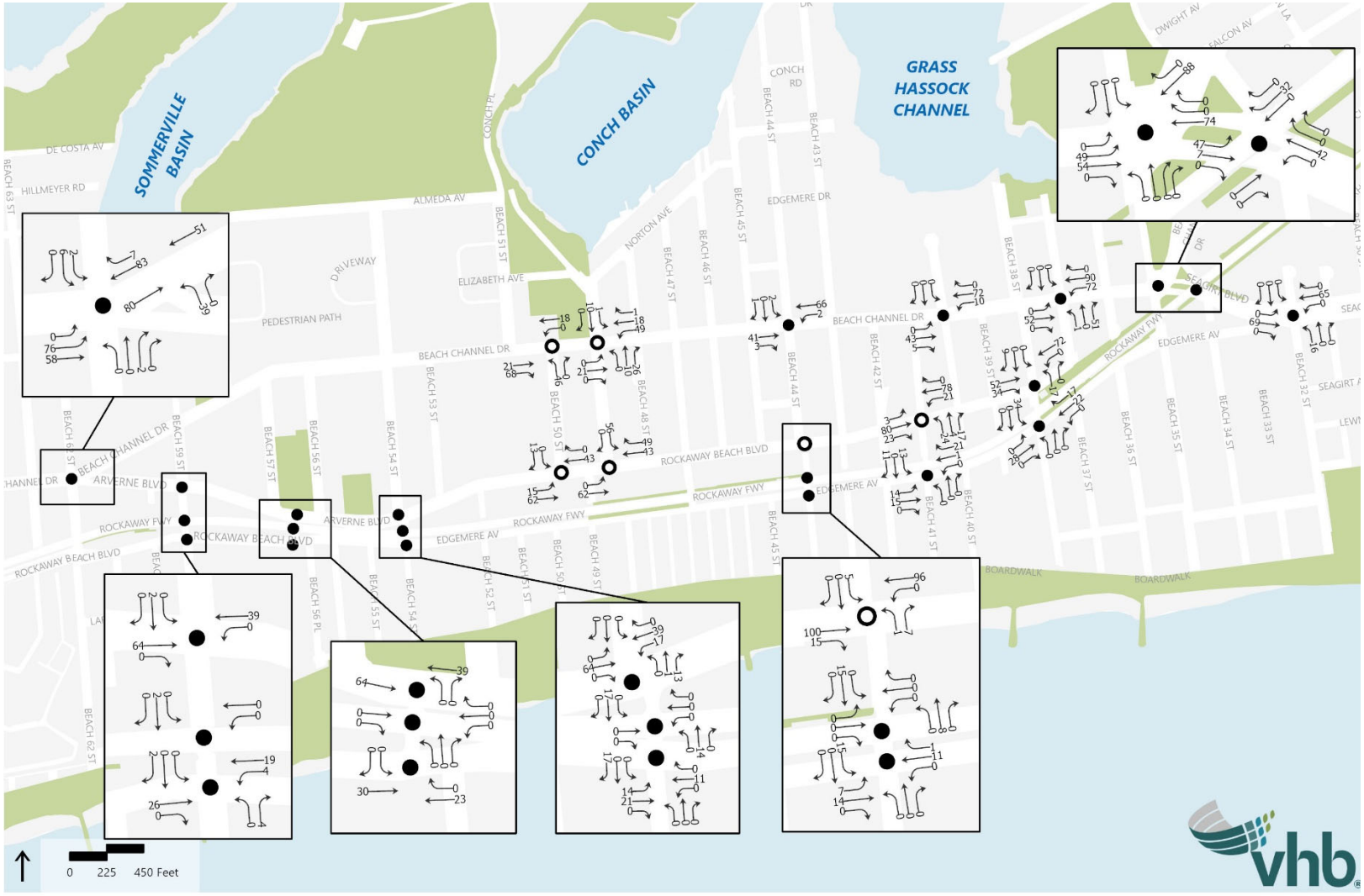


Figure 12-5 Traffic Volume Increment – Saturday Peak Hour

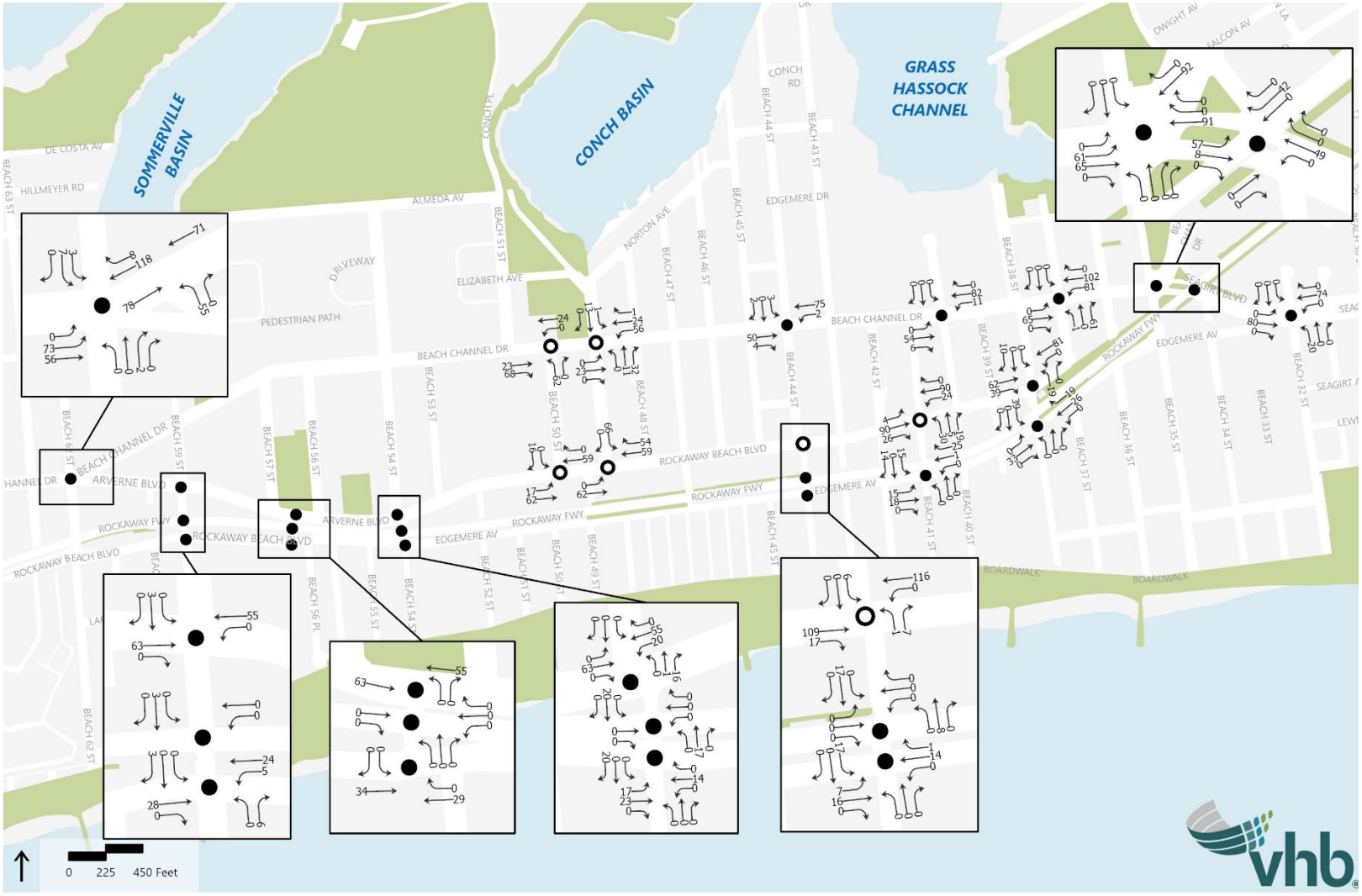


Figure 12-6 Traffic Analysis Locations



Buses

Bus assignments were conducted for the weekday AM and PM commuter periods in order to identify routes that would require detailed analysis. Bus transit options within the Edgemere neighborhood include the Q22 and Q52-SBS local bus routes and the QM17 express bus route. The Q22 bus provides local weekday and weekend service between the Far Rockaway and Roxbury neighborhoods in Queens. The Q52-SBS bus provides local weekday and weekend service between the Far Rockaway and Woodside neighborhoods in Queens. The QM17 bus provides weekday-only express service between Far Rockaway and Midtown Manhattan. As the QM17 bus only operates during the weekday AM and PM commuter periods, all bus trips in the weekday midday and Saturday peak hours were assigned to the Q22 bus route.

According to 2012-2016 American Association of State Highway and Transportation Officials (AASHTO) CTPP journey-to-work data for Queens Tracts 964, 972.02, 972.03, 72.04, 992, 998.01, 998.02 and 1008.02, approximately 23 percent of bus riders commute to Manhattan. Therefore, for the weekday AM peak hour, 23 percent of outbound bus trips generated by the proposed residential use were assigned to the QM17 and the remaining 77 percent of residential use outbound trips plus all residential use inbound trips were assigned to the local routes. Vice versa, for the weekday PM peak hour, 23 percent of inbound bus trips generated by the proposed residential use were assigned to the QM17 and 77 percent of residential use inbound trips plus all residential use outbound trips were assigned to the local routes. For bus trips generated by local retail use, it was assumed that riders would utilize the local bus routes, Q22 and/or Q52-SBS, where appropriate. Due to proximity considerations, it was assumed that local-route bus trips generated by Projected Development Sites located east of Beach 49th Street would utilize the Q22 route. Local-route bus trips generated by sites west of Beach 49th Street were distributed between the Q22 and Q52-SBS according to 2019 average ridership data.

According to the screening thresholds used by the Metropolitan Transit Authority (MTA) and specified in the *CEQR Technical Manual*, a detailed analysis of bus conditions is generally required if Proposed Actions are projected to result in 50 or more peak hour trips being assigned to a single bus route in one direction; this is the Level 2 screening for buses. **Table 12-5** summarizes the volume of weekday AM and PM peak hour person trips assigned to bus routes. As shown in **Table 12-5**, the Q22 bus route is expected to incur increases of 50 or more riders in both the eastbound and westbound directions during the weekday AM and PM peak hours and will therefore require detailed analysis.

Table 12-5 Incremental Person Trips by Bus

		AM Peak Hour			PM Peak Hour		
Route	**Direction**	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Q22	Eastbound	18	36	54	49	43	92
	Westbound	17	37	54	48	43	91
Q52-SBS	Eastbound	10	0	10	24	0	24
	Westbound	0	22	22	0	21	21
QM17	Eastbound	0	0	0	14	0	14
	Westbound	0	19	19	0	0	0

Subways

Subway assignments were conducted for the weekday AM and PM commuter periods in order to determine if detailed analyses are required and for which specific components of the subway system. Two subway stations, the Beach 36th Street Edgemere Station and the Beach 44th Street/Frank Avenue Station, are located within a quarter-mile radius of the Projected Development Sites. Both stations are served by the A subway line. Subway rider trips generated by sites west of Beach 40th Street were assigned to the Beach 44th Street/Frank Avenue Station, while trips for sites east of Beach 40th Street were assigned to the Beach 36th Street Edgemere Station. **Table 12-6** summarizes the volume of weekday AM and PM peak hour incremental person trips assigned to subway stations nearest the project area.

Table 12-6 Incremental Person Trips by Subway

Subway Station	Subway Line	AM Peak Hour			PM Peak Hour		
		Inbound	Outbound	Total	Inbound	Outbound	Total
Beach 36th Street	A	10	33	43	27	18	45
Beach 44th Street/ Frank Avenue	A	54	196	250	157	97	254

As shown in **Table 12-6**, the Beach 44th Street/Frank Avenue Station is expected to incur increases of 200 or more subway riders in both commuter peak hours. Therefore, key circulation elements (e.g., street stairs and fare arrays) expected to attract concentrated levels of incremental demand will be analyzed. These analysis elements include the following:

› Beach 44th Street/Frank Avenue Station Elements
  - Two street stairs located on the north sidewalk on Rockaway Freeway between Beach 44th and Beach 47th Streets
  - All four ~~platforms~~platform stairways
  - Turnstile fare array

As all subway trips would utilize the A subway line, detailed subway line-haul analyses are warranted for both the weekday AM and PM peak hours.

Pedestrians

As described above, pedestrian trips include walk-only trips and walking connections linked to transit trips. Walk-only pedestrian trips were distributed across local avenues and cross streets extending out towards the surrounding areas to and from local residential and commercial destinations.

Based on the detailed block-by-block pedestrian trip assignments, and per *CEQR Technical Manual* guidelines, detailed level of service analyses are warranted for pedestrian elements that would exceed Level 2 thresholds of 200 or more new pedestrian trips during the analysis peak hours. Pedestrian increments are shown in ~~**Figure 12-7**~~**Figure 12-7** through **Figure 12-10** for the weekday AM, midday and PM, and Saturday peak hours, respectively.

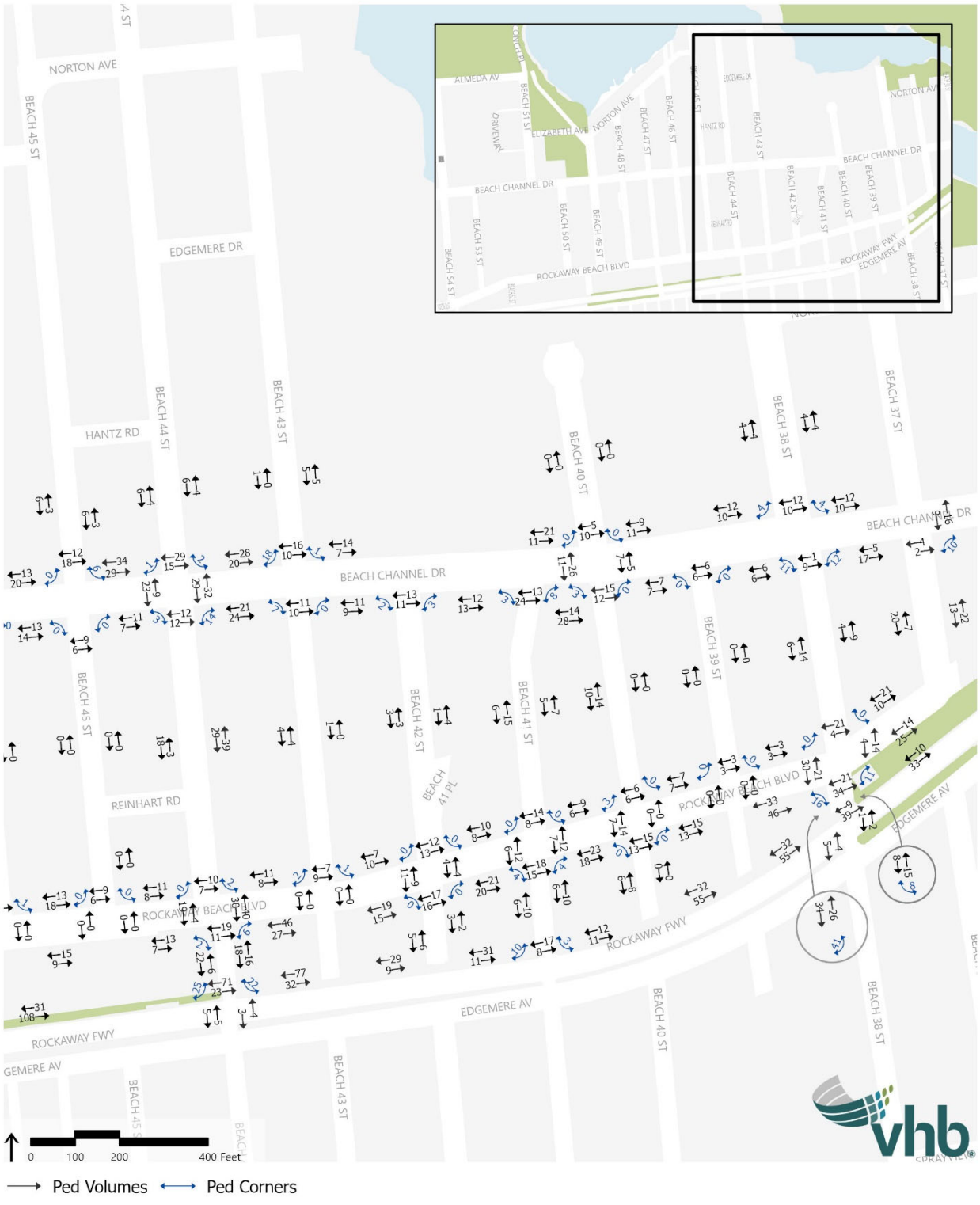
It should be noted that at present there is currently no marked crossing in the north/south direction on Rockaway Beach Boulevard between Beach ~~39th~~45th Street and Beach 53rd Street. As a result, it is likely that pedestrians en route to and from ~~projected developments sites~~Projected Development Sites 1 and 2 would choose to cross Rockaway Beach Boulevard at a proximate location where a marked crosswalk is not present. However, for pedestrian trip assignment purposes it was assumed that in the future, new pedestrian ~~crossing~~crossings would be installed at ~~these locations proximate to Projected Development Sites to accommodate current and future pedestrian demand. These intersections include~~ the ~~intersections~~intersection of Rockaway Beach Boulevard ~~at Beach 40th Street, Beach 41st Street, Beach 42nd Street, Beach 44th Street, Beach 47th Street~~ and Beach 49th Street to accommodate current and future pedestrian demand.

Overall, the concentration of pedestrian trips is expected to result in exceedance of the Level 2 threshold, in one or more peak hours, on 17 sidewalks, at 16 corners and five crosswalks at signalized intersections near and around Projected Development Sites in the weekday midday, weekday PM and/or Saturday peak hours. According to the assignments, no pedestrian element would warrant detailed analyses during the weekday AM peak hour. The sidewalks, corners, and crosswalks selected for weekday midday, weekday PM, and Saturday analyses are shown in **Figure 12-11** and listed below.

Figure 12-7 Pedestrian Volume Increment – AM Peak Hour

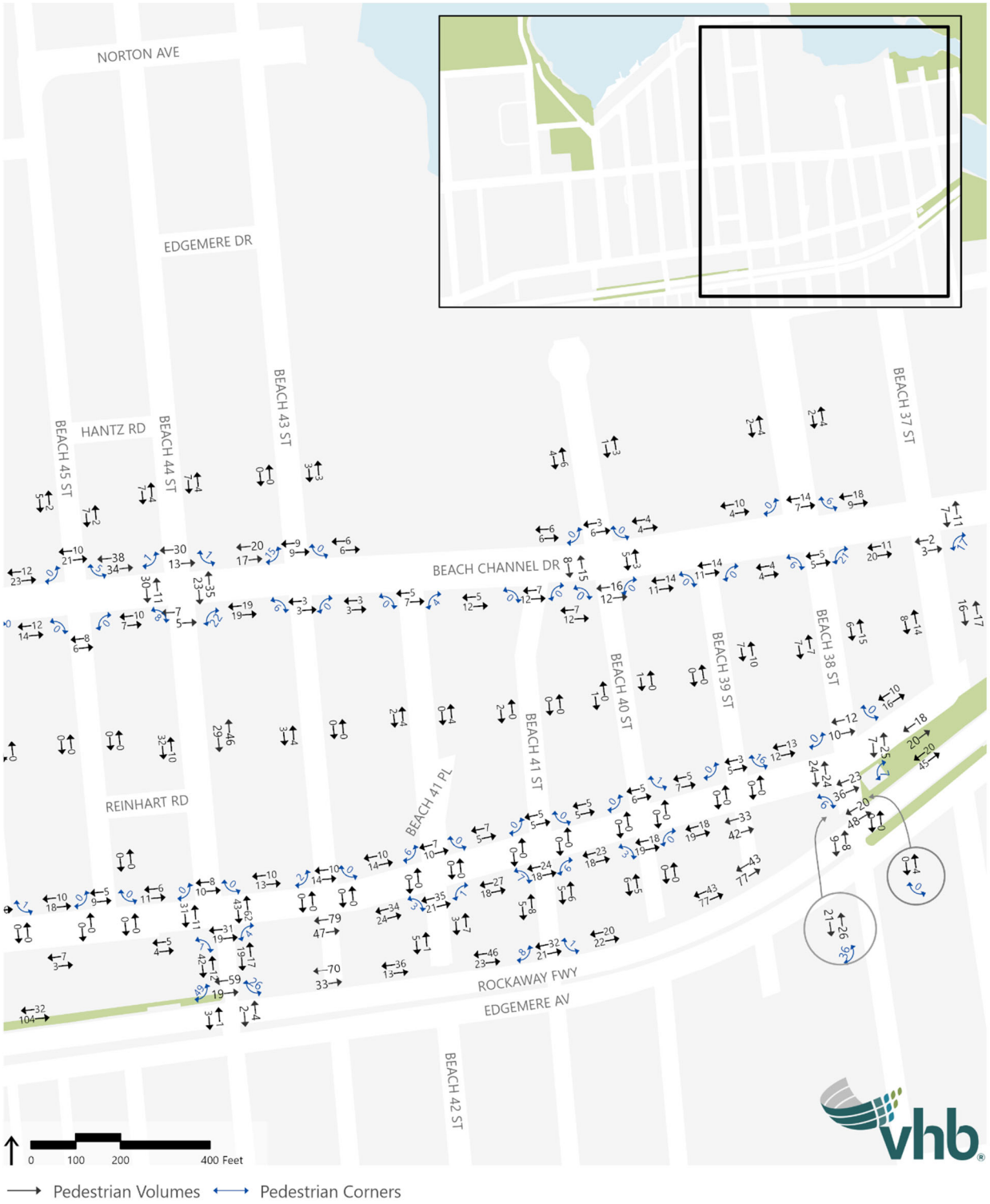


Figure 12-7 Pedestrian Volume Increment – AM Peak Hour



This Figure has been updated for the FEIS

Figure 12-7 Pedestrian Volume Increment – AM Peak Hour



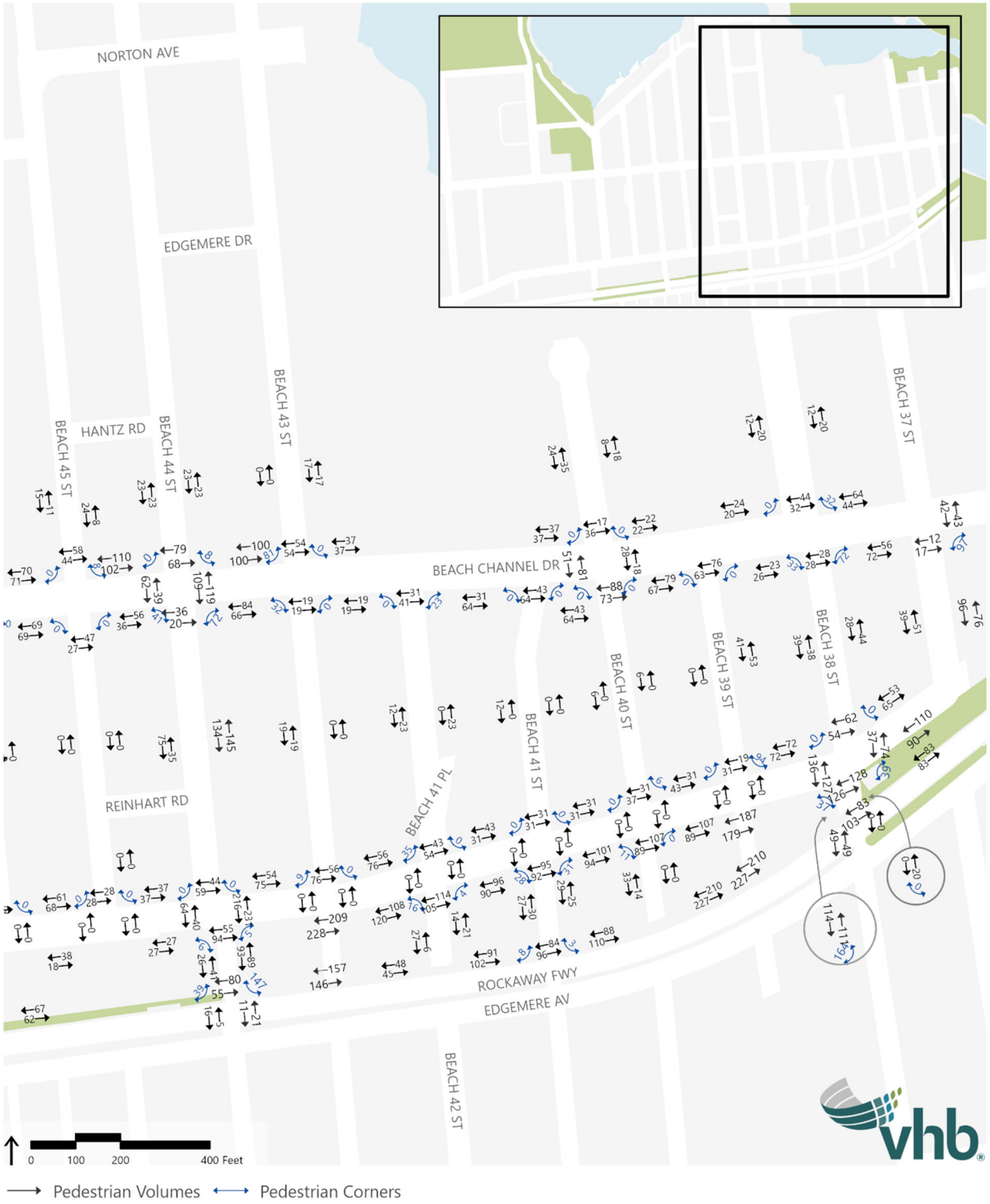
This Figure has been updated for the FEIS.

Figure 12-8 Pedestrian Volume Increment – Midday Peak Hour



This Figure has been updated for the FEIS.

Figure 12-8 Pedestrian Volume Increment – Midday Peak Hour



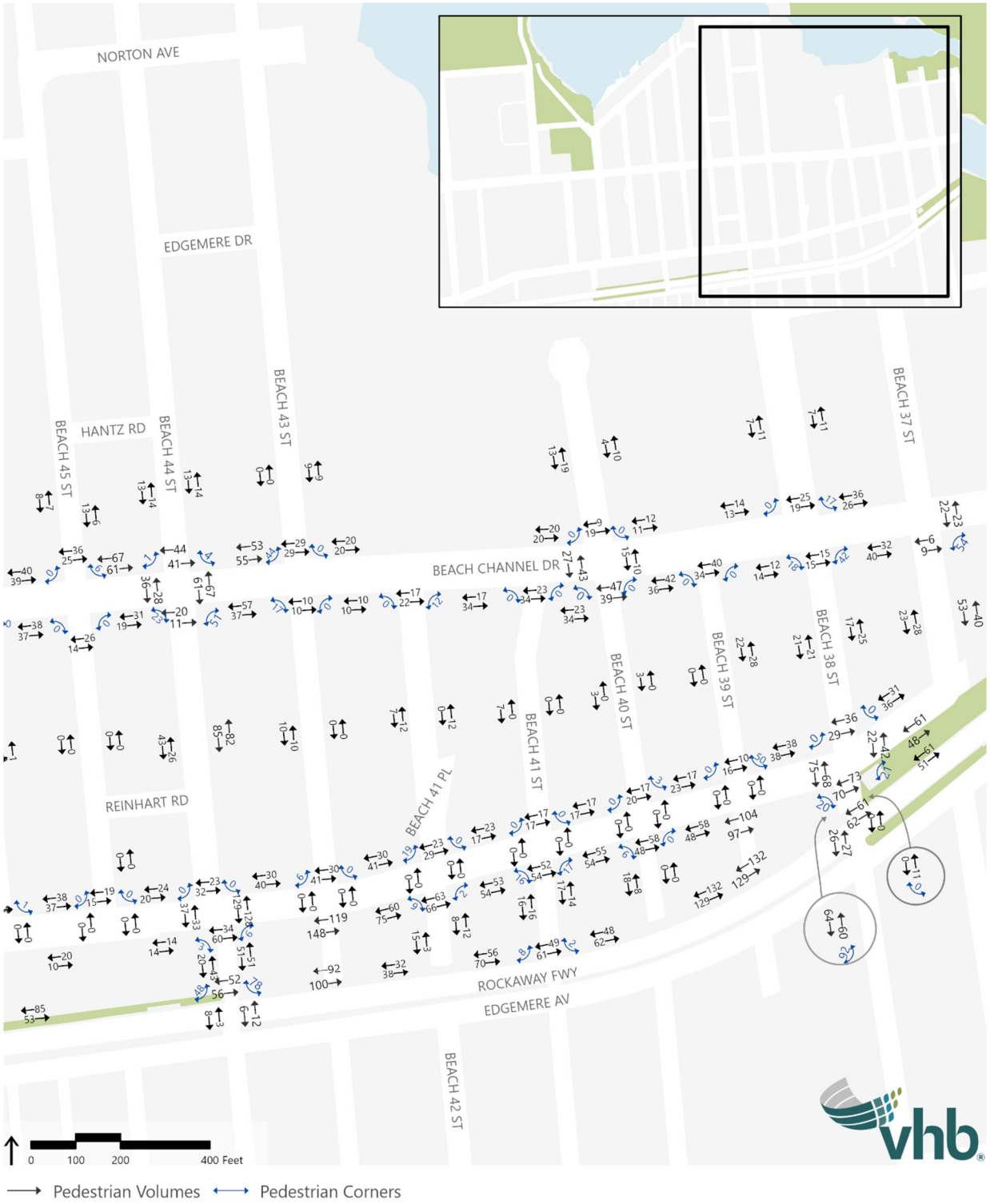
This Figure has been updated for the FEIS.

Figure 12-9 Pedestrian Volume Increment – PM Peak Hour



This Figure has been updated for the FEIS.

Figure 12-9 Pedestrian Volume Increment – PM Peak Hour



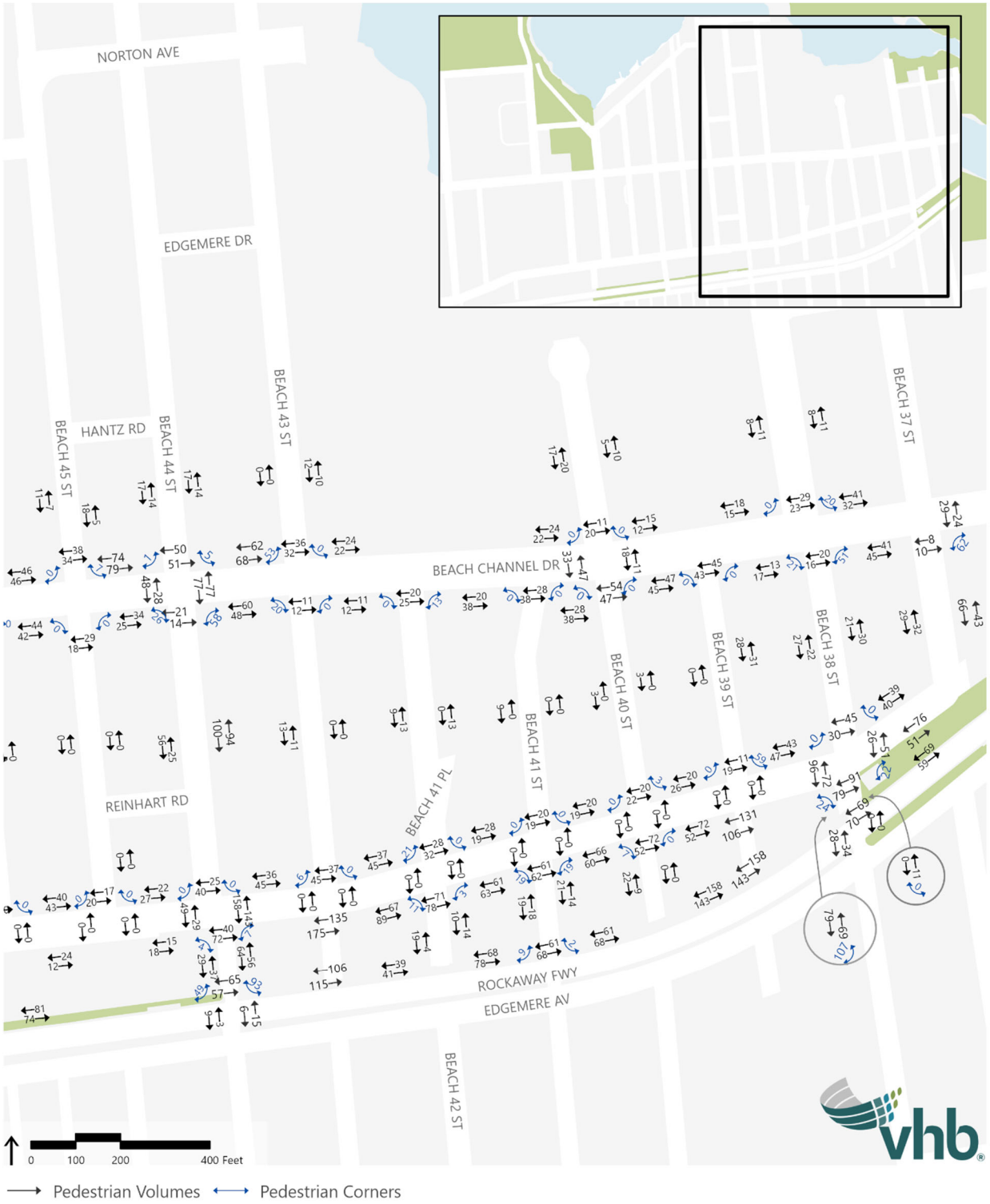
This Figure has been updated for the FEIS.

Figure 12-10 Pedestrian Volume Increment – Saturday Peak Hour



This Figure has been updated for the FEIS.

Figure 12-10 Pedestrian Volume Increment – Saturday Peak Hour



This Figure has been updated for the FEIS.

Figure 12-11 Pedestrian Analysis Locations



- Sidewalks
  - Four south sidewalks on Beach Channel Drive between Beach 54th Street and Beach 49th Street
  - Two north sidewalks on Beach Channel Drive between Beach 45th Street and Beach 43rd Street
  - East sidewalk on Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard
  - West sidewalk on Beach 49th Street between Beach Channel Drive and Rockaway Beach Boulevard
  - South sidewalk on Rockaway Beach Boulevard between Beach 50th Street and Beach 49th Street
  - South sidewalk on Rockaway Beach Boulevard between Beach 49th Street and Beach 47th Street
  - East sidewalk on Beach 44th Street between Beach Channel Drive and Rockaway Beach Boulevard
  - South sidewalk on Rockaway Beach Boulevard between Beach 44th Street and Beach ~~43rd~~42nd Street
  - North sidewalk on Rockaway Freeway between Beach 44th Street and Beach 42nd Street
  - North sidewalk on Rockaway Freeway between Beach 40th Street and Beach 38th Street
  - Two south sidewalks on Rockaway Beach Boulevard between Beach 40th Street and Beach 37th Street
  - West sidewalk on Beach 38th Street between Rockaway Beach Boulevard and Rockaway Freeway
- Corners & Crosswalks
  - Southeast corner at the intersection of Beach Channel Drive and Beach 54th Street
  - Northeast corner at the intersection of Rockaway Beach Boulevard and Beach 54th Street
  - Northeast, southeast, and southwest corners; and the east and south crosswalks at the intersection of Beach Channel Drive and Beach 51st Street
  - Northwest, northeast, and southeast corners; and the east crosswalk at the intersection of Beach Channel Drive and Beach 44th Street
  - Northeast corner at the intersection of Rockaway Freeway and Beach 44th Street
  - Southwest corner at the intersection of Beach Channel Drive and Beach 40th Street
  - All four corners; and the west and south crosswalks at the intersection of Rockaway Beach Boulevard and Beach 38th Street
  - Northwest corner at the intersection of Rockaway Freeway and Beach 38th Street
  - Southeast corner at the intersection of Beach Channel Drive and Beach 37th Street

Detailed Analysis Methodology

This section describes the methodology used for the detailed traffic, subway, and pedestrian analyses.

Traffic

The operation of all signalized and unsignalized intersection analysis locations were assessed using Synchro software which are based on methodologies presented in the *Highway Capacity Manual (HCM)*. The HCM procedures evaluate the levels of service (LOS) for signalized and unsignalized intersections using average stop control delay, in seconds per vehicle, as described below.

- LOS A describes operations with very low delays, i.e., 10.0 seconds or less per vehicle. This occurs when signal progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all.
- LOS B describes operations with delays in excess of 10.0 seconds up to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. Again, most vehicles do not stop at the intersection.
- LOS C describes operations with delays in excess of 20.0 seconds up to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. The number of vehicles stopping is noticeable at this level, although many still pass through the intersection without stopping.
- LOS D describes operations with delays in excess of 35.0 seconds up to 55.0 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines.
- LOS E describes operations with delays in excess of 55.0 seconds up to 80.0 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios.
- LOS F describes operations with delays in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with cycle failures. Poor progression and long cycle lengths may also contribute to such delays. Often, vehicles do not pass through the intersection in one signal cycle.

Based on the 2020 *CEQR Technical Manual* guidelines, LOS A, B, and C are considered acceptable, LOS D is generally considered marginally acceptable up to mid-LOS D (45 seconds of delay for signalized intersections) and unacceptable above mid-LOS D, and LOS E and F indicate congestion. These guidelines are applicable to individual traffic movements and overall intersection levels of service.

For unsignalized intersections, delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line: LOS A describes operations with very low delay, i.e., 10.0 seconds or less per vehicle; LOS B describes

operations with delays in excess of 10.0 seconds up to 15.0 seconds; LOS C has delays in excess of 15.0 seconds up to 25.0 seconds; LOS D, excess of 25.0 seconds up to 35.0 seconds per vehicle; and LOS E, excess of 35.0 seconds up to 50.0 seconds per vehicle, which is considered to be the limit of acceptable delay. LOS F describes operation with delays in excess of 50.0 seconds per vehicle, which is considered unacceptable to most drivers. This condition exists when there are insufficient gaps of suitable size in a major vehicular traffic stream to allow side street traffic to cross safely.

Significant Impact Criteria

The assessment of potential significant traffic impacts of a proposed project is based on significant impact criteria defined in the 2020 *CEQR Technical Manual*. No-Action LOS A, B, or C conditions that deteriorate to unacceptable LOS D, E, or F in the future With-Action condition are considered a significant traffic impact.

For future No-Action LOS A, B, or C conditions that deteriorate to unacceptable LOS D, mitigation to mid-LOS D (45.0 seconds of delay for signalized intersections and 30.0 seconds of delay for unsignalized intersections) needs to be considered to fully mitigate the impact.

For a No-Action LOS D, an increase of delay by five or more seconds in the With-Action condition is considered a significant impact if the With-Action delay meets or exceeds 45.0 seconds. For a No-Action LOS E, the threshold is a four second increase in With-Action delay; for a No-Action LOS F, a three second increase in delay in the With-Action condition is significant. For unsignalized intersections, for the minor street to generate a significant impact, 90 passenger car equivalents (PCEs) must be identified in the With-Action condition in any peak hour.

Parking

The parking analysis identifies the extent to which off- and on-street parking is available and utilized under existing and future conditions. It takes into consideration anticipated changes in area parking supply and provides a comparison of parking needs versus availability to determine if a parking shortfall is likely to result from additional demand generated by the Proposed Actions. This analysis typically encompasses a study area within a quarter mile of the Projected Development Sites. If the analysis concludes that there would be a shortfall in parking within the quarter-mile study area, the study area may be extended to a half-mile to identify additional parking supply.

For proposed projects located in Manhattan or other central business district (CBD) areas[1], the inability of the Proposed Actions or the surrounding area (on-street and off-street) to accommodate the incremental future parking demand is considered a parking shortfall but is generally not considered significant due to the magnitude of available alternative modes of transportation. For other areas in New York City, a parking shortfall that exceeds the available on-street and off-street parking spaces within a quarter mile of Projected Development Sites may be considered significant. Additional factors, such as the availability and extent of transit in the area and the patterns of automobile usage by area residents, could be considered to determine the significance of the identified parking shortfall. If there

[1] Parking shortfalls in Zone 1 and Zone 2, as identified in the *CEQR Technical Manual*, are generally not considered to be significant. The rezoning area is located within Zone 5.

is an adequate parking supply within a half-mile of Projected Development Sites, the projected parking shortfall may not be considered significant.

Transit

The *CEQR Technical Manual* provides methodologies to assess several components of transit operations including the line-haul capacities of bus and subway lines, and the capacity of subway station circulation elements including stairways, escalators, passageway, and fare controls (turnstiles, high entry/exit turnstiles [HEETs], and high exit turnstiles [HXTs]).

Subway Station Elements

Subway station elements are assessed based on the ratio of passenger volume and the capacity of the element (the v/c ratio). The v/c ratio criteria are used to determine the levels of service which are shown in **Table 12-7**. LOS A and LOS B depict free flow and fluid flow conditions, respectively, at a subway station element. Station elements operating at LOS C still exhibit fluid flow, but pedestrian activities begin to become somewhat restricted. When conditions become crowded and there is restriction to walking speeds, the station element is considered to be operating at LOS D. At LOS E the station element is considered to be congested. There is shuffling and frequent interactions between pedestrians which result in some queueing. Severe congestion with constant queuing signifies that a station element is operating at LOS F.

Table 12-7 Level of Service Criteria for Subway Station Elements

LOS	v/c Ratio
A	0.00 to 0.45
B	0.45 to 0.70
C	0.70 to 1.00
D	1.00 to 1.33
E	1.33 to 1.67
F	Above 1.67

Source: *2020 CEQR Technical Manual*

Stairways and passageways are analyzed based on the width of the station element and the 15-minute pedestrian flow passing through. These analyses also take into account pedestrian surging resulting from an arriving train or platooning volumes from a major attraction such as a stadium or school (the effect of surging can reduce capacity by up to 25 percent) and friction from pedestrian interactions (the effect of friction can reduce capacity by up to 10 percent). Other station elements including escalators and turnstiles are measured against the operational capacities designated by New York City Transit (NYCT).

Significant Impact Criteria

Significant impacts to stairs and passageways are determined by the width increment threshold (WIT) between the No-Action and With-Action conditions for elements operating at v/c ratios greater than 1.0 in the With-Action condition. The WIT for significant impacts is detailed in **Table 12-8** below. If a stairway or passageway is significantly impacted,

mitigation measures identified would need to restore the levels of service back to the No-Action levels of service or to a v/c ratio of 1.0. For escalators and turnstile elements, a With-Action v/c ratio of 1.0 or greater when the No-Action v/c ratio was less than 1.0 is considered a significant impact. For these elements where the No-Action v/c ratio is already in excess of 1.0, an incremental change in the v/c ratio of 0.01 would be considered a significant impact.

Table 12-8 Significant Impact Guidance for Stairs and Passageways

No-Action v/c Ratio	Width Increment Threshold (WIT) for Significant Impacts (Inches)	
	Stairway	Passageway
1.00 to 1.09	8.0	13.0
1.10 to 1.19	7.0	11.5
1.20 to 1.29	6.0	10.0
1.30 to 1.39	5.0	8.5
1.40 to 1.49	4.0	6.0
1.50 to 1.59	3.0	4.5
1.60 and up	2.0	3.0

Source: *CEQR Technical Manual*

Subway Line-Haul Capacity

Line-haul capacity analyses address the ability of a subway line to accommodate passenger loads at the maximum load point, or the point where the addition of incremental passengers would be the highest. These analyses are needed when the With-Action increase in passengers surpasses the *CEQR Technical Manual* threshold. For subway cars, the threshold is five or more passengers per subway train car.

NYCT operates six different types of subway train cars with maximum peak period loading capacities ranging from 110 passengers to 175 passengers per car. The capacity of each car assumes full occupancy of all seats and approximately 3 square feet of standing room per passenger.

Pedestrians

Pedestrian level of service standards are determined on the basis of walking speed, pedestrian spacing, and probabilities of pedestrian and vehicular conflict, and are assessed based on the methodologies presented in the *2010 Highway Capacity Manual* and the *CEQR Technical Manual*. These standards are primarily based on the space needs of people involved in various activities and are widely used for planning and design of facilities for pedestrians. Analysis of crosswalks, street corners, and sidewalks along key walking paths to and from the Projected Development Sites will be performed to assess the adequacy of these pedestrian elements.

To evaluate sidewalks, the pedestrian flow per unit width (p/ft/min) is calculated based on the pedestrian flow and the effective walkway width[2]. The analysis of sidewalk conditions should also consider if pedestrian flow is a "non-platoon" flow (pedestrian flow within the peak 15-minute period is relatively uniform) or "platoon" flow. Platooning occurs when pedestrians move in groups or "platoons" as a result of pedestrian metering from a traffic signal, or from attractions such as subway stations or bus stops. The ratio of the walking speed[3] over the pedestrian flow per unit width determines the average pedestrian space (sf/p).

Crosswalk conditions are expressed as a measurement of the area available (the area consists of the crosswalk width multiplied by the crossing distance) and available pedestrian crossing time. The pedestrian flow is compared to the "time-space" available to determine the crosswalk level of service which is expressed as square feet per pedestrian (sf/p). This analysis also takes account of pedestrian conflicts in the crosswalk with turning vehicles.

Similar to crosswalks, street corners must provide sufficient space for a mix of standing pedestrians (queued to cross a street) and circulating pedestrians (crossing the other street or passing around the corner). The analysis applies a measure of time and space availability based on the area of the corner reservoir, pedestrian crossing time available, and the estimated time used by circulating pedestrians.

The level of service standards for pedestrian elements are based on the time and space available per pedestrian during the analysis period. Level of service grades from A to F are assigned, with LOS A representative of free flow conditions without pedestrian conflicts and LOS F depicting significant capacity limitations and inconvenience. **Table 12-9** defines the level of service criteria for crosswalks, corner area, and sidewalk conditions, as per the *2010 HCM*. The *CEQR Technical Manual* identifies acceptable levels of service in non-CBD areas (such as the area in this study) as LOS C or better, and mid-LOS D or better for CBD areas.

The Project Area is located in a non-CBD area, and the pedestrian analysis elements were analyzed assuming non-platoon pedestrian flow.

Table 12-9 Level of Service Criteria for Pedestrian Elements

	Sidewalks		Corner Reservoirs and Crosswalks
LOS	**Non-Platoon Flow**	**Platoon Flow**	
A	> 60 sf/p	> 530 sf/p	> 60 sf/p
B	> 40 and ≤ 60 sf/p	> 90 and ≤ 530 sf/p	> 40 and ≤ 60 sf/p
C	> 24 and ≤ 40 sf/p	> 40 and ≤ 90 sf/p	> 24 and ≤ 40 sf/p
D	> 15 and ≤ 24 sf/p	> 23 and ≤ 40 sf/p	> 15 and ≤ 24 sf/p
E	> 8 and ≤ 15 sf/p	> 11 and ≤ 23 sf/p	> 8 and ≤ 15 sf/p
F	≤ 8 sf/p	≤ 11 sf/p	≤ 8 sf/p

Source: *2020 CEQR Technical Manual*

[2] The effective walkway width is the space along the walkway that pedestrians could use that is free of obstruction. This width also takes account of the "shy distance" (the space between pedestrians and the obstacle such as a wall or building façade).

[3] The typical average pedestrian walking speed specified in the 2020 *CEQR Technical Manual* is 3.5 feet per second (ft/s). For intersections with school crosswalks or that are located within the Senior Pedestrian Focus Areas, an average pedestrian walking speed of 3.0 ft/s is used.

Significant Impact Criteria

The identification of significant pedestrian impacts is dependent on the area type (CBD or non-CBD) and is determined by the decrease of time and space available for pedestrians between the No-Action and With-Action conditions. The Project Area and surrounding analysis locations are located in a non-CBD area. The *CEQR Technical Manual* identifies significant impacts for the pedestrian sidewalk, crosswalk, and corner elements on a sliding scale detailed below. With-Action pedestrian level of service that is considered acceptable (LOS C or better in non-CBD areas, and mid-LOS D or better in CBD areas) would not have a potential for significant impacts.

For sidewalks, the assessment of potential significant impacts is based on a sliding-scale formula provided in the *CEQR Technical Manual*. Consideration as to whether pedestrian flow along the sidewalk is platooning or non-platooning, and whether the sidewalk being analyzed is in a CBD or non-CBD condition is necessary.

For sidewalks with non-platoon pedestrian flow, the formula used to determine the decrease in pedestrian space from the No-Action to With-Action condition that would trigger a significant impact is $Y \geq (X / 9.0) - 0.31$, where Y is the decrease in pedestrian space (sf/p) to be considered a potential significant impact and X is the No-Action pedestrian space (sf/p). If the decrease in pedestrian space is greater than Y and the With-Action level of service is considered to be unacceptable, the sidewalk is considered to be significantly impacted. For sidewalks with platoon pedestrian flow, the formula to determine if the decrease in pedestrian space would trigger a significant impact is $Y \geq X / (9.5 - 0.321)$. **Table 12-10** provides a summary of the sliding-scale guidelines provided in the *CEQR Technical Manual*.

For corners and crosswalks, the assessment of potential significant impacts is also based on a sliding-scale formula provided in the *CEQR Technical Manual*. The formula used to determine the decrease in pedestrian space from the No-Action to With-Action condition that would trigger a significant impact is $Y \geq (X / 9.0) - 0.31$, where Y is the decrease in pedestrian space (sf/p) to be considered a potential significant impact and X is the No-Action pedestrian space (sf/p). If the decrease in pedestrian space is greater than Y and the With-Action level of service is considered to be unacceptable, the corner or crosswalk is considered to be significantly impacted. **Table 12-11** provides a summary of the sliding-scale guidelines provided in the *CEQR Technical Manual*.

Table 12-10 Significant Impact Criteria for Sidewalks

Non-Platoon Flow (non-CBD Areas)			
No-Action Ped Space (sf/p)	**With-Action Ped Space Reduction (sf/p)**	**No-Action Ped Space (sf/p)**	**With-Action Ped Space Reduction (sf/p)**
>26.6	With-Action Condition <24.0		
25.8 to 26.6	≥ 2.6	14.1 to 14.9	≥ 1.3
24.9 to 25.7	≥ 2.5	13.2 to 14.0	≥ 1.2
24.0 to 24.8	≥ 2.4	12.3 to 13.1	≥ 1.1
23.1 to 23.9	≥ 2.3	11.4 to 12.2	≥ 1.0
22.2 to 23.0	≥ 2.2	10.5 to 11.3	≥ 0.9
21.3 to 22.1	≥ 2.1	9.6 to 10.4	≥ 0.8
20.4 to 21.2	≥ 2.0	8.7 to 9.5	≥ 0.7
19.5 to 20.3	≥ 1.9	7.8 to 8.6	≥ 0.6
18.6 to 19.4	≥ 1.8	6.9 to 7.7	≥ 0.5
17.7 to 18.5	≥ 1.7	6.0 to 6.8	≥ 0.4
16.8 to 17.6	≥ 1.6	5.1 to 5.9	≥ 0.3
15.9 to 16.7	≥ 1.5	< 5.1	≥ .2

Source: *2020 CEQR Technical Manual*

Table 12-11 Significant Impact Criteria for Corners and Crosswalks

Non-CBD Areas	
No-Action Ped Space (sf/p)	**With-Action Ped Space Reduction (sf/p)**
>26.6	With-Action Condition <24.0
25.8 to 26.6	≥ 2.6
24.9 to 25.7	≥ 2.5
24.0 to 24.8	≥ 2.4
23.1 to 23.9	≥ 2.3
22.2 to 23.0	≥ 2.2
21.3 to 22.1	≥ 2.1
20.4 to 21.2	≥ 2.0
19.5 to 20.3	≥ 1.9
18.6 to 19.4	≥ 1.8
17.7 to 18.5	≥ 1.7
16.8 to 17.6	≥ 1.6
15.9 to 16.7	≥ 1.5
15.0 to 15.8	≥ 1.4
14.1 to 14.9	≥ 1.3
13.2 to 14.0	≥ 1.2
12.3 to 13.1	≥ 1.1
11.4 to 12.2	≥ 1.0
10.5 to 11.3	≥ 0.9
9.6 to 10.4	≥ 0.8
8.7 to 9.5	≥ 0.7
7.8 to 8.6	≥ 0.6
6.9 to 7.7	≥ 0.5
6.0 to 6.8	≥ 0.4
5.1 to 5.9	≥ 0.3
< 5.1	≥ 0.2

Source: *2020 CEQR Technical Manual*

Vehicle and Pedestrian Safety

An evaluation of vehicular and pedestrian safety is necessary for locations within the traffic and pedestrian study areas that have been identified as high-crash locations, where 48 or more total reportable and non-reportable crashes or five or more pedestrian/bicyclist injury crashes occurred in any consecutive 12 months of the most recent three-year period for which data are available. For these locations, crash trends are identified to determine whether projected vehicular and pedestrian traffic would further impact safety at these locations. The determination of potential significant safety impacts depends on the type of

area where the Project Area is located, traffic volumes, crash types and severity, and other contributing factors. Where appropriate, measures to improve traffic and pedestrian safety are identified.

Existing Conditions

Traffic

Roadway Network

The roadway network within the study area consists of major and minor corridors serving primarily residential uses. Beach Channel Drive is a major east-west two-way street serving the northern portion of the study area. Beach Channel Drive ranges from approximately 40 to 65 feet in width within different sections of the traffic study area. The road extends to the west, changing to Rockaway Point Boulevard after it intersects with the Marine Parkway Bridge, and to the east to Nassau County's Inwood hamlet where it changes to Sheridan Boulevard. This important arterial has one moving lane in each direction throughout the traffic study area, with curbside parking on both sides of the street, and dedicated bike lanes between the moving lane and parking in each direction. There is a raised median separating eastbound and westbound traffic for segments of the road between Beach 58th Street and Beach 54th Street; there are breaks in the median to allow for turning movements. Parking restrictions on Beach Channel Drive throughout the traffic study area are typically limited by alternate-side street cleaning regulations between 8:30-10 AM on Mondays and Wednesdays.

Rockaway Beach Boulevard is an east-west two-way street ranging from approximately 42 to 50 feet in width within different sections of the traffic study area. Rockaway Beach Boulevard runs parallel and in close proximity to Rockaway Freeway. Rockaway Beach Boulevard extends to the west, changing to Arverne Boulevard west of Beach 54th Street. Arverne Boulevard then terminates at the intersection of Beach 62nd Street and Beach Channel Drive. To the south of Rockaway Freeway, Edgemere Avenue changes to Rockaway Beach Boulevard west of Beach 56th Street, terminating just east of the Marine Parkway Bridge (see below for description of this section of Rockaway Beach Boulevard). To the east, Rockaway Beach Boulevard terminates at Beach 37th Street. Rockaway Beach Boulevard consists of a moving lane and curbside parking lane in each direction. Parking restrictions on Rockaway Beach Boulevard throughout the traffic study area are mostly limited to street cleaning between 8:30-10 AM on Mondays and Wednesdays.

Rockaway Freeway is a major east-west two-way corridor that is approximately 50 feet in width throughout the traffic study area. The street extends to the west, terminating at Beach 62nd Street, and, to the east, terminating at Mott Avenue. This principal arterial (non-expressway) typically consists of one moving lane in each direction throughout the traffic study area but also provides left-turn pockets at a few locations. The corridor contains a raised median separating eastbound and westbound traffic with breaks at some intersections to accommodate turning lanes.

Edgemere Avenue is an east-west two-way street that serves as the southern edge of the street network within the study area and runs parallel and directly adjacent to Rockaway

Freeway. Edgemere Avenue is approximately 30 feet wide east of Beach 56th Street. West of Beach 56th Street the corridor widens to approximately 40 feet and changes to Rockaway Beach Boulevard and terminates just east of the Marine Parkway Bridge. To the east, Edgemere Avenue terminates at the intersection of Seagirt Boulevard and Beach 32nd Street. This roadway has one moving lane in each direction throughout the traffic study area, with curbside parking only on the south curb of the street east of Beach 56th Street.

The local north-south cross streets serving the Edgemere neighborhood range from approximately 25 to 45 feet in width. Most of these cross streets serve traffic in one direction. Typically, curbside parking is available on either side of these streets with alternate-side street cleaning restrictions typically in effect.

Traffic Volumes

To establish the existing conditions traffic network, traffic data for the weekday AM, weekday midday, weekday PM, and Saturday peak periods were assembled using video Turning Movement Counts (TMCs) at intersections and 24-hour Automatic Traffic Recorder (ATR) machine counts from several historic sources and recent data collected in November 2020.

In addition to TMC and ATR data collected in November 2020, data available from previous traffic studies completed prior to the COVID-19 pandemic were also utilized. These sources include the Access to Opportunity study from April 2016, the 2016 *Downtown Far Rockaway Rezoning EIS*, and the 2018 *Peninsula Hospital Site Redevelopment EIS*. The year 2020 was established as the foundation for the existing traffic volume network as it is based mostly on the November 2020 data. Where available data from prior years overlapped with November 2020 data, a comparison was made between the pre-pandemic period and November 2020. With concurrence from NYCDOT, the 2020 data were adjusted to reflect pre-COVID conditions based on these comparisons. These volumes were used along with physical inventory data, and the most recent signal timing plans obtained from NYCDOT, to determine levels of service for the weekday peak hours of 7:30 AM to 8:30 AM, 1 PM to 2 PM, and 4:30 PM to 5:30 PM. The Saturday peak hour of 2:45 to 3:45 PM was also selected for analysis.

Traffic in the study area generally travels along the eastbound and westbound direction across four parallel corridors: Beach Channel Drive; Rockaway Beach Boulevard/Arverne Boulevard; Rockaway Freeway; and Edgemere Avenue.

Travel volumes along eastbound Beach Channel Drive at the eastern end of the study area range from approximately 450 vph to 550 vph during the weekday AM, weekday midday, weekday PM, and Saturday peak hours. At the western end of the study area, travel volumes along eastbound Beach Channel Drive range from approximately 380 vph to 530 vph. Travel volumes along westbound Beach Channel Drive at the eastern end of the study area range from approximately 490 vph to 750 vph during the weekday AM, weekday midday, weekday PM, and Saturday peak hours. At the western end of the study area, travel volumes along westbound Beach Channel Drive range from approximately 410 to 710 vph.

Travel volumes along eastbound Rockaway Beach Boulevard/Arverne Boulevard range from approximately 190 vph to 370 vph in the weekday AM, weekday midday, weekday PM, and Saturday peak hours. In the westbound direction, travel volumes range from approximately 120 vph to 250 vph. At the western end of the study area, traffic from Arverne Boulevard

merges with Beach Channel Drive. At the eastern end of the study area, traffic from Rockaway Beach Boulevard turns onto Beach 37th Street, and then merges with traffic on Beach Channel Drive.

Travel volumes along eastbound Rockaway Freeway range from approximately 160 vph to 400 vph in the weekday AM, weekday midday, weekday PM, and Saturday peak hours. In the westbound direction, travel volumes range from approximately 210 vph to 460 vph.

Travel volumes along eastbound Edgemere Avenue range from approximately 410 vph to 530 vph in the weekday AM, weekday midday, weekday PM, and Saturday peak hours. In the westbound direction, travel volumes range from approximately 320 vph to 540 vph.

Existing traffic volumes, representing 2020 conditions adjusted to pre-pandemic levels, are shown in **Figure 12-12** through **Figure 12-15**.

Figure 12-12 Existing Traffic Volumes – AM Peak Hour

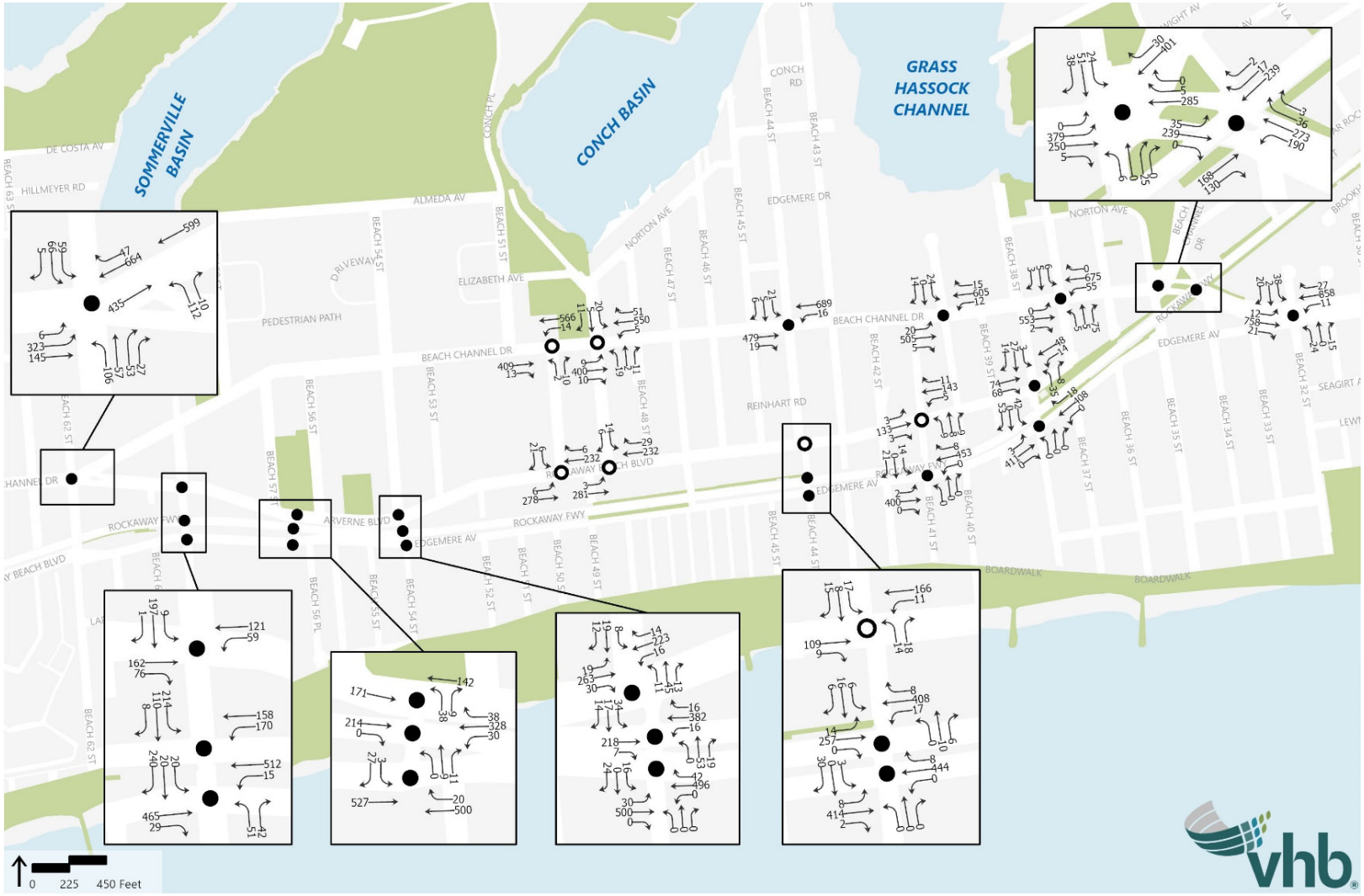


Figure 12-13 Existing Traffic Volumes – Midday Peak Hour

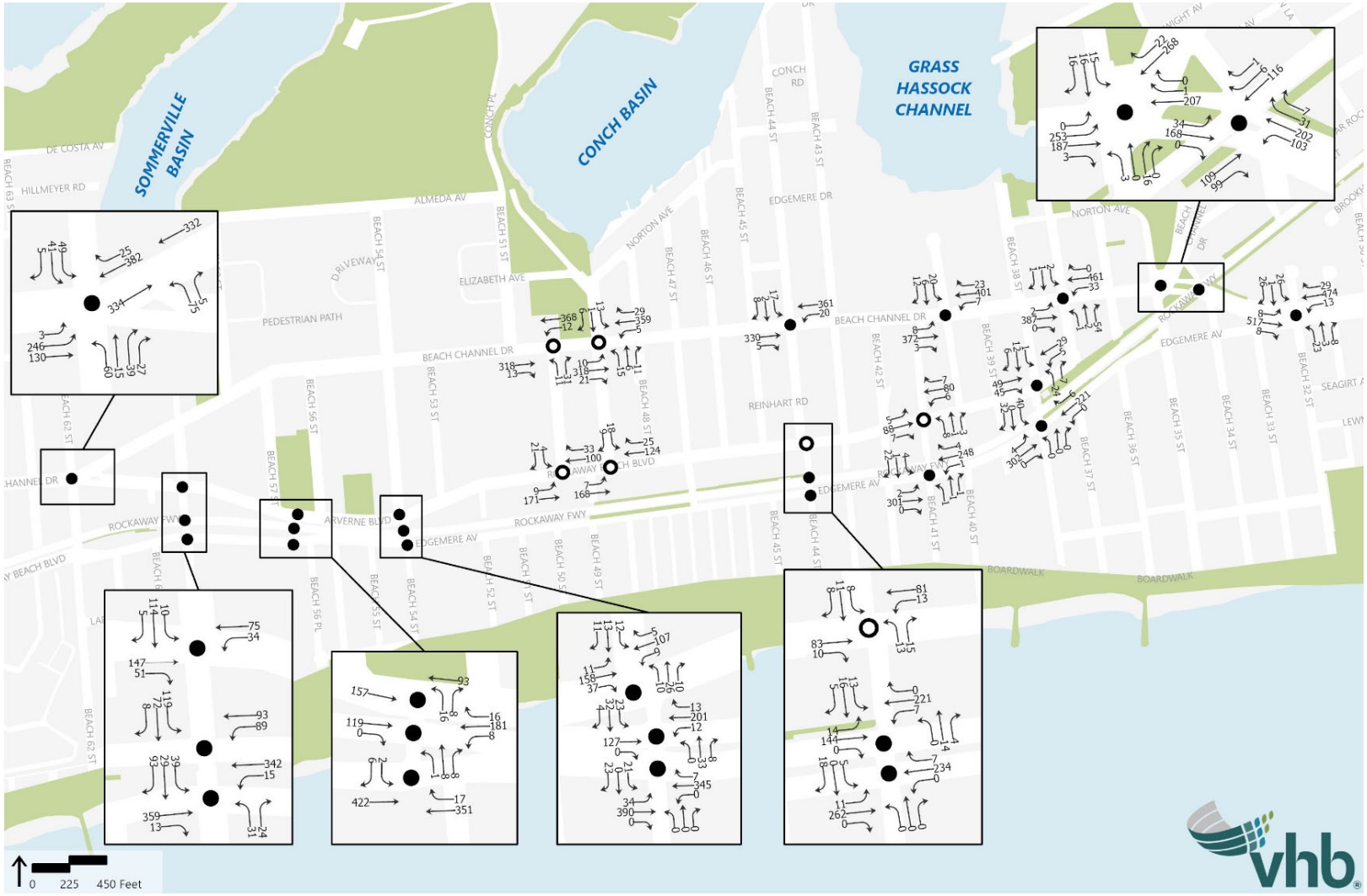


Figure 12-14 Existing Traffic Volumes – PM Peak Hour

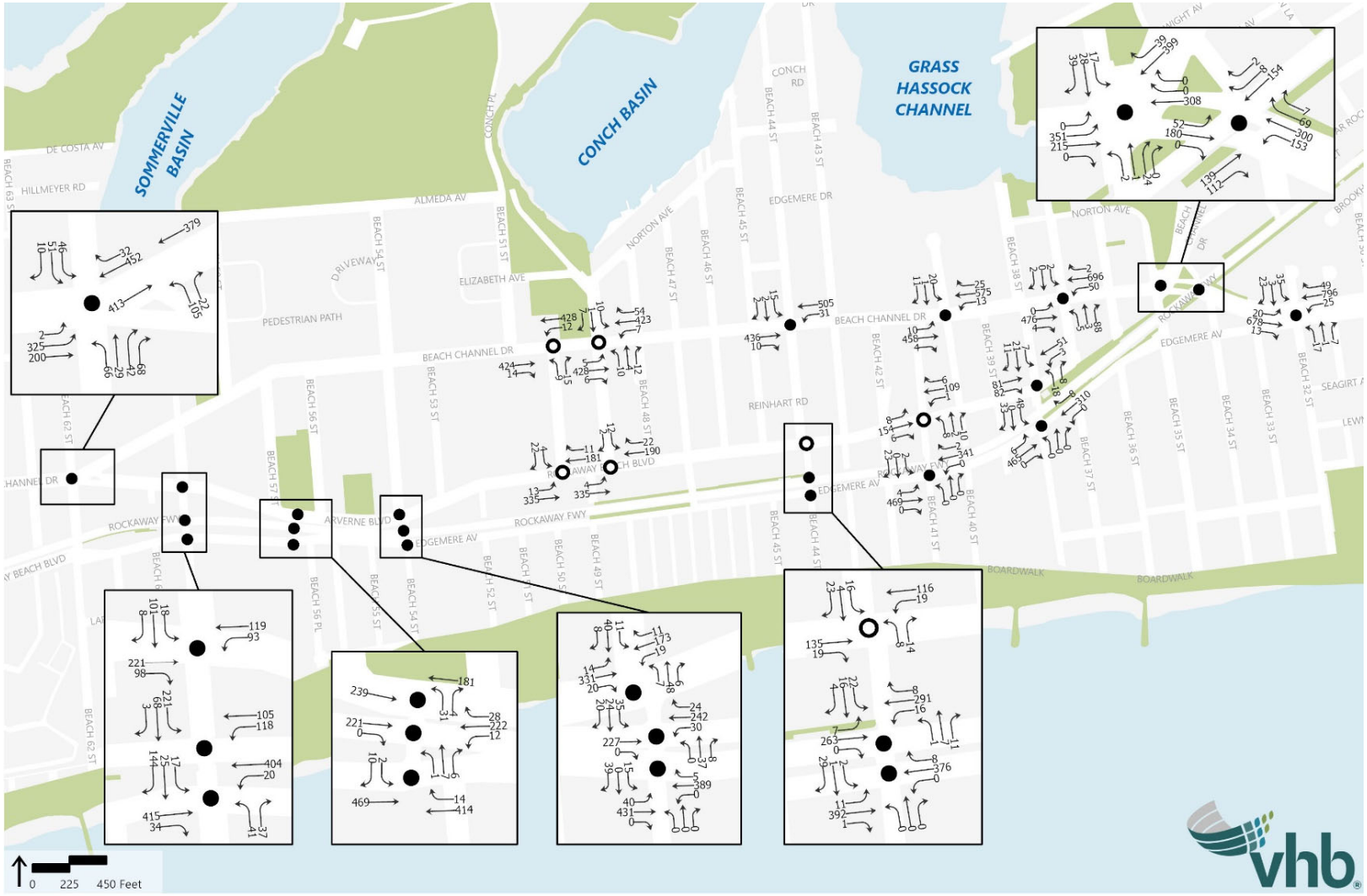
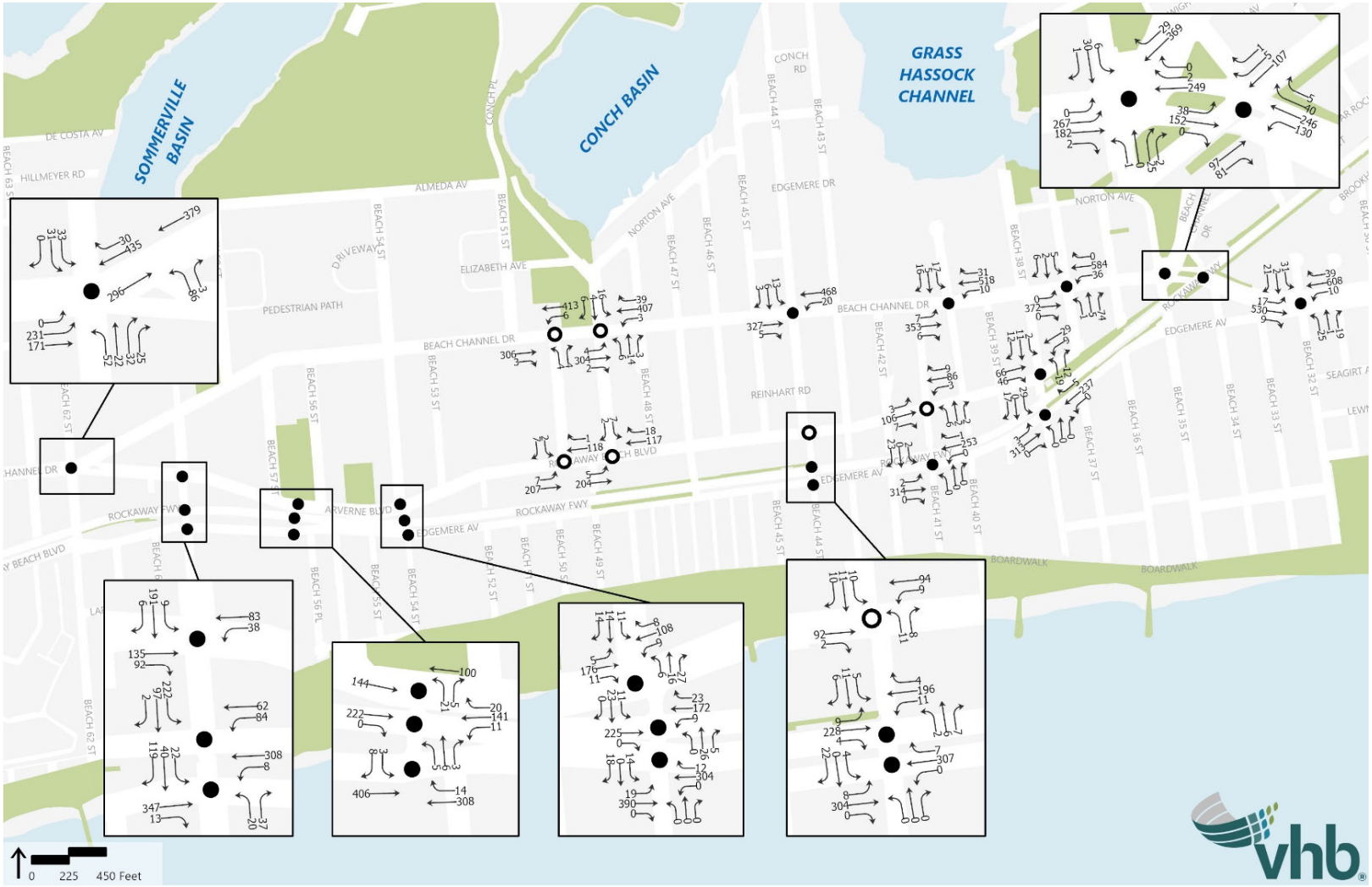


Figure 12-15 Existing Traffic Volumes – Saturday Peak Hour



Levels of Service

Table 12-12 and **Table 12-13** provide an overview of the levels of service that characterize existing "overall" intersection conditions and individual traffic movements, respectively, during the weekday AM, weekday midday, weekday PM, and Saturday peak hours. Detailed existing traffic levels of service are provided in **Table 12-14**.

Table 12-12 Existing Traffic Level of Service Summary – Overall Intersections

	Weekday AM Peak Hour	Weekday MD Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour
Intersections at Overall LOS A/B/C	23	27	24	26
Intersections at Overall LOS D	4	0	3	1
Intersections at Overall LOS E	0	0	0	0
Intersections at Overall LOS F	0	0	0	0

Note: Includes 21 signalized intersections and 6 unsignalized intersections

Table 12-13 Existing Traffic Level of Service Summary – Traffic Movements

	Weekday AM Peak Hour	Weekday MD Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour
Traffic Movements at LOS A/B/C and Acceptable LOS D	102	111	106	109
Traffic Movements at Unacceptable LOS D	6	1	5	2
Traffic Movements at LOS E	5	1	2	2
Traffic Movements at LOS F	0	0	0	0
Number of Individual Traffic Movements	113	113	113	113

Note: Traffic movements with delays less than or equal to 45 seconds for signalized movements, and less than or equal to 30 seconds for unsignalized movements, are considered to be operating at acceptable levels of service.

Table 12-14 Existing Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Beach Channel Drive and Beach 35th Street and Seagirt Boulevard																	
Beach Channel Drive	SW	R	0.84	43.5	D	R	0.61	31.8	C	R	0.76	37.2	D	R	0.74	36.1	D
Beach Channel Drive	EB	TR	0.71	25.4	C	TR	0.43	15.4	B	TR	0.50	17.6	B	TR	0.43	13.3	B
Beach Channel Drive	EB	L	0.95	43.2	D	L	0.58	21.2	C	L	0.75	26.8	C	L	0.60	20.6	C
Seagirt Boulevard	WB	T	0.62	17.0	B	T	0.44	9.0	A	T	0.55	11.5	B	T	0.45	8.0	A
Beach 35th Street	NB	LT	0.02	20.2	C	LT	0.01	20.1	C	LT	0.01	20.1	C	LT	0.00	20.0	B
	NB	R	0.05	20.4	C	R	0.03	20.3	C	R	0.04	20.4	C	R	0.05	20.5	C
Beach 35th Street	SB	LTR	0.25	22.9	C	LTR	0.10	21.1	C	LTR	0.19	22.1	C	LTR	0.08	20.8	C
Overall Intersection		-	-	**31.5**	**C**	-	-	**19.5**	**B**	-	-	**23.6**	**C**	-	-	**20.5**	**C**
Seagirt Boulevard and Rockaway Freeway																	
Seagirt Boulevard	EB	L	0.04	17.2	B	L	0.04	9.9	A	L	0.06	12.7	B	L	0.05	9.7	A
	EB	TR	0.30	18.4	B	TR	0.20	10.5	B	TR	0.18	12.7	B	TR	0.16	10.1	B
	WB	LT	0.76	38.8	D	LT	0.50	31.8	C	LT	0.65	34.7	C	LT	0.54	32.3	C
	WB	R	0.18	28.3	C	R	0.15	27.7	C	R	0.27	29.7	C	R	0.17	27.9	C
Rockaway Freeway at Seagirt Boulevard WB	NE	T	0.18	1.0	A	T	0.13	1.6	A	T	0.19	1.8	A	T	0.13	1.8	A
	SW	TR	0.48	24.4	C	TR	0.20	20.1	C	TR	0.28	21.1	C	TR	0.19	20.0	B
Rockaway Freeway at Seagirt Boulevard EB	NE	TR	0.56	26.1	C	TR	0.38	22.7	C	TR	0.44	23.6	C	TR	0.33	21.9	C
	SW	T	0.74	19.2	B	T	0.37	14.1	B	T	0.46	14.2	B	T	0.39	14.7	B
Overall Intersection		-	-	**23.8**	**C**	-	-	**18.9**	**B**	-	-	**20.8**	**C**	-	-	**19.5**	**B**

Table 12-14 Existing Traffic Levels of Service

		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**
Beach Channel Drive and Beach 37th Street																	
Beach Channel Drive	EB	LTR	0.81	25.1	C	LTR	0.51	15.2	B	LTR	0.59	16.7	B	LTR	0.45	14.1	B
	WB	LTR	1.01	41.8	D	LTR	0.75	13.1	B	LTR	0.96	29.8	C	LTR	0.77	11.0	B
Beach 37th Street	NB	LTR	0.20	21.7	C	LTR	0.15	21.0	C	LTR	0.24	22.3	C	LTR	0.20	21.7	C
	SB	LTR	0.04	19.8	B	LTR	0.01	19.5	B	LTR	0.01	19.5	B	LTR	0.04	19.8	B
Overall Intersection		-	-	**33.1**	**C**	-	-	**14.5**	**B**	-	-	**24.4**	**C**	-	-	**13.1**	**B**
Beach Channel Drive and Beach 40th Street																	
Beach Channel Drive	EB	LTR	0.78	24.2	C	LTR	0.47	14.3	B	LTR	0.56	16.0	B	LTR	0.42	13.5	B
	WB	LTR	0.92	36.9	D	LTR	0.67	19.5	B	LTR	0.82	26.1	C	LTR	0.74	21.8	C
Beach 40th Street	SB	LTR	0.10	20.4	C	LTR	0.10	20.4	C	LTR	0.08	20.2	C	LTR	0.09	20.3	C
Overall Intersection		-	-	**30.6**	**C**	-	-	**17.3**	**B**	-	-	**21.6**	**C**	-	-	**18.6**	**B**
Beach Channel Drive and Beach 44th Street																	
Beach Channel Drive	EB	TR	0.84	28.8	C	TR	0.52	15.7	B	TR	0.62	17.9	B	TR	0.47	14.6	B
	WB	LT	0.99	50.6	D	LT	0.66	19.6	B	LT	0.77	23.6	C	LT	0.68	19.6	B
Beach 44th Street	SB	LTR	0.07	20.1	C	LTR	0.07	20.0	B	LTR	0.05	19.9	B	LTR	0.05	19.9	B
Overall Intersection		-	-	**40.1**	**D**	-	-	**17.9**	**B**	-	-	**21.0**	**C**	-	-	**17.6**	**B**

Table 12-14 Existing Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Beach Channel Drive and Arverne Boulevard and Beach 62nd Street																	
Beach Channel Drive at Beach 62nd Street	EB	LTR	0.96	58.5	E	LTR	0.77	34.1	C	LTR	0.96	56.6	E	LTR	0.84	38.8	D
Beach 62nd Street	NB	L	0.51	37.8	D	L	0.27	31.6	C	L	0.30	32.1	C	L	0.24	31.0	C
	NB	TR	0.53	37.2	D	TR	0.35	32.7	C	TR	0.55	37.8	D	TR	0.30	31.5	C
	SB	LTR	0.80	60.7	E	LTR	0.49	38.0	D	LTR	0.66	47.2	D	LTR	0.30	32.1	C
Beach Channel Drive @ WB Arverne Blvd	WB	T	0.92	45.2	D	T	0.54	24.2	C	T	0.54	23.9	C	T	0.54	23.9	C
Arverne Boulevard	NW	LR	0.38	32.6	C	LR	0.28	31.1	C	LR	0.45	34.3	C	LR	0.30	31.2	C
Overall Intersection		-	-	**48.0**	**D**	-	-	**30.7**	**C**	-	-	**40.9**	**D**	-	-	**31.7**	**C**
Rockaway Beach Boulevard and Beach 38th Street																	
Rockaway Beach Blvd	EB	TR	0.24	9.8	A	TR	0.16	9.2	A	TR	0.24	9.8	A	TR	0.18	9.4	A
	WB	LT	0.12	8.8	A	LT	0.06	8.4	A	LT	0.08	8.5	A	LT	0.06	8.4	A
Beach 38th Street	NB	LR	0.09	13.4	B	LR	0.07	13.2	B	LR	0.05	13.1	B	LR	0.07	13.2	B
	SB	LTR	0.10	13.5	B	LTR	0.04	13.0	B	LTR	0.08	13.3	B	LTR	0.05	13.1	B
Overall Intersection		-	-	**10.7**	**B**	-	-	**10.2**	**B**	-	-	**10.3**	**B**	-	-	**10.3**	**B**

Table 12-14 Existing Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Arverne Boulevard / Rockaway Beach Boulevard and Beach 54th Street																	
Arverne Boulevard	EB	L	0.06	16.3	B	L	0.03	15.9	B	L	0.04	16.0	B	L	0.01	15.7	B
	EB	TR	0.58	24.5	C	TR	0.36	20.1	C	TR	0.66	26.7	C	TR	0.35	19.7	B
Rockaway Beach Blvd	WB	LTR	0.49	22.3	C	LTR	0.24	18.3	B	LTR	0.39	20.5	C	LTR	0.25	18.4	B
Beach 54th Street	NB	LTR	0.11	6.7	A	LTR	0.09	8.9	A	LTR	0.11	11.0	B	LTR	0.07	14.7	B
	SB	LTR	0.11	22.7	C	LTR	0.10	22.4	C	LTR	0.14	23.0	C	LTR	0.12	22.8	C
Overall Intersection		-	-	**21.5**	**C**	-	-	**18.3**	**B**	-	-	**22.9**	**C**	-	-	**19.0**	**B**
Arverne Boulevard and Beach 56th Street (West)																	
Arverne Boulevard	EB	T	0.21	9.6	A	T	0.19	9.4	A	T	0.26	10.1	B	T	0.18	9.3	A
	WB	T	0.15	9.1	A	T	0.12	8.9	A	T	0.24	9.9	A	T	0.12	8.9	A
Beach 56th Street	NB	LR	0.12	24.3	C	LR	0.06	20.1	C	LR	0.08	23.7	C	LR	0.06	23.9	C
Overall Intersection		-	-	**11.5**	**B**	-	-	**10.2**	**B**	-	-	**11.1**	**B**	-	-	**10.6**	**B**
Arverne Boulevard and Beach 59th Street																	
Arverne Boulevard	EB	TR	0.34	9.6	A	TR	0.25	8.8	A	TR	0.39	10.0	A	TR	0.30	9.2	A
	WB	LT	0.28	9.1	A	LT	0.17	8.2	A	LT	0.40	10.6	B	LT	0.18	8.2	A
Beach 59th Street	SB	LT	0.53	21.1	C	LT	0.32	17.4	B	LT	0.31	17.3	B	LT	0.51	20.5	C
	SB	R	0.00	14.0	B	R	0.02	14.2	B	R	0.03	14.3	B	R	0.02	14.2	B
Overall Intersection		-	-	**13.4**	**B**	-	-	**11.3**	**B**	-	-	**11.7**	**B**	-	-	**13.2**	**B**

Table 12-14 Existing Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Rockaway Freeway and Beach 44th Street																	
Rockaway Freeway	EB	L	0.10	38.2	D	L	0.10	42.2	D	L	0.05	36.9	D	L	0.07	40.9	D
	EB	TR	0.36	10.6	B	TR	0.20	9.9	A	TR	0.34	9.0	A	TR	0.31	6.1	A
	WB	L	0.12	37.3	D	L	0.05	36.3	D	L	0.11	37.2	D	L	0.08	36.7	D
	WB	TR	0.51	20.2	C	TR	0.29	16.8	B	TR	0.39	18.2	B	TR	0.27	16.5	B
Beach 44th Street	NB	LTR	0.04	43.6	D	LTR	0.05	49.2	D	LTR	0.05	45.9	D	LTR	0.04	48.1	D
	SB	LTR	0.09	26.2	C	LTR	0.10	23.7	C	LTR	0.14	28.3	C	LTR	0.06	24.3	C
Overall Intersection		-	-	**18.4**	**B**	-	-	**17.7**	**B**	-	-	**16.9**	**B**	-	-	**14.0**	**B**
Rockaway Freeway and Beach 54th Street																	
Rockaway Freeway	EB	TR	0.33	2.8	A	TR	0.19	2.9	A	TR	0.30	1.2	A	TR	0.28	1.0	A
	WB	L	0.12	55.4	E	L	0.08	56.4	E	L	0.17	55.9	E	L	0.06	55.5	E
	WB	TR	0.37	20.2	C	TR	0.24	17.7	B	TR	0.29	18.2	B	TR	0.20	17.4	B
Beach 54th Street	NB	LTR	0.17	42.4	D	LTR	0.09	43.3	D	LTR	0.10	41.5	D	LTR	0.07	44.9	D
	SB	LTR	0.18	34.0	C	LTR	0.15	38.4	D	LTR	0.20	26.6	C	LTR	0.08	28.6	C
Overall Intersection		-	-	**19.2**	**B**	-	-	**19.7**	**B**	-	-	**16.8**	**B**	-	-	**13.7**	**B**
Rockaway Freeway and Beach 56th Street																	
Rockaway Freeway	EB	TR	0.34	23.2	C	TR	0.17	22.1	C	TR	0.35	23.2	C	TR	0.35	22.9	C
	WB	L	0.21	22.0	C	L	0.06	19.8	B	L	0.08	20.8	C	L	0.08	22.3	C
	WB	TR	0.42	3.3	A	TR	0.22	1.7	A	TR	0.25	2.2	A	TR	0.17	2.0	A
Beach 56th Street	NB	LTR	0.04	37.0	D	LTR	0.04	35.6	D	LTR	0.03	35.3	D	LTR	0.03	33.1	C
Overall Intersection		-	-	**12.0**	**B**	-	-	**10.5**	**B**	-	-	**13.5**	**B**	-	-	**15.3**	**B**

Table 12-14 Existing Traffic Levels of Service

		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**
Rockaway Freeway and Beach 59th Street																	
Rockaway Freeway	WB	L	0.75	49.6	D	L	0.50	41.7	D	L	0.70	52.8	D	L	0.48	41.0	D
	WB	T	0.15	23.1	C	T	0.11	29.8	C	T	0.12	25.3	C	T	0.06	27.8	C
Beach 59th Street	SB	LT	0.85	54.1	D	LT	0.53	34.1	C	LT	0.85	51.1	D	LT	0.89	56.4	E
	SB	R	0.03	27.6	C	R	0.03	26.0	C	R	0.01	25.8	C	R	0.01	25.8	C
Overall Intersection		-	-	**44.8**	**D**	-	-	**34.6**	**C**	-	-	**46.1**	**D**	-	-	**49.7**	**D**
Edgemere Avenue and Beach 38th Street																	
Edgemere Avenue	EB	LTR	0.57	39.9	D	LTR	0.42	43.7	D	LTR	0.62	39.6	D	LTR	0.42	46.0	D
	WB	LTR	0.62	24.4	C	LTR	0.30	18.7	B	LTR	0.40	20.1	C	LTR	0.30	18.7	B
Beach 38th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-
	SB	LTR	0.17	16.7	B	LTR	0.12	16.2	B	LTR	0.13	16.3	B	LTR	0.08	15.7	B
Overall Intersection		-	-	**29.9**	**C**	-	-	**30.5**	**C**	-	-	**30.1**	**C**	-	-	**32.5**	**C**
Edgemere Avenue and Beach 41st Street																	
Edgemere Avenue	EB	LTR	0.54	11.8	B	LTR	0.40	4.4	A	LTR	0.60	11.6	B	LTR	0.40	3.9	A
	WB	LTR	0.71	19.8	B	LTR	0.33	10.9	B	LTR	0.44	11.2	B	LTR	0.36	10.9	B
Beach 41st Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-
	SB	LTR	0.07	17.5	B	LTR	0.06	17.4	B	LTR	0.05	17.3	B	LTR	0.05	17.3	B
Overall Intersection		-	-	**16.3**	**B**	-	-	**7.9**	**A**	-	-	**11.6**	**B**	-	-	**7.6**	**A**

Table 12-14 Existing Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Edgemere Avenue and Beach 44th Street																	
Edgemere Avenue	EB	LTR	0.59	17.8	B	LTR	0.36	16.1	B	LTR	0.52	18.1	B	LTR	0.37	16.9	B
	WB	LTR	0.65	32.6	C	LTR	0.33	33.2	C	LTR	0.49	35.2	D	LTR	0.40	34.1	C
Beach 44th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-
	SB	LTR	0.07	1.8	A	LTR	0.04	2.1	A	LTR	0.06	1.6	A	LTR	0.05	7.5	A
Overall Intersection		-	-	**24.7**	**C**	-	-	**23.3**	**C**	-	-	**25.3**	**C**	-	-	**24.8**	**C**
Edgemere Avenue and Beach 54th Street																	
Edgemere Avenue	EB	LTR	0.93	41.1	D	LTR	0.59	26.9	C	LTR	0.72	29.6	C	LTR	0.52	27.3	C
	WB	LTR	0.74	26.8	C	LTR	0.43	22.1	C	LTR	0.53	23.3	C	LTR	0.40	20.9	C
Beach 54th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-
	SB	LTR	0.07	4.4	A	LTR	0.08	0.5	A	LTR	0.09	2.1	A	LTR	0.06	1.1	A
Overall Intersection		-	-	**32.4**	**C**	-	-	**23.4**	**C**	-	-	**25.2**	**C**	-	-	**23.4**	**C**
Rockaway Beach Boulevard and Beach 56th Street (West)																	
Rockaway Beach Blvd	EB	T	0.86	26.2	C	T	0.66	15.9	B	T	0.68	18.2	B	T	0.54	13.3	B
	WB	TR	0.89	33.4	C	TR	0.61	15.2	B	TR	0.64	16.2	B	TR	0.49	8.9	A
Beach 56th Street	SB	LR	0.05	0.1	A	LR	0.01	0.0	A	LR	0.02	0.0	A	LR	0.02	0.1	A
Overall Intersection		-	-	**28.9**	**C**	-	-	**15.4**	**B**	-	-	**17.0**	**B**	-	-	**11.1**	**B**

Table 12-14 Existing Traffic Levels of Service

		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**
Rockaway Beach Boulevard and Beach 59th Street**																	
Rockaway Beach Blvd	EB	TR	0.87	42.2	D	TR	0.60	27.0	C	TR	0.70	30.2	C	TR	0.55	25.5	C
	WB	LT	0.90	45.5	D	LT	0.63	41.1	D	LT	0.76	45.6	D	LT	0.52	44.7	D
Beach 59th Street	NB	LTR	0.58	44.9	D	LTR	0.26	30.8	C	LTR	0.37	33.1	C	LTR	0.26	30.5	C
	SB	LT	0.08	3.4	A	LT	0.14	1.8	A	LT	0.07	3.9	A	LT	0.10	1.2	A
	SB	R	0.77	53.0	D	R	0.31	35.6	D	R	0.41	42.2	D	R	0.37	34.2	C
Overall Intersection		-	-	**44.0**	**D**	-	-	**31.6**	**C**	-	-	**36.5**	**D**	-	-	**32.1**	**C**
Seagirt Boulevard and Beach 32nd Street																	
Seagirt Blvd	EB	LTR	0.34	14.4	B	LTR	0.20	13.2	B	LTR	0.27	13.8	B	LTR	0.22	13.4	B
	WB	LTR	0.51	16.6	B	LTR	0.30	14.1	B	LTR	0.46	15.9	B	LTR	0.32	14.3	B
Beach 32nd Street	NB	LTR	0.10	17.3	B	LTR	0.08	17.1	B	LTR	0.05	16.7	B	LTR	0.11	17.3	B
	SB	LTR	0.16	18.1	B	LTR	0.13	17.6	B	LTR	0.13	17.7	B	LTR	0.13	17.6	B
Overall Intersection		-	-	**15.7**	**B**	-	-	**14.0**	**B**	-	-	**15.1**	**B**	-	-	**14.2**	**B**
Beach Channel Drive and Beach 49th Street (Unsignalized)																	
Beach Channel Drive	EB	LTR	-	0.4	A	LTR	-	0.4	A	LTR	-	0.2	A	LTR	-	0.2	A
	WB	LTR	-	0.2	A	LTR	-	0.2	A	LTR	-	0.3	A	LTR	-	0.1	A
Beach 49th Street	NB	L	-	48.9	E	L	-	23.2	C	L	-	27.1	D	L	-	22.1	C
	NB	TR	-	14.6	B	TR	-	13.8	B	TR	-	13.8	B	TR	-	17.1	C
	SB	L	-	45.1	E	L	-	20.6	C	L	-	24.2	C	L	-	20.2	C
	SB	TR	-	20.3	C	TR	-	11.6	B	TR	-	11.8	B	TR	-	13.4	B
Overall Intersection		-	-	**2.2**	**A**	-	-	**1.5**	**A**	-	-	**1.2**	**A**	-	-	**1.4**	**A**

Table 12-14 Existing Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Beach Channel Drive and Beach 50th Street (Unsignalized)																	
Beach Channel Drive	EB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A
	WB	LT	-	0.5	A	LT	-	0.5	A	LT	-	0.4	A	LT	-	0.2	A
Beach 50th Street	NB	LR	-	13.8	B	LR	-	13.8	B	LR	-	14.3	B	LR	-	16.7	C
Overall Intersection		-	-	**0.5**	**A**	-	-	**1.1**	**A**	-	-	**0.7**	**A**	-	-	**0.3**	**A**
Rockaway Beach Boulevard and Beach 50th Street (Unsignalized)																	
Rockaway Beach Blvd	EB	LT	-	0.3	A	LT	-	0.5	A	LT	-	0.4	A	LT	-	0.3	A
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A
Beach 50th Street	SB	LR	-	11.4	B	LR	-	9.8	A	LR	-	10.3	B	LR	-	9.4	A
Overall Intersection		-	-	**0.8**	**A**	-	-	**1.0**	**A**	-	-	**0.8**	**A**	-	-	**0.5**	**A**
Rockaway Beach Boulevard and Beach 49th Street (Unsignalized)																	
Rockaway Beach Blvd	EB	LT	-	0.1	A	LT	-	0.4	A	LT	-	0.1	A	LT	-	0.2	A
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A
Beach 49th Street	SB	L	-	14.2	B	L	-	11.7	B	L	-	14.6	B	L	-	11.6	B
	SB	R	-	11.3	B	R	-	10.8	B	R	-	9.7	A	R	-	9.2	A
Overall Intersection		-	-	**0.6**	**A**	-	-	**1.1**	**A**	-	-	**0.4**	**A**	-	-	**0.4**	**A**
Rockaway Beach Boulevard and Beach 44th Street (Unsignalized)																	
Rockaway Beach Blvd	EB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A
	WB	LT	-	0.6	A	LT	-	1.1	A	LT	-	1.2	A	LT	-	0.8	A
Beach 44th Street	NB	LTR	-	10.9	B	LTR	-	10.0	A	LTR	-	10.6	B	LTR	-	10.3	B
	SB	LTR	-	11.5	B	LTR	-	10.4	B	LTR	-	10.7	B	LTR	-	10.3	B
Overall Intersection		-	-	**2.6**	**A**	-	-	**2.8**	**A**	-	-	**2.4**	**A**	-	-	**2.5**	**A**

Table 12-14 Existing Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Rockaway Beach Boulevard and Beach 41st Street (Unsignalized)																	
Rockaway Beach Blvd	EB	LTR	-	0.2	A	LTR	-	0.4	A	LTR	-	0.4	A	LTR	-	0.2	A
	WB	LTR	-	0.3	A	LTR	-	0.6	A	LTR	-	0.1	A	LTR	-	0.3	A
Beach 41st Street	NB	LTR	-	10.7	B	LTR	-	9.9	A	LTR	-	10.3	B	LTR	-	10.1	B
Overall Intersection		-	-	**1.2**	**A**	-	-	**1.0**	**A**	-	-	**0.9**	**A**	-	-	**0.7**	**A**

[1] Control delay is measured in seconds per vehicle.

[2] Overall intersection v/c ratio is the critical lane groups' v/c ratio.

* Northbound approaches to Edgemere Avenue at Beach 44th Street and Beach 54th Street have zero volume in field observed data.

** Synchro results used instead of HCM 2000 due to close adjacency of intersections.

The summary overview of existing conditions indicates that:

- In the weekday AM peak hour, none of the intersections analyzed operate at overall LOS E or LOS F. "Overall" LOS E or F means that serious congestion exists – either one specific major traffic movement has severe delays or two or more of the specific traffic movements at the intersection are at LOS E or F with significant delays (the overall intersection level of service is a weighted average of all individual traffic movements). Eleven individual traffic movements out of 113 movements analyzed operate at unacceptable LOS D, LOS E, or LOS F (e.g., left turns from one street to another, through traffic on one street passing through the intersection, etc.).
- In the weekday midday peak hour, none of the intersections analyzed operate at overall LOS E or LOS F, and two individual traffic movements operate at unacceptable LOS D, LOS E, or LOS F.
- In the weekday PM peak hour, none of the intersections analyzed operate at overall LOS E or LOS F, and seven individual traffic movements operate at unacceptable LOS D, LOS E, or LOS F.
- In the Saturday peak hour, none of the intersections analyzed operate at overall LOS E or LOS F, and four individual traffic movements operate at unacceptable LOS D, LOS E, or LOS F.

Traffic movements operating at unacceptable levels of service are listed below.

- Beach Channel Drive and Beach 44th Street
  - Westbound Beach Channel Drive approach (weekday AM)
- Beach Channel Drive, Arverne Boulevard and Beach 62nd Street
  - Eastbound Beach Channel Drive approach (weekday AM and weekday PM)
  - Southbound Beach 62nd Street (weekday AM and weekday PM)
  - Westbound Beach Channel Drive upstream of Arverne Boulevard approach (weekday AM)
- Rockaway Freeway and Beach 44th Street
  - Northbound Beach 44th Street approach (weekday midday, weekday PM and Saturday)
- Rockaway Freeway and Beach 54th Street
  - Westbound Rockaway Freeway left turn lane (weekday AM, weekday midday, weekday PM, and Saturday)
- Rockaway Freeway and Beach 59th Street
  - Westbound Rockaway Freeway left turn lane (weekday AM and weekday PM)
  - Southbound Beach 59th Street shared left-through lane group (weekday AM, weekday PM, and Saturday)
- Edgemere Avenue and Beach 38th Street
  - Edgemere Avenue eastbound approach (Saturday)
- Rockaway Beach Boulevard and Beach 59th Street
  - Westbound Rockaway Beach Boulevard approach (weekday AM and weekday PM)
  - Southbound Beach 59th Street right turn lane (weekday AM)

› Beach Channel Drive and Beach 49th Street (unsignalized)
  - Northbound Beach 49th Street left lane (weekday AM)
  - Southbound Beach 49th Street left lane (weekday AM)

Parking

Due to the lack of existing public parking facilities within the study area, the parking analysis focuses on on-street parking capacity. A detailed inventory of on-street parking within a quarter-mile radius of the project area was conducted in March 2021. This quarter-mile distance is considered an acceptable walking distance to and from parking, per the *CEQR Technical Manual*. **Table 12-15** presents the on-street parking capacity and demand during the weekday AM, midday, PM and overnight periods, and the Saturday midday period (i.e., the typical peak parking occupancy periods on weekdays and Saturdays). The total capacity of the on-street parking is 1,911 parking spaces, and they are approximately 75 percent occupied during the weekday AM peak period, 65 percent during the weekday midday, weekday PM and Saturday peak periods, and 79 percent occupied during the weekday overnight peak period.

Table 12-15 Existing On-Street Parking Utilization

	Weekday AM	Weekday Midday	Weekday PM	Weekday Overnight	Saturday
Existing Demand	1,435	1,242	1,249	1,516	1,251
Existing Capacity	1,911	1,911	1,911	1,911	1,911
Existing Availability	476	669	662	395	660
% Occupied	75%	65%	65%	79%	65%

Buses

As discussed in the **Level 2 Screening Results** section, incremental trips are expected to exceed the 50-trip *CEQR Technical Manual* analysis threshold on the Q22 bus route in both the eastbound and westbound directions during the weekday AM and PM peak hours. The Q22 bus route utilizes standard buses and operates between a terminus at Mott Avenue and Beach 21st Street to the east and a terminus at Rockaway Point Boulevard and Beach 169th Street to the west. Maximum load point data for 2019 for the Q22 route were provided by NYCT.

Table 12-16 summarizes the existing number of buses, passengers, and available capacity at maximum load points for the Q22 route during the weekday AM and PM peak hours. As shown in **Table 12-16**, the Q22 route currently operates below capacity through the maximum load points in both the eastbound and westbound directions.

Table 12-16 Existing Bus Line-Haul Capacity – Q22 Bus

Peak Hour	Direction	Maximum Load Point	Peak Hour Buses[1]	Peak Hour Passengers[1]	Average Passengers per Bus	Available Capacity[2]
AM	EB	Beach Channel Dr & Beach 35th St	6	197	33	127
	WB	Rockaway Beach Bl & Cross Bay Pkwy	9	457	51	29
PM	EB	Rockaway Beach Bl & Beach 88th St	7	275	39	103
	WB	Beach Channel Drive & Beach 47th St	7	218	31	160

Notes: Methodology based on *2020 CEQR Technical Manual* guidelines
[1] Based on most currently available data from NYCT (May 2019)
[2] Available capacity based on MTA loading guidelines of 54 passengers per 40-foot standard bus
EB=Eastbound; WB=Westbound

Subways

Subway Station Elements

As discussed in the **Level 2 Screening Results** section, incremental trips at the Beach 44th Street-Frank Avenue Station are expected to exceed the 200-trip *CEQR Technical Manual* analysis threshold in the weekday AM and PM commuter peak hours.

The Beach 44th Street-Frank Avenue Station is served by the A local train along the IND Rockaway Line. The A local service operates at all times. This station consists of one central mezzanine and two platforms above – one northbound, one southbound. The mezzanine level is accessed from the street via four street staircases. The fare control area is located on the mezzanine level and consists of three standard turnstiles and an emergency door.

The following station elements were selected for analysis:

- Street staircase (S1/M3)
- Street staircase (S3/M3)
- Fare-array (three turnstiles)
- Northbound platform staircase (P3/P5)
- Northbound platform staircase (P7/P9)
- Southbound platform staircase (P4/P6)
- Southbound platform staircase (P8/P10)

Levels of Service

Table 12-17 and **Table 12-18** show the results of the level of service analyses at the analyzed stairs and fare control area, respectively. This analysis was based on count data collected in March 2021 during the COVID-19 pandemic that was then adjusted to pre-pandemic levels by comparing these recent pandemic period turnstile data with NYCT-provided turnstile data collected before the pandemic. Volumes at the station are low and,

as shown in **Table 12-17** and **Table 12-18**, all analyzed elements operate at LOS A during the weekday AM and PM peak hours under existing conditions.

Table 12-17 Existing Subway Station Level of Service – Stairs

Peak Hour	Stair	Effective Width (ft)	Pedestrian Volume Up (15-min)	Pedestrian Volume Down (15-min)	Friction Factor	Surging Factor (Up/Down)	v/c Ratio	LOS
AM	S3/M3	7.3	34	3	0.9	1.0/0.80	0.04	A
	S1/M3	7.3	5	2	0.9	1.0/0.80	0.01	A
	P3/P5	7.3	20	1	1.0	1.0/0.75	0.02	A
	P7/P9	7.3	15	1	0.9	1.0/0.75	0.02	A
	P4/P6	7.3	0	2	1.0	1.0/0.75	0.00	A
	P8/P10	7.2	2	2	0.9	1.0/0.75	0.00	A
PM	S3/M3	7.3	7	41	0.9	1.0/0.80	0.06	A
	S1/M3	7.3	0	5	1.0	1.0/0.80	0.01	A
	P3/P5	7.3	5	4	0.9	1.0/0.75	0.01	A
	P7/P9	7.3	4	0	1.0	1.0/0.75	0.00	A
	P4/P6	7.3	1	25	1.0	1.0/0.75	0.03	A
	P8/P10	7.2	0	22	1.0	1.0/0.75	0.03	A

Note: Methodology based on *2020 CEQR Technical Manual* guidelines

Table 12-18 Existing Subway Station Level of Service – Fare Control Area

Peak Hour	Control Elements	Entry Volume (15-min)	Exit Volume (15-min)	Surging Factor[1]	Friction Factor (In/Out)	v/c Ratio	LOS
AM	3 two-way turnstiles	37	6	0.8	0.9	0.04	A
PM	3 two-way turnstiles	10	51	0.8	0.9	0.05	A

Note: Methodology based on *2020 CEQR Technical Manual* guidelines

[1] Surging factor only applies to exiting volumes. The surge factor for entry volumes is 1.0.

Subway Line-Haul

Per the *CEQR Technical Manual* Level 2 line-haul screening guidelines, this subway line has been identified for weekday AM and PM peak hour analyses. Maximum load point data for 2017-2018 for these routes were provided by NYCT.

Table 12-19 summarizes existing line-haul conditions in the peak direction at the maximum load points during the weekday AM and PM analysis peak hours. As shown in **Table 12-19**, the A subway line operates below capacity (v/c ratio of less than 1.0) in the peak direction in each peak hour.

Table 12-19 Existing Subway Line-Haul Capacity

Peak Hour	Route (Direction)	Maximum Load Point	Average Trains Per Hour[1]	Average Cars Per Hour[1]	Average Passengers[1]		Guideline Passengers per Car[2]	v/c Ratio[3]
					Per Hour	Per Car		
AM	A local (NB)	Nostrand Ave	16.0	128	16,980	132.7	175	0.74
PM	A local (SB)	Jay St-MetroTech	15.5	124	17,341	139.8	175	0.78

Notes: Methodology based on *2020 CEQR Technical Manual* guidelines

[1] Based on 2017-2018 ridership and train throughput data from NYCT.

[2] Guideline capacities are based on NYCT rush hour loading guidelines, which vary by car type, line, and location based on frequency and type of service. This figure reflects the predominant car type (75 feet long) on the A line. Some trains, however, use shorter cars (60 feet long) with a lower guideline per car.

[3] Volume to guideline capacity ratio. V/C reflects the mix of 75-foot and 60-foot-long cars operating on the A line.

Pedestrians

The pedestrian analysis utilizes counts conducted in May 2021. The pedestrian peak hours of 1:00 PM to 2:00 PM, 4:15 PM to 5:15 PM, and 1:45 PM to 2:45 PM were selected for the weekday midday, weekday PM, and Saturday analyses, respectively. Existing condition peak hour volumes for each pedestrian element analyzed are presented in **Figure 12-16**, **Figure 12-17**, and **Figure 12-18**.

As shown in **Table 12-20**, all analyzed pedestrian elements operate at LOS A during all three peak hours analyzed. The levels of service, as well as existing peak hour volumes, for each sidewalk, crosswalk, and corner analyzed are presented in **Table 12-21**, **Table 12-22**, and **Table 12-23**, respectively.

Figure 12-16 Existing Pedestrian Volumes – Midday Peak Hour



Figure 12-17 Existing Pedestrian Volumes – PM Peak Hour



Figure 12-18 Existing Pedestrian Volumes – Saturday Peak Hour



Table 12-20 Existing Pedestrian Levels of Service Summary

	Midday Peak Hour	PM Peak Hour	SAT Peak Hour
Sidewalk Elements			
Sidewalks at LOS A/B/C	17	17	17
Sidewalks at LOS D	0	0	0
Sidewalks at LOS E	0	0	0
Sidewalks at LOS F	0	0	0
Crosswalk Elements			
Crosswalks at LOS A/B/C	5	5	5
Crosswalks at LOS D	0	0	0
Crosswalks at LOS E	0	0	0
Crosswalks at LOS F	0	0	0
Corner Elements			
Corners at LOS A/B/C	16	16	16
Corners at LOS D	0	0	0
Corners at LOS E	0	0	0
Corners at LOS F	0	0	0

Note: Includes 17 sidewalks, 5 crosswalks, and 16 corner analysis locations

Table 12-21 Existing Pedestrian Levels of Service – Sidewalks

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Sidewalk	Effective Width, ft	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Rockaway Beach Boulevard between Beach 50th Street and Beach 49th Street (north side)	5.0	22	1,963.6	A	1	43,200.0	A	14	3,085.7	A
Rockaway Beach Boulevard between Beach 49th Street and Beach 47th Street (south side)	3.8	7	4,628.6	A	5	6,480.0	A	9	3,600.0	A
Rockaway Beach Boulevard between Beach 44th Street and Beach 42nd Street (south side)	2.3	6	3,240.0	A	1	19,440.0	A	3	6,480.0	A
Rockaway Beach Boulevard between Beach 40th Street and Beach 38th Street (south side)	2.0	2	10,440.0	A	0	n/a	A	0	n/a	A
Rockaway Freeway between Beach 44th Street and Beach 42nd Street (north side)	2.0	4	3,240.0	A	1	12,960.0	A	2	6,480.0	A
Rockaway Freeway between Beach 40th Street and Beach 38th Street (north side)	2.0	1	12,960.0	A	0	n/a	A	4	3,240.0	A
Beach 38th Street between Rockaway Freeway and Rockaway Beach Boulevard (west side)	5.0	3	13,440.0	A	1	40,320.0	A	2	20,160.0	A
Beach 50th Street between Rockaway Beach Boulevard and Beach Channel Drive (east side)	3.4	1	29,520.0	A	0	n/a	A	1	29,520.0	A
Beach 49th Street between Rockaway Beach Boulevard and Beach Channel Drive (west side)	4.3	1	36,720.0	A	7	5,245.7	A	2	18,360.0	A

Table 12-21 Existing Pedestrian Levels of Service – Sidewalks

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Sidewalk	Effective Width, ft	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Beach 44th Street between Rockaway Beach Boulevard and Beach Channel Drive (east side)	3.5	45	672.0	A	51	592.9	A	84	359.9	A
Beach 37th Street between Rockaway Beach Boulevard and Beach Channel Drive (east side)	5.3	0	n/a	A	4	14,400.0	A	0	n/a	A
Beach Channel Drive between Beach 54th Street and Beach 53rd Street (south side)	3.4	28	1,054.3	A	28	1,054.3	A	24	1,230.0	A
Beach Channel Drive between Beach 53rd Street and Beach 51st Street (south side)	4.8	26	1,578.4	A	11	3,730.9	A	13	3,156.9	A
Beach Channel Drive between Beach 51st Street and Beach 50th Street (south side)	5.2	20	2,232.0	A	14	3,188.6	A	22	2,029.1	A
Beach Channel Drive between Beach 50th Street and Beach 49th Street (south side)	8.5	28	2,622.8	A	20	3,672.0	A	13	5,649.2	A
Beach Channel Drive between Beach 45th Street and Beach 44th Street (north side)	3.8	50	648.0	A	42	771.4	A	20	1,620.0	A
Beach Channel Drive between Beach 44th Street and Beach 43rd Street (north side)	3.9	17	2,115.0	A	17	1,990.6	A	14	2,658.8	A

Note: Average Ped Spaces listed as "n/a" have no pedestrian volume during that time period, making the Average Ped Space mathematically incalculable; these locations operate at LOS A.

Table 12-22 Existing Pedestrian Levels of Service – Crosswalks

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Intersection	Crosswalk	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Rockaway Beach Boulevard and Beach 38th Street	*South*	4	6,740.7	A	3	8,681.0	A	0	n/a	A
	West	6	2,855.6	A	2	8,584.4	A	0	n/a	A
Beach Channel Drive and Beach 51st Street	*East*	15	1,188.6	A	6	3,441.3	A	5	3,582.7	A
	South	28	1,088.9	A	14	2,299.6	A	15	2,046.2	A
Beach Channel Drive and Beach 44th Street	*East*	24	1,297.1	A	32	973.7	A	22	1,419.0	A

Note: Average Ped Spaces listed as "n/a" have no pedestrian volume during that time period, making the Average Ped Space mathematically incalculable; these locations operate at LOS A.

Table 12-23 Existing Pedestrian Levels of Service – Corners

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Intersection	Corner	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Rockaway Beach Boulevard and Beach 54th Street	*Northeast*	54	930.0	A	47	1,018.2	A	76	676.9	A
Rockaway Beach Boulevard and Beach 38th Street	*Northeast*	0	1,030.7	A	0	4,729.5	A	1	1,886.8	A
	Southeast	0	4,195.3	A	0	12,594.6	A	0	10,072.0	A
	Southwest	1	2,439.4	A	0	5,373.1	A	0	n/a	A
	Northwest	1	3,012.8	A	3	6,499.9	A	1	10,401.6	A
Rockaway Freeway and Beach 44th Street	*Northeast*	0	1,449.3	A	1	1,159.7	A	0	1,451.7	A
Rockaway Freeway and Beach 38th Street	*Northwest*	0	8,380.2	A	0	13,974.3	A	0	5,229.4	A
Beach Channel Drive and Beach 54th Street	*Southeast*	12	853.1	A	13	879.0	A	12	930.6	A
Beach Channel Drive and Beach 51st Street	*Northeast*	63	911.6	A	35	1,346.2	A	9	3,182.3	A
	Southeast	0	1,957.9	A	0	4,543.4	A	0	4,217.4	A
	Southwest	5	2,070.6	A	3	4,179.1	A	1	3,692.3	A

Table 12-23 Existing Pedestrian Levels of Service – Corners

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Intersection	Corner	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Beach Channel Drive and Beach 44th Street	*Northeast*	0	816.2	A	2	670.6	A	3	1,009.7	A
	Southeast	34	637.9	A	62	530.6	A	92	481.5	A
	Northwest	3	1,400.2	A	8	1,208.8	A	2	2,046.6	A
Beach Channel Drive and Beach 40th Street	*Southwest*	4	1,421.1	A	1	1,238.5	A	5	1,314.5	A
Beach Channel Drive and Beach 37th Street	*Southeast*	0	2,139.6	A	4	3,089.5	A	0	3,290.3	A

Notes: Volumes shown are "rounding the corner" volumes. Average Ped Spaces listed as "n/a" have no pedestrian volume during that time period, making the Average Ped Space mathematically incalculable; these locations operate at LOS A.

Vehicular and Pedestrian Safety

Crash data were obtained for the study area intersections from NYCDOT for the most recent three-year period for which such data are available (2016 through 2016). This information is based on data provided by the New York State Department of Transportation (NYSDOT), New York State Department of Motor Vehicles (MYSDMV), and New York City Police Department (NYPD).

The crash data detail reported crashes (crashes resulting in death, injury, or property damage in excess of $1,000), fatalities, injuries, and pedestrian and bicycle injuries annually. According to the *CEQR Technical Manual,* an intersection is considered a high-crash location when there are 48 or more total reportable and non-reportable crashes, or five or more pedestrian/bicyclist injury crashes in any consecutive 12 months during the most recent three-year period for which data are available.

Table 12-24 presents a summary of total crashes at the study area intersections during the three-year period of 2016 through 2018, and also shows total fatalities, injuries, and pedestrian and bicycle crashes. As shown in **Table 12-24**, no study area intersection is considered a high-crash location.

Table 12-24 Vehicle and Pedestrian Crash Summary

Intersection		Total Crashes by Year					Pedestrian and Bicycle Crashes by Year		
North-South Roadway	East-West Roadway	2016	2017	2018	Total Fatalities	Total Injuries	2016	2017	2018
Beach 62nd St	Arverne Blvd / Beach Channel Dr	2	3	10	0	13	0	2	1
Beach 59th St	Rockaway Beach Blvd	0	3	8	0	5	0	2	2
Beach 59th St	Rockaway Freeway	2	2	1	0	3	1	1	1
Beach 59th St	Arverne Blvd	2	4	4	0	3	0	1	1
Beach 56th St	Rockaway Beach Blvd	0	2	4	0	9	0	0	0
Beach 56th St	Arverne Blvd / Rockaway Fwy	1	1	2	0	4	0	0	0
Beach 54th St	Edgemere Ave / Rockaway Fwy	8	7	4	0	30	0	0	0
Beach 54th St	Arverne Blvd / Rockaway Beach Blvd	1	2	0	0	3	0	0	0
Beach 50th St	Beach Channel Dr	0	0	1	0	1	0	0	0
Beach 50th St	Rockaway Beach Blvd	0	3	0	0	3	0	0	0
Beach 49th St	Rockaway Beach Blvd	0	2	2	0	6	0	0	0
Beach 49th St	Beach Channel Dr	1	2	0	0	3	0	0	0
Beach 44th St	Edgemere Ave / Rockaway Fwy	1	0	5	0	6	0	0	0
Beach 44th St	Rockaway Beach Blvd	0	3	2	0	5	0	1	0
Beach 44th St	Beach Channel Dr	1	2	1	0	4	0	0	1
Beach 41st St	Rockaway Beach Blvd	1	2	1	0	4	0	0	0
Beach 41st St	Edgemere Ave	3	6	4	0	8	0	0	1
Beach 40th St	Beach Channel Dr	6	4	5	0	12	3	0	0
Beach 38th St	Rockaway Beach Blvd	0	1	1	0	2	0	0	0
Beach 38th St	Edgemere Ave	1	1	0	0	4	0	0	0
Beach 37th St	Beach Channel Dr	1	2	3	0	5	0	1	1
Beach 35th St	Beach Channel Dr/ Rockaway Beach Blvd	5	8	6	0	16	2	1	0
Beach 34th St	Rockaway Fwy/Seagirt Blvd	4	5	12	0	25	0	0	0
Beach 32nd St	Edgemere Ave / Seagirt Blvd	2	3	2	0	5	1	2	0

Source: NYSDOT/NYSDMV (2016-2018)

No-Action Conditions

This section establishes the baseline (No-Action) condition against which potential impacts of the project can be identified. Future year conditions were analyzed for the year 2031. No-Action traffic, pedestrian, and transit volumes were established by applying a background growth rate of 0.50 percent per year for the first five years (years 2020 to 2024) and a growth rate of 0.25 percent per year for the subsequent six years (years 2025 to 2031) in accordance with *CEQR Technical Manual* guidelines for Queens projects outside of Long Island City and Downtown Flushing. This background growth is applied to existing traffic volumes and accounts for smaller projects and general increases in travel demand. As detailed in **Chapter 2, Land Use, Zoning, and Public Policy**, several developments are being planned and are expected to be constructed and operational by the year 2031 within the study area. Eleven projects were identified in consultation with NYCDCP to be incorporated in the 2031 No-Action condition analyses, totaling approximately 9,053 residential units, 972,000 sf of retail space, 150 hotel rooms, and 236,000 sf of community facility space; these projects are detailed in **Table 12-25**.

Table 12-25 Background Development Projects

No.	Project Name/Address	Description	Projected Completion Date
1	Downtown Far Rockaway FEIS	3,131 Residential Units 259,687 sf Retail Space 85,947 sf Community Facility Space	2036**
2*	1047 Beach 21st Street	224 Residential Units 22,265 sf Retail Space 7,245 sf Community Facility	2021
3*	1725 Village Lane (Rockaway Village)	1,700 Residential Units 112,293 sf Retail Space 7.650 sf Community Facility	2026
4*	1414 Central Avenue	142 Residential Units	2021
5*	19-38 Cornaga Avenue	173 Residential Units	2021
6*	16-37 Central Avenue (Far Rockaway Library)	32,147 sf Community Facility	2021
7	Arverne East	1,650 Residential Units 150 Hotel Units 500,000 sf Commercial Retail Space	2031
8	Edgemere Commons (Peninsula Hospital Site Redevelopment)	1,791 Residential Units 72,000 sf Retail Space 77,000 sf Community Facility	2031***
9	Beach Green Dunes III (Beach 35 and 36 St and Beach Channel Drive)	138 Residential Units 5,500 sf Retail Space	2022
10	62-00 Beach Channel Drive	19,745 sf Community Facility	2021
11	Beach 67th Street Rezoning	305 Residential Units 82,795 sf Community Facility	2022

Notes:

(*) indicates projects included within the *Downtown Far Rockaway FEIS* traffic assignments.

(**) Although the project build year of 2036 is beyond the 2031 build year for the Proposed Action, this No-Action project was included because many of the component pieces would be complete by 2031, and in order to be conservative.

(***) The Edgemere Commons project includes 11 buildings, eight of which are projected to be completed by 2031. To be conservative, the No-Action analyses reflects full buildout consistent with the travel demand forecasts and assignments included in the *Peninsula Hospital Site Redevelopment FEIS*.

Traffic

Traffic Volumes

No-Action traffic volume maps for the weekday AM, midday, PM and Saturday peak hours are provided in **Figure 12-19** through **Figure 12-22**.

Figure 12-19 No-Action Traffic Volumes – AM Peak Hour

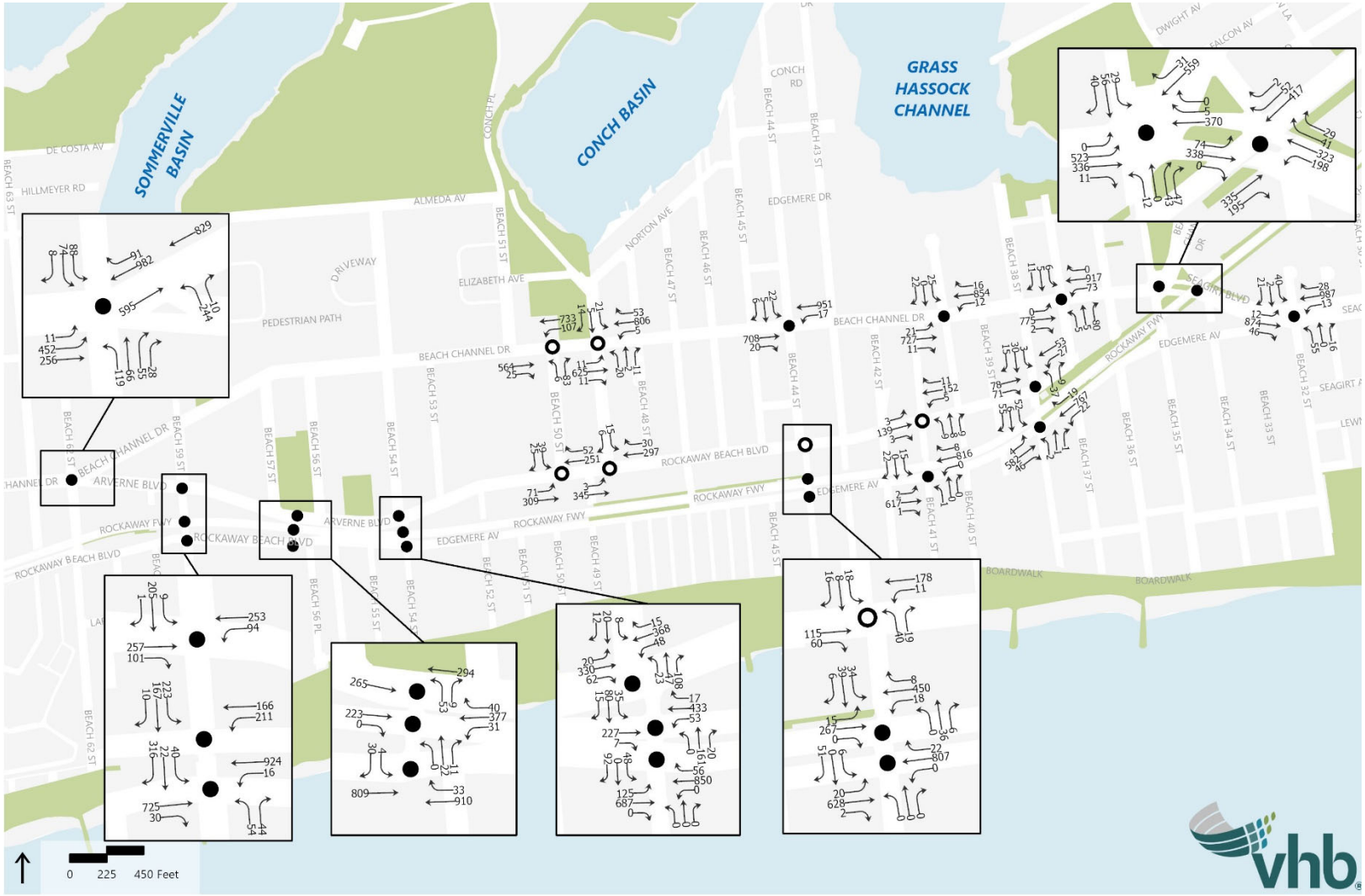


Figure 12-20 No-Action Traffic Volumes – Midday Peak Hour

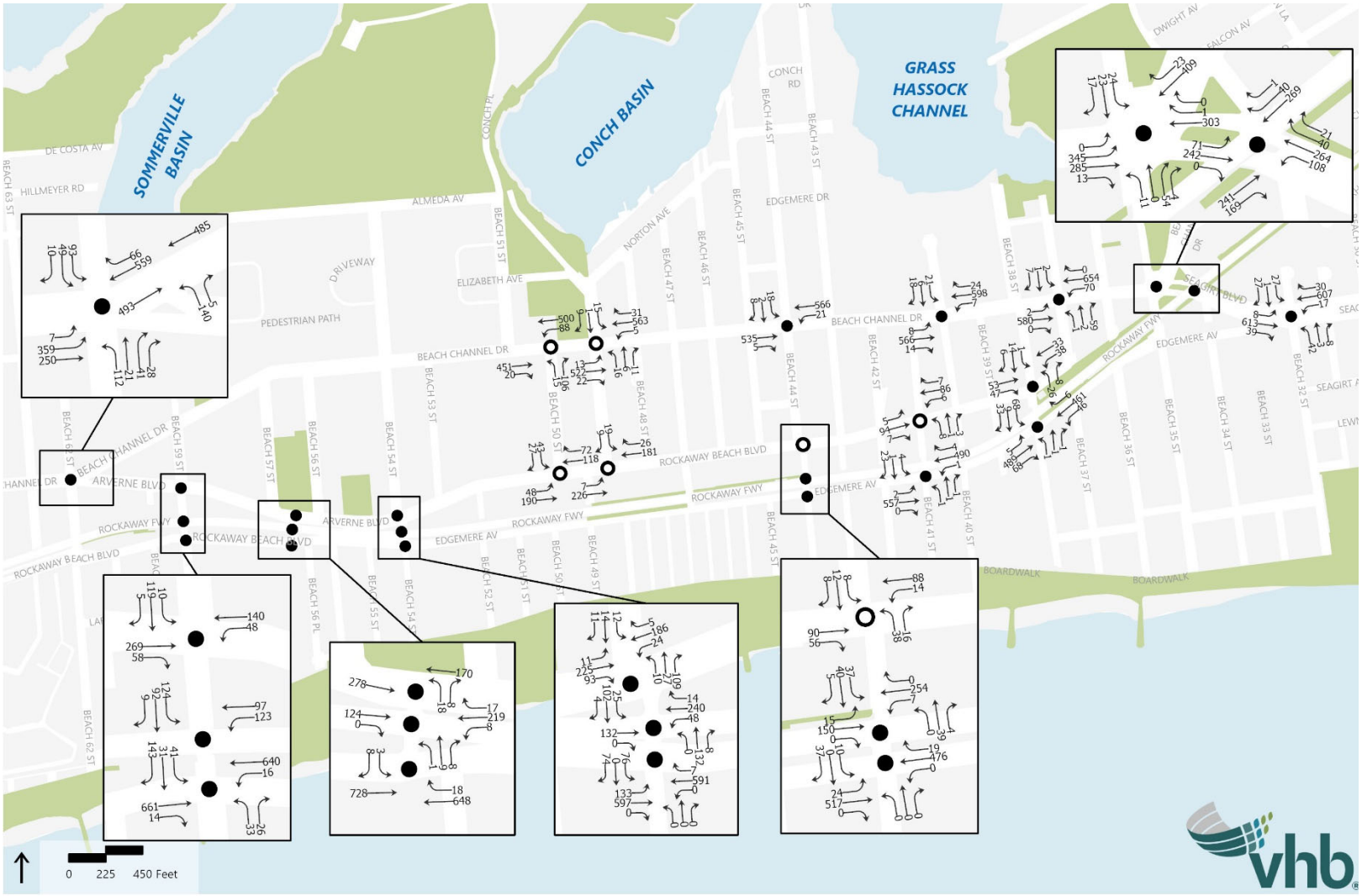


Figure 12-21 No-Action Traffic Volumes – PM Peak Hour

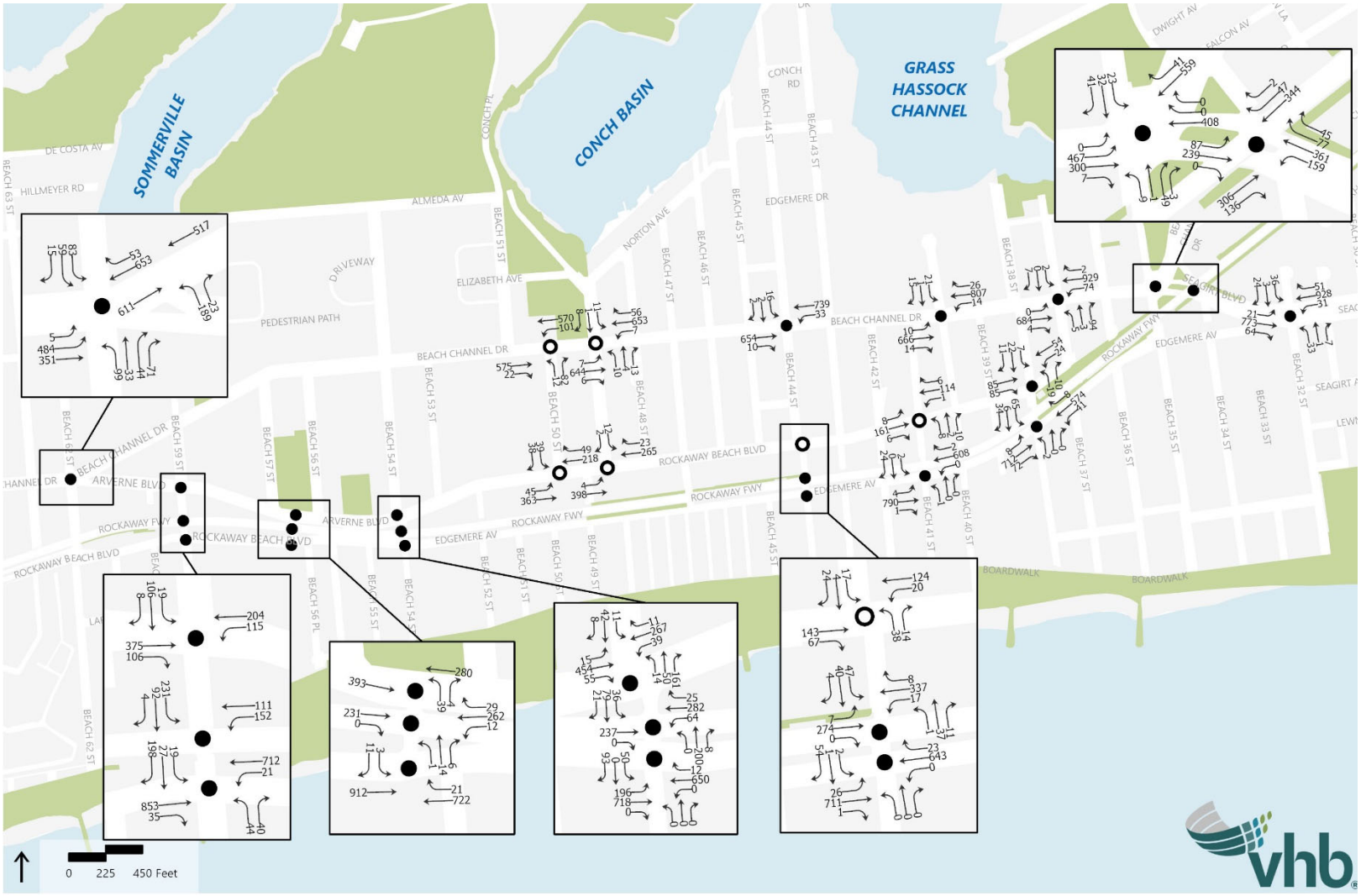
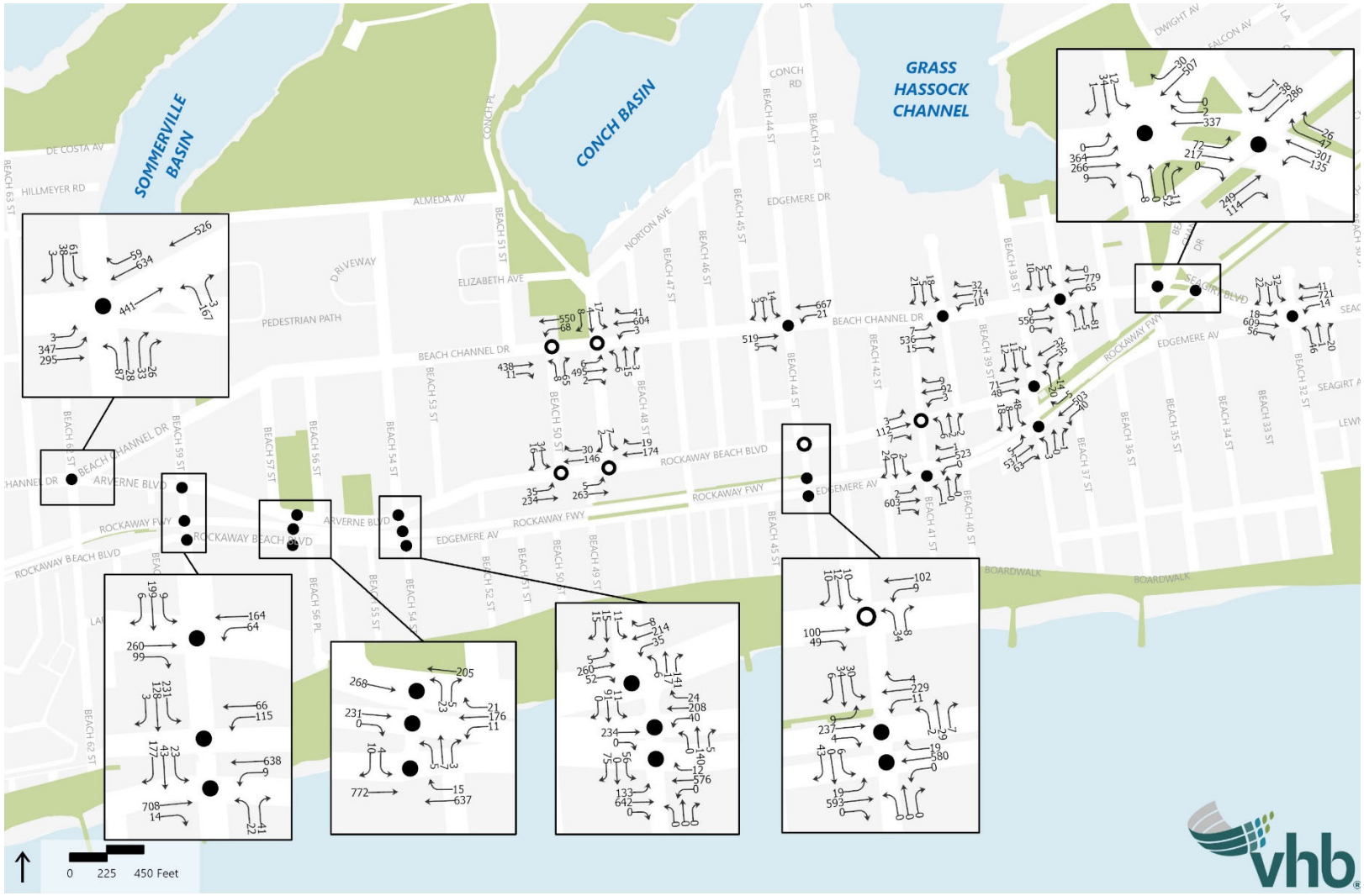


Figure 12-22 No-Action Traffic Volumes – Saturday Peak Hour



Roadway Improvements

In addition to increased traffic volumes due to background growth and trip increments associated with the No-Action projects, several physical and operational changes to the street network are reflected in the No-Action street network. These changes include mitigation/improvement measures proposed by No-Action projects – i.e., Edgemere Commons, Arverne East, and the Beach 67th Street Rezoning project – as well as improvements planned by NYCDOT associated with the Rockaway Beach Reconstruction project (SANDHW12). These changes are summarized below:

- Edgemere Commons (mitigation measures from *Peninsula Hospital Site Redevelopment EIS*):
  - A minor modification to the signal timing plan at the intersection of Seagirt Boulevard and Rockaway Freeway during the weekday midday peak hour, which changes the offset from 0 seconds to 6 seconds.
  - Elimination of on-street parking on the north curb of the westbound approach of Rockaway Beach Boulevard between Beach 53rd Street and Beach 54th Street at the intersection of Arverne Boulevard/Rockaway Beach Boulevard and Beach 54th Street.
  - At the intersection of Arverne Boulevard and Beach 59th Street, the westbound approach would be restriped to provide one 75-foot long, 11-foot-wide left turn bay, one 11-foot wide through lane, and one 8-foot-wide parking lane. The eastbound approach would also be restriped to provide an 8-foot-wide center median (150 feet long) to better align the eastbound and westbound approaches.
  - A minor modification to the signal timing plan at the intersection of Arverne Boulevard and Beach 59th Street during the PM peak hour, which reallocates one second of green time from the southbound phase to the eastbound/westbound phase
- A set of physical and operational changes were made as a result of a proposed widening and realignment of Edgemere Avenue between Beach 38th Street and Seagirt Boulevard associated with the Arverne East development project. Two of the intersections selected for analysis are within the extents of this Edgemere modification. The following are the changes anticipated at these intersections:
  - The westbound approach of Edgemere Avenue at Beach 38th Street would be restriped to provide one 11-foot-wide right turn lane and one 11-foot-wide shared left/through lane.
  - The existing right most travel lane of the eastbound approach of Seagirt Boulevard at Beach 32nd Street would be removed with closure of the street segment of Edgemere Avenue between Beach 32nd and 33rd Streets.
- Beach 67th Street Rezoning Project (mitigation measures from *Beach 67th Street Rezoning EAS*):
  - The eastbound approach of Beach Channel Drive at the intersection of Beach Channel Drive and Arverne Boulevard and Beach 62nd Street would be restriped to provide two 11-foot-wide travel lanes – one for left turns and through traffic continuing on Beach Channel Drive and the other for traffic heading to Arverne Boulevard.

- Elimination of on-street parking on the north and south curbs of Beach Channel Drive between Beach 62nd and 63rd Streets and shifting of the bike lanes to the curb lanes.
- A modification to the signal timing plan at the intersection of Beach Channel Drive and Arverne Boulevard and Beach 62nd Street that would stop eastbound through-to-Arverne Boulevard vehicles during the eastbound/westbound phase to protect eastbound bicycles and pedestrians. The eastbound through-to-Arverne Boulevard vehicles would travel protected (no conflicting bicycles or pedestrians) during the westbound-only (at Beach 62nd Street)/northbound (Arverne Boulevard) phase.

› NYCDOT (SANDHW12 project):

- Restriping of Rockaway Beach Boulevard between Beach 49th Street and Beach 54th Street to provide one 11-foot-wide travel lane in each direction with a striped curb-side parking lane.
- A minor modification to the signal timing plan at the intersections of Rockaway Freeway and Beach 54th Street and the intersection of Edgemere Avenue and Beach 54th Street, which reallocates three second of green time from the eastbound/westbound phase to the northbound/southbound phase.
- Pavement striping restoration of the eastbound approach at the intersection of Arverne Boulevard/Rockaway Beach Boulevard and Beach 54th Street.

› The traffic control at the intersection of Rockaway Beach Boulevard and Beach 44th Street would be converted from two-way stop controlled to all-way stop controlled and pedestrian crossings across all four approaches would be delineated as marked crosswalks.

Levels of Service

Based on the traffic volume increases and traffic operations changes described above, the 2031 No-Action traffic levels of service were determined for the 27 analysis locations. **Table 12-26** and **Table 12-27** provide an overview of the levels of service that are projected to characterize the No-Action "overall" intersection conditions and individual traffic movements, respectively, during the weekday AM, weekday midday, weekday PM, and Saturday peak hours. Detailed traffic levels of service are provided in **Table 12-28**.

Table 12-26 No-Action Traffic Level of Service Summary – Overall Intersections

	Existing				No-Action			
	AM	Midday	PM	SAT	AM	Midday	PM	SAT
Intersections at Overall LOS A/B/C	23	27	24	26	12	19	15	18
Intersections at Overall LOS D	4	0	3	1	3	4	3	5
Intersections at Overall LOS E	0	0	0	0	1	1	2	1
Intersections at Overall LOS F	0	0	0	0	11	3	7	3

Note: Includes 21 signalized intersections and 6 unsignalized intersections

Table 12-27 No-Action Traffic Level of Service Summary – Traffic Movements

	Existing				No-Action			
Movements	**AM**	**Midday**	**PM**	**SAT**	**AM**	**Midday**	**PM**	**SAT**
LOS A/B/C & Acceptable LOS D	102	111	106	109	81	101	93	102
Unacceptable LOS D	6	1	5	2	4	5	4	5
LOS E	5	1	2	2	6	3	7	3
LOS F	0	0	0	0	27	9	14	8
Total	113	113	113	113	118	118	118	118

Note:
Number of movements may vary between peak hours due to turn prohibitions, parking regulations, and the presence of de facto left turn movements. Number of movements vary between Existing and No-Action conditions due to improvements made under future No-Action projects.

Table 12-28 No-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Beach Channel Drive and Beach 35th Street and Seagirt Boulevard																	
Beach Channel Drive	SW	R	1.14	116.5	F	R	0.90	50.5	D	R	1.04	78.1	E	R	1.00	67.0	E
Beach Channel Drive	EB	TR	0.97	33.3	C	TR	0.62	23.4	C	TR	0.71	25.4	C	TR	0.60	21.2	C
Beach Channel Drive	EB	L	1.31	162.3	F	L	0.79	28.4	C	L	1.00	52.7	D	L	0.82	29.8	C
Seagirt Boulevard	WB	T	0.80	24.5	C	T	0.64	15.9	B	T	0.73	19.9	B	T	0.61	13.8	B
Beach 35th Street	NB	LT	0.03	20.4	C	LT	0.04	20.4	C	LT	0.02	20.2	C	LT	0.02	20.2	C
	NB	R	0.18	21.9	C	R	0.10	21.0	C	R	0.09	20.9	C	R	0.11	21.1	C
Beach 35th Street	SB	LTR	0.28	23.3	C	LTR	0.14	21.5	C	LTR	0.22	22.5	C	LTR	0.10	21.0	C
Overall Intersection		-	-	**83.9**	**F**	-	-	**30.2**	**C**	-	-	**45.5**	**D**	-	-	**36.1**	**D**
Seagirt Boulevard and Rockaway Freeway																	
Seagirt Boulevard	EB	L	0.09	16.5	B	L	0.08	15.2	B	L	0.11	17.3	B	L	0.09	14.7	B
	EB	TR	0.42	20.8	C	TR	0.28	16.1	B	TR	0.24	18.1	B	TR	0.23	15.2	B
	WB	LT	0.85	48.9	D	LT	0.61	40.4	D	LT	0.75	43.7	D	LT	0.63	40.2	D
	WB	R	0.30	34.6	C	R	0.23	34.3	C	R	0.45	38.5	D	R	0.28	35.0	C
Rockaway Freeway at Seagirt Boulevard WB	NE	T	0.37	1.1	A	T	0.29	1.6	A	T	0.38	1.7	A	T	0.32	1.7	A
	SW	TR	0.89	43.1	D	TR	0.52	25.2	C	TR	0.68	29.5	C	TR	0.57	26.2	C
Rockaway Freeway at Seagirt Boulevard EB	NE	TR	0.98	58.1	E	TR	0.75	32.4	C	TR	0.76	33.0	C	TR	0.66	28.9	C
	SW	T	1.06	53.2	D	T	0.64	13.6	B	T	0.75	13.9	B	T	0.69	13.4	B
Overall Intersection		-	-	**40.1**	**D**	-	-	**22.7**	**C**	-	-	**24.8**	**C**	-	-	**22.0**	**C**

Table 12-28 No-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Beach Channel Drive and Beach 37th Street																	
Beach Channel Drive	EB	LTR	1.13	95.0	F	LTR	0.76	22.4	C	LTR	0.85	27.4	C	LTR	0.68	19.0	B
	WB	LTR	2.72	600+	F	LTR	1.19	105.8	F	LTR	1.98	456.3	F	LTR	1.28	142.8	F
Beach 37th Street	NB	LTR	0.21	21.9	C	LTR	0.16	21.2	C	LTR	0.26	22.5	C	LTR	0.22	21.9	C
	SB	LTR	0.06	20.0	B	LTR	0.03	19.7	B	LTR	0.03	19.6	B	LTR	0.05	19.9	B
Overall Intersection		-	-	**430.5**	**F**	-	-	**67.3**	**E**	-	-	**260.9**	**F**	-	-	**87.7**	**F**
Beach Channel Drive and Beach 40th Street																	
Beach Channel Drive	EB	LTR	1.12	92.6	F	LTR	0.72	20.6	C	LTR	0.83	25.4	C	LTR	0.64	17.7	B
	WB	LTR	1.28	155.9	F	LTR	0.98	47.6	D	LTR	1.14	96.8	F	LTR	1.00	53.0	D
Beach 40th Street	SB	LTR	0.12	20.7	C	LTR	0.12	20.7	C	LTR	0.09	20.3	C	LTR	0.10	20.4	C
Overall Intersection		-	-	**122.4**	**F**	-	-	**34.4**	**C**	-	-	**63.3**	**E**	-	-	**37.6**	**D**
Beach Channel Drive and Beach 44th Street																	
Beach Channel Drive	EB	TR	1.23	135.2	F	TR	0.83	27.9	C	TR	0.92	37.1	D	TR	0.74	22.0	C
	WB	LT	1.74	361.5	F	LT	1.02	61.0	E	LT	1.28	159.0	F	LT	0.96	43.3	D
Beach 44th Street	SB	LTR	0.08	20.1	C	LTR	0.07	20.1	C	LTR	0.05	19.9	B	LTR	0.06	19.9	B
Overall Intersection		-	-	**250.1**	**F**	-	-	**45.0**	**D**	-	-	**100.8**	**F**	-	-	**33.7**	**C**

Table 12-28 No-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Beach Channel Drive and Arverne Boulevard and Beach 62nd Street																	
Beach Channel Drive at Beach 62nd Street	EB*****	LT	1.67	342.4	F	LT	0.65	28.1	C	LT	0.77	32.8	C	LT	0.60	26.0	C
	EB*****	R	0.70	42.5	D	R	0.72	43.6	D	R	0.93	65.9	E	R	0.94	66.5	E
Beach 62nd Street	NB	L	0.56	39.4	D	L	0.50	37.3	D	L	0.45	35.6	D	L	0.40	34.4	C
	NB	TR	0.58	38.7	D	TR	0.38	33.5	C	TR	0.58	39.0	D	TR	0.33	32.0	C
	SB	LTR	1.11	133.4	F	LTR	0.80	59.1	E	LTR	1.00	99.6	F	LTR	0.50	37.9	D
Beach Channel Drive at WB Arverne Blvd	WB	T	1.27	161.6	F	T	0.79	32.7	C	T	0.73	29.6	C	T	0.75	30.1	C
Arverne Boulevard	NW	LR	0.78	47.8	D	LR	0.51	36.0	D	LR	0.74	45.8	D	LR	0.57	37.4	D
Overall Intersection		-	-	**151.9**	**F**	-	-	**36.7**	**D**	-	-	**45.6**	**D**	-	-	**37.9**	**D**
Rockaway Beach Boulevard and Beach 38th Street																	
Rockaway Beach Blvd	EB	TR	0.25	9.9	A	TR	0.17	9.3	A	TR	0.26	9.9	A	TR	0.20	9.5	A
	WB	LT	0.16	9.2	A	LT	0.14	9.0	A	LT	0.13	8.9	A	LT	0.13	8.9	A
Beach 38th Street	NB	LR	0.10	13.5	B	LR	0.09	13.4	B	LR	0.06	13.2	B	LR	0.08	13.3	B
	SB	LTR	0.11	13.6	B	LTR	0.05	13.1	B	LTR	0.08	13.3	B	LTR	0.05	13.1	B
Overall Intersection		-	-	**10.8**	**B**	-	-	**10.2**	**B**	-	-	**10.4**	**B**	-	-	**10.3**	**B**

Table 12-28 No-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Arverne Boulevard / Rockaway Beach Boulevard and Beach 54th Street																	
Arverne Boulevard	EB	L	0.11	17.4	B	L	0.05	16.2	B	L	0.07	16.6	B	L	0.02	15.8	B
	EB	TR	0.78	32.5	C	TR	0.61	25.4	C	TR	0.97	54.6	D	TR	0.59	24.7	C
Rockaway Beach Boulevard	WB	LTR	1.03	73.7	E	LTR	0.42	20.9	C	LTR	0.97	65.5	E	LTR	0.52	23.1	C
Beach 54th Street	NB	LTR	0.41	7.5	A	LTR	0.38	8.3	A	LTR	0.58	16.2	B	LTR	0.22	5.0	A
	SB	LTR	0.12	22.8	C	LTR	0.10	22.5	C	LTR	0.15	23.1	C	LTR	0.13	23.0	C
Overall Intersection		-	-	**44.3**	**D**	-	-	**20.1**	**C**	-	-	**47.4**	**D**	-	-	**20.1**	**C**
Arverne Boulevard and Beach 56th Street (West)																	
Arverne Boulevard	EB	T	0.33	10.8	B	T	0.33	10.8	B	T	0.43	12.0	B	T	0.33	10.8	B
	WB	T	0.32	10.6	B	T	0.22	9.7	A	T	0.37	11.3	B	T	0.25	9.9	A
Beach 56th Street	NB	LR	0.19	20.2	C	LR	0.08	19.5	B	LR	0.14	20.0	B	LR	0.08	22.9	C
Overall Intersection		-	-	**11.7**	**B**	-	-	**10.9**	**B**	-	-	**12.2**	**B**	-	-	**11.1**	**B**
Arverne Boulevard and Beach 59th Street																	
Arverne Boulevard	EB	TR	0.58	13.4	B	TR	0.47	11.4	B	TR	0.64	13.8	B	TR	0.53	12.2	B
	WB***	L	0.30	10.3	B	L	0.13	8.2	A	L	0.43	12.5	B	L	0.19	8.8	A
	WB***	T	0.36	9.9	A	T	0.24	8.7	A	T	0.32	9.0	A	T	0.25	8.8	A
Beach 59th Street	SB	LT	0.56	21.7	C	LT	0.34	17.6	B	LT	0.36	18.8	B	LT	0.53	21.0	C
	SB	R	0.00	14.0	B	R	0.02	14.3	B	R	0.03	15.1	B	R	0.03	14.3	B
Overall Intersection		-	-	**14.2**	**B**	-	-	**11.9**	**B**	-	-	**13.3**	**B**	-	-	**13.6**	**B**

Table 12-28 No-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Rockaway Freeway and Beach 44th Street																	
Rockaway Freeway	EB	L	0.11	38.1	D	L	0.11	41.8	D	L	0.05	38.5	D	L	0.07	41.6	D
	EB	TR	0.37	10.7	B	TR	0.21	10.3	B	TR	0.36	9.2	A	TR	0.32	6.9	A
	WB	L	0.13	37.5	D	L	0.05	36.3	D	L	0.12	37.3	D	L	0.08	36.7	D
	WB	TR	0.56	21.2	C	TR	0.34	17.4	B	TR	0.45	19.1	B	TR	0.31	17.0	B
Beach 44th Street	NB	LTR	0.11	39.5	D	LTR	0.12	41.8	D	LTR	0.13	40.2	D	LTR	0.09	40.5	D
	SB	LTR	0.27	27.2	C	LTR	0.25	26.8	C	LTR	0.31	28.0	C	LTR	0.22	26.2	C
Overall Intersection		-	-	**20.2**	**C**	-	-	**19.9**	**B**	-	-	**19.0**	**B**	-	-	**16.5**	**B**
Rockaway Freeway and Beach 54th Street																	
Rockaway Freeway	EB	TR	0.37	3.3	A	TR	0.21	3.2	A	TR	0.33	2.3	A	TR	0.32	2.0	A
	WB	L	0.39	56.1	E	L	0.33	54.9	D	L	0.37	56.0	E	L	0.28	54.8	D
	WB	TR	0.44	20.1	C	TR	0.30	17.4	B	TR	0.35	18.5	B	TR	0.25	17.0	B
Beach 54th Street	NB	LTR	0.36	41.2	D	LTR	0.28	40.2	D	LTR	0.40	41.8	D	LTR	0.28	40.4	D
	SB	LTR	0.31	36.3	D	LTR	0.30	41.2	D	LTR	0.31	30.0	C	LTR	0.20	37.8	D
Overall Intersection		-	-	**24.3**	**C**	-	-	**26.3**	**C**	-	-	**23.9**	**C**	-	-	**22.6**	**C**
Rockaway Freeway and Beach 56th Street																	
Rockaway Freeway	EB	TR	0.35	22.7	C	TR	0.18	21.2	C	TR	0.36	22.6	C	TR	0.36	22.3	C
	WB	L	0.22	22.0	C	L	0.06	20.1	C	L	0.08	19.9	B	L	0.08	21.3	C
	WB	TR	0.48	4.0	A	TR	0.26	2.4	A	TR	0.29	2.6	A	TR	0.21	2.3	A
Beach 56th Street	NB	LTR	0.07	36.9	D	LTR	0.04	37.3	D	LTR	0.05	36.7	D	LTR	0.04	37.4	D
Overall Intersection		-	-	**12.2**	**B**	-	-	**10.1**	**B**	-	-	**13.2**	**B**	-	-	**14.4**	**B**

Table 12-28 No-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Rockaway Freeway and Beach 59th Street																	
Rockaway Freeway	WB	L	0.93	71.3	E	L	0.69	50.6	D	L	0.90	76.3	E	L	0.66	48.3	D
	WB	T	0.16	22.0	C	T	0.11	28.3	C	T	0.12	24.6	C	T	0.07	26.8	C
Beach 59th Street	SB	LT	1.04	92.8	F	LT	0.63	37.2	D	LT	1.00	77.7	E	LT	1.03	87.3	F
	SB	R	0.04	27.7	C	R	0.03	26.1	C	R	0.01	25.9	C	R	0.01	25.8	C
Overall Intersection		-	-	**70.1**	**E**	-	-	**38.7**	**D**	-	-	**67.0**	**E**	-	-	**71.2**	**E**
Edgemere Avenue and Beach 38th Street																	
Edgemere Avenue	EB	LTR	1.34	185.5	F	LTR	0.80	37.0	D	LTR	1.28	156.2	F	LTR	0.83	34.9	C
	WB****	LT	1.55	283.4	F	LT	1.03	73.4	E	LT	1.26	158.7	F	LT	1.02	69.0	E
	WB****	R	0.04	16.0	B	R	0.01	15.7	B	R	0.02	15.8	B	R	0.01	15.7	B
Beach 38th Street	NB	LTR	0.01	21.5	C	LTR	0.01	21.4	C	LTR	0.01	21.4	C	LTR	0.01	21.5	C
	SB	LTR	0.20	17.0	B	LTR	0.19	16.9	B	LTR	0.18	16.8	B	LTR	0.12	16.2	B
Overall Intersection		-	-	**221.6**	**F**	-	-	**50.6**	**D**	-	-	**145.5**	**F**	-	-	**48.5**	**D**
Edgemere Avenue and Beach 41st Street																	
Edgemere Avenue	EB	LTR	1.15	96.5	F	LTR	0.74	21.0	C	LTR	1.02	38.9	D	LTR	0.76	23.0	C
	WB	LTR	1.28	149.4	F	LTR	0.65	21.3	C	LTR	0.78	22.9	C	LTR	0.74	22.4	C
Beach 41st Street	NB	LTR	0.00	23.5	C	LTR	0.01	23.5	C	LTR	0.00	23.5	C	LTR	0.00	23.5	C
	SB	LTR	0.07	17.5	B	LTR	0.06	17.4	B	LTR	0.05	17.3	B	LTR	0.05	17.3	B
Overall Intersection		-	-	**125.0**	**F**	-	-	**21.0**	**C**	-	-	**31.8**	**C**	-	-	**22.6**	**C**

Table 12-28 No-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Edgemere Avenue and Beach 44th Street																	
Edgemere Avenue	EB	LTR	2.23	579.1	F	LTR	0.78	20.6	C	LTR	1.60	294.9	F	LTR	0.93	24.5	C
	WB	LTR	1.20	114.8	F	LTR	0.67	27.9	C	LTR	0.86	32.6	C	LTR	0.76	29.3	C
Beach 44th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-
	SB	LTR	0.11	1.7	A	LTR	0.08	1.9	A	LTR	0.11	1.5	A	LTR	0.10	5.2	A
Overall Intersection		-	-	**301.5**	**F**	-	-	**23.1**	**C**	-	-	**163.8**	**F**	-	-	**25.9**	**C**
Edgemere Avenue and Beach 54th Street																	
Edgemere Avenue	EB	LTR	3+	600+	F	LTR	3+	600+	F	LTR	3+	600+	F	LTR	3+	600+	F
	WB	LTR	1.33	173.9	F	LTR	0.79	29.6	C	LTR	0.96	41.4	D	LTR	0.80	27.5	C
Beach 54th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-
	SB	LTR	0.24	2.4	A	LTR	0.27	1.5	A	LTR	0.25	2.5	A	LTR	0.23	1.4	A
Overall Intersection		-	-	**600+**	**F**	-	-	**600+**	**F**	-	-	**600+**	**F**	-	-	**600+**	**F**
Rockaway Beach Boulevard and Beach 56th Street (West)																	
Rockaway Beach Boulevard	EB	T	1.31	165.5	F	T	1.15	94.3	F	T	1.32	169.0	F	T	1.02	37.2	D
	WB	TR	1.61	302.2	F	TR	1.10	84.0	F	TR	1.12	87.4	F	TR	0.98	46.5	D
Beach 56th Street	SB	LR	0.05	1.6	A	LR	0.02	4.7	A	LR	0.02	2.6	A	LR	0.02	2.8	A
Overall Intersection		-	-	**235.1**	**F**	-	-	**88.7**	**F**	-	-	**131.4**	**F**	-	-	**41.2**	**D**

Table 12-28 No-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Rockaway Beach Boulevard and Beach 59th Street**																	
Rockaway Beach Boulevard	EB	TR	1.33	186.5	F	TR	1.08	88.0	F	TR	1.37	201.2	F	TR	1.09	91.2	F
	WB	LT	2.84	600+	F	LT	2.45	600+	F	LT	3+	600+	F	LT	1.96	460.4	F
Beach 59th Street	NB	LTR	0.64	48.9	D	LTR	0.29	31.5	C	LTR	0.40	34.2	C	LTR	0.29	31.4	C
	SB	LT	0.14	4.2	A	LT	0.15	3.4	A	LT	0.08	5.2	A	LT	0.11	2.7	A
	SB	R	1.03	75.4	E	R	0.49	39.1	D	R	0.56	42.7	D	R	0.55	36.8	D
Overall Intersection		-	-	**426.7**	**F**	-	-	**321.8**	**F**	-	-	**457.4**	**F**	-	-	**224.0**	**F**
Seagirt Boulevard and Beach 32nd Street																	
Seagirt Boulevard	EB	LTR	0.50	17.8	B	LTR	0.32	14.1	B	LTR	0.42	15.7	B	LTR	0.35	14.7	B
	WB	LTR	0.59	17.8	B	LTR	0.38	15.0	B	LTR	0.54	17.0	B	LTR	0.38	14.9	B
Beach 32nd Street	NB	LTR	0.21	18.7	B	LTR	0.13	17.7	B	LTR	0.08	17.1	B	LTR	0.17	18.1	B
	SB	LTR	0.17	18.2	B	LTR	0.13	17.7	B	LTR	0.14	17.7	B	LTR	0.14	17.7	B
Overall Intersection		-	-	**17.8**	**B**	-	-	**14.8**	**B**	-	-	**16.5**	**B**	-	-	**15.1**	**B**
Beach Channel Drive and Beach 49th Street (Unsignalized)																	
Beach Channel Drive	EB	LTR	-	0.9	A	LTR	-	0.6	A	LTR	-	0.4	A	LTR	-	0.3	A
	WB	LTR	-	0.3	A	LTR	-	0.2	A	LTR	-	0.3	A	LTR	-	0.1	A
Beach 49th Street	NB	L	-	600+	F	L	-	150.1	F	L	-	209.1	F	L	-	84.0	F
	NB	TR	-	39.9	E	TR	-	34.5	D	TR	-	33.1	D	TR	-	51.3	F
	SB	L	-	600+	F	L	-	91.2	F	L	-	140.9	F	L	-	76.5	F
	SB	TR	-	103.0	F	TR	-	17.3	C	TR	-	20.3	C	TR	-	24.6	C
Overall Intersection		-	-	**25.3**	**D**	-	-	**4.5**	**A**	-	-	**3.8**	**A**	-	-	**3.1**	**A**

Table 12-28 No-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Beach Channel Drive and Beach 50th Street (Unsignalized)																	
Beach Channel Drive	EB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A
	WB	LT	-	5.2	A	LT	-	4.4	A	LT	-	4.6	A	LT	-	2.8	A
Beach 50th Street	NB	LR	-	28.2	D	LR	-	58.1	F	LR	-	47.2	E	LR	-	34.4	D
Overall Intersection		-	-	**4.8**	**A**	-	-	**8.8**	**A**	-	-	**6.0**	**A**	-	-	**3.9**	**A**
Rockaway Beach Boulevard and Beach 50th Street (Unsignalized)																	
Rockaway Beach Boulevard	EB	LT	-	2.6	A	LT	-	2.3	A	LT	-	1.5	A	LT	-	1.4	A
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A
Beach 50th Street	SB	LR	-	22.8	C	LR	-	15.7	C	LR	-	18.1	C	LR	-	13.8	B
Overall Intersection		-	-	**3.4**	**A**	-	-	**3.4**	**A**	-	-	**2.8**	**A**	-	-	**2.2**	**A**
Rockaway Beach Boulevard and Beach 49th Street (Unsignalized)																	
Rockaway Beach Boulevard	EB	LT	-	0.1	A	LT	-	0.4	A	LT	-	0.1	A	LT	-	0.2	A
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A
Beach 49th Street	SB	L	-	17.5	C	L	-	14.3	B	L	-	18.7	C	L	-	13.8	B
	SB	R	-	12.5	B	R	-	12.2	B	R	-	10.8	B	R	-	10.0	A
Overall Intersection		-	-	**0.6**	**A**	-	-	**1.0**	**A**	-	-	**0.4**	**A**	-	-	**0.3**	**A**

Table 12-28 No-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Rockaway Beach Boulevard and Beach 44th Street (Unsignalized)																	
Rockaway Beach Boulevard	EB	TR	-	8.9	A	TR	-	8.4	A	TR	-	9.1	A	TR	-	8.6	A
	WB	LT	-	9.5	A	LT	-	8.4	A	LT	-	8.9	A	LT	-	8.1	A
Beach 44th Street	NB	LTR	-	8.5	A	LTR	-	8.2	A	LTR	-	8.4	A	LTR	-	8.0	B
	SB	LTR	-	8.3	A	LTR	-	7.9	A	LTR	-	8.1	A	LTR	-	7.8	B
Overall Intersection		-	-	**9.0**	**A**	-	-	**8.3**	**A**	-	-	**8.8**	**A**	-	-	**8.3**	**A**
Rockaway Beach Boulevard and Beach 41st Street (Unsignalized)																	
Rockaway Beach Boulevard	EB	LTR	-	0.2	A	LTR	-	0.4	A	LTR	-	0.4	A	LTR	-	0.2	A
	WB	LTR	-	0.3	A	LTR	-	0.5	A	LTR	-	0.1	A	LTR	-	0.3	A
Beach 41st Street	NB	LTR	-	10.8	B	LTR	-	10.0	A	LTR	-	10.4	B	LTR	-	10.2	B
Overall Intersection		-	-	**1.1**	**A**	-	-	**1.0**	**A**	-	-	**0.8**	**A**	-	-	**0.7**	**A**

[1] Control delay is measured in seconds per vehicle.

[2] Overall intersection v/c ratio is the critical lane groups' v/c ratio.

*Northbound approaches to Edgemere Avenue at Beach 44th Street and Beach 54th Street have zero volume in field observed data.

**Synchro results used instead of HCM 2000 due to close adjacency of intersections

(***) As a result of the Peninsula Hospital EIS Mitigation measures, the WB approach of Arverne Blvd at Beach 59th St would be restriped beginning in the No-Action to provide one 11-foot-wide L-turn bay (75 feet long) and one 11-foot-wide Thru lane.

(****) As a result of the Arverne East With-Action scenario, the WB approach of Edgemere Ave at Beach 38th St would be restriped beginning in the No-Action to provide one 11-foot-wide R-turn lane and one 11 foot wide Left-Thru lane.

(*****) As a result of the Beach 67th Street Rezoning EAS Mitigation measure, the EB approach of Beach Channel Drive would be restriped beginning in the No-Action to provide one 11-foot-wide Left-Thru lane (Thru to Beach Channel Drive) and one 11-foot-wide R-turn lane (to Arverne Boulevard).

In general, the increase in traffic volumes due to background growth and the No-Action projects is anticipated to increase delays throughout the study area. The summary overview of No-Action conditions indicates that, of the 27 intersections analyzed:

- In the weekday AM peak hour, one of the intersections analyzed would be expected to operate at overall LOS E, and 11 would operate at overall LOS F. "Overall" LOS E or F means that serious congestion exists – either one specific major traffic movement has severe delays or two or more of the specific traffic movements at the intersection are at LOS E or F with significant delays (the overall intersection level of service is a weighted average of all individual traffic movements). Thirty-seven individual traffic movements out of 118 movements analyzed would be expected to operate at unacceptable LOS D, LOS E, or LOS F (e.g., left turns from one street to another, through traffic on one street passing through the intersection, etc.).
- In the weekday midday peak hour, one of the intersections analyzed would be expected to operate at overall LOS E, and three would operate at overall LOS F. In addition, 17 individual traffic movements would be expected to operate at unacceptable LOS D, LOS E, or LOS F.
- In the weekday PM peak hour, two of the intersections analyzed would be expected to operate at overall LOS E, and seven would operate at overall LOS F. In addition, 25 individual traffic movements would be expected to operate at unacceptable LOS D, LOS E, or LOS F.
- In the Saturday peak hour, one of the intersections analyzed would be expected to operate at overall LOS E, and three would operate at overall LOS F. In addition, 16 individual traffic movements would be expected to operate at unacceptable LOS D, LOS E, or LOS F.

Traffic movements that would be expected to operate at unacceptable levels of service are listed below.

- Beach Channel Drive and Beach 35th Street and Seagirt Boulevard
  - Southwestbound Beach Channel Drive approach (weekday AM, weekday midday, weekday PM, and Saturday)
  - Eastbound Beach Chanel Drive left turn lane (weekday AM and weekday PM)
- Seagirt Boulevard and Rockaway Freeway
  - Westbound Seagirt Boulevard shared left/through lane group (weekday AM)
  - Northeastbound Rockaway Freeway approach upstream of eastbound Seagirt Boulevard (weekday AM)
  - Southwestbound Rockaway Freeway approach upstream of eastbound Seagirt Boulevard (weekday AM)
- Beach Channel Drive and Beach 37th Street
  - Eastbound Beach Channel Drive approach (weekday AM)
  - Westbound Beach Channel Drive approach (weekday AM, weekday midday, weekday PM, and Saturday)
- Beach Channel Drive and Beach 40th Street
  - Eastbound Beach Channel Drive approach (weekday AM)

- Westbound Beach Channel Drive approach (weekday AM, weekday midday, weekday PM, and Saturday)

› Beach Channel Drive and Beach 44th Street
  - Eastbound Beach Channel Drive approach (weekday AM)
  - Westbound Beach Channel Drive approach (weekday AM, weekday midday, and weekday PM)

› Beach Channel Drive and Arverne Boulevard and Beach 62nd Street
  - Eastbound Beach Channel Drive shared left/through lane upstream of Beach 62nd Street approach (weekday AM)
  - Eastbound Beach Channel Drive right turn lane upstream of Beach 62nd Street approach (weekday PM and Saturday)
  - Southbound Beach 62nd Street approach (weekday AM, weekday midday, and weekday PM)
  - Westbound Beach Channel Drive upstream of Arverne Boulevard approach (weekday AM)
  - Northwestbound Arverne Boulevard approach (weekday AM and weekday PM)

› Arverne Boulevard/Rockaway Beach Boulevard and Beach 54th Street
  - Eastbound Arverne Boulevard shared through/right lane (weekday PM)
  - Westbound Rockway Beach Boulevard approach (weekday AM and weekday PM)

› Rockaway Freeway and Beach 54th Street
  - Westbound Rockaway Freeway left turn lane (weekday AM, weekday midday, weekday PM, and Saturday)

› Rockaway Freeway and Beach 59th Street
  - Westbound Rockaway Freeway left turn lane (weekday AM, weekday midday, weekday PM, and Saturday)
  - Southbound Beach 59th Street shared left/through lane (weekday AM, weekday PM, and Saturday)

› Edgemere Avenue and Beach 38th Street
  - Eastbound Edgemere Avenue approach (weekday AM and weekday PM)
  - Westbound Edgemere Avenue shared left/through lane (weekday AM, weekday midday, weekday PM, and Saturday)

› Edgemere Avenue and Beach 41st Street
  - Eastbound Edgemere Avenue approach (weekday AM)
  - Westbound Edgemere Avenue approach (weekday AM)

› Edgemere Avenue and Beach 44th Street
  - Eastbound Edgemere Avenue approach (weekday AM and weekday PM)
  - Westbound Edgemere Avenue approach (weekday AM)

› Edgemere Avenue and Beach 54th Street
  - Eastbound Edgemere Avenue approach (weekday AM, weekday midday, weekday PM, and Saturday)

- Westbound Edgemere Avenue approach (weekday AM)

› Rockaway Beach Boulevard and Beach 56th Street (West)
  - Eastbound Rockaway Beach Boulevard approach (weekday AM, weekday midday, and weekday PM)
  - Westbound Rockaway Beach Boulevard approach (weekday AM, weekday midday, weekday PM, and Saturday)

› Rockaway Beach Boulevard and Beach 59th Street
  - Eastbound Rockaway Beach Boulevard approach (weekday AM, weekday midday, weekday PM, and Saturday)
  - Westbound Rockaway Beach Boulevard approach (weekday AM, weekday midday, weekday PM, and Saturday)
  - Northbound Beach 59th Street approach (weekday AM)
  - Southbound Beach 59th Street right turn lane (weekday AM)

› Beach Channel Drive and Beach 49th Street (unsignalized)
  - Northbound Beach 49th Street left lane (weekday AM, weekday midday, weekday PM, and Saturday)
  - Northbound Beach 49th Street through/right lane (weekday AM, weekday midday, weekday PM, and Saturday)
  - Southbound Beach 49th Street left lane (weekday AM, weekday midday, weekday PM, and Saturday)
  - Southbound Beach 49th Street through/right lane (weekday AM)

› Beach Channel Drive and Beach 50th Street (unsignalized)
  - Northbound Beach 50th Street left/right lane (weekday midday, weekday PM, and Saturday)

Parking

Between 2021 and 2031 demand for on-street parking is expected to increase due to background growth and demand generated by other development projects. Within the parking study area, two No-Action projects -- Peninsula Hospital Site Redevelopment and Beach Green Dunes III – are anticipated to not be able to fully accommodate their parking demand in at least one time period. The Arverne East development is also located within the parking study area; however, that project is anticipated to provide sufficient off-street parking supply to meet its own needs during all periods analyzed. Therefore, the projected No-Action on-street parking demand for the Peninsula Hospital Site Redevelopment and Beach Green Dunes III are reflected in the No-Action on-street parking analysis. In terms of changes to No-Action on-street parking supply, the Peninsula Hospital Site Redevelopment project is expected to introduce 71 new on-street parking spaces and the Arverne East project would provide 350 new on-street parking spaces. These changes in the No-Action on-street parking supply are also reflected in the No-Action analysis.

Table 12-29 summarizes the increase in weekday and Saturday peak period on-street parking demand anticipated under the future No-Action condition as well as additional capacity associated with No-Action developments. As shown in **Table 12-29**, approximately

694 on-street parking spaces would be available in the weekday AM peak period, 943 in the weekday midday peak period, 930 in the weekday PM peak period, 318 in the weekday overnight period, and 618 in the Saturday peak period in the future No-Action condition.

Table 12-29 No-Action On-Street Parking Utilization

	Weekday AM	Weekday Midday	Weekday PM	Weekday Overnight	Saturday
Existing Availability	**476**	**669**	**662**	**395**	**660**
No-Action Demand - Background Growth[1]	55	47	48	58	48
No-Action Demand - Other Developments[2]	148	100	105	440	415
Total No-Action Incremental Demand	**203**	**147**	**153**	**498**	**463**
Change in No-Action Capacity[3]	**421**	**421**	**421**	**421**	**421**
No-Action Availability	**694**	**943**	**930**	**318**	**618**

Notes:
[1] Reflects annual background growth rate of 0.5 percent per year for the first five years (2021 to 2026) and 0.25 percent thereafter (2026–2031)
[2] No-Action projects included are Peninsula Hospital Site Redevelopment and Beach Green Dunes III. Arverne East provides sufficient off-street parking for their With-Action demand, so no on-street parking demand is assumed.
[3] Reflects new on-street parking spaces expected to be introduced by the Peninsula Hospital Site Redevelopment and Arverne East projects (71 and 350 spaces, respectively).

Buses

Bus service demand is expected to increase in the future as a result of background growth as well as demand from No-Action development. As shown in **Table 12-30**, existing bus trip frequencies would not be sufficient to accommodate the projected demand under 2031 No-Action conditions through the maximum load points of the eastbound and westbound Q22 bus routes in the weekday AM and PM peak hours.

Based on a loading guideline of 54 passengers per standard bus, one additional standard bus per hour would be needed to accommodate projected No-Action weekday AM and PM demand in both the eastbound and westbound directions. Per CEQR guidelines, service changes should be assumed such that future No-Action demand would not exceed capacity on any given route. Therefore, it is anticipated that, in the No-Action condition, the MTA would increase service frequency of the Q22 to address these modest shortfalls.

Overall, under No-Action weekday AM peak hour conditions, the Q22 bus route would be able to accommodate 29 additional passengers in the eastbound direction and nine additional passengers in the westbound direction. Under No-Action weekday PM peak hour conditions, the Q22 route would be able to accommodate 21 and 23 additional passengers, in the eastbound and westbound directions, respectively.

Table 12-30 No-Action Bus Line-Haul Capacity – Q22 Bus

				No-Action at Current Bus Frequency Levels			No-Action with Expected Service Adjustments		
Peak Hour	Direction	Maximum Load Point	Peak Hour Passengers[1]	Peak Hour Buses[2]	Average Passengers per Bus	Available Capacity[3]	Peak Hour Buses[4]	Average Passengers per Bus	Available Capacity[3,4]
AM	EB	Beach Channel Dr & Beach 35th St	349	6	58	-25	7	50	29
	WB	Rockaway Beach Bl & Cross Bay Pkwy	531	9	59	-45	10	53	9
PM	EB	Rockaway Beach Bl & Beach 88th St	411	7	59	-33	8	51	21
	WB	Beach Channel Drive & Beach 47th St	409	7	58	-31	8	51	23

Notes: Methodology based on *2020 CEQR Technical Manual* guidelines

[1] No-Action passenger volumes are based on 0.5 percent per year background growth for the first 5 years and 0.25 percent per year background growth for subsequent years for the 2019 through 2031 period plus demand from No-Action developments.

[2] Based on most currently available data from NYCT (May 2019)

[3] Available capacity based on MTA loading guidelines of 54 passengers per 40-foot standard bus

[4] Assumes service levels adjusted to address capacity shortfalls under No-Action conditions.

EB=Eastbound; WB=Westbound

Subways

Subway Station Elements

Under No-Action conditions, demand at the Beach 44th Street-Frank Avenue Station is expected to increase modestly as a result of general background growth and demand associated with No-Action developments. No change to existing pedestrian circulation elements is planned at this station.

The levels of service for stairs and fare control areas analyzed under No-Action conditions are shown in **Table 12-31** and **Table 12-32,** respectively. As shown, all station elements analyzed are expected to operate at acceptable LOS A during both the weekday AM and PM peak hours.

Table 12-31 No-Action Subway Station Level of Service – Stairs

Peak Hour	Stair	Effective Width (ft)	Pedestrian Volume Up (15-min)	Pedestrian Volume Down (15-min)	Friction Factor	Surging Factor (Up/Down)	v/c Ratio	LOS
AM	S3/M3	7.3	35	3	0.9	1.0/0.80	0.04	A
	S1/M3	7.3	5	2	0.9	1.0/0.80	0.01	A
	P3/P5	7.3	23	1	1.0	1.0/0.75	0.02	A
	P7/P9	7.3	17	1	0.9	1.0/0.75	0.02	A
	P4/P6	7.3	0	3	1.0	1.0/0.75	0.00	A
	P8/P10	7.2	2	3	0.9	1.0/0.75	0.01	A
PM	S3/M3	7.3	7	43	0.9	1.0/0.80	0.06	A
	S1/M3	7.3	0	5	1.0	1.0/0.80	0.01	A
	P3/P5	7.3	6	4	0.9	1.0/0.75	0.01	A
	P7/P9	7.3	5	0	1.0	1.0/0.75	0.00	A
	P4/P6	7.3	1	28	1.0	1.0/0.75	0.04	A
	P8/P10	7.2	0	24	1.0	1.0/0.75	0.03	A

Note: Methodology based on *2020 CEQR Technical Manual* guidelines

Table 12-32 No-Action Subway Station Level of Service – Fare Control Area

Peak Hour	Control Elements	Entry Volume (15-min)	Exit Volume (15-min)	Surging Factor[1]	Friction Factor (In/Out)	v/c Ratio	LOS
AM	3 two-way turnstiles	42	8	0.8	0.9	0.04	A
PM	3 two-way turnstiles	12	56	0.8	0.9	0.05	A

Note: Methodology based on *2020 CEQR Technical Manual* guidelines

[1] Surging factor only applies to exiting volumes. The surge factor for entry volumes is 1.0.

Subway Line-Haul

Under No-Action conditions, demand on the A local subway is expected to increase modestly as a result of general background growth and demand associated with No-Action developments.

Table 12-33 summarizes projected No-Action line-haul conditions in the peak direction at the maximum load points for the A subway route analyzed for the weekday AM and PM peak hours. As shown in **Table 12-33**, the A local train would operate below capacity through its respective maximum load point during the weekday AM and PM peak hours.

Table 12-33 No-Action Subway Line-Haul Capacity

Peak Hour	Route (Direction)	Maximum Load Point	Average Trains Per Hour[1]	Average Cars Per Hour[1]	Average Passengers[2]		Guideline Passengers per Car[3]	v/c Ratio[4]
					Per Hour	Per Car		
AM	A local (NB)	Nostrand Ave	16.0	128	18,621	145.5	175	0.83
PM	A local (SB)	Jay St-MetroTech	15.5	124	18,722	151.0	175	0.86

Notes: Methodology based on *2020 CEQR Technical Manual* guidelines

[1] Based on 2017-2018 train throughput data from NYCT.

[2] No-Action passenger volumes include 0.5 percent per year background growth for the first 5 years and 0.25 percent per year background growth for subsequent years for the 2019 through 2031 period plus demand from No-Action developments.

[3] Guideline capacities are based on NYCT rush hour loading guidelines, which vary by car type, line, and location based on frequency and type of service. This figure reflects the predominant car type (75 feet long) on the A. Some trains, however, use shorter cars (60 feet long) with a lower guideline per car.

[4] Volume to guideline capacity ratio. V/C reflects the mix of 75-foot and 60-foot-long cars operating on the A line.

Pedestrians

The 2031 No-Action pedestrian volumes were developed by increasing existing volumes to reflect expected background growth in overall travel through and within the study area and incorporating additional pedestrian volumes from development projects expected to be completed and operating by then. No-Action weekday midday, weekday PM, and Saturday peak hour volumes for each pedestrian element analyzed are presented in **Figure 12-23**, **Figure 12-24**, and **Figure 12-25**, respectively.

Table 12-34 provides an overview of the pedestrian levels of service for the analyzed peak hours. This analysis was performed using the existing conditions analysis as a base and reflects the No-Action pedestrian volumes and No-Action conflicting vehicle volumes. The levels of service, as well as No-Action peak hour volumes, for each analyzed sidewalk, crosswalk, and corner are presented in **Table 12-35**, **Table 12-36**, and **Table 12-37**, respectively. The summary of No-Action conditions indicates that all pedestrian elements would continue to operate at LOS A during all peak hours analyzed.

Figure 12-23 No-Action Pedestrian Volumes – Midday Peak Hour

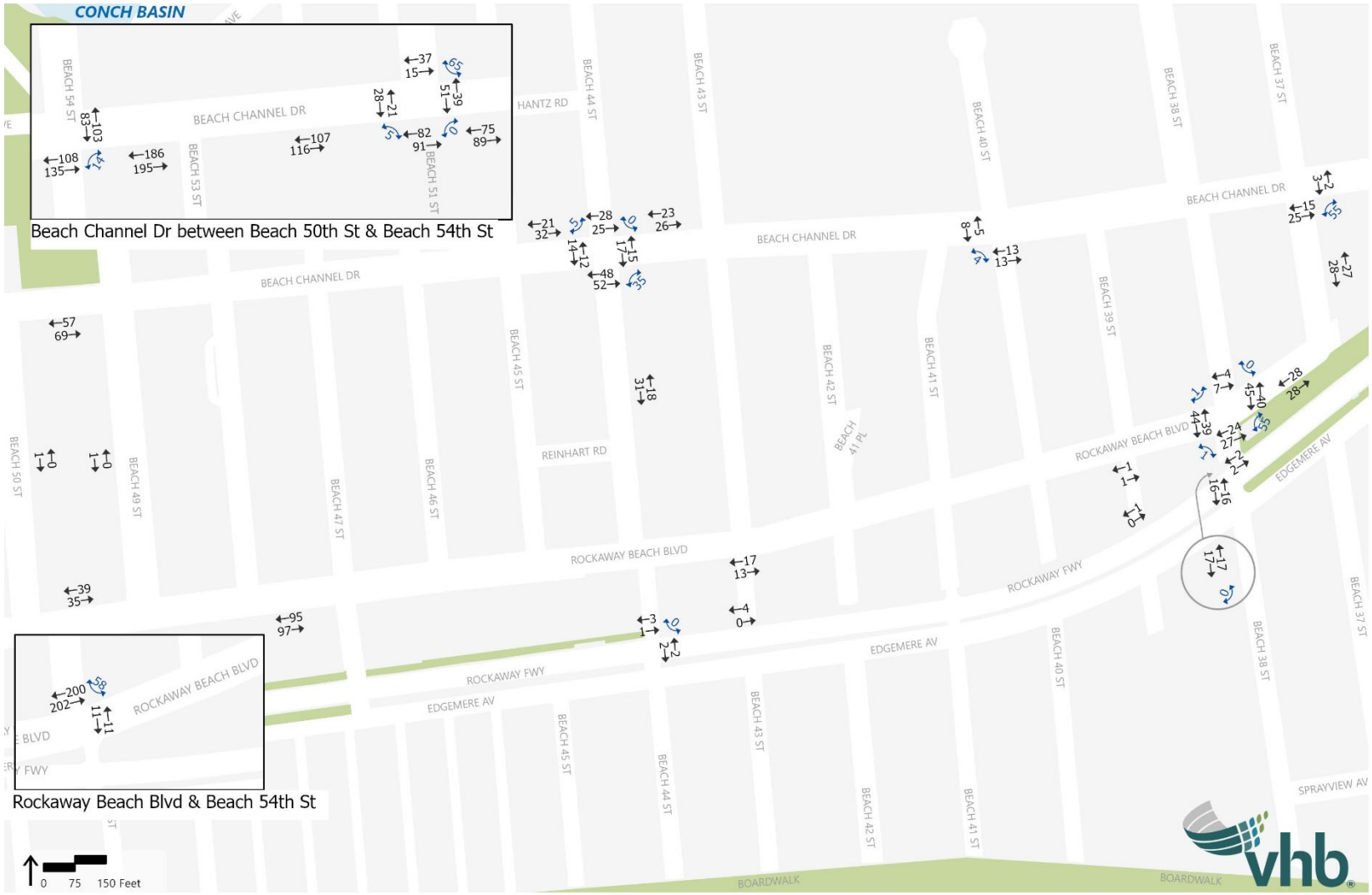


Figure 12-24 No-Action Pedestrian Volumes – PM Peak Hour

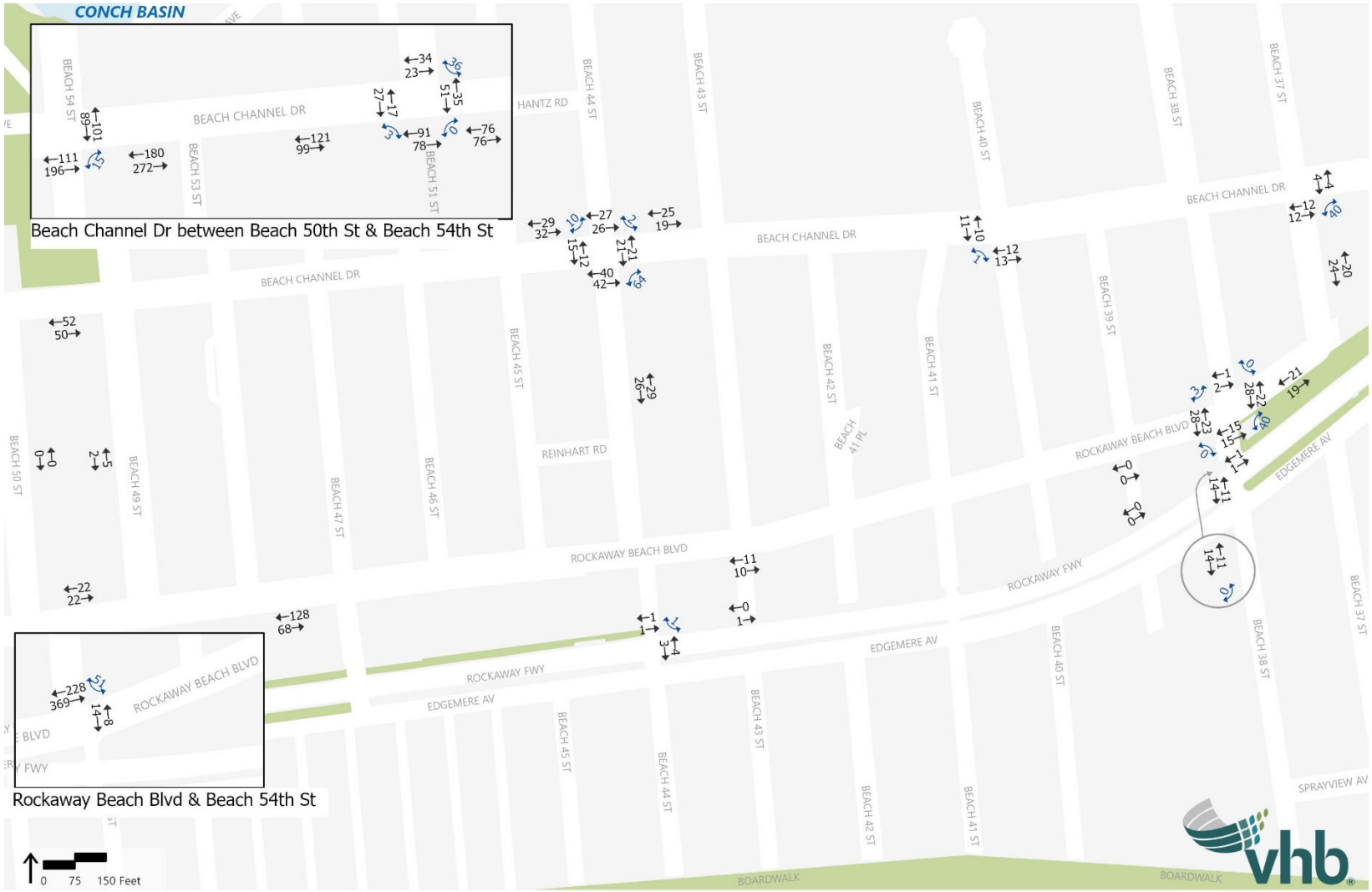


Figure 12-25 No-Action Pedestrian Volumes – Saturday Peak Hour

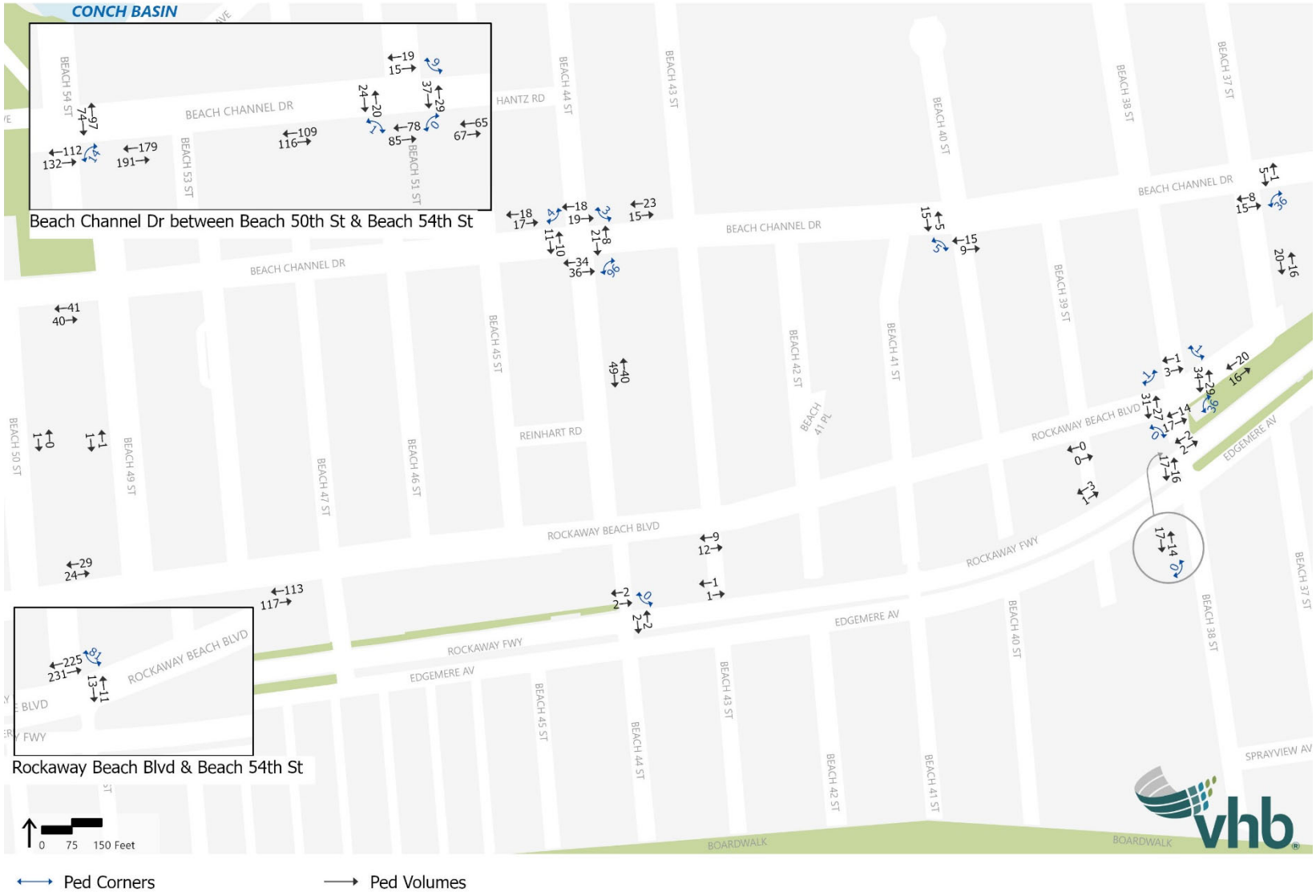


Table 12-34 No-Action Pedestrian Levels of Service Summary

	Midday Peak Hour	PM Peak Hour	SAT Peak Hour
Sidewalk Elements			
Sidewalks at LOS A/B/C	17	17	17
Sidewalks at LOS D	0	0	0
Sidewalks at LOS E	0	0	0
Sidewalks at LOS F	0	0	0
Crosswalk Elements			
Crosswalks at LOS A/B/C	5	5	5
Crosswalks at LOS D	0	0	0
Crosswalks at LOS E	0	0	0
Crosswalks at LOS F	0	0	0
Corner Elements			
Corners at LOS A/B/C	16	16	16
Corners at LOS D	0	0	0
Corners at LOS E	0	0	0
Corners at LOS F	0	0	0

Note: Includes 17 sidewalks, 5 crosswalks, and 16 corner analysis locations

Table 12-35 No-Action Pedestrian Levels of Service – Sidewalks

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Sidewalk	Effective Width, ft	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Rockaway Beach Boulevard between Beach 50th Street and Beach 49th Street (north side)	5.0	74	583.7	A	44	981.8	A	53	815.1	A
Rockaway Beach Boulevard between Beach 49th Street and Beach 47th Street (south side)	3.8	192	168.6	A	196	165.2	A	230	140.7	A
Rockaway Beach Boulevard between Beach 44th Street and Beach 42nd Street (south side)	2.3	30	648.0	A	21	925.7	A	21	925.7	A
Rockaway Beach Boulevard between Beach 40th Street and Beach 38th Street (south side)	2.0	2	10,440.0	A	0	n/a	A	0	n/a	A
Rockaway Freeway between Beach 44th Street and Beach 42nd Street (north side)	2.0	4	3,240.0	A	1	12,960.0	A	2	6,480.0	A
Rockaway Freeway between Beach 40th Street and Beach 38th Street (north side)	2.0	1	12,960.0	A	0	n/a	A	4	3,240.0	A
Beach 38th Street between Rockaway Freeway and Rockaway Beach Boulevard (west side)	5.0	34	1,185.9	A	25	1,612.8	A	31	1,300.6	A
Beach 50th Street between Rockaway Beach Boulevard and Beach Channel Drive (east side)	3.4	1	29,520.0	A	0	n/a	A	1	29,520.0	A
Beach 49th Street between Rockaway Beach Boulevard and Beach Channel Drive (west side)	4.3	1	36,720.0	A	7	5,245.7	A	2	18,360.0	A

Table 12-35 No-Action Pedestrian Levels of Service – Sidewalks

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Sidewalk	Effective Width, ft	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Beach 44th Street between Rockaway Beach Boulevard and Beach Channel Drive (east side)	3.5	49	617.1	A	55	549.8	A	89	339.7	A
Beach 37th Street between Rockaway Beach Boulevard and Beach Channel Drive (east side)	5.3	55	837.8	A	44	1,309.1	A	36	1,280.0	A
Beach Channel Drive between Beach 54th Street and Beach 53rd Street (south side)	3.4	381	77.2	A	452	64.9	A	370	79.5	A
Beach Channel Drive between Beach 53rd Street and Beach 51st Street (south side)	4.8	223	183.9	A	220	186.4	A	225	182.3	A
Beach Channel Drive between Beach 51st Street and Beach 50th Street (south side)	5.2	164	272.1	A	152	293.6	A	132	338.1	A
Beach Channel Drive between Beach 50th Street and Beach 49th Street (south side)	8.5	126	582.8	A	102	720.0	A	81	906.6	A
Beach Channel Drive between Beach 45th Street and Beach 44th Street (north side)	3.8	53	611.3	A	61	531.1	A	35	925.7	A
Beach Channel Drive between Beach 44th Street and Beach 43rd Street (north side)	3.9	49	733.7	A	44	769.1	A	38	979.6	A

Note: Average Ped Spaces listed as "n/a" have no pedestrian volume during that time period, making the Average Ped Space mathematically incalculable; these locations operate at LOS A.

Table 12-36 No-Action Pedestrian Levels of Service – Crosswalks

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Intersection	Crosswalk	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Rockaway Beach Boulevard and Beach 38th Street	*South*	51	508.1	A	30	844.6	A	31	839.3	A
	West	83	204.4	A	51	334.6	A	58	293.2	A
Beach Channel Drive and Beach 51st Street	*East*	90	196.3	A	86	234.0	A	66	269.3	A
	South	173	173.3	A	169	187.9	A	163	185.1	A
Beach Channel Drive and Beach 44th Street	*East*	32	971.3	A	42	740.5	A	29	1,075.0	A

Note: Average Ped Spaces listed as "n/a" have no pedestrian volume during that time period, making the Average Ped Space mathematically incalculable; these locations operate at LOS A.

Table 12-37 No-Action Pedestrian Levels of Service – Corners

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Intersection	Corner	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Rockaway Beach Boulevard and Beach 54th Street	*Northeast*	58	165.8	A	51	128.4	A	81	143.9	A
Rockaway Beach Boulevard and Beach 38th Street	*Northeast*	0	186.8	A	0	344.2	A	1	266.1	A
	Southeast	55	256.7	A	40	413.5	A	36	380.5	A
	Southwest	1	188.9	A	0	322.1	A	0	291.7	A
	Northwest	1	539.7	A	3	900.4	A	1	813.2	A
Rockaway Freeway and Beach 44th Street	*Northeast*	0	1,449.3	A	1	1,159.7	A	0	1,451.7	A
Rockaway Freeway and Beach 38th Street	*Northwest*	0	1,149.2	A	0	1,535.6	A	0	1,117.3	A
Beach Channel Drive and Beach 54th Street	*Southeast*	14	158.2	A	15	133.5	A	14	158.2	A
Beach Channel Drive and Beach 51st Street	*Northeast*	65	512.0	A	36	630.4	A	9	979.8	A
	Southeast	0	310.6	A	0	346.0	A	0	358.6	A
	Southwest	5	365.3	A	3	401.0	A	1	399.3	A
	Northeast	0	476.6	A	2	427.0	A	3	620.3	A

Table 12-37 No-Action Pedestrian Levels of Service – Corners

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Intersection	Corner	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Beach Channel Drive and Beach 44th Street	*Southeast*	35	425.3	A	64	380.6	A	96	366.2	A
	Northwest	5	745.5	A	10	709.7	A	4	1,061.2	A
Beach Channel Drive and Beach 40th Street	*Southwest*	4	1,421.1	A	1	1,238.5	A	5	1,262.9	A
Beach Channel Drive and Beach 37th Street	*Southeast*	55	919.9	A	40	1,493.0	A	36	1,417.4	A

Note: Volumes shown are "rounding the corner" volumes. Average Ped Spaces listed as "n/a" have no pedestrian volume during that time period, making the Average Ped Space mathematically incalculable; these locations operate at LOS A.

With Action Conditions

The Proposed Actions would enable mid-rise development of multi-family housing and commercial amenities. The RWCDS reflects a development program that would add 1,222 dwelling units, 113,491 gsf of commercial space, and 478 parking spaces. This development would be spread among 41 development sites throughout the study area. These new developments would generate additional vehicular traffic on the local traffic network, additional parking demand throughout the study area, additional demand for transit services passing through the study area, and additional pedestrian foot traffic at various points throughout the study area. The incremental effects of this increased travel have been assessed and are described in the sections below.

Traffic

Traffic Volumes

Overall, the Proposed Actions would generate a total of 526 vehicles per hour (vph) during the weekday AM peak hour, 986 vph in the weekday midday peak hour, 735 vph in the weekday PM peak hour, and 851 vph in the Saturday peak hour. These trips were distributed through the traffic study area as described in the Level 2 screening assessment. The With-Action traffic volumes for the AM, midday, PM and Saturday peak hours are shown in **Figure 12-26** through **Figure 12-29**.

Figure 12-26 With-Action Traffic Volumes – AM Peak Hour

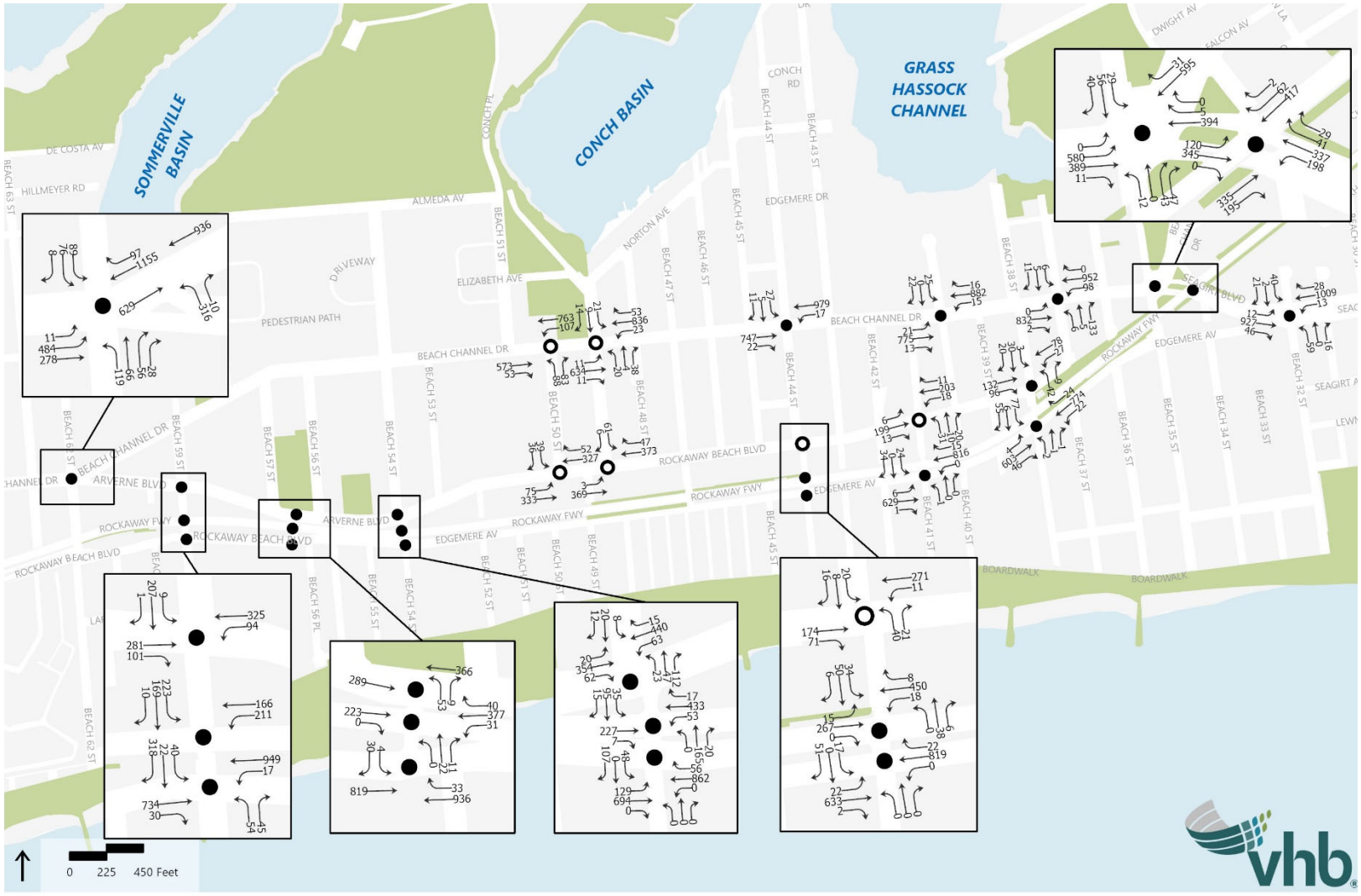


Figure 12-27 With-Action Traffic Volumes – Midday Peak Hour

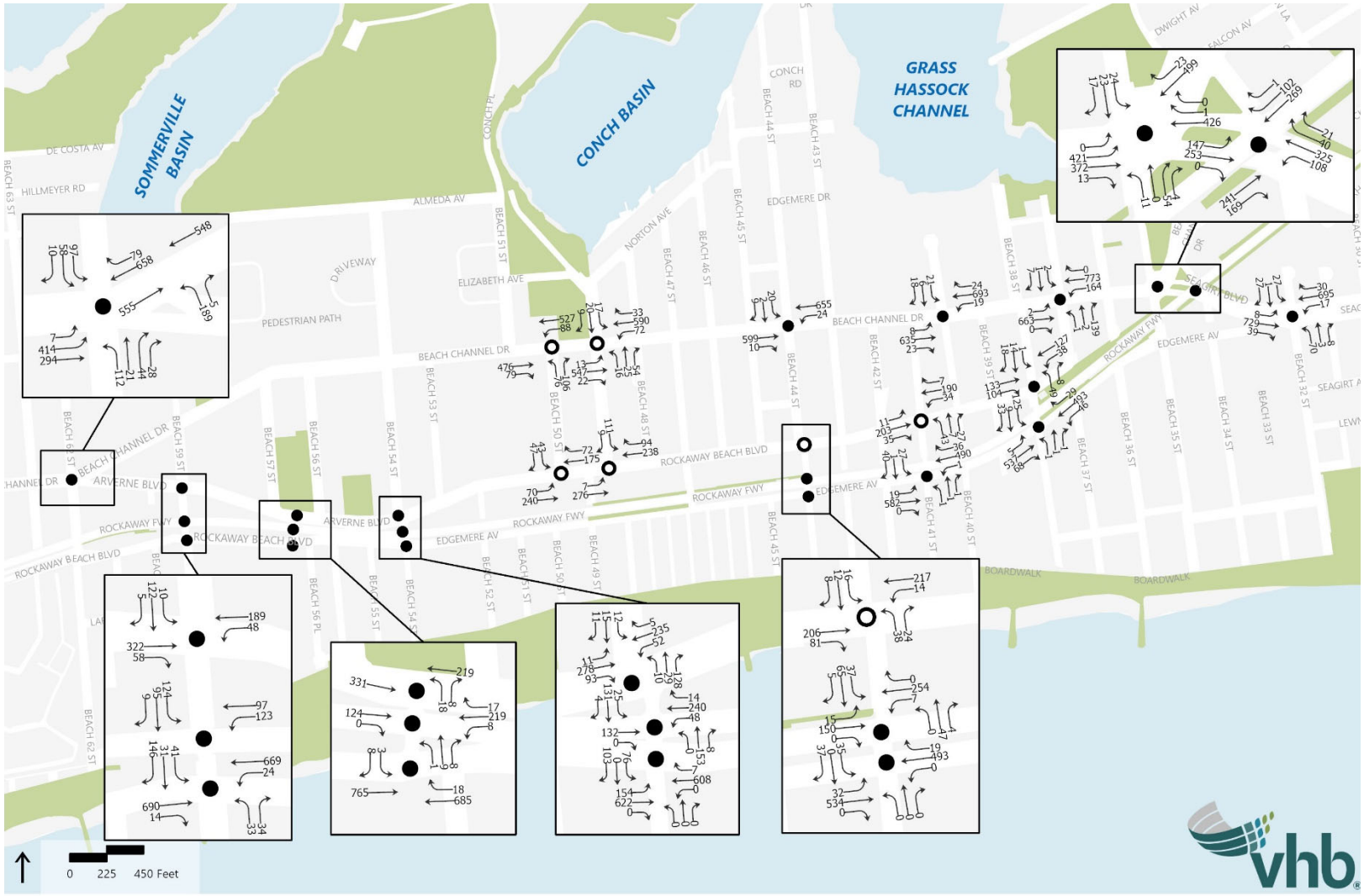


Figure 12-28 With-Action Traffic Volumes – PM Peak Hour

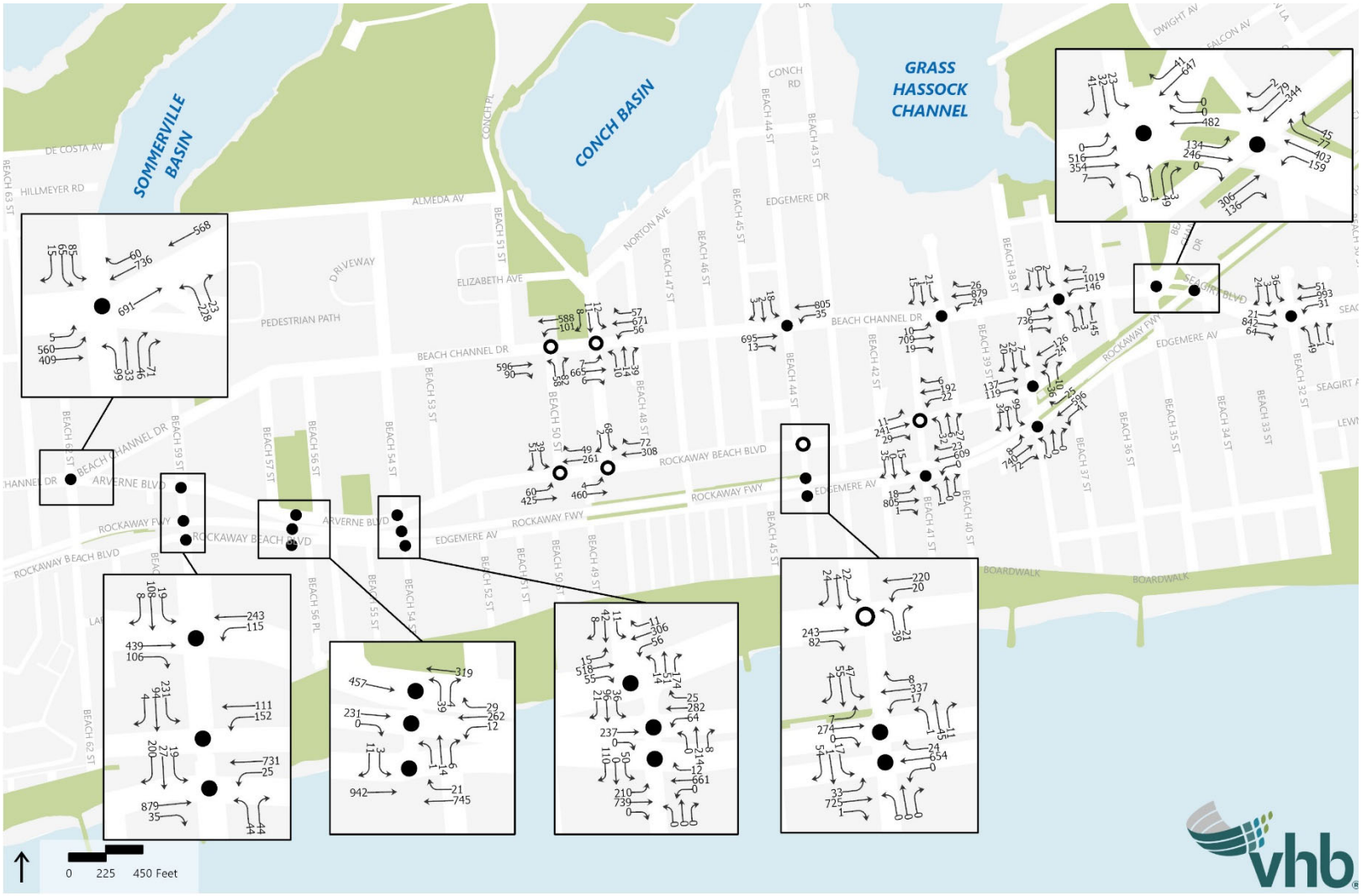
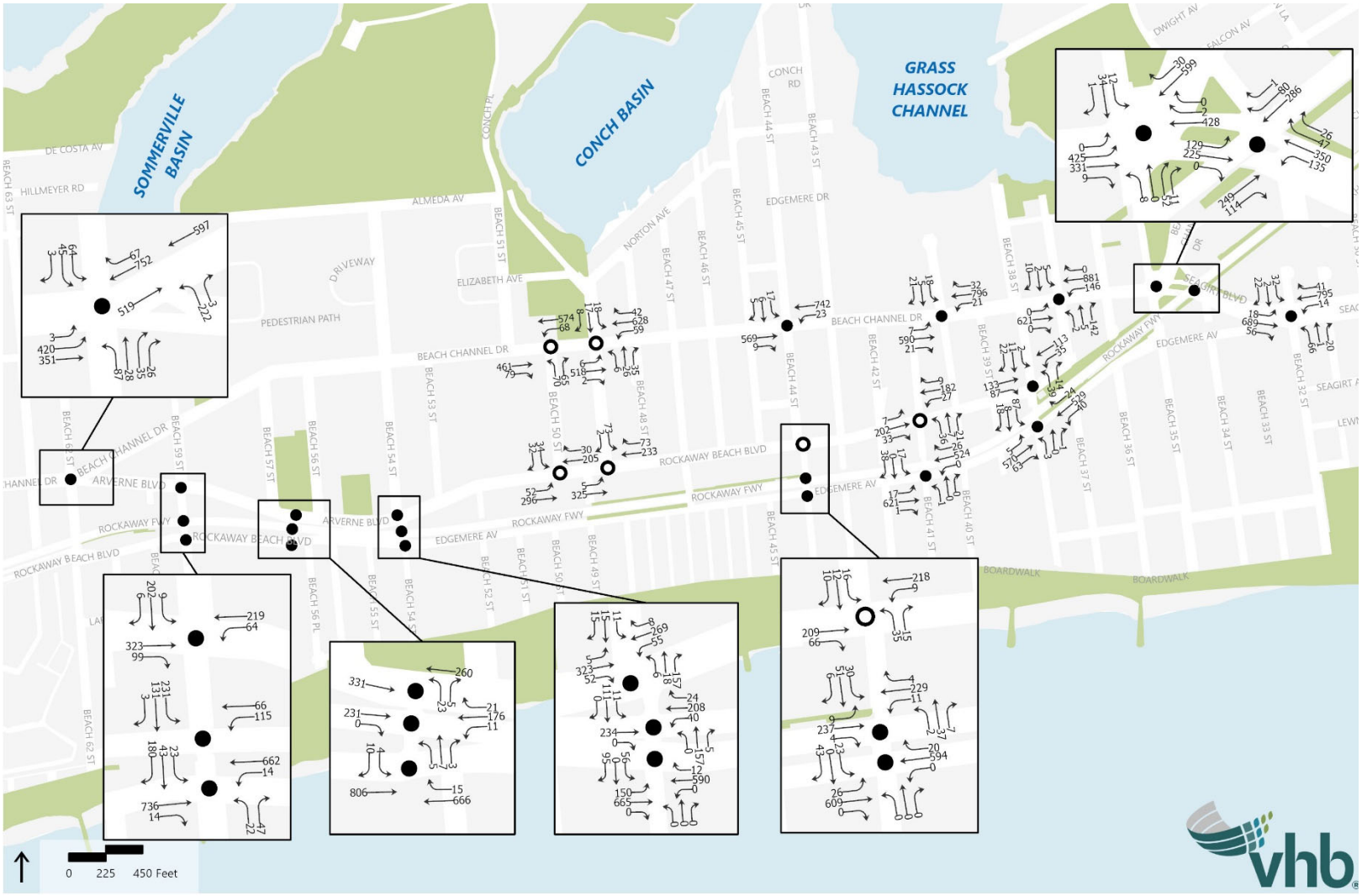


Figure 12-29 With-Action Traffic Volumes – Saturday Peak Hour



Levels of Service

Based on the traffic volume increments illustrated above, the 2031 With-Action traffic levels of service were determined for the 27 analysis locations. **Table 12-38** and **Table 12-39** provide an overview of the levels of service that characterize 2031 With-Action "overall" intersection conditions and individual traffic movements during the weekday AM, weekday midday, weekday PM, and Saturday peak hours, respectively. Overall, as shown in **Table 12-38** and **Table 12-39**, of the 27 intersections analyzed, the Proposed Actions would result in significant adverse traffic impacts at 13 intersections (at 27 movements) during the weekday AM peak hour, 12 intersections (at 17 movements) during the weekday midday peak hour, 13 intersections (at 22 movements) during the weekday PM peak hour, and 11 intersections (at 14 movements) during the Saturday peak hour.

Detailed traffic levels of service comparing the No-Action and With-Action conditions during each peak hour are provided in **Table 12-40**. In the table, shading indicates projected significant traffic impacts.

Table 12-38 With-Action Traffic Level of Service Summary – Overall Intersections

	No-Action				With-Action			
	AM	Midday	PM	SAT	AM	Midday	PM	SAT
Intersections at Overall LOS A/B/C	12	19	15	18	11	15	12	14
Intersections at Overall LOS D	3	4	3	5	1	3	0	5
Intersections at Overall LOS E	1	1	2	1	1	2	3	3
Intersections at Overall LOS F	11	3	7	3	14	7	12	5
Intersections significantly impacted	-	-	-	-	13	12	13	11

Note: Includes 21 signalized intersections and 6 unsignalized intersections

Table 12-39 With-Action Traffic Level of Service Summary – Traffic Movements

	No-Action				With-Action			
	AM	Midday	PM	SAT	AM	Midday	PM	SAT
LOS A/B/C & Acceptable LOS D	81	101	93	102	76	97	87	96
Unacceptable LOS D	4	5	4	5	5	3	3	4
LOS E	6	3	7	3	6	1	4	4
LOS F	27	9	14	8	31	17	24	14
Traffic Movements Impacted	-	-	-	-	27	17	22	14
Total Traffic Movements	118	118	118	118	118	118	118	118

Note: Number of movements may vary between peak hours due to turn prohibitions, parking regulations, and the presence of de facto left turn movements.

Table 12-40 With-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Beach Channel Drive and Beach 35th Street and Seagirt Boulevard																	
Beach Channel Drive	SW	R	1.21	143.6	F	R	1.09	96.3	F	R	1.19	132.8	F	R	1.17	123.6	F
Beach Channel Drive	EB	TR	1.10	73.4	E	TR	0.78	26.2	C	TR	0.80	27.0	C	TR	0.72	23.4	C
Beach Channel Drive	EB	L	1.45	220.3	F	L	0.96	42.8	D	L	1.10	81.5	F	L	0.96	44.1	D
Seagirt Boulevard	WB	T	0.85	27.7	C	T	0.90	36.1	D	T	0.86	28.4	C	T	0.78	23.7	C
Beach 35th Street	NB	LT	0.03	20.4	C	LT	0.04	20.4	C	LT	0.02	20.2	C	LT	0.02	20.2	C
	NB	R	0.18	21.9	C	R	0.10	21.0	C	R	0.09	20.9	C	R	0.11	21.1	C
Beach 35th Street	SB	LTR	0.28	23.3	C	LTR	0.14	21.6	C	LTR	0.22	22.6	C	LTR	0.10	21.0	C
Overall Intersection		-	-	**117.9**	**F**	-	-	**52.0**	**D**	-	-	**72.3**	**E**	-	-	**61.5**	**E**
Seagirt Boulevard and Rockaway Freeway																	
Seagirt Boulevard	EB	L	0.15	17.5	B	L	0.17	18.0	B	L	0.16	18.9	B	L	0.15	17.1	B
	EB	TR	0.43	21.5	C	TR	0.30	19.2	B	TR	0.24	19.6	B	TR	0.24	17.8	B
	WB	LT	0.88	50.7	D	LT	0.71	42.2	D	LT	0.81	45.8	D	LT	0.70	41.6	D
	WB	R	0.30	34.3	C	R	0.23	33.3	C	R	0.45	37.8	D	R	0.28	34.3	C
Rockaway Freeway at Seagirt Boulevard WB	NE	T	0.41	1.6	A	T	0.36	2.4	A	T	0.43	2.2	A	T	0.37	2.3	A
	SW	TR	0.91	46.7	D	TR	0.67	29.5	C	TR	0.75	32.3	C	TR	0.66	28.5	C
Rockaway Freeway at Seagirt Boulevard EB	NE	TR	0.98	58.1	E	TR	0.75	32.4	C	TR	0.76	33.0	C	TR	0.66	28.9	C
	SW	T	1.06	52.0	D	T	0.64	11.8	B	T	0.75	13.6	B	T	0.69	12.1	B
Overall Intersection		-	-	**40.1**	**D**	-	-	**23.6**	**C**	-	-	**25.7**	**C**	-	-	**22.6**	**C**

Table 12-40 With-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Beach Channel Drive and Beach 37th Street																	
Beach Channel Drive	EB	LTR	1.21	128.0	F	LTR	0.87	29.9	C	LTR	0.91	34.1	C	LTR	0.76	22.0	C
	WB	LTR	3+	600+	F	LTR	2.06	488.7	F	LTR	3+	600+	F	LTR	2.48	600+	F
Beach 37th Street	NB	LTR	0.35	24.0	C	LTR	0.41	25.5	C	LTR	0.42	25.3	C	LTR	0.41	25.2	C
	SB	LTR	0.06	20.1	C	LTR	0.03	19.8	B	LTR	0.03	19.7	B	LTR	0.06	20.0	B
Overall Intersection		-	-	**600+**	**F**	-	-	**280.3**	**F**	-	-	**600+**	**F**	-	-	**388.8**	**F**
Beach Channel Drive and Beach 40th Street																	
Beach Channel Drive	EB	LTR	1.20	121.4	F	LTR	0.83	25.9	C	LTR	0.89	30.6	C	LTR	0.71	19.9	B
	WB	LTR	1.33	179.2	F	LTR	1.17	111.2	F	LTR	1.27	151.8	F	LTR	1.15	101.1	F
Beach 40th Street	SB	LTR	0.13	20.8	C	LTR	0.14	21.0	C	LTR	0.10	20.4	C	LTR	0.11	20.6	C
Overall Intersection		-	-	**147.3**	**F**	-	-	**70.1**	**E**	-	-	**95.7**	**F**	-	-	**65.9**	**E**
Beach Channel Drive and Beach 44th Street																	
Beach Channel Drive	EB	TR	1.30	165.8	F	TR	0.95	41.9	D	TR	0.99	49.2	D	TR	0.82	26.4	C
	WB	LT	2.04	496.2	F	LT	1.21	129.6	F	LT	1.52	264.9	F	LT	1.07	73.2	E
Beach 44th Street	SB	LTR	0.11	20.5	C	LTR	0.10	20.6	C	LTR	0.07	20.2	C	LTR	0.08	20.2	C
Overall Intersection		-	-	**330.4**	**F**	-	-	**87.8**	**F**	-	-	**162.7**	**F**	-	-	**52.1**	**D**

Table 12-40 With-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Beach Channel Drive and Arverne Boulevard and Beach 62nd Street																	
Beach Channel Drive at Beach 62nd Street	EB*****	LT	1.78	392.8	F	LT	0.81	37.0	D	LT	0.93	48.4	D	LT	0.74	31.3	C
	EB*****	R	0.76	46.1	D	R	0.85	53.8	D	R	1.09	106.3	F	R	1.11	114.6	F
Beach 62nd Street	NB	L	0.56	39.3	D	L	0.49	37.1	D	L	0.45	35.5	D	L	0.40	34.3	C
	NB	TR	0.58	38.8	D	TR	0.39	33.7	C	TR	0.59	39.3	D	TR	0.33	32.1	C
	SB	LTR	1.14	142.8	F	LTR	0.87	67.9	E	LTR	1.06	117.5	F	LTR	0.56	39.9	D
Beach Channel Drive at WB Arverne Blvd	WB	T	1.44	233.1	F	T	0.89	41.2	D	T	0.81	33.2	C	T	0.85	36.1	D
Arverne Boulevard	NW	LR	1.00	81.7	F	LR	0.68	42.4	D	LR	0.88	59.0	E	LR	0.75	46.0	D
Overall Intersection		-	-	**192.4**	**F**	-	-	**44.3**	**D**	-	-	**60.3**	**E**	-	-	**51.7**	**D**
Rockaway Beach Boulevard and Beach 38th Street																	
Rockaway Beach Blvd	EB	TR	0.39	11.5	B	TR	0.46	12.8	B	TR	0.41	11.7	B	TR	0.39	11.6	B
	WB	LT	0.21	9.7	A	LT	0.32	10.9	B	LT	0.24	9.8	A	LT	0.27	10.1	B
Beach 38th Street	NB	LR	0.12	13.7	B	LR	0.23	15.6	B	LR	0.12	13.8	B	LR	0.17	14.4	B
	SB	LTR	0.13	13.8	B	LTR	0.11	13.8	B	LTR	0.12	13.7	B	LTR	0.10	13.5	B
Overall Intersection		-	-	**11.6**	**B**	-	-	**12.5**	**B**	-	-	**11.5**	**B**	-	-	**11.6**	**B**
Arverne Boulevard / Rockaway Beach Boulevard and Beach 54th Street																	
Arverne Boulevard	EB	L	0.13	17.8	B	L	0.05	16.3	B	L	0.08	16.7	B	L	0.02	15.9	B
	EB	TR	0.83	35.9	D	TR	0.70	28.7	C	TR	1.09	88.4	F	TR	0.71	28.6	C
Rockaway Beach Boulevard	WB	LTR	1.45	242.9	F	LTR	0.69	29.4	C	LTR	1.90	449.0	F	LTR	0.85	41.2	D
Beach 54th Street	NB	LTR	0.42	7.7	A	LTR	0.45	11.2	B	LTR	0.63	19.5	B	LTR	0.24	4.8	A
	SB	LTR	0.12	22.8	C	LTR	0.11	22.7	C	LTR	0.16	23.2	C	LTR	0.14	23.1	C

Table 12-40 With-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Overall Intersection		-	-	**122.0**	**F**	-	-	**25.0**	**C**	-	-	**173.1**	**F**	-	-	**28.6**	**C**
Arverne Boulevard and Beach 56th Street (West)																	
Arverne Boulevard	EB	T	0.36	11.1	B	T	0.39	11.5	B	T	0.50	13.0	B	T	0.41	11.8	B
	WB	T	0.39	11.5	B	T	0.28	10.3	B	T	0.42	11.9	B	T	0.31	10.6	B
Beach 56th Street	NB	LR	0.19	20.1	C	LR	0.08	19.6	B	LR	0.14	20.1	C	LR	0.08	22.9	C
Overall Intersection		-	-	**12.1**	**B**	-	-	**11.4**	**B**	-	-	**12.9**	**B**	-	-	**11.8**	**B**
Arverne Boulevard and Beach 59th Street																	
Arverne Boulevard	EB	TR	0.62	14.2	B	TR	0.55	12.6	B	TR	0.72	16.1	B	TR	0.61	13.8	B
	WB***	L	0.32	10.7	B	L	0.15	8.4	A	L	0.50	15.1	B	L	0.21	9.2	A
	WB***	T	0.47	11.2	B	T	0.32	9.5	A	T	0.38	9.7	A	T	0.33	9.6	A
Beach 59th Street	SB	LT	0.56	21.8	C	LT	0.34	17.7	B	LT	0.36	18.9	B	LT	0.54	21.1	C
	SB	R	0.00	14.0	B	R	0.02	14.3	B	R	0.03	15.1	B	R	0.03	14.3	B
Overall Intersection		-	-	**14.6**	**B**	-	-	**12.5**	**B**	-	-	**14.8**	**B**	-	-	**14.2**	**B**
Rockaway Freeway and Beach 44th Street																	
Rockaway Freeway	EB	L	0.11	38.0	D	L	0.11	42.0	D	L	0.05	37.8	D	L	0.07	41.6	D
	EB	TR	0.37	11.1	B	TR	0.21	11.2	B	TR	0.36	9.7	A	TR	0.32	7.2	A
	WB	L	0.13	37.5	D	L	0.05	36.3	D	L	0.12	37.3	D	L	0.08	36.7	D
	WB	TR	0.56	21.2	C	TR	0.34	17.4	B	TR	0.45	19.2	B	TR	0.31	17.0	B
Beach 44th Street	NB	LTR	0.12	39.5	D	LTR	0.14	41.1	D	LTR	0.16	40.3	D	LTR	0.11	40.0	D
	SB	LTR	0.30	27.7	C	LTR	0.33	28.0	C	LTR	0.36	28.8	C	LTR	0.27	27.0	C
Overall Intersection		-	-	**20.5**	**C**	-	-	**20.9**	**C**	-	-	**19.7**	**B**	-	-	**17.3**	**B**

Table 12-40 With-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Rockaway Freeway and Beach 54th Street																	
Rockaway Freeway	EB	TR	0.37	3.3	A	TR	0.21	3.2	A	TR	0.33	2.3	A	TR	0.32	2.0	A
	WB	L	0.39	56.0	E	L	0.33	54.9	D	L	0.37	56.1	E	L	0.28	54.7	D
	WB	TR	0.44	20.0	C	TR	0.30	17.4	B	TR	0.35	18.5	B	TR	0.25	17.1	B
Beach 54th Street	NB	LTR	0.37	41.4	D	LTR	0.32	40.8	D	LTR	0.42	42.1	D	LTR	0.31	40.7	D
	SB	LTR	0.34	36.0	D	LTR	0.36	41.3	D	LTR	0.35	30.4	C	LTR	0.24	37.0	D
Overall Intersection		-	-	**24.5**	**C**	-	-	**27.4**	**C**	-	-	**24.4**	**C**	-	-	**23.4**	**C**
Rockaway Freeway and Beach 56th Street																	
Rockaway Freeway	EB	TR	0.35	22.6	C	TR	0.18	21.1	C	TR	0.36	22.6	C	TR	0.36	22.3	C
	WB	L	0.22	21.9	C	L	0.06	19.9	B	L	0.08	19.8	B	L	0.08	21.4	C
	WB	TR	0.48	4.0	A	TR	0.26	2.4	A	TR	0.29	2.5	A	TR	0.21	2.3	A
Beach 56th Street	NB	LTR	0.07	36.9	D	LTR	0.04	37.0	D	LTR	0.05	36.6	D	LTR	0.04	37.1	D
Overall Intersection		-	-	**12.2**	**B**	-	-	**10.0**	**B**	-	-	**13.1**	**B**	-	-	**14.4**	**B**
Rockaway Freeway and Beach 59th Street																	
Rockaway Freeway	WB	L	0.93	71.3	E	L	0.69	50.6	D	L	0.90	76.3	E	L	0.66	48.3	D
	WB	T	0.16	22.0	C	T	0.11	28.3	C	T	0.12	24.6	C	T	0.07	26.8	C
Beach 59th Street	SB	LT	1.05	94.4	F	LT	0.63	37.4	D	LT	1.00	78.2	E	LT	1.04	89.3	F
	SB	R	0.04	27.7	C	R	0.03	26.1	C	R	0.01	25.9	C	R	0.01	25.8	C
Overall Intersection		-	-	**70.9**	**E**	-	-	**38.8**	**D**	-	-	**67.3**	**E**	-	-	**72.7**	**E**

Table 12-40 With-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Edgemere Avenue and Beach 38th Street																	
Edgemere Avenue	EB	LTR	1.39	206.7	F	LTR	0.87	36.9	D	LTR	1.41	215.0	F	LTR	0.88	34.0	C
	WB****	LT	1.57	290.9	F	LT	1.12	101.3	F	LT	1.32	181.8	F	LT	1.08	87.2	F
	WB****	R	0.05	16.1	B	R	0.06	16.2	B	R	0.05	16.1	B	R	0.06	16.2	B
Beach 38th Street	NB	LTR	0.01	21.5	C	LTR	0.01	21.4	C	LTR	0.01	21.5	C	LTR	0.01	21.5	C
	SB	LTR	0.25	17.7	B	LTR	0.31	18.4	B	LTR	0.24	17.6	B	LTR	0.20	17.0	B
Overall Intersection		-	-	**229.4**	**F**	-	-	**60.0**	**E**	-	-	**179.5**	**F**	-	-	**54.2**	**D**
Edgemere Avenue and Beach 41st Street																	
Edgemere Avenue	EB	LTR	1.40	208.3	F	LTR	0.85	26.5	C	LTR	1.33	176.1	F	LTR	0.96	28.5	C
	WB	LTR	1.29	154.5	F	LTR	0.71	21.5	C	LTR	0.81	23.5	C	LTR	0.78	23.1	C
Beach 41st Street	NB	LTR	0.00	23.5	C	LTR	0.01	23.5	C	LTR	0.00	23.5	C	LTR	0.00	23.5	C
	SB	LTR	0.11	18.0	B	LTR	0.15	18.5	B	LTR	0.10	17.7	B	LTR	0.11	17.9	B
Overall Intersection		-	-	**170.4**	**F**	-	-	**23.8**	**C**	-	-	**107.3**	**F**	-	-	**25.5**	**C**
Edgemere Avenue and Beach 44th Street																	
Edgemere Avenue	EB	LTR	2.40	600+	F	LTR	0.93	25.7	C	LTR	1.90	428.6	F	LTR	1.11	74.7	E
	WB	LTR	1.21	122.9	F	LTR	0.69	27.6	C	LTR	0.87	33.4	C	LTR	0.78	29.5	C
Beach 44th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-
	SB	LTR	0.14	1.9	A	LTR	0.14	2.1	A	LTR	0.14	1.8	A	LTR	0.13	4.5	A
Overall Intersection		-	-	**334.9**	**F**	-	-	**25.0**	**C**	-	-	**230.5**	**F**	-	-	**49.4**	**D**

Table 12-40 With-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Edgemere Avenue and Beach 54th Street																	
Edgemere Avenue	EB	LTR	3+	600+	F	LTR	3+	600+	F	LTR	3+	600+	F	LTR	3+	600+	F
	WB	LTR	1.35	181.6	F	LTR	0.81	30.7	C	LTR	0.98	43.9	D	LTR	0.81	28.7	C
Beach 54th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-
	SB	LTR	0.27	2.4	A	LTR	0.32	1.8	A	LTR	0.28	2.5	A	LTR	0.27	1.7	A
Overall Intersection		-	-	**600+**	**F**	-	-	**600+**	**F**	-	-	**600+**	**F**	-	-	**600+**	**F**
Rockaway Beach Boulevard and Beach 56th Street (West)																	
Rockaway Beach Boulevard	EB	T	1.33	172.9	F	T	1.20	118.8	F	T	1.37	188.8	F	T	1.06	54.2	D
	WB	TR	1.65	322.5	F	TR	1.16	107.4	F	TR	1.15	101.3	F	TR	1.02	56.9	E
Beach 56th Street	SB	LR	0.05	1.6	A	LR	0.02	4.7	A	LR	0.02	2.6	A	LR	0.02	2.8	A
Overall Intersection		-	-	**249.9**	**F**	-	-	**112.5**	**F**	-	-	**148.6**	**F**	-	-	**54.9**	**D**
Rockaway Beach Boulevard and Beach 59th Street**																	
Rockaway Beach Boulevard	EB	TR	1.35	193.4	F	TR	1.13	104.6	F	TR	1.41	217.4	F	TR	1.14	106.3	F
	WB	LT	3+	600+	F	LT	3+	600+	F	LT	3+	600+	F	LT	2.47	600+	F
Beach 59th Street	NB	LTR	0.65	49.7	D	LTR	0.33	32.3	C	LTR	0.42	34.7	C	LTR	0.32	32.0	C
	SB	LT	0.14	4.1	A	LT	0.15	3.3	A	LT	0.08	5.2	A	LT	0.11	2.7	A
	SB	R	1.03	76.8	E	R	0.50	39.0	D	R	0.57	42.5	D	R	0.56	36.5	D
Overall Intersection		-	-	**473.3**	**F**	-	-	**477.8**	**F**	-	-	**545.9**	**F**	-	-	**319.0**	**F**

Table 12-40 With-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Seagirt Boulevard and Beach 32nd Street																	
Seagirt Boulevard	EB	LTR	0.53	18.3	B	LTR	0.38	15.2	B	LTR	0.46	16.4	B	LTR	0.39	15.5	B
	WB	LTR	0.60	18.0	B	LTR	0.43	15.6	B	LTR	0.58	17.6	B	LTR	0.41	15.3	B
Beach 32nd Street	NB	LTR	0.22	18.9	B	LTR	0.22	18.8	B	LTR	0.12	17.5	B	LTR	0.23	18.9	B
	SB	LTR	0.17	18.2	B	LTR	0.14	17.7	B	LTR	0.14	17.7	B	LTR	0.14	17.7	B
Overall Intersection		-	-	**18.2**	**B**	-	-	**15.7**	**B**	-	-	**17.1**	**B**	-	-	**15.7**	**B**
Beach Channel Drive and Beach 49th Street (Unsignalized)																	
Beach Channel Drive	EB	LTR	-	1.0	A	LTR	-	0.9	A	LTR	-	0.5	A	LTR	-	0.4	A
	WB	LTR	-	1.6	A	LTR	-	4.2	A	LTR	-	3.0	A	LTR	-	2.4	A
Beach 49th Street	NB	L	-	600+	F	L	-	600+	F	L	-	600+	F	L	-	600+	F
	NB	TR	-	75.3	F	TR	-	600+	F	TR	-	265.3	F	TR	-	376.1	F
	SB	L	-	600+	F	L	-	600+	F	L	-	600+	F	L	-	600+	F
	SB	TR	-	428.0	F	TR	-	600+	F	TR	-	362.2	F	TR	-	254.4	F
Overall Intersection		-	-	**600+**	**F**	-	-	**600+**	**F**	-	-	**175.8**	**F**	-	-	**600+**	**F**
Beach Channel Drive and Beach 50th Street (Unsignalized)																	
Beach Channel Drive	EB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A
	WB	LT	-	9.2	A	LT	-	246.8	F	LT	-	23.6	C	LT	-	15.9	C
Beach 50th Street	NB	LR	-	600+	F	LR	-	600+	F	LR	-	600+	F	LR	-	600+	F
Overall Intersection		-	-	**600+**	**F**	-	-	**600+**	**F**	-	-	**600+**	**F**	-	-	**600+**	**F**

Table 12-40 With-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Rockaway Beach Boulevard and Beach 50th Street (Unsignalized)																	
Rockaway Beach Boulevard	EB	LT	-	2.9	A	LT	-	3.5	A	LT	-	2.1	A	LT	-	2.0	A
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A
Beach 50th Street	SB	LR	-	29.3	D	LR	-	28.2	D	LR	-	26.5	D	LR	-	19.2	C
Overall Intersection		-	-	**4.2**	**A**	-	-	**5.7**	**A**	-	-	**4.0**	**A**	-	-	**3.0**	**A**
Rockaway Beach Boulevard and Beach 49th Street (Unsignalized)																	
Rockaway Beach Boulevard	EB	LT	-	0.1	A	LT	-	0.5	A	LT	-	0.2	A	LT	-	0.3	A
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A
Beach 49th Street	SB	L	-	39.9	E	L	-	69.2	F	L	-	65.6	F	L	-	37.4	E
	SB	R	-	18.2	C	R	-	24.9	C	R	-	16.3	C	R	-	16.0	C
Overall Intersection		-	-	**3.1**	**A**	-	-	**11.3**	**B**	-	-	**5.1**	**A**	-	-	**3.7**	**A**
Rockaway Beach Boulevard and Beach 44th Street (Unsignalized)																	
Rockaway Beach Boulevard	EB	TR	-	10.3	B	TR	-	11.3	B	TR	-	12.0	B	TR	-	11.1	B
	WB	LT	-	11.4	B	LT	-	10.8	B	LT	-	10.8	B	LT	-	9.8	A
Beach 44th Street	NB	LTR	-	9.1	A	LTR	-	9.2	A	LTR	-	9.2	A	LTR	-	8.9	A
	SB	LTR	-	8.9	A	LTR	-	9.0~~29.5~~	A	LTR	-	9.0	A	LTR	-	8.7	A
Overall Intersection		-	-	**10.6**	**A**	-	-	**10.8**	**B**	-	-	**11.1**	**B**	-	-	**10.3**	**B**

Table 12-40 With-Action Traffic Levels of Service

Intersection & Approach		AM Peak Hour				Midday Peak Hour				PM Peak Hour				SAT Peak Hour			
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS
Rockaway Beach Boulevard and Beach 41st Street (Unsignalized)																	
Rockaway Beach Boulevard	EB	LTR	-	0.4	A	LTR	-	0.5	A	LTR	-	0.4	A	LTR	-	0.3	A
	WB	LTR	-	0.8	A	LTR	-	1.8	A	LTR	-	1.1	A	LTR	-	1.5	A
Beach 41st Street	NB	LTR	-	14.4	B	LTR	-	27.1	D	LTR	-	17.8	C	LTR	-	18.5	C
Overall Intersection		-	-	**2.4**	**A**	-	-	**4.7**	**A**	-	-	**2.6**	**A**	-	-	**3.1**	**A**

Note: Shading indicates impacted movement.

[1] Control delay is measured in seconds per vehicle.

[2] Overall intersection v/c ratio is the critical lane groups' v/c ratio.

*Northbound approaches to Edgemere Avenue at Beach 44th Street and Beach 54th Street have zero volume in field observed data.

**Synchro results used instead of HCM 2000 due to node clustering.

(***) As a result of the Peninsula Hospital EIS mitigation measures, the WB approach of Arverne Blvd at Beach 59th St is restriped beginning in the No-Action to provide one 11' L-turn bay (75') and one 11' Thru lane.

(****) As a result of the Arverne East With-Action scenario, the WB approach of Edgemere Ave at Beach 38th St is restriped beginning in the No-Action to provide one 11' R-turn lane and one 11' Left-Thru lane.

(*****) As a result of the Beach 67th Street Rezoning EAS Mitigation measure, the EB approach of Beach Channel Drive would be restriped beginning in the No-Action to provide one 11-foot-wide Left-Thru lane (Thru to Beach Channel Drive) and one 11-foot-wide R-turn lane (to Arverne Boulevard).

The summary overview of With-Action conditions indicates that, of the 27 intersections analyzed:

- In the weekday AM peak hour, one of the intersections analyzed would be expected to operate at overall LOS E, and 14 would operate at overall LOS F. "Overall" LOS E or F means that serious congestion exists – either one specific major traffic movement has severe delays or two or more of the specific traffic movements at the intersection are at LOS E or F with significant delays (the overall intersection level of service is a weighted average of all individual traffic movements). Forty-two individual traffic movements out of 118 movements analyzed would be expected to operate at unacceptable LOS D, LOS E, or LOS F (e.g., left turns from one street to another, through traffic on one street passing through the intersection, etc.).
- In the weekday midday peak hour, two of the intersections analyzed would be expected to operate at overall LOS E, and seven would operate at overall LOS F. In addition, ~~22~~21 individual traffic movements would be expected to operate at unacceptable LOS D, LOS E, or LOS F.
- In the weekday PM peak hour, three of the intersections analyzed would be expected to operate at overall LOS E, and 12 would operate at overall LOS F. In addition, 31 individual traffic movements would be expected to operate at unacceptable LOS D, LOS E, or LOS F.
- In the Saturday peak hour, three of the intersections analyzed would be expected to operate at overall LOS E, and five would operate at overall LOS F. In addition, 22 individual traffic movements would operate at unacceptable LOS D, LOS E, or LOS F.

Traffic movements operating at unacceptable levels of service are listed below.

- Beach Channel Drive and Beach 35th Street and Seagirt Boulevard
  - Southwestbound Beach Channel Drive approach (weekday AM, weekday midday, weekday PM, and Saturday)
  - Eastbound Beach Channel Drive shared through/right lane (weekday AM)
  - Eastbound Beach Chanel Drive left turn lane (weekday AM and weekday PM)
- Seagirt Boulevard and Rockaway Freeway
  - Westbound Seagirt Boulevard shared left/through lane group (weekday AM and weekday PM)
  - Southwestbound Rockaway Freeway approach upstream of westbound Seagirt Boulevard (weekday AM)
  - Northeastbound Rockaway Freeway approach upstream of eastbound Seagirt Boulevard (weekday AM)
  - Southwestbound Rockaway Freeway approach upstream of eastbound Seagirt Boulevard (weekday AM)
- Beach Channel Drive and Beach 37th Street
  - Eastbound Beach Channel Drive approach (weekday AM)
  - Westbound Beach Channel Drive approach (weekday AM, weekday midday, weekday PM, and Saturday)
- Beach Channel Drive and Beach 40th Street

- Eastbound Beach Channel Drive approach (weekday AM)
- Westbound Beach Channel Drive approach (weekday AM, weekday midday, weekday PM, and Saturday)

› Beach Channel Drive and Beach 44th Street
- Eastbound Beach Channel Drive approach (weekday AM and weekday PM)
- Westbound Beach Channel Drive approach (weekday AM, weekday midday, weekday PM, and Saturday)

› Beach Channel Drive and Arverne Boulevard and Beach 62nd Street
- Eastbound Beach Channel Drive shared left/through lane upstream of Beach 62nd Street approach (weekday AM and weekday PM)
- Eastbound Beach Channel Drive right turn lane upstream of Beach 62nd Street approach (weekday AM, weekday midday, weekday PM, and Saturday)
- Southbound Beach 62nd Street approach (weekday AM, weekday midday, and weekday PM)
- Westbound Beach Channel Drive upstream of Arverne Boulevard approach (weekday AM)
- Northwestbound Arverne Boulevard approach (weekday AM, weekday PM, and Saturday)

› Arverne Boulevard/Rockaway Beach Boulevard and Beach 54th Street
- Eastbound Arverne Boulevard shared through/right lane (weekday PM)
- Westbound Rockway Beach Boulevard approach (weekday AM and weekday PM)

› Rockaway Freeway and Beach 54th Street
- Westbound Rockaway Freeway left turn lane (weekday AM, weekday midday, weekday PM, and Saturday)

› Rockaway Freeway and Beach 59th Street
- Westbound Rockaway Freeway left turn lane (weekday AM, weekday midday, weekday PM, and Saturday)
- Southbound Beach 59th Street shared left/through lane (weekday AM, weekday PM, and Saturday)

› Edgemere Avenue and Beach 38th Street
- Eastbound Edgemere Avenue approach (weekday AM and weekday PM)
- Westbound Edgemere Avenue shared left/through lane (weekday AM, weekday midday, weekday PM, and Saturday)

› Edgemere Avenue and Beach 41st Street
- Eastbound Edgemere Avenue approach (weekday AM and weekday PM)
- Westbound Edgemere Avenue approach (weekday AM)

› Edgemere Avenue and Beach 44th Street
- Eastbound Edgemere Avenue approach (weekday AM, weekday PM, and Saturday)
- Westbound Edgemere Avenue approach (weekday AM)

› Edgemere Avenue and Beach 54th Street

- Eastbound Edgemere Avenue approach (weekday AM, weekday midday, weekday PM, and Saturday)
- Westbound Edgemere Avenue approach (weekday AM)

› Rockaway Beach Boulevard and Beach 56th Street (West)
- Eastbound Rockaway Beach Boulevard approach (weekday AM, weekday midday, and weekday PM, and Saturday)
- Westbound Rockaway Beach Boulevard approach (weekday AM, weekday midday, and weekday PM, and Saturday)

› Rockaway Beach Boulevard and Beach 59th Street
- Eastbound Rockaway Beach Boulevard approach (weekday AM, weekday midday, weekday PM, and Saturday)
- Westbound Rockaway Beach Boulevard approach (weekday AM, weekday midday, weekday PM, and Saturday)
- Northbound Beach 59th Street approach (weekday AM)
- Southbound Beach 59th Street right turn lane (weekday AM)

› Beach Channel Drive and Beach 49th Street (unsignalized)
- Northbound Beach 49th Street left lane (weekday AM, weekday midday, weekday PM, and Saturday)
- Northbound Beach 49th Street through/right lane (weekday AM, weekday midday, weekday PM, and Saturday)
- Southbound Beach 49th Street left lane (weekday AM, weekday midday, weekday PM, and Saturday)
- Southbound Beach 49th Street through/right lane (weekday AM, weekday midday, weekday PM, and Saturday)

› Beach Channel Drive and Beach 50th Street (unsignalized)
- Westbound Beach Channel Drive approach (weekday midday)
- Northbound Beach 50th Street approach (weekday AM, weekday midday, weekday PM, and Saturday)

› Rockaway Beach Boulevard and Beach 49th Street (unsignalized)
- Southbound Beach 49th Street left turn lane (weekday AM, weekday midday, weekday PM, and Saturday)

~~› Rockaway Beach Boulevard and Beach 44th Street (unsignalized)~~
- ~~Northbound Beach 44th Street approach (weekday midday)~~

Overall, of the 27 intersections analyzed, the Proposed Actions would result in significant adverse traffic impacts at 13 intersections (at 27 movements) during the weekday AM peak hour, 12 intersections (at 17 movements) during the weekday midday peak hour, 13 intersections (at 22 movements) during the weekday PM peak hour, and 11 intersections (at 14 movements) during the Saturday peak hour. The significantly impacted traffic movements are identified below:

› Beach Channel Drive and Beach 35th Street and Seagirt Boulevard

- Southwestbound Beach Channel Drive approach (weekday AM, weekday midday, weekday PM, and Saturday)
- Eastbound Beach Channel Drive shared through/right lane (weekday AM)
- Eastbound Beach Chanel Drive left turn lane (weekday AM and Weekday PM)

› Beach Channel Drive and Beach 37th Street
- Eastbound Beach Channel Drive approach (weekday AM)
- Westbound Beach Channel Drive approach (weekday AM, weekday midday, weekday PM, and Saturday)

› Beach Channel Drive and Beach 40th Street
- Eastbound Beach Channel Drive approach (weekday AM)
- Westbound Beach Channel Drive approach (weekday AM, weekday midday, weekday PM, and Saturday)

› Beach Channel Drive and Beach 44th Street
- Eastbound Beach Channel Drive approach (weekday AM and weekday PM)
- Westbound Beach Channel Drive approach (weekday AM, weekday midday, weekday PM, and Saturday)

› Beach Channel Drive and Arverne Boulevard and Beach 62nd Street
- Eastbound Beach Channel Drive shared left/through lane upstream of Beach 62nd Street approach (weekday AM and weekday PM)
- Eastbound Beach Channel Drive right turn lane upstream of Beach 62nd Street approach (weekday midday, weekday PM, and Saturday)
- Southbound Beach 62nd Street (weekday AM, weekday midday, and weekday PM)
- Westbound Beach Channel Drive upstream of Arverne Boulevard approach (weekday AM)
- Northwestbound Arverne Boulevard approach (weekday AM, weekday PM, and Saturday)

› Arverne Boulevard/Rockaway Beach Boulevard and Beach 54th Street
- Eastbound Arverne Boulevard shared through/right lane (weekday PM)
- Westbound Rockway Beach Boulevard approach (weekday AM and weekday PM)

› Edgemere Avenue and Beach 38th Street
- Eastbound Edgemere Avenue approach (weekday AM and weekday PM)
- Westbound Edgemere Avenue shared left/through lane (weekday AM, weekday midday, weekday PM, and Saturday)

› Edgemere Avenue and Beach 41st Street
- Eastbound Edgemere Avenue approach (weekday AM and weekday PM)
- Westbound Edgemere Avenue approach (weekday AM)

› Edgemere Avenue and Beach 44th Street
- Eastbound Edgemere Avenue approach (weekday AM, weekday PM, and Saturday)
- Westbound Edgemere Avenue approach (weekday AM)

› Edgemere Avenue and Beach 54th Street

- Eastbound Edgemere Avenue approach (weekday AM, weekday midday, weekday PM, and Saturday)
- Westbound Edgemere Avenue approach (weekday AM)

› Rockaway Beach Boulevard and Beach 56th Street (West)
- Eastbound Rockaway Beach Boulevard approach (weekday AM, weekday midday, and weekday PM, and Saturday)
- Westbound Rockaway Beach Boulevard approach (weekday AM, weekday midday, and weekday PM, and Saturday)

› Rockaway Beach Boulevard and Beach 59th Street
- Eastbound Rockaway Beach Boulevard approach (weekday AM, weekday midday, weekday PM, and Saturday)
- Westbound Rockaway Beach Boulevard approach (weekday AM, weekday midday, weekday PM, and Saturday)

› Beach Channel Drive and Beach 49th Street (unsignalized)
- Northbound Beach 49th Street left lane (weekday midday)
- Northbound Beach 49th Street through/right lane (weekday midday)

› Beach Channel Drive and Beach 50th Street (unsignalized)
- Westbound Beach Channel Drive approach (weekday midday)
- Northbound Beach 50th Street approach (weekday AM, weekday midday, weekday PM, and Saturday)

› Rockaway Beach Boulevard and Beach 49th Street (unsignalized)
- Southbound Beach 49th Street left turn lane (weekday midday)

The identification and evaluation of traffic capacity improvements needed to mitigate potential significant adverse traffic impacts created by the Proposed Actions are presented in **Chapter 19, Mitigation**.

Parking

Under the RWCDS, the mixed-use sites (Sites 1-9) would provide 518 on-site parking spaces, while the residential infill sites (Sites 10-41) would provide 122 on-site parking spaces. **Table 12-41** and **Table 12-42** show the hourly parking accumulation for weekday and Saturday projected for the mixed-use sites and the infill sites, respectively. For the residential infill sites, all parking demand would be accommodated on-site during all peak periods. For the mixed-use sites, demand for 106 parking spaces would not be accommodated by on-site parking during the weekday overnight peak period and demand for 229 parking spaces would not be accommodated by on-site parking during the Saturday peak period (weekday AM, midday and PM demand would be fully accommodated as demand in those periods would not exceed the 518 spaces provided by the mixed-use sites). Therefore, the weekday overnight and Saturday peak period shortfalls would need to be accommodated on-street.

Table 12-41 With-Action Project Increment – Parking Demand – Sites 1-9

	Weekday			Saturday		
Hour	Residential	Local Retail	Total	Residential	Local Retail	Total
12 AM - 1 AM	616	0	616	616	0	616
1 AM - 2 AM	624	0	624	630	0	630
2 AM - 3 AM	624	0	624	639	0	639
3 AM - 4 AM	624	0	624	645	0	645
4 AM - 5 AM	624	0	624	652	0	652
5 AM - 6 AM	624	0	624	646	0	646
6 AM - 7 AM	624	0	624	634	0	634
7 AM - 8 AM	498	14	512	600	0	600
8 AM - 9 AM	304	14	318	534	19	553
9 AM - 10 AM	223	22	245	459	55	514
10 AM - 11 AM	139	42	181	406	189	595
11 AM - 12 PM	121	37	158	377	189	566
12 PM - 1 PM	121	37	158	348	234	582
1 PM - 2 PM	121	23	144	355	277	632
2 PM - 3 PM	121	14	135	371	322	693
3 PM - 4 PM	124	9	133	374	361	735
4 PM - 5 PM	183	4	187	403	319	722
5 PM - 6 PM	263	4	267	421	319	740
6 PM - 7 PM	298	0	298	463	284	747
7 PM - 8 PM	406	0	406	489	249	738
8 PM - 9 PM	469	0	469	518	161	679
9 PM - 10 PM	516	0	516	557	0	557
10 PM - 11 PM	563	0	563	577	0	577
11 PM - 12 AM	595	0	595	594	0	594

Table 12-42 With-Action Project Increment – Parking Demand – Sites 10-41

	Weekday			Saturday		
Hour	Residential	Local Retail	Total	Residential	Local Retail	Total
12 AM - 1 AM	68	0	68	68	0	68
1 AM - 2 AM	68	0	68	68	0	68
2 AM - 3 AM	68	0	68	68	0	68
3 AM - 4 AM	68	0	68	68	0	68
4 AM - 5 AM	68	0	68	68	0	68
5 AM - 6 AM	68	0	68	68	0	68
6 AM - 7 AM	74	0	74	68	0	68
7 AM - 8 AM	60	0	60	66	0	66
8 AM - 9 AM	30	0	30	63	0	63
9 AM - 10 AM	20	0	20	54	0	54
10 AM - 11 AM	14	0	14	51	0	51
11 AM - 12 PM	16	0	16	45	0	45
12 PM - 1 PM	16	0	16	43	0	43
1 PM - 2 PM	16	0	16	48	0	48
2 PM - 3 PM	14	0	14	44	0	44
3 PM - 4 PM	15	0	15	42	0	42
4 PM - 5 PM	23	0	23	42	0	42
5 PM - 6 PM	38	0	38	44	0	44
6 PM - 7 PM	56	0	56	52	0	52
7 PM - 8 PM	66	0	66	58	0	58
8 PM - 9 PM	63	0	63	60	0	60
9 PM - 10 PM	62	0	62	63	0	63
10 PM - 11 PM	66	0	66	64	0	64
11 PM - 12 AM	68	0	68	66	0	66

Table 12-43 summarizes weekday overnight and Saturday peak period on-street parking availability under No-Action conditions, and incremental on-street parking demand generated by the Proposed Actions. No change in on-street parking capacity is assumed from the build-out of the Projected Development Sites under With-Action conditions.

With 318 available on-street parking spaces during the weekday overnight period and an incremental With-Action parking demand of 106 on-street spaces, the availability of on-street spaces would be able to accommodate the demand and there would still be 212 on-street spaces remaining. Similarly, during the Saturday peak period, the 618 available on-street parking spaces would be fully able to accommodate the incremental demand of 229 on-street spaces and there would still be 389 on-street spaces remaining. As there would not be a With-Action on-street parking space shortfall, there would be no potential for a parking impact as result of the Proposed Actions.

Table 12-43 With-Action On-Street Parking Utilization – Weekday Overnight and Saturday Peak Period

	Weekday Overnight	Saturday
No-Action Availability	318	618
With-Action Project Demand Not Accommodated by Projected Development Sites	106	229
With-Action Availability[1]	**212**	**389**

Note:
[1] With-Action availability reflects the number of available on-street spaces remaining after accounting for demand from Projected Development Sites

Buses

The Proposed Actions are expected to generate a total of 159 new bus passenger trips on the bus routes operating in proximity to the project area in the weekday AM peak hour and 242 new bus passenger trips on those bus routes in the weekday PM peak hours.

As shown in **Table 12-44**, under With-Action conditions, weekday AM peak hour eastbound and westbound direction demand through the maximum load points on the Q22 is expected to increase by 37 and 13 passengers, respectively. Weekday PM peak hour eastbound and westbound direction demand is expected to increase by 33 and 44 passengers, respectively. Even though these would be considered only modest increases in bus ridership, there would be a significant impact as No-Action capacity would not be sufficient to accommodate this additional demand under With-Action conditions during the weekday AM and PM peak hours in each direction. This would be a modest capacity shortfall of just 4 to 8 passengers in the weekday AM peak hour, and 12 to 21 passengers in the PM peak hour. Mitigation for these impacts is identified within **Chapter 19, Mitigation.**

Table 12-44 With-Action Bus Line-Haul Capacity – Q22 Bus

Peak Hour	Direction	Maximum Load Point	Peak Hour Buses[1]	No-Action Available Capacity[2]	Increment Through Load Point	Available Capacity[2]
AM	EB	Beach Channel Dr & Beach 35th St	7	29	37	-8
	WB	Rockaway Beach Bl & Cross Bay Pkwy	10	9	13	-4
PM	EB	Rockaway Beach Bl & Beach 88th St	8	21	33	-12
	WB	Beach Channel Drive & Beach 47th St	8	23	44	-21

Notes: Methodology based on *2020 CEQR Technical Manual* guidelines
[1]Assumes service levels adjusted to address capacity shortfalls under No-Action conditions.
[2]Available capacity based on MTA loading guidelines of 54 passengers per 40-foot standard bus
EB=Eastbound; WB=Westbound
Shading denotes an adverse bus impact

Subways

The Proposed Actions are expected to generate a total of 293 new subway trips in the weekday AM peak hour and 299 new subway trips in the weekday PM peak hours. Conditions at stairs, fare control areas, and subway lines analyzed in the With-Action condition are discussed below.

Subway Station Elements

The levels of service for stairs and fare control areas analyzed at the Beach 44th Street-Frank Avenue Station under With-Action conditions are shown in **Table 12-45** and **Table 12-46**, respectively. As shown in these two tables, station elements analyzed are expected to operate at acceptable LOS A during both the weekday AM and PM peak hours. Therefore, per *CEQR Technical Manual* guidelines, the Proposed Actions would not result in significant impacts to subway stations.

Table 12-45 With-Action Subway Station Level of Service – Stairs

Peak Hour	Stair	Effective Width (ft)	Pedestrian Volume Up (15-min)	Pedestrian Volume Down (15-min)	Friction Factor	Surging Factor (Up/Down)	v/c Ratio	LOS
AM	S3/M3	7.3	62	10	0.9	1.0/0.80	0.08	A
	S1/M3	7.3	39	12	0.9	1.0/0.80	0.05	A
	P3/P5	7.3	57	3	1.0	1.0/0.75	0.06	A
	P7/P9	7.3	43	3	0.9	1.0/0.75	0.05	A
	P4/P6	7.3	0	10	1.0	1.0/0.75	0.01	A
	P8/P10	7.2	5	10	0.9	1.0/0.75	0.02	A
PM	S3/M3	7.3	20	65	0.9	1.0/0.80	0.10	A
	S1/M3	7.3	17	32	0.9	1.0/0.80	0.06	A
	P3/P5	7.3	22	8	0.9	1.0/0.75	0.03	A
	P7/P9	7.3	17	0	1.0	1.0/0.75	0.02	A
	P4/P6	7.3	4	53	0.9	1.0/0.75	0.08	A
	P8/P10	7.2	0	46	1.0	1.0/0.75	0.06	A

Note: Methodology based on *2020 CEQR Technical Manual* guidelines

Table 12-46 With-Action Subway Station Level of Service – Fare Control Area

Peak Hour	Control Elements	Entry Volume (15-min)	Exit Volume (15-min)	Surging Factor[1]	Friction Factor (In/Out)	v/c Ratio	LOS
AM	3 two-way turnstiles	105	26	0.8	0.9	0.11	A
PM	3 two-way turnstiles	43	107	0.8	0.9	0.11	A

Note: Methodology based on *2020 CEQR Technical Manual* guidelines

[1] Surging factor only applies to exiting volumes. The surge factor for entry volumes is 1.0.

Subway Line-Haul

Under With-Action conditions, demand on the A local subway is expected to increase as a result of incremental demand associated with the Proposed Actions.

Table 12-47 summarizes With-Action weekday AM and PM peak hour line-haul conditions in the peak direction at the maximum load points for the A local subway. As shown in **Table 12-47**, the A local train would continue to operate below capacity through its maximum load points in both the weekday AM and PM peak hours – v/c ratios below 1.0. Therefore, per *CEQR Technical Manual* guidelines, the Proposed Actions would not significantly impact this subway line.

Table 12-47 With-Action Subway Line-Haul Capacity

Peak Hour	Route (Direction)	Maximum Load Point	Average Trains Per Hour[1]	Average Cars Per Hour[1]	Average Passengers		Guideline Passengers per Car[2]	v/c Ratio[3]	Incremental Passengers per Car
					Per Hour	Per Car			
AM	A local (NB)	Nostrand Ave	16.0	128	18,772	146.7	175	0.84	1.2
PM	A local (SB)	Jay St-MetroTech	15.5	124	18,804	151.6	175	0.87	0.7

Notes: Methodology based on *2020 CEQR Technical Manual* guidelines

[1] Based on 2017-2018 train throughput data from NYCT.

[2] Guideline capacities are based on NYCT rush hour loading guidelines, which vary by car type, line, and location based on frequency and type of service. This figure reflects the predominant car type (75 feet long) on the A. Some trains, however, use shorter cars (60 feet long) with a lower guideline per car.

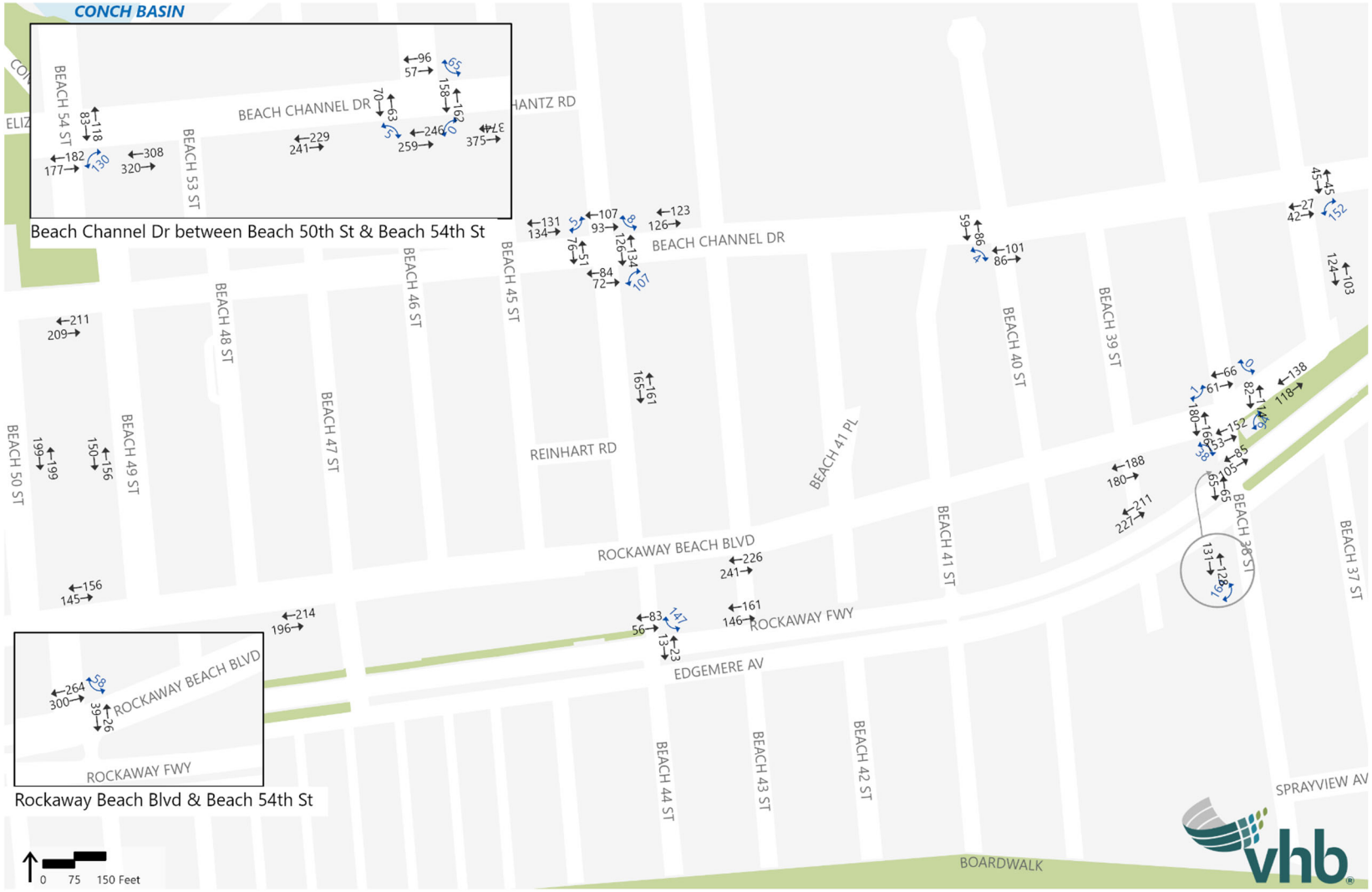
[3] Volume to guideline capacity ratio. V/C reflects the mix of 75-foot and 60-foot-long cars operating on the A line.

Pedestrians

The action-generated pedestrian volumes were added to the 2031 No-Action volumes to develop 2031 With-Action pedestrian volumes. With-Action pedestrian volumes for the weekday midday, weekday PM, and Saturday peak hours are shown in **Figure 12-30**, **Figure 12-31**, and **Figure 12-32**, respectively. Pedestrian analyses were performed based on these volumes and the With-Action pedestrian levels of service were determined for the analysis locations. No change in the physical street network was assumed.

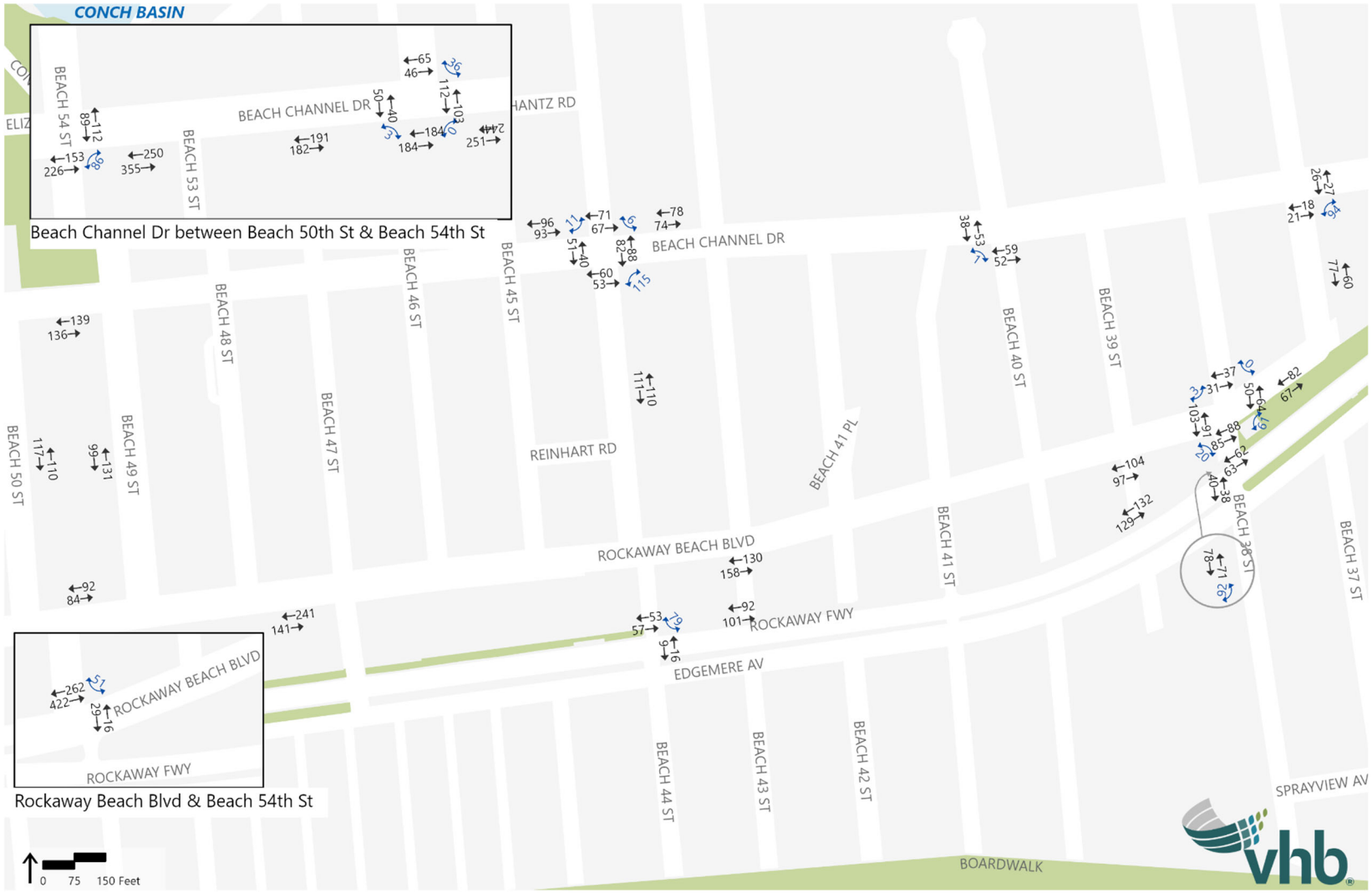
Table 12-48 provides an overview of the pedestrian levels of service for the peak hours analyzed. The levels of service, as well as With-Action peak hour volumes, for each sidewalk, crosswalk, and corner analyzed are presented in **Table 12-49**, **Table 12-50**, and **Table 12-51**, respectively. The summary of the With-Action condition indicates that all pedestrian elements would operate at acceptable levels of service (LOS C or better) during all time periods analyzed. Therefore, per *CEQR Technical Manual* criteria, none of the pedestrian elements analyzed would be significantly impacted by the Proposed Actions.

Figure 12-30 With-Action Pedestrian Volumes – Midday Peak Hour



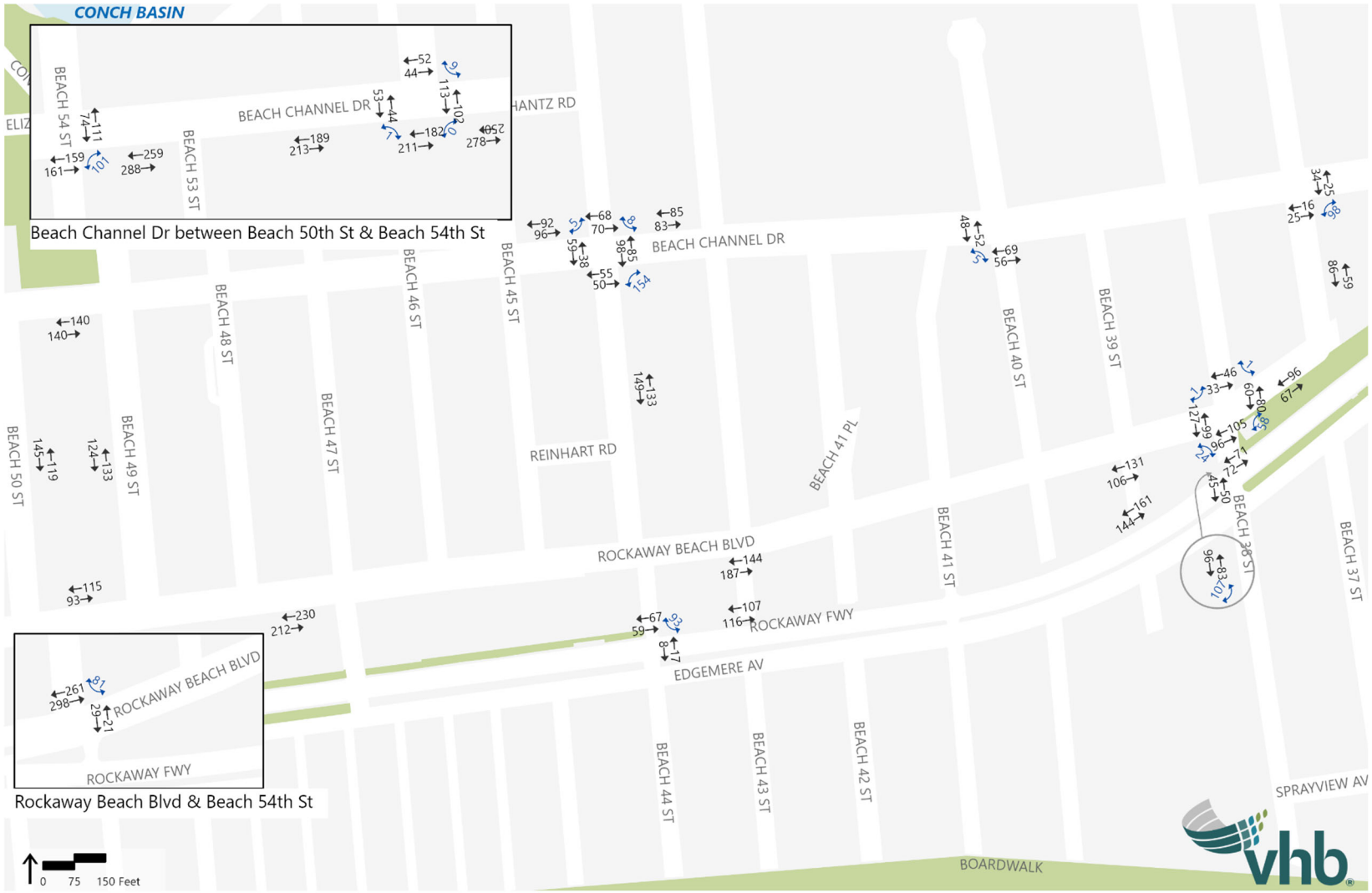
This Figure has been updated for the FEIS.

Figure 12-31 With-Action Pedestrian Volumes – PM Peak Hour



This Figure has been updated for the FEIS.

Figure 12-32 With-Action Pedestrian Volumes – Saturday Peak Hour



This Figure has been updated for the FEIS.

Table 12-48 With-Action Pedestrian Levels of Service Summary

	Midday Peak Hour	PM Peak Hour	SAT Peak Hour
Sidewalk Elements			
Sidewalks at LOS A/B/C	17	17	17
Sidewalks at LOS D	0	0	0
Sidewalks at LOS E	0	0	0
Sidewalks at LOS F	0	0	0
Crosswalk Elements			
Crosswalks at LOS A/B/C	5	5	5
Crosswalks at LOS D	0	0	0
Crosswalks at LOS E	0	0	0
Crosswalks at LOS F	0	0	0
Corner Elements			
Corners at LOS A/B/C	16	16	16
Corners at LOS D	0	0	0
Corners at LOS E	0	0	0
Corners at LOS F	0	0	0

Note: Includes 17 sidewalks, 5 crosswalks, and 16 corner analysis locations

Table 12-49 With-Action Pedestrian Levels of Service – Sidewalks

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Sidewalk	**Effective Width, ft**	**Volume, ped/hr**	**Avg Ped Space, SF/P**	**LOS**	**Volume, ped/hr**	**Avg Ped Space, SF/P**	**LOS**	**Volume, ped/hr**	**Avg Ped Space, SF/P**	**LOS**
Rockaway Beach Boulevard between Beach 50th Street and Beach 49th Street (north side)	5.0	301	143.3	A	176	245.4	A	208	207.6	A
Rockaway Beach Boulevard between Beach 49th Street and Beach 47th Street (south side)	3.8	410	78.7	A	382	84.5	A	452	71.3	A
Rockaway Beach Boulevard between Beach 44th Street and Beach 42nd Street (south side)	2.3	467	41.0	B	288	67.1	A	331	58.3	B
Rockaway Beach Boulevard between Beach 40th Street and Beach 38th Street (south side)	2.0	368	56.3	B	201	103.6	A	237	87.8	A

Table 12-49 With-Action Pedestrian Levels of Service – Sidewalks

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Sidewalk	Effective Width, ft	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Rockaway Freeway between Beach 44th Street and Beach 42nd Street (north side)	2.0	307	41.6~~48.4~~	B	193	66.8	A	223	57.7	B
Rockaway Freeway between Beach 40th Street and Beach 38th Street (north side)	2.0	438	28.7	C	261	49.1	B	305	41.9	B
Beach 38th Street between Rockaway Freeway and Rockaway Beach Boulevard (west side)	5.0	259	155.5	A	149	270.5	A	179	225.1	A
Beach 50th Street between Rockaway Beach Boulevard and Beach Channel Drive (east side)	3.4	398	73.8	A	227	129.8	A	264	111.6	A
Beach 49th Street between Rockaway Beach Boulevard and Beach Channel Drive (west side)	4.3	306	119.8	A	230	159.5	A	257	142.7	A
Beach 44th Street between Rockaway Beach Boulevard and Beach Channel Drive (east side)	3.5	326	92.5	A	221	136.6	A	282	107.0	A
Beach 37th Street between Rockaway Beach Boulevard and Beach Channel Drive (east side)	5.3	227	202.9	A	137	420.4	A	145	317.7	A
Beach Channel Drive between Beach 54th Street and Beach 53rd Street (south side)	3.4	628	46.5	B	605	48.3	A	547	53.5	B
Beach Channel Drive between Beach 53rd Street and Beach 51st Street (south side)	4.8	470	87.0	A	373	109.8	A	402	101.8	A
Beach Channel Drive between Beach 51st Street	5.2	749	59.2	B	495	89.9	A	528	84.2	A

Table 12-49 With-Action Pedestrian Levels of Service – Sidewalks

Sidewalk	Effective Width, ft	Midday Peak Hour Volume, ped/hr	Midday Peak Hour Avg Ped Space, SF/P	Midday Peak Hour LOS	PM Peak Hour Volume, ped/hr	PM Peak Hour Avg Ped Space, SF/P	PM Peak Hour LOS	SAT Peak Hour Volume, ped/hr	SAT Peak Hour Avg Ped Space, SF/P	SAT Peak Hour LOS
and Beach 50th Street (south side)										
Beach Channel Drive between Beach 50th Street and Beach 49th Street (south side)	8.5	420	174.7	A	275	267.0	A	280	262.2	A
Beach Channel Drive between Beach 45th Street and Beach 44th Street (north side)	3.8	265	122.1	A	189	171.3	A	188	172.2	A
Beach Channel Drive between Beach 44th Street and Beach 43rd Street (north side)	3.9	249	144.2	A	152	222.5	A	168	221.5	A

Table 12-50 With-Action Pedestrian Levels of Service – Crosswalks

Intersection	Crosswalk	Midday Peak Hour Volume, ped/hr	Midday Peak Hour Avg Ped Space, SF/P	Midday Peak Hour LOS	PM Peak Hour Volume, ped/hr	PM Peak Hour Avg Ped Space, SF/P	PM Peak Hour LOS	SAT Peak Hour Volume, ped/hr	SAT Peak Hour Avg Ped Space, SF/P	SAT Peak Hour LOS
Rockaway Beach Boulevard and Beach 38th Street	*South*	305	78.0	A	173	139.2	A	201	122.2	A
	West	346	45.5	B	194	83.6	A	226	71.0	A
Beach Channel Drive and Beach 51st Street	*East*	320	53.7	B	215	90.7	A	215	81.1	A
	South	505	57.2	B	368	84.1	A	393	74.8	A
Beach Channel Drive and Beach 44th Street	*East*	260	116.8	A	170	180.4	A	183	167.5	A

Table 12-51 With-Action Pedestrian Levels of Service – Corners

		Midday Peak Hour			PM Peak Hour			SAT Peak Hour		
Intersection	Corner	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS	Volume, ped/hr	Avg Ped Space, SF/P	LOS
Rockaway Beach Boulevard and Beach 54th Street	*Northeast*	58	112.9	A	51	108.5	A	81	115.3	A
Rockaway Beach Boulevard and Beach 38th Street	*Northeast*	0	51.9	B	0	94.1	A	1	76.0	A
	Southeast	94	75.9	A	61	136.3	A	58	117.2	A
	Southwest	38	29.533.0	C	20	60.2	A	24	50.8	B
	Northwest	1	101.1	A	3	184.9	A	1	158.0	A
Rockaway Freeway and Beach 44th Street	*Northeast*	147	29.9	C	79	48.4	B	93	41.5	B
Rockaway Freeway and Beach 38th Street	*Northwest*	164	77.5	A	92	133.1	A	107	112.7	A
Beach Channel Drive and Beach 54th Street	*Southeast*	130	98.1	A	86	100.9	A	101	109.7	A
Beach Channel Drive and Beach 51st Street	*Northeast*	65	187.9	A	36	306.6	A	9	323.4	A
	Southeast	0	90.2	A	0	143.3	A	0	127.8	A
	Southwest	5	122.1	A	3	181.5	A	1	163.0	A
Beach Channel Drive and Beach 44th Street	*Northeast*	8	77.6	A	6	123.6	A	8	119.8	A
	Southeast	107	128.3	A	115	173.9	A	154	155.9	A
	Northwest	5	180.6	A	11	259.9	A	5	264.6	A
Beach Channel Drive and Beach 40th Street	*Southwest*	4	169.6	A	1	276.8	A	5	256.0	A
Beach Channel Drive and Beach 37th Street	*Southeast*	152	290.8	A	94	559.1	A	98	460.8	A

Note: Volumes shown are "rounding the corner" volumes.

Pedestrian Safety and Improvements

As discussed previously, currently there is no marked crossing in the north/south direction on Rockaway Beach Boulevard between Beach ~~39th~~45th Street and Beach 53rd Street. As a result, it is likely that pedestrians en route to and from Projected Developments Sites 1 and 2 would choose to cross Rockaway Beach Boulevard at a proximate location where a marked crosswalk is not present, such as at the ~~intersections~~intersection of Rockaway Beach Boulevard at ~~Beach 40th Street, Beach 41st Street, Beach 42nd Street, Beach 44th Street, Beach 47th Street and~~ Beach 49th Street. This would have the potential for significant pedestrian safety impacts. Measures needed to mitigate these potential impacts are presented in **Chapter 19, Mitigation**.

13

Air Quality

Ambient air quality, or the quality of the surrounding air, may be affected by air pollutants produced by motor vehicles, referred to as "mobile sources"; by fixed facilities, referred to as "stationary sources"; or by a combination of both. Under CEQR, an air quality assessment determines both a proposed project's effects on ambient air quality as well as the effects of ambient air quality on the project.

Introduction

The New York City Department of Housing Preservation and Development (HPD) is proposing a series of land use actions (the Proposed Actions) to implement recommendations of the Resilient Edgemere Community Planning Initiative. The Proposed Actions are projected to result in the development of a reasonable worst-case development scenario (RWCDS) consisting of 41 Projected Development Sites—nine Projected Multi-Family Mixed-Use Development Sites and 32 Projected Residential Infill Sites (see **Figure 13-1**). The Projected Multi-Family Mixed-Use Development Sites would consist of buildings up to eight stories in height, and the Projected Residential Infill Sites would consist of buildings up to three stories in height.

Potential air quality impacts of the Proposed Actions include potential impacts from project-generated traffic, parking and from the Proposed Project's heating, ventilation and air conditioning (HVAC) systems. Consistent with the *CEQR Technical Manual*, the air quality analysis also includes potential impacts on the Projected Development Sites from nearby

light industrial sources and "large" and "major" sources (i.e., facilities with State and Title V air permits).

The key issues addressed in the air quality analysis are the potential for:

- Emissions from the project-generated vehicular travel to significantly impact air quality near affected intersections;
- Emissions from the parking facilities;
- Emissions from the Projected Development Sites' HVAC systems to significantly impact existing buildings and each other;
- Emissions from the large/major sources to impact the Projected Development Sites;
- Emissions from light industrial and manufacturing facilities to impact the Projected Development Sites.

Principal Conclusions

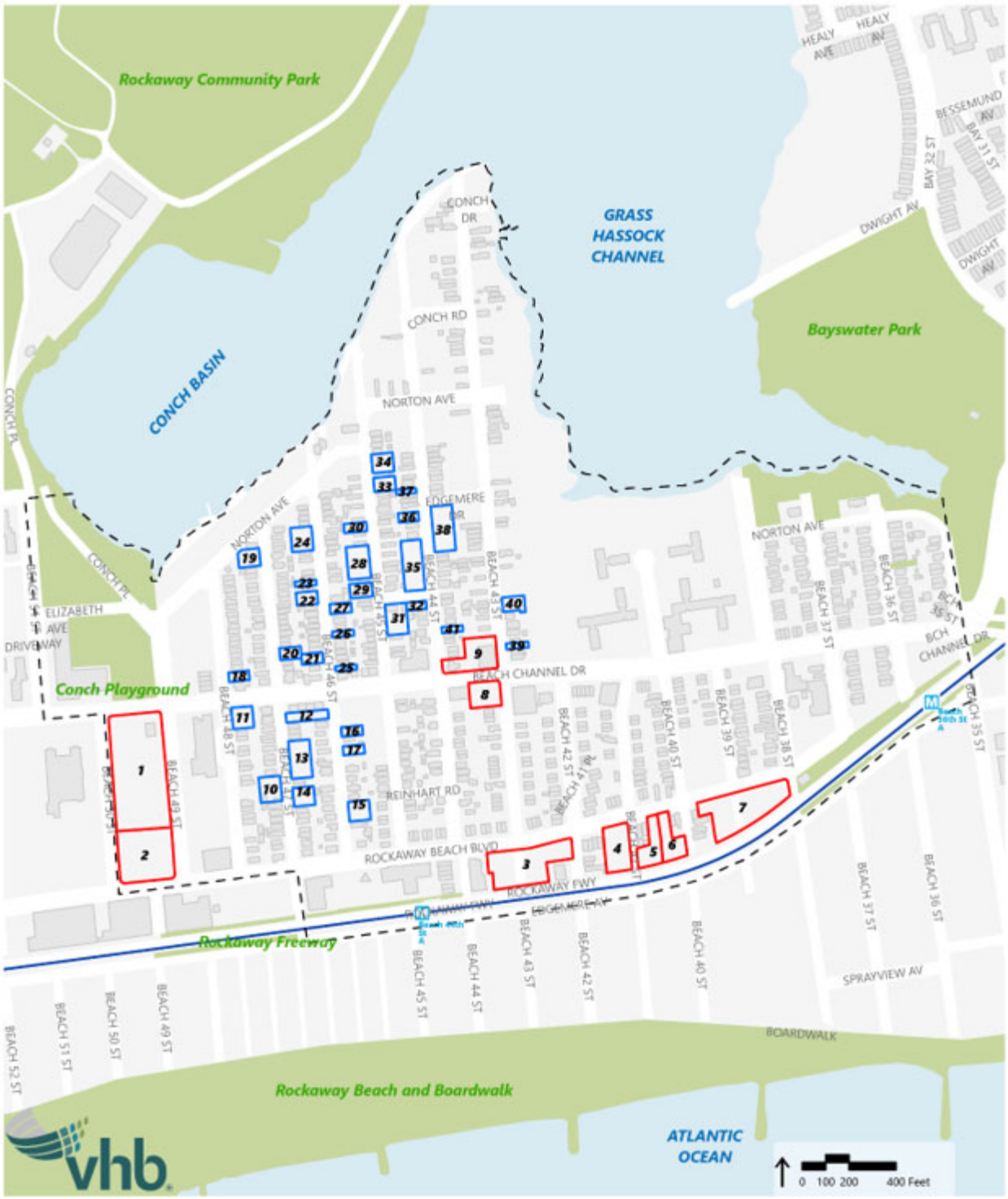
The air quality analysis addressed mobile sources, parking facilities, emissions from the HVAC and hot water systems and from industrial sources.

The number of incremental trips generated by the Proposed Actions would be higher than the screening thresholds for carbon monoxide (CO) and particulate matter ($PM_{2.5}$) identified in the *CEQR Technical Manual*. A screening assessment was undertaken, which indicated the need for additional analysis. Three intersections were selected as worst- case locations, and a microscale analysis for CO and PM was conducted. The highest predicted CO and 24-hour and annual $PM_{2.5}$ concentrations were below respective National Ambient Air Quality Standards (NAAQS) and the City's *de minimis* value at all intersections except Beach Channel Drive and Beach 37th Street. However, with the application of traffic mitigation measures to this intersection as presented in **Chapter 19, Mitigation**, the maximum predicted annual $PM_{2.5}$ would comply with the City's annual *de minimis* and no significant adverse air quality impacts would be expected from the project's mobile sources.

An analysis of parking facilities was undertaken and focused on the largest parking facility—which would be located at Projected Development Sites 1 and 2. The analysis determined that emissions from this facility would not result in a significant adverse air quality impact. Since the parking facilities on the other Projected Multi-Family Mixed-Use sites would be smaller, no impacts would result from these facilities, and overall, no significant adverse air quality impacts are expected from the parking facilities.

An analysis of the potential for impacts from stationary sources at the Projected Development Sites was undertaken. The detailed analysis of Projected Multi-Family Mixed-Use Development Sites 1 through 9 demonstrated that these projected developments must use natural gas in their fossil fuel-fired heating and hot water systems and ensure that the exhaust stacks are located at the highest tier and at least 88 feet (83 feet for Sites 8 and 9) above grade to avoid any potential significant adverse air quality impact. Also, Projected Multi-Family Mixed-Use Development Sites 1, 2, and 3 must use boilers with the low NO_x burners in order to avoid any potential significant adverse air quality impact.

Figure 13-1 Projected Development Sites



The screening analysis of impacts of the Projected Residential Infill Sites demonstrated that there would be no significant adverse air quality impacts at all sites with the following commitments: Sites 13, 22, 23, 28, 29, 33, and 34 must use natural gas in their HVAC and hot water systems; in addition, Sites 22, 23, 28, 29, 33, and 34 must also ensure that the exhaust stacks are located at the highest tier and at least 38 feet above grade. These commitments would be memorialized in either a Land Disposition Agreement (LDA) or an (E) designation for the Proposed Actions (E-655). With these measures, development at these sites would not result in potential significant adverse air quality impacts.

No large or major sources were identified within a 1,000-foot radius of the Project Area and therefore the analysis of large or major sources was not warranted.

An analysis of the potential for industrial sources was undertaken to determine if such sources would adversely affect the Projected Development Sites. The identified light industrial sources would not emit any carcinogenic air toxic pollutants. The analysis of non-carcinogenic non-criteria pollutants resulted in concentrations below guideline levels and demonstrated the hazard index below the threshold. Hence, no adverse air quality impacts on the Projected Development Sites are expected from the nearby industrial sources.

Air Quality Standards

In accordance with the requirements of the Clean Air Act, as amended in 1990, the U.S. Environmental Protection Agency (EPA) has promulgated National Ambient Air Quality Standards (NAAQS) (40 CFR part 50) for pollutants considered harmful to public health and the environment. The NAAQS are presented in **Table 13-1**.

The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of sensitive populations such as sick, children, and elderly populations. Secondary standards set limits to protect public welfare, including protection against decreased visibility and protections against damage to animals, crops, vegetation, and buildings.

The EPA Office of Air Quality Planning and Standards has set NAAQS for six principal pollutants, which are called "criteria" pollutants. These six pollutants are ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns in diameter (PM_{10}) and less than 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). These standards are reviewed periodically and may be revised. The State of New York has adopted similar standards as those set by the EPA, with the exception of sulfur dioxide, particulates, fluorides, and hydrogen sulfide.

Table 13-1 National Ambient Air Quality Standards

Pollutant	Primary/ Secondary	Averaging Level	Level	Form
Carbon Monoxide (CO)	Primary	8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Lead (Pb)	Primary and secondary	Rolling 3-month average	0.15 µg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary and secondary	1 year	53 ppb (2)	Annual mean
Ozone (O_3)	Primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum concentration, averaged over 3 years
Particulate Matter ($PM_{2.5}$)	Primary	1 year	12.0 µg/m^3	Annual mean, averaged over 3 years
	Secondary	1 year	15.0 µg/m^3	Annual mean, averaged over 3 years
	Primary and secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
Particulate Matter (PM_{10})	Primary and secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)	Primary	1 hour	75 ppb(4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Notes:

[1] In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m^3 as a calendar quarter average) also remain in effect.

[2] The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

[3] Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

[4] The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2)any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Source: EPA NAAQS Table, https://www.epa.gov/criteria-air-pollutants/naaqs-table, accessed July 2021

In addition to criteria pollutants, there are other pollutants, air toxics, not included by the EPA in the list of principal pollutants. Non-criteria pollutants are emitted by a wide range of man-made and naturally occurring sources. These pollutants are sometimes referred to as hazardous air pollutants and when emitted from mobile sources, as Mobile Source Air Toxics. No federal ambient air quality standards have been promulgated for toxic air pollutants.

However, EPA and New York State Department of Environmental Conservation (NYSDEC) have issued guidelines that establish acceptable ambient levels for these pollutants based on human exposure.

Regulatory Context

The 1990 Clean Air Act with Amendments resulted in states being divided into attainment and non-attainment areas, with classifications based upon the severity of their air quality problems. Air quality control regions are classified and divided into one of four categories: attainment, unclassified, maintenance, or non-attainment depending upon air quality data and ambient concentrations of pollutants. Attainment areas are regions where ambient concentrations of a pollutant are below the respective NAAQS; non-attainment areas are those where concentrations exceed the NAAQS. Maintenance areas are former non-attainment that achieved attainment. An unclassified area is a region where data are insufficient to make a determination and is generally considered as an attainment area for administrative purposes. A single area can be in attainment of the standards for some pollutants while being in non-attainment for others.

New York County is designated as a serious non-attainment area for the 2008 8-hour ozone standard and a moderate non-attainment area for the 2015 8-hour ozone standard. Both designations are part of a larger New York-Northern New Jersey-Long Island, NY-NJ-CT non-attainment area. Queens county has been designated as a maintenance area for CO as of May 20, 2002 and for the 2006 $PM_{2.5}$ standard as of April 18, 2014. Queens County is in attainment for all other criteria pollutants (PM_{10}, Pb, NO_2, and SO_2).

Pollutants of Concern

Air pollution is of concern because of its demonstrated effects on human health. Of special concern are the respiratory effects of the pollutants and their potential toxic effects, as described below.

Carbon monoxide (CO) is a colorless and odorless gas that is a product of incomplete combustion. Carbon monoxide is absorbed by the lungs and reacts with hemoglobin to reduce the oxygen carrying capacity of the blood. At low concentrations, CO has been shown to aggravate the symptoms of cardiovascular disease. It can cause headaches, nausea, and at sustained high concentration levels, can lead to coma and death.

Particulate matter is made up of small solid particles and liquid droplets. PM_{10} refers to particulate matter with a nominal aerodynamic diameter of 10 micrometers or less, and $PM_{2.5}$ refers to particulate matter with an aerodynamic diameter of 2.5 micrometers or less. Particulates can enter the body through the respiratory system. Particulates over 10 micrometers in size are generally captured in the nose and throat and are readily expelled from the body. Particulates smaller than 10 micrometers, and especially particles smaller than 2.5 micrometers, can reach the air ducts (bronchi) and the air sacs (alveoli) in the lungs. Particulates are associated with increased incidence of respiratory diseases, cardiopulmonary disease, and cancer.

Nitrogen oxides (NO_X), the most significant of which are nitric oxide (NO) and nitrogen dioxide (NO_2), can occur when combustion temperatures are extremely high (such as in

engines) and atmospheric nitrogen gas combines with oxygen gas. NO is relatively harmless to humans but quickly converts to NO_2. Nitrogen dioxide has been found to be a lung irritant and can lead to respiratory illnesses. Nitrogen oxides, along with VOCs, are also precursors to ozone formation.

Sulfur Dioxide (SO_2) emissions are the main components of the "oxides of sulfur," a group of highly reactive gases from fossil fuel combustion at power plants, other industrial facilities, industrial processes, and burning of high sulfur containing fuels by locomotives, large ships, and non-road equipment. High concentrations of SO_2 will lead to formation of other sulfur oxides. By reducing the SO_2 emissions, other forms of sulfur oxides are also expected to decrease. When oxides of sulfur react with other compounds in the atmosphere, small particles that can affect the lungs can be formed. This can lead to respiratory disease and aggravate existing heart disease.

Non-criteria pollutants are air toxics that could be harmful to human health. Federal ambient air quality standards do not exist for non-criteria pollutants; however, NYSDEC has issued standards for certain non-criteria compounds, including beryllium, gaseous fluorides, and hydrogen sulfide. NYSDEC has also developed a guidance document DAR-1 (August 2016), which contains a compilation of annual and short term (1-hour) guideline concentration thresholds for these compounds. The NYSDEC's DAR-1 guidance thresholds represent ambient levels that are considered safe for public exposure. EPA has also developed guidelines for assessing exposure to non-criteria pollutants. These exposure guidelines are used in health risk assessments to determine the potential effects to the public.

Impact Criteria

The State Environmental Quality Review Act (SEQRA) regulations and *2020 CEQR Technical Manual* indicate that the significance of a predicted consequence of a project (i.e., whether it is material, substantial, large, or important) should be assessed in connection with its setting (e.g., urban or rural), its probability of occurrence, its duration, its irreversibility, its geographic scope, its magnitude, and the number of people affected.[1] The predicted concentrations of pollutants of concern associated with a proposed project are compared with the NAAQS for criteria air pollutants or ambient guideline concentrations for non-criteria pollutants. Generally, if project-related concentrations are higher than the NAAQS, there is a potential for significant adverse air quality impacts. In addition, the City's *de minimis* criteria are also used to determine significance of impacts for CO and $PM_{2.5}$.

CO De Minimis Criteria

New York City has developed *de minimis* criteria to assess the significance of the increase in CO concentrations that would result from the impact of project-generated mobile sources, as set forth in the *CEQR Technical Manual*. These criteria set the minimum change in CO concentration that defines a significant adverse environmental impact. Significant increases of CO concentrations in New York City are defined as:

[1] *CEQR Technical Manual*, Chapter 1, section 222, November 2020; and State Environmental Quality Review Regulations, 6 NYCRR §617.7

- An increase of 0.5 ppm or more in the maximum eight-hour average CO concentration at a location where the predicted No-Action eight-hour concentration is equal to or between 8.0 and 9.0 ppm; or
- An increase of more than half the difference between baseline (i.e., No-Action) concentrations and the eight-hour standard, when No-Action concentrations are below 8.0 ppm.

$PM_{2.5}$ De Minimis Criteria

New York City uses de minimis criteria to determine a project's potential to result in a significant adverse $PM_{2.5}$ impact under CEQR. The *de minimis* criteria are as follows:

- Predicted increase of more than half the difference between the background concentration and the 24-hour standard;
- Annual average $PM_{2.5}$ concentration increments which are predicted to be greater than 0.1 $\mu g/m^3$ at ground level on a neighborhood scale (i.e., the annual increase in concentration representing the average over an area of approximately 1 square kilometer, centered on the location where the maximum ground-level impact is predicted for stationary sources; or at a distance from a roadway corridor similar to the minimum distance defined for locating neighborhood scale monitoring stations); or
- Annual average $PM_{2.5}$ concentration increments which are predicted to be greater than 0.3 $\mu g/m^3$ at a discrete receptor location (elevated or ground level) for stationary sources.

Non-Criteria Pollutant Thresholds

Non-criteria, or toxic, air pollutants include a multitude of pollutants of variable toxicity. No federal ambient air quality standards have been promulgated for toxic air pollutants. However, NYSDEC has issued guideline non-criteria pollutant ambient air concentrations and acceptable risk management range to determine the potential effects to the public.

The NYSDEC DAR-1 guidance document presents guideline concentrations in micrograms per cubic meter ($\mu g/m^3$) for the one-hour (short-term guideline concentration, SGC) and annual average (annual guideline concentration, AGC) periods for various air toxic compounds[2].

The potential cancer risk associated with each carcinogenic air toxic, as well as the total cancer risk of the releases of all the carcinogenic toxic pollutants combined, can be estimated from the predicted concentrations of the carcinogenic pollutants. If the total incremental cancer risk of all the carcinogenic toxic pollutants combined is less than one-in-one million, the residual risk is deemed acceptable.

In order to evaluate residual risk of non-carcinogenic toxic air emissions, hazard index is calculated based on annual exposure limits. If the combined ratio of pollutant concentration divided by its annual exposure threshold for each of the toxic pollutants is found to be less than 2.0, according to DAR-1, the residual risk is deemed acceptable.

[2] NYSDEC DAR-1 - http://www.dec.ny.gov/docs/air_pdf/dar1.pdf.

Background Concentrations

Background concentrations are ambient pollution levels associated with existing stationary, mobile, and other area emission sources. NYSDEC maintains an air quality monitoring network and produces annual air quality reports that include monitoring data for NO_2, PM_{10}, $PM_{2.5}$, and SO_2. The latest three full years of monitoring data (2018 to 2020) from the representative monitoring stations were used to develop background concentrations for all pollutants (see **Table 13-2** below in the **Existing Conditions** Section).

The *CEQR Technical Manual de minimis* threshold were estimated based on the background concentrations and were determined to be 3.7 ppm for 8-hour CO and 9.2 µg/m^3 for the 24-hour $PM_{2.5}$.

Analysis Approach

Mobile Sources

The impacts of trips generated by the project and impacts of the increased trips at the parking lot were analyzed using the *2020 CEQR Technical Manual* screening approach.

Screening Analysis of Project-Generated Mobile Trips

A screening analysis of mobile source CO emissions on ambient pollutant levels in the study area was conducted per *CEQR Technical Manual* guidance as described in Chapter 17, Sections 210 and 311 of the *2020 CEQR Technical Manual*. The threshold for conducting an analysis of CO emissions is 170 project-generated vehicles at a given intersection in the peak hour. The number of heavy-duty diesel vehicle or equivalent trips in the peak hour is compared to the PM thresholds using the *CEQR Technical Manual* spreadsheet to determine a need for more detailed PM analysis. The PM thresholds depend on the average daily traffic on a particular type of roadway.

Detailed Mobile Source Analysis

The CEQR threshold for CO and $PM_{2.5}$ were exceeded at several intersections. The intersections were ranked by the generated volume to select the worst ones for modeling. Detailed microscale analysis of particulate matter ($PM_{2.5}$) and CO was conducted for the Proposed Actions.

Vehicle Emissions

Vehicular CO and $PM_{2.5}$ emission factors utilized in the dispersion modeling were computed using the latest version of the EPA's Motor Vehicle Emission Simulator, MOVES3. This emissions model is capable of calculating engine emission factors for various vehicle types, based on the fuel type (gasoline, diesel, or compressed natural gas), meteorological conditions, vehicle speeds, vehicle age, roadway types, number of starts per day, engine soak time, and various other factors that influence emissions, such as an inspection maintenance program.

MOVES input files (i.e., fuel data, county-specific hourly temperature and relative humidity data, inspection/ maintenance coverage, etc.) for Queens County were obtained from NYSDEC. Source type age distribution data were obtained from the NYSDEC and processed using the EPA's *Age Distribution Projection Tool for MOVES3*.[3]

Traffic Data

Traffic information from **Chapter 12, Transportation** and speeds developed specifically for this analysis on the basis of speed runs collected for the project were used to estimate emissions and to develop geometries for the dispersion modeling.

CO Emissions

CO emissions were conservatively estimated using the month of the highest CO emissions. MOVES3 runs for CO were conducted for the four peak periods, AM, midday and PM peak and Saturday peak for With-Action and No-Action conditions.

PM Emissions

Following the 2015 EPA's *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*,[4] particulate matter MOVES runs were conducted for each of the four seasons and for the AM, midday, PM, and overnight time periods. For AM, midday, and PM, traffic volumes were based on volumes presented in **Chapter 12, Transportation**. For the overnight period, the midday traffic volumes were used as a reference and scaled down to reflect projected overnight volumes. The runs were made for the With-Action and No-Action conditions for each link used in the intersection model utilizing link-specific parameters and data.

Fugitive Dust

In addition to exhaust, tire and brake-wear emission factors estimated by MOVES3 for particulate matter, fugitive dust emissions were estimated using EPA's Compilation of Air Emissions Factors (AP-42)[5] guidance for paved roads. Fugitive dust emissions were used in the short-term, 24-hour modeling of $PM_{2.5}$. Consistent with NYCDEP's conclusion that fugitive dust has insignificant contribution on the neighborhood scale, fugitive dust emissions were not used in the annual $PM_{2.5}$ modeling (i.e., neighborhood scale analysis).

Dispersion Model

EPA AERMOD model (version 21112) was used in the analyses of CO and $PM_{2.5}$ at the selected intersections. The intersections links were modeled using line source option in the model and following the EPA's PM Transportation Conformity Guidance. Initial vertical and horizontal dimensions and source release heights were determined based on the source types in the fleet as described in Appendix J.3 to the EPA PM Guidance. CO analysis used the highest peak hour emission rates at each link, while PM analysis utilized variable hourly emission rates.

[3] EPA. Age Distribution Projection Tool for MOVES3.xlsx < Tools to Develop or Convert MOVES Inputs | US EPA>

[4] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100NMXM.pdf

[5] EPA. AP-42, chapter 13.2.1 Paved Roads. https://www.epa.gov/sites/production/files/2020-10/documents/13.2.1_paved_roads.pdf

Receptor Placement

Sensitive receptors near the intersections were placed at the existing sidewalks under With-Action and No-Action conditions at 1.8 meters above grade. For the short-term impacts, receptors were placed at the sidewalks around the intersections at around 10 feet from the curb. For compliance with the annual neighborhood $PM_{2.5}$ criterion, receptors were placed at 15 meters away from the curb.

Analysis Year

The mobile sources analyses were performed for 2031, the analysis year for this EIS.

Meteorological Data

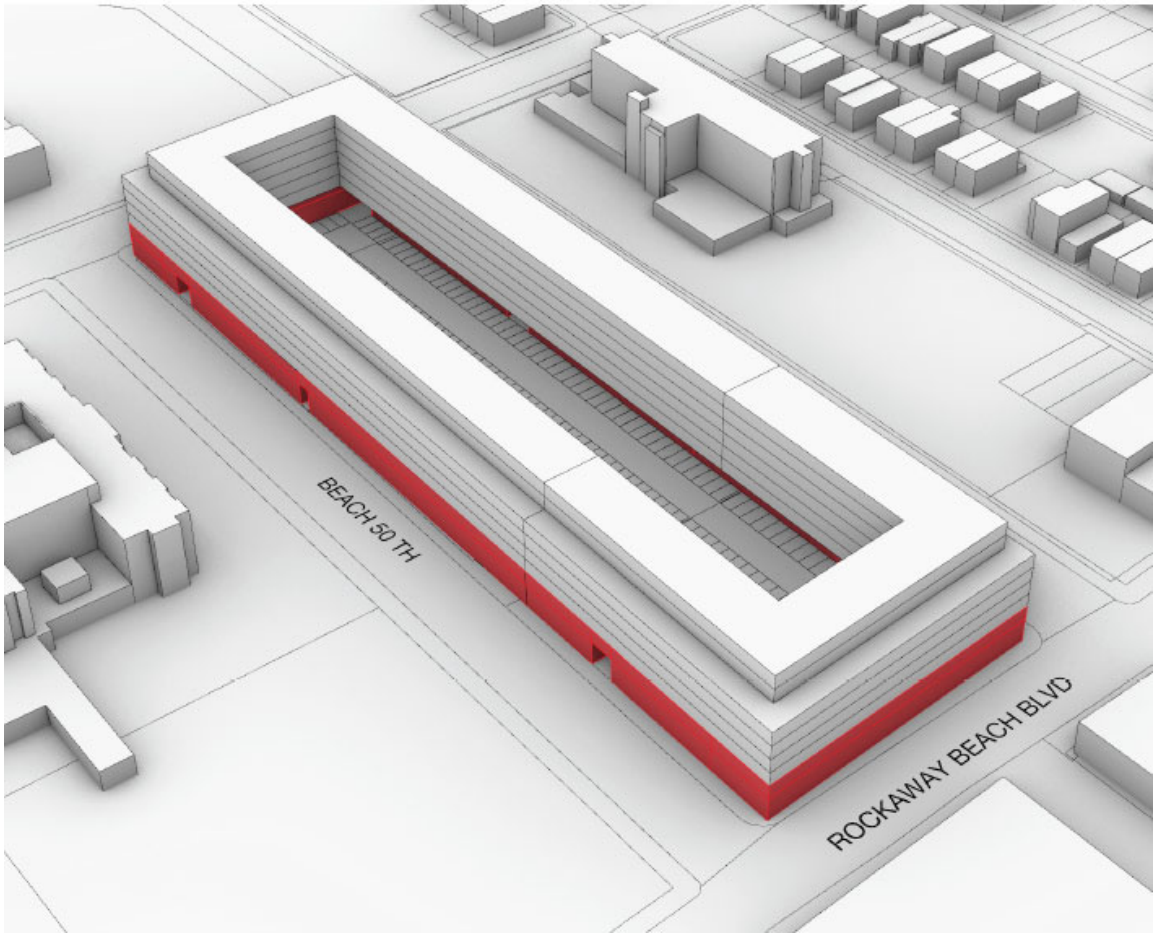
Dispersion analysis used the latest available five years (2016-2020) of hourly meteorological observations from JFK Airport National Weather Service station and upper air data obtained from the Brookhaven station, New York. JFK airport is located across Jamaica Bay from the Edgemere neighborhood and was considered to have more representative observations than LaGuardia airport.

Parking Facilities

The Proposed Actions are projected to introduce 478 parking spaces on the Projected Development Sites in surface parking areas, with Projected Development Sites 1 and 2 expected to have the largest and most active parking area (241 parking spaces) (see **Figure 13-2**).

Potential impacts from parking lot emissions were estimated using the *CEQR Technical Manual* approach conservatively assuming only one entrance and exit at Projected Development Site 2, located on Beach 50th Street closer to the corner of Rockaway Beach Boulevard. This is a conservative assumption as it is anticipated that the parking facility would have more than one entrance/exit.

Figure 13-2 Projected Development Sites 1 and 2: Parking



Stationary Sources

HVAC Analysis

As described above and presented in **Figure 13-1**, the Proposed Actions are projected to result in the development of a RWCDS consisting of 41 Projected Development Sites: nine Projected Multi-Family Mixed-Use Sites and 32 Projected Residential Infill Sites. The Projected Multi-Family Mixed-Use Sites would consist of buildings up to eight stories in height, and the Projected Residential Infill Sites would consist of buildings up to three stories in height.

The Projected Multi-Family Mixed-Use Sites are assumed to have natural gas-fueled low NO_x boilers to service the HVAC and hot-water systems. The Projected Residential Infill Sites are assumed to have no restriction on fuel for boilers. The HVAC analysis assesses the potential for emissions from the Projected Development Sites to significantly impact existing buildings in the surrounding area as well as impact each other.

Two types of analyses were conducted for this project. The Projected Multi-Family Mixed-Use Sites were analyzed separately from emissions of the Projected Residential Infill Sites.

Based on the number of Projected Multi-Family Mixed-Use Sites, the *2020 CEQR Technical Manual* requires the detailed dispersion analysis using the EPA's AERMOD model as described below. The Projected Residential Infill Sites were analyzed using the cluster approach with these new residences grouped based on the size. A CEQR graphical screening analysis was performed for the largest Projected Residential Infill Site and the result was applied to the other Projected Residential Infill Sites in the group. For those Projected Residential Infill Sites that failed the graphical screening, AERSCREEN modeling was performed.

Analysis of Multi-Family Buildings

HVAC and hot-water heaters emissions from the Projected Multi-Family Mixed-Use Sites were analyzed using the EPA dispersion model AERMOD.

AERMOD Dispersion Modeling

AERMOD version 21112 was used in this modeling effort. AERMOD is a state-of-the-art dispersion model, applicable to rural and urban areas, flat and complex terrain, surface and elevated releases, and multiple sources (including point, area, and volume sources). AERMOD is a steady-state plume model that incorporates current concepts about flow and dispersion in complex terrain, including updated treatments of the boundary layer theory, understanding of turbulence and dispersion, and includes handling of terrain interactions. The AERMOD model calculates pollutant concentrations from one or more points (e.g., exhaust stacks) based on hourly meteorological data and has the capability to calculate pollutant concentrations at locations where the plume from the exhaust stack is affected by the aerodynamic wakes and eddies (downwash) produced by nearby structures. AERMOD can be run with and without building downwash. The downwash option accounts for the effects on plume dispersion created by the structure the stack is located on, and other nearby structures.

Emission Rates and Stack Parameters

Emission rates for the proposed HVAC systems were estimated using the AP-42, EPA's Compilation of Air Emissions.[6] The fuel consumption was estimated based on the Mid-Atlantic Region average residential fuel consumption from the 2015 Residential Energy Consumption Survey (RECS).[7]

Methodology Utilized for Estimating NO_2 Concentrations

The 1-hour NO_2 concentration associated with the proposed buildings was estimated using the AERMOD Plume Volume Molar Ratio Method (PVMRM) module. The PVMRM module limits the NO_x to NO_2 conversion by considering NO_2 formation based on the amount of ozone within the plume volume. The annual levels were estimated using the EPA-recommended annual ratio of 0.75.

[6] https://www.epa.gov/sites/production/files/2020-09/documents/1.4_natural_gas_combustion.pdf
[7] https://www.eia.gov/consumption/residential/data/2015/index.php?view=consumption

Meteorological Data

Dispersion analysis used the latest available five years (2016-2020) of hourly meteorological observations from JFK Airport.

Receptor Locations

Receptors were placed on existing buildings of similar or greater height, buildings of similar or greater height expected to be complete in the future No-Action condition (e.g., the Peninsula Hospital Development), and on the Projected Development Sites themselves.

Analysis of Infill Sites

CEQR Graphical Screening (HVAC Screening)

As described in Section 220 and Section 321 in Chapter 17 of the *CEQR Technical Manual*, for single-building projects that would use fossil fuels (i.e., natural gas) for HVAC systems, a preliminary stationary source screening analysis is typically warranted to evaluate the potential for impacts on existing buildings from HVAC systems emissions for a proposed project. The *CEQR Technical Manual* provides screening nomographs based on fuel type, stack height, minimum distance from the source to the nearest receptor buildings with similar or greater heights, and floor area of development resulting from a proposed project. There are three different curves representing three different stack heights (30 feet, 100 feet, and 165 feet) on the screening nomograph figures, and the height closest to but not higher than the proposed stack height should be selected. Should the distance between the stack and the nearest building of similar or greater height be less than the minimum required distances determined, there is the potential for a significant air quality impact from the project's boiler.

The 32 Projected Residential Infill Sites were separated into two groups—those with projected developments larger than 10,000 gsf (Group A) and those with projected developments smaller than 10,000 gsf (Group B). The largest building of each group was selected for screening. For the smaller sites that did not meet the conservative distance requirement identified for the largest site in each group, a refined analysis was undertaken. As described below, six sites, one in Group A and five in Group B, failed the nomograph screen and were therefore evaluated under the more refined analysis.

The more refined analysis used EPA's AERSCREEN model and more detailed information about the stack for each Projected Development Site, the proposed building dimensions, existing (or proposed) building heights, and window locations (receptors) on adjacent properties for each site, and distances between the proposed and receptor buildings.

AERSCREEN Dispersion Modeling

For projects where the CEQR graphical screening indicates the need for further analysis, a refined air quality analysis was performed using the EPA's AERSCREEN model (version 21112), which is the screening version of the EPA's AERMOD model (see above in the AERMOD Dispersion Modeling section), to evaluate the potential for emissions from the proposed HVAC systems to result in a significant adverse impact. Similar to AERMOD, AERSCREEN was run with and without building downwash.

Emission Rates and Stack Parameters

Emission rates for the HVAC systems were estimated based on the EPA's AP-42, Compilation of Air Pollutant Emissions Factors and 2015 fuel consumption rates from the Residential Energy Consumption Survey.

Methodology Utilized for Estimating NO_2 Concentrations

AERMOD/AERSCREEN Plume Volume Molar Ratio Method (PVMRM) and background ozone concentration were used in this analysis to estimate 1-hour concentrations. Annual concentrations were estimated using the 0.75 NO_2/NO_x conversion ratio.

Industrial Sources

As described in Section 220 and Section 321 in Chapter 17 of the *CEQR Technical* Manual, an air quality assessment is warranted to evaluate the potential impacts of air toxics emissions from ventilation exhaust systems of manufacturing or processing facilities within a 400-foot radius of a project site when a project would result in new sensitive uses (particularly residences, schools, hospitals, or parks).

For identified sources, a screening analysis is performed based on Table 17-3 in Chapter 17 of the *CEQR Technical Manual*. The screening table provides the maximum 1-hour, 8-hour, 24-hour and annual average modeled values based on a generic emission rate of 1 gram per second of a pollutant from a 20-foot-tall point source for the distances between 30 feet and 400 feet from the receptor of the same height. Potential impacts predicted from the industrial source of concern based on the screen table are compared with the short-term guideline concentrations (SGCs) and annual guideline concentration (AGCs) recommended in NYSDEC's DAR-1 AGC/SGC Tables. If a proposed project fails the above screening analysis, or the screening analysis methodology is not applicable to the project, further refined analysis using EPA's AERSCREEN and/or AERMOD model is warranted to determine any potential for significant adverse impacts.

As discussed below, two industrial sources that failed the screening analysis were identified and assessed using AERSCREEN.

Large and Major Sources

As described in Section 220 and Section 321 in Chapter 17 of the *CEQR Technical Manual*, an air quality assessment is required to evaluate the potential impacts of emissions from a "large" or "major" emission source within a 1,000-foot radius of a project site. "Major" sources are identified as sources with Title V/PSD (Prevention of Significant Deterioration) permits. "Large" sources are identified as sources with Air State Facility (ASF) permits. A detailed analysis is usually performed for such sources to determine any potential for significant adverse impact on the proposed development.

No large or major sources were identified within a 1,000-foot radius of the Project Area and therefore the analysis of large or major sources is not warranted.

Existing Conditions

Existing conditions in the area are characterized by the monitored concentrations representative of the Project Area. The same monitoring stations at 65-30 Kissena Boulevard were used to develop background concentrations and to represent the existing conditions in the Project Area for the same pollutants. Lead concentrations are monitored at only one location in New York City, in the Bronx at IS 52 at 681 Kelly Street. Existing concentrations are presented in **Table 13-2** in the form comparable to the NAAQS and in the same units as the standards.

Concentrations of all pollutants except ozone were below their respective NAAQS. Ozone concentrations slightly exceeded the 2015 8-hour standard which corresponds with the non-attainment status of Queens County, where the project is proposed.

Table 13-2 Existing Monitored Concentrations (2018-2020)

Pollutant	Averaging Time	Concentration	NAAQS
Carbon Monoxide	1-Hour	2.1 ppm	35 ppm
	8-Hour	1.6 ppm	9 ppm
Lead	3-month	0.0033 µg/m^3	0.15 µg/m^3
Nitrogen Dioxide	1-Hour	53 ppb	100 ppb
	Annual	13.7 ppb	53 ppb
Ozone	8-Hour	0.071 ppm	0.070 ppm
Particulate Matter (PM_{10})	24-Hour	34 µg/m^3	150 µg/m^3
Particulate Matter ($PM_{2.5}$)	24-Hour	16.7 µg/m^3	35 µg/m^3
	Annual	5.8 µg/m^3	12 µg/m^3
Sulfur Dioxide	1-Hour	5.7 ppb	75 ppb

Source: https://www.epa.gov/outdoor-air-quality-data/monitor-values-report
ppm: parts per million; ppb: parts per billion

Assessment

Mobile Sources

Screening Analysis of Project-Generated Mobile Trips

As described in **Chapter 12, Transportation,** the Proposed Actions residential and mixed-use development would generate mostly auto trips. The generated peak hour (AM, MD, PM and Saturday) trips were screened using CEQR screening threshold for CO and $PM_{2.5}$. The Project Area has a number of signalized and unsignalized intersections that would be affected by the projected development. **Table 13-3** lists signalized intersections ranked by the number of total generated trip. Several intersections failed CO screening threshold of 170 trips per peak hour. The Proposed Actions would not generate a significant number of heavy-duty diesel vehicles. As presented in **Table 12-4** of **Chapter 12, Transportation**, the number of incremental truck trips would be highest in the weekday MD peak hour, with a total of 8 trips. As the RWCDS reflects residential and local retail uses, it is expected that these trucks would be delivery vehicles, class 3 trucks HDDV3. Within the Project Area, these

vehicles would concentrate along Beach Channel Drive, the lone designated truck route in the Project Area. Along Beach Channel Drive, a maximum of four truck trips are forecasted at any one intersection. Despite the low number of trucks, the equivalent $PM_{2.5}$ emissions from the generated auto trips, considered LDGT1, and the HDDV3 trips would exceed the CEQR threshold. Therefore, a microscale intersection analysis is warranted.

Table 13-3 Signalized Intersections Project-Generated Trips Screening

Corridor	Intersection	AM	MD	PM	Saturday
Beach Channel Drive	**Beach Channel Dr at Beach 37th St**	**171**	**376**	**266**	**310**
Beach Channel Drive	**Beach Channel Dr/Arverne Blvd/Beach 62nd St**	**237**	**227**	**234**	**267**
Rockaway Beach Blvd	**Rockaway Beach Blvd at Beach 38th St**	114	**266**	**184**	**211**
Seagirt Blvd	Seagirt Blvd/Edgemere Ave/Beach 32nd St	79	**232**	150	**174**
Seagirt Blvd	Seagirt Blvd at Rockaway Fwy	77	**210**	128	156
Arverne Blvd	Arverne Blvd/Rockaway Beach Blvd/Beach 54th St	115	152	134	155
Beach Channel Drive	Beach Channel Dr at Beach 44th St	79	164	115	136
Edgemere Avenue	Edgemere Ave at Beach 38th St	58	160	101	117
Arverne Blvd	Arverne Blvd at Beach 59th St	98	105	105	121
Arverne Blvd	Arverne Blvd at Beach 56th St S	96	102	103	118
Arverne Blvd	Arverne Blvd at Beach 56th St N	96	102	103	118
Edgemere Avenue	Edgemere Ave at Beach 41st St	44	114	75	88
Edgemere Avenue	Edgemere Ave at Beach 54th St	38	92	63	74
Rockaway Beach Blvd	Rockaway Beach Blvd at Beach 59th St	38	77	55	66
Edgemere Avenue	Edgemere Ave at Beach 44th St	30	67	48	55
Rockaway Freeway	Rockaway Fwy at Beach 54th St	19	50	31	37
Rockaway Freeway	Rockaway Fwy at Beach 44th St	13	33	23	25
Rockaway Freeway	Rockaway Fwy at Beach 59th St	2	3	2	3
Rockaway Freeway	Rockaway Fwy at Beach 56th St	0	0	0	0

Source: VHB, Inc. August 2021

Three top signalized intersections were selected for the detailed microscale analysis for CO and PM. The selected intersections are highlighted in bold in the **Table 13-3** and are shown on **Figure 13-3**.

Microscale Intersection Analysis

Microscale intersection analysis compares the future With-Action condition to the No-Action condition at the intersections selected for analysis. It is assumed that if no significant adverse

impacts are identified at the intersections with the highest volumes, other intersections would not experience significant adverse air quality impacts.

In the No-Action condition, the Projected Development Sites are assumed to remain unchanged from existing conditions. The No-Action condition considers the effects of background growth and growth generated by known projects (e.g., developments that are under construction, planned, or proposed by the 2031 build year).

CO Analysis

Emissions from vehicles at the intersections selected for analysis were estimated using EPA's MOVES3 mobile source emissions model and NYSDEC inputs for Queens County. The analysis was conducted for the peak periods, AM, midday, PM, and Saturday peak hours. CO emissions were conservatively estimated using the highest peak month and period emissions for all analyzed periods. The other assumptions are described in the **Analysis Approach** section.

The highest results of the AERMOD analysis are presented in **Table 13-4**. All estimated concentration were below respective CO NAAQS and CEQR *de minimis* criterion.

Table 13-4 Highest CO Concentrations for No-Action and With Action Conditions in 2031 (ppm)

	1-Hour			8-Hour		
Intersection	**No-Action[1]**	**With Action[2]**	**Increment**	**No-Action[1]**	**With Action[2]**	**Increment**
Beach Channel at Beach 37th	3.0	4.1	1.1	2.2	3.0	0.7
Beach Channel and Beach 62nd	2.6	2.7	0.1	2.0	2.0	0.1
Rockaway Beach at Beach 38th	2.4	2.6	0.3	1.8	2.0	0.2
NAAQS/CEQR *de minimis*	**35**			**9**		**3.7**

Source: VHB, Inc. November 2021

Notes:

[1] No-Action and With Action impacts are highest second highest 1 or 8-hour concentrations.

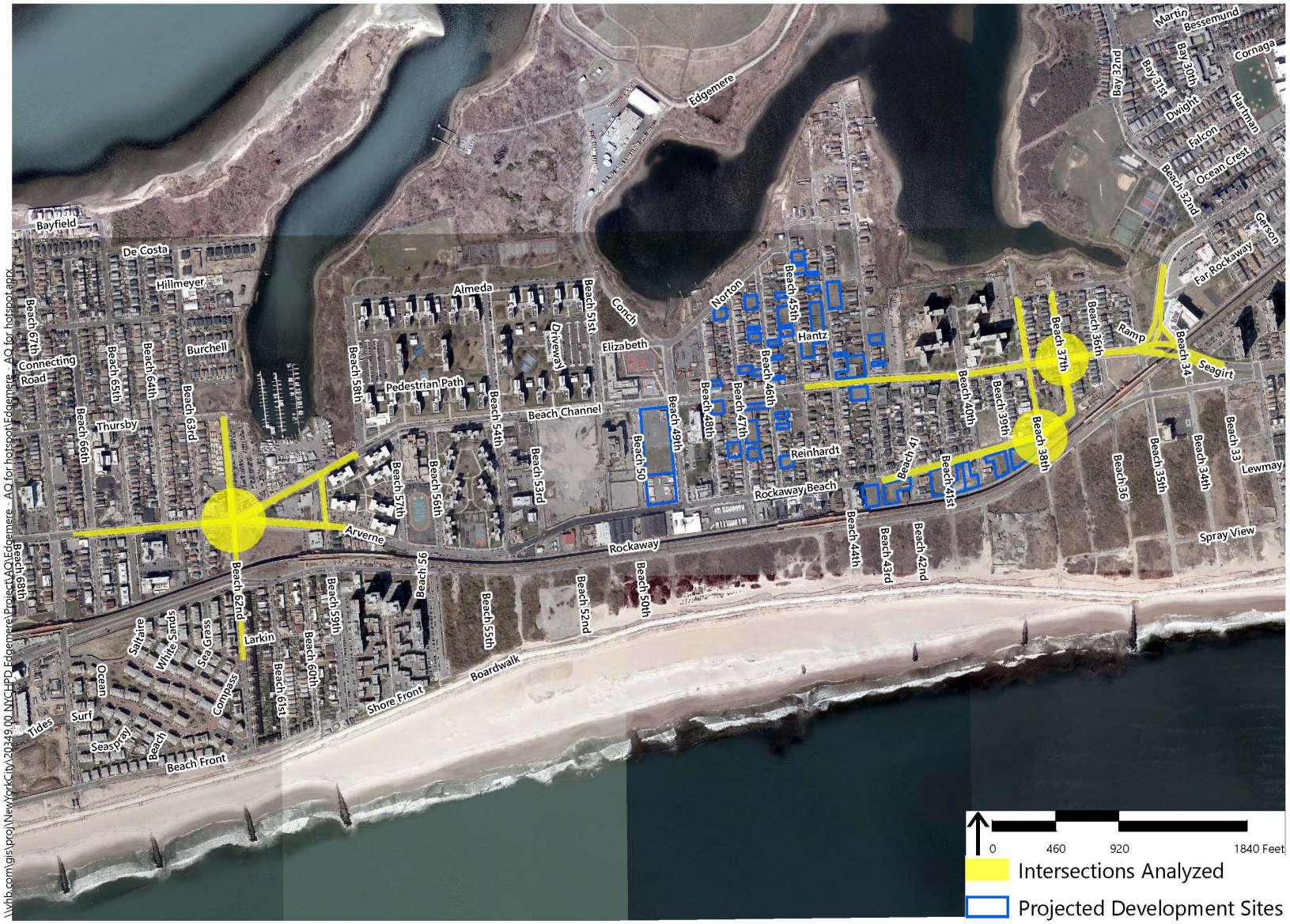
[2] Resultant concentrations include background concentrations from **Table 13-2**.

The highest impacts were estimated for the AM peak period. As the results show, the highest modeled concentrations under the No-Action and With Action conditions at the selected intersections were below the 1 and 8-hour NAAQS. The 8-hour impact of the With-Action condition over the No-Action was below the CEQR *de minimis* criterion for CO. As such, the Proposed Project would not adversely impact the CO levels near the affected intersections.

PM Analysis

The particulate matter analysis was conducted to estimate the total 24-hour and annual $PM_{2.5}$ concentrations under the No-Action and With Action conditions and to compare them with the $PM_{2.5}$ NAAQS. The 24-hour and annual $PM_{2.5}$ incremental impacts were compared with the CEQR *de minimis* thresholds for 24-hours and for the mobile source neighborhood scale receptors.

Figure 13-3 Intersections Selected for the Microscale Modeling



The 24-hour hourly traffic conditions were composed of blocks of time reflective of the AM, midday, and PM peak periods. The overnight traffic was scaled down using midday traffic as a reference. Saturday hour-by-hour 24-hour traffic is lighter than the weekday traffic and therefore impacts of Saturday traffic emissions were assumed to be smaller than that of the weekday traffic emissions and not analyzed separately.

$PM_{2.5}$ concentrations were estimated for the 24 hour and annual periods. **Table 13-5** presents the 24-hour results in comparison with the 24-hour *de minimis* criterion and **Table 13-6** presents the annual results.

Table 13-5 Highest 24-Hour $PM_{2.5}$ Concentrations for No-Action and With Action Conditions in 2031 ($\mu g/m^3$)

Intersection	No-Action Impact[1]	No-Action Total[2]	With Action Impact[1]	With Action Total[2]	Increment
Beach Channel at Beach 37th	6.2	22.9	9.9	26.6	3.7
Beach Channel and Beach 62nd	5.6	22.2	6.4	23.1	0.8
Rockaway Beach at Beach 38th	1.7	18.3	2.3	19.0	0.7
$PM_{2.5}$ NAAQS and CEQR *de minimis*		**35**		**35**	**9.2**

Source: VHB, Inc. November 2021

Notes:

[1] No-Action and With-Action impacts are the average of 98th percentile of the annual 24-hour concentrations over the modeled five years of meteorological observations.

[2] No-Action and With-Action total results include background concentrations from **Table 13-2**.

Table 13-6 Highest Annual $PM_{2.5}$ Concentrations for No-Action and With Action Conditions in 2031 ($\mu g/m^3$)

Intersection	No-Action Impact[1]	No-Action Total[2]	With Action Impact[1]	With Action Total[2]	Increment
Beach Channel at Beach 37th	0.6	6.4	1.1	6.9	0.6
Beach Channel and Beach 62nd	0.4	6.2	0.4	6.2	0.1
Rockaway Beach at Beach 38th	0.2	6.0	0.2	6.0	0.1
$PM_{2.5}$ NAAQS and CEQR *de minimis*		**12.0**		**12.0**	**0.1**

Source: VHB, Inc. November 2021

Notes:

[1] No-Action and With-Action impacts are the highest average levels over the modeled five years of meteorological observations.

[2] No-Action and With-Action total results include background concentrations from **Table 13-2**.

The results presented in **Table 13-5** through **Table 13-6** indicate that the 24-hour and annual $PM_{2.5}$ concentrations at the modeled intersections were below the NAAQS for both the No-Action and With Action conditions. The 24-hour $PM_{2.5}$ increments of With Action over the No-Action condition were below the CEQR *de minimis* threshold for 24 hours at all modeled intersections. The annual $PM_{2.5}$ increments were below the CEQR *de minimis* threshold for the annual averaging period at two of the three intersections. Beach Channel Drive at Beach 37th highest impact was above the CEQR *de minimis* increment threshold for the annual averaging period. With the inclusion of the proposed traffic mitigation applied to this intersection, the air quality assessment demonstrated compliance with the annual *CEQR de minimis* threshold. Results of the mitigation scenario that are presented in **Chapter 19, Mitigation** in **Table 19-7**. Therefore, no significant adverse air quality impacts from mobile sources are anticipated with the proposed traffic mitigation measure in place.

Impacts from Parking

As discussed above, the surface parking area at Projected Development Sites 1 and 2 would have 241 parking spaces (see **Figure 13-2**). This parking would be used only by predominantly gas-fueled passenger vehicles. As a result, CO emissions would be of concern from this facility. The impacts of this parking lot were conservatively analyzed assuming that all cars use one entrance, which is the entrance located closer to the Rockaway Beach Boulevard.

The hourly ins and outs were examined to identify the highest volume; based on the projected volumes, the weekday 12 PM to 1 PM time period was selected for the analysis (see **Table 13-7**).

Table 13-7 Hourly In and Out Volumes for Projected Development Sites 1 and 2 Parking Lot

	Weekday			Saturday		
Time	**In**	**Out**	**Total**	**In**	**Out**	**Total**
12-1 AM	20	9	29	27	16	43
1-2 AM	9	5	14	14	7	21
2-3 AM	4	4	8	7	3	10
3-4 AM	3	3	6	6	4	10
4-5 AM	3	3	6	7	4	11
5-6 AM	1	1	2	4	6	10
6-7 AM	20	20	40	7	14	21
7-8 AM	13	70	83	13	30	43
8-9 AM	63	160	223	36	60	96
9-10 AM	58	95	153	52	74	126
10-11 AM	55	88	143	117	86	203
11 AM-12 PM	84	95	179	148	163	311
12-1 PM	**212**	**212**	**424**	168	163	331
1-2 PM	176	181	357	**192**	**171**	**363**
2-3 PM	129	133	262	169	140	309
3-4 PM	129	129	258	175	157	332
4-5 PM	157	131	288	159	162	321
5-6 PM	178	138	316	155	147	302
6-7 PM	144	129	273	153	148	301
7-8 PM	157	103	260	135	136	271
8-9 PM	54	23	77	108	132	240
9-10 PM	41	17	58	87	136	223
10-11 PM	40	17	57	48	38	86
11 PM-12 AM	27	11	38	37	27	64

Source: VHB, Inc. August 2021

The analysis used the CEQR parking analysis spreadsheet to estimate CO impacts of idling, starting, and running emissions from vehicles in the parking lot. Vehicular emission rates were calculated using MOVES3 for Queens County with similar assumptions as in the intersection analysis for the year 2031. The impacts on the far sidewalk on Beach 50th Street were estimated using contribution from the parking lot and from the Beach 50th Street traffic. The results presented in the **Table 13-8** indicate that there is no potential for parking emissions to have significant adverse impacts on the CO levels near the parking lot.

Table 13-8 Highest 8-Hour CO Concentration from Parking Facility (μg/m³)

	50th Street	
CO Concentration	**Near Sidewalk**	**Far Sidewalk**
8-Hour Impact	2.8	1.3
Background	1.6	1.6
Total	4.4	3.0[1]
NAAQS	9	9
CEQR *de minimis*	3.7	3.7

Notes:
[1] The total far sidewalk concentration is a sum of the impact, background, and on-street contributions.
Source: VHB, Inc. August 2021

Stationary Sources

HVAC Analysis

Projected Residential Infill Sites Screening

A CEQR graphical screening was conducted for the largest of the Projected Residential Infill Development Sites in both Group A (the group with projected developments larger than 10,000 gsf) and Group B (the group with projected developments smaller than 10,000 gsf). Within Group A, Site 35 was assessed, and within Group B, Site 10 was assessed. Both sites were assessed for both fuel oil and natural gas. In accordance with CEQR direction, one pollutant of most concern was analyzed for each fuel, SO_2 for fuel oil and NO_2 for natural gas.

Figure 13-4 to **Figure 13-7** present the results of the graphical screening. The resultant distances from these screenings were conservatively applied to all other Projected Residential Infill Development Sites in both groups, respectively. In Group A, two sites, Sites 13 and 28, failed the screening, while in Group B, five sites, Sites 22, 23, 29, 33 and 34, failed. Site 13 failed the fuel oil screening analysis but passed with the natural gas screening analysis. Therefore, Site 13 was considered passing with the restriction on the fuel used. AERSCREEN analyses were performed for the other six sites.

Figure 13-4 Cluster HVAC Screening for Fuel Oil –Site 10, Group B

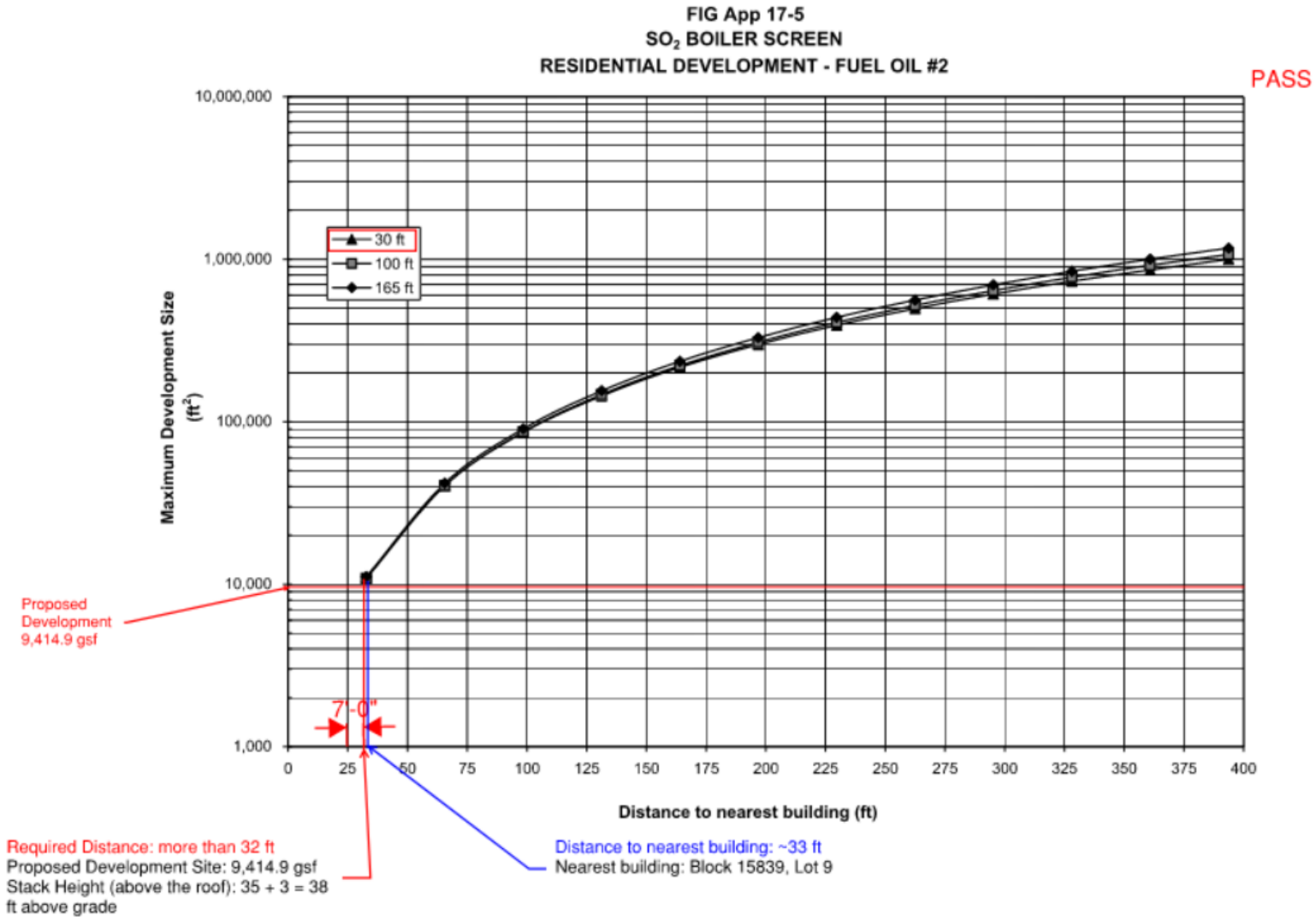


Figure 13-5 Cluster HVAC Screening for Natural Gas –Site 10 Group B

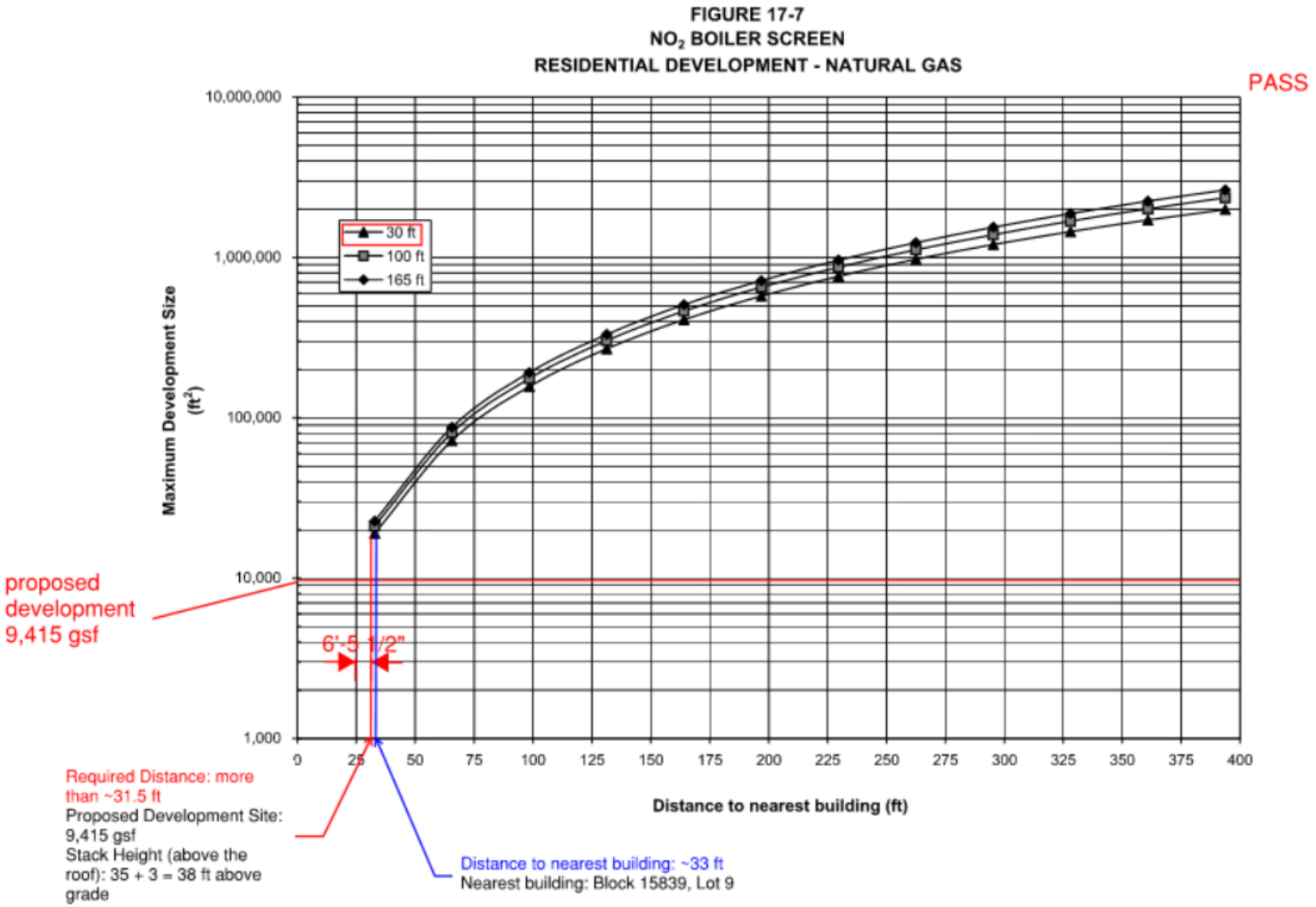


Figure 13-6 Cluster HVAC Screening for Fuel Oil –Site 35, Group A

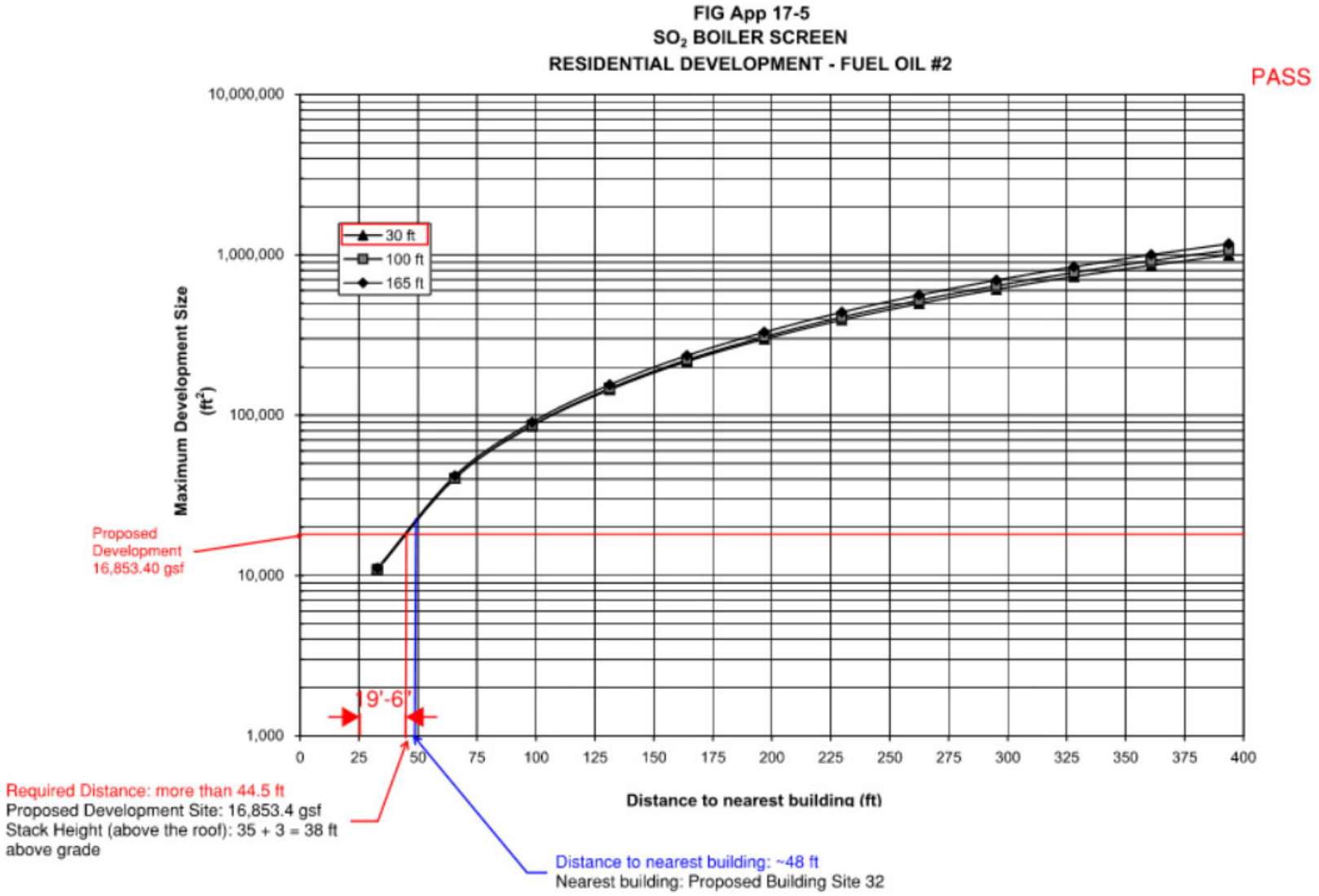
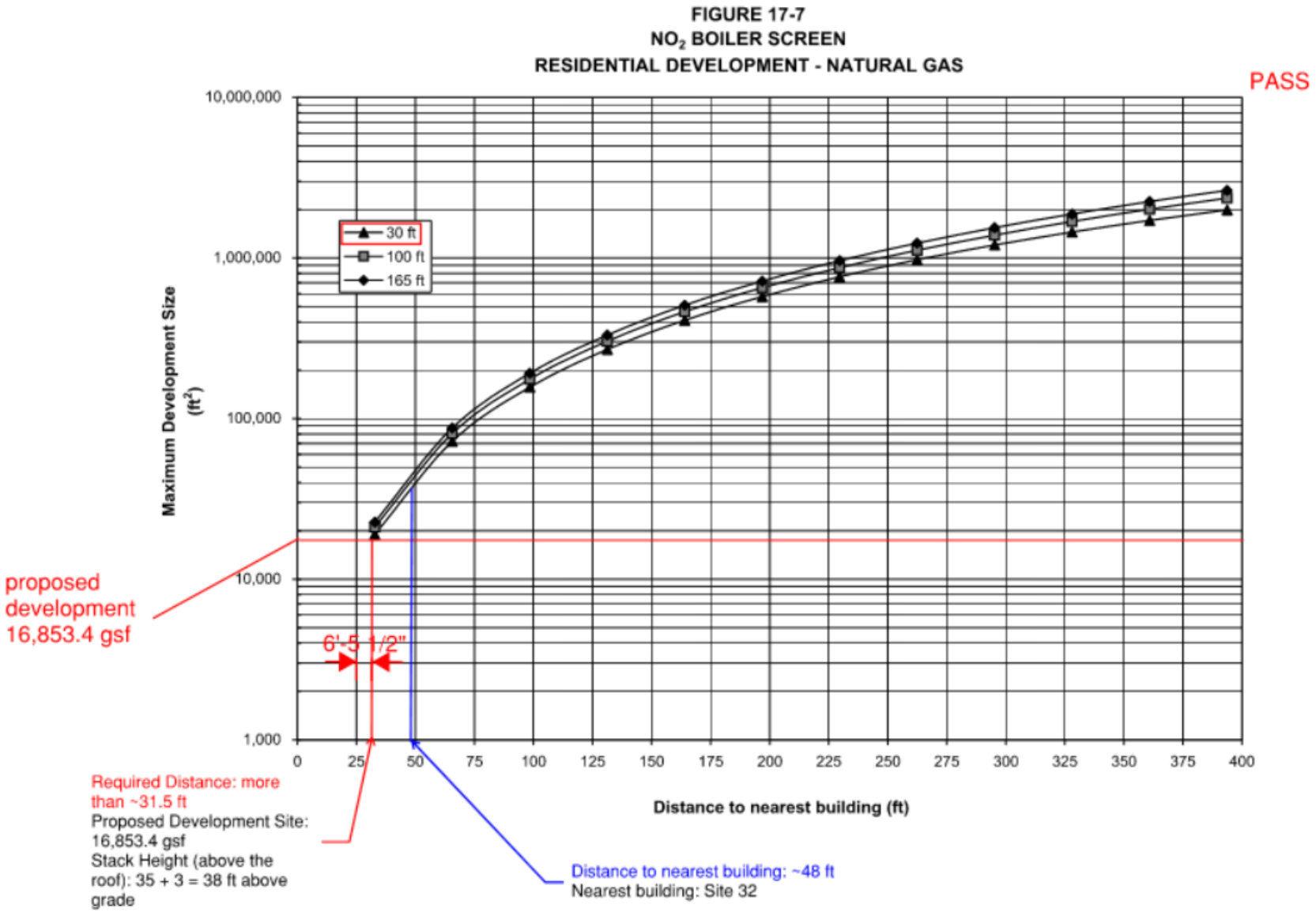


Figure 13-7 Cluster HVAC Screening for Natural Gas –Site 35, Group A



Infill Sites AERSCREEN Analysis

The AERSCREEN model was used to predict impacts of the HVAC system emissions from the six Projected Residential Infill Development Sites that failed the CEQR screening. Each site was modeled separately using the projected building dimensions, stack heights, and distances from the closest receptors. In each case, the closest affected receptors were either existing or projected buildings of similar height. The minimum allowed distance per zoning requirements between buildings was used to determine the actual source-receptor distance in the case of the projected developments. It was assumed that all sites analyzed with AERSCREEN would use natural gas boilers. NO_2 and $PM_{2.5}$ were considered pollutants of concern for the natural gas boilers.

The emission rates used in the modeling are presented in **Table 13-9**.

Table 13-9 Emission Rates for AERSCREEN Modeling of Infill Sites (g/s)

Projected Development Site	1-hr NO_2	Annual NO_2	24-hr $PM_{2.5}$	Annual $PM_{2.5}$
Site 22	1.10E-03	3.02E-04	8.38E-05	2.30E-05
Site 23	4.51E-04	1.24E-04	3.43E-05	9.39E-06
Site 28	2.79E-03	7.64E-04	2.12E-04	5.81E-05
Site 29	1.20E-03	3.27E-04	9.08E-05	2.49E-05
Site 33	1.15E-03	3.16E-04	8.77E-05	2.40E-05
Site 34	1.54E-03	4.22E-04	1.17E-04	3.20E-05

Source: VHB, Inc. August 2021

The HVAC emissions were modeled as a direct plume impact and with the downwash algorithm. The highest of the NO_2 and $PM_{2.5}$ modeled impacts are presented in **Table 13-10** and **Table 13-11**. The NO_2 impacts were added to the 1-hour and annual background levels to estimate the highest total concentrations from the HVAC emissions of these developments. The $PM_{2.5}$ impacts were compared to the *CEQR de minimis* criteria.

Table 13-10 Highest NO_2 Modeled Pollutant Concentration ($\mu g/m^3$)

Project Development Site	1-hr NO_2 Impact[1]	1-hr NO_2 Concentration[2]	Annual NO_2 Impact[1]	Annual NO_2 Concentration[2]
Site 22	28.9	128.6	2.9	28.0
Site 23	57.2	156.9	5.7	30.1
Site 28	10.8	110.5	1.1	26.6
Site 29	4.6	104.3	0.5	26.1
Site 33	4.5	104.2	0.4	26.1
Site 34	6.0	105.7	0.6	26.2
NAAQS		***188***		***100***

Notes:

[1] The refined HVAC analysis was performed in AERSCREEN for with and without building downwash options. The higher concentration is presented in this table.

[2] Background concentrations from **Table 13-2** were added to the modeled 1-hour and annual NO_2 impacts to predict the maximum total concentrations.

Source: VHB, Inc. August 2021

Table 13-11 Highest $PM_{2.5}$ Modeled Pollutant Impacts[1] ($\mu g/m^3$)

Project Development Site	24-Hour $PM_{2.5}$ Impact	Annual $PM_{2.5}$ Impact
Site 22	1.5	0.07
Site 23	2.9	0.13
Site 28	0.5	0.02
Site 29	0.2	0.01
Site 33	0.2	0.01
Site 34	0.3	0.01
CEQR de minimis	***9.2***	***0.3***

Note:

[1] The refined HVAC analysis was performed in AERSCREEN for with and without building downwash options. The higher concentration is presented in this table.

As the total concentrations of NO_2 and the $PM_{2.5}$ impacts are below the respective NAAQS and CEQR thresholds, no significant adverse impacts from the HVAC emissions of the six Projected Residential Infill Sites are expected. Thus, no further analysis is required.

Detailed HVAC Analysis

Potential impacts from the Projected Multi-Family Mixed-Use Development Sites' HVAC systems were estimated on existing and the other projected development sites. The projected buildings would be approximately 80 to 85 feet tall. AERMOD was run with and without the downwash algorithm to assess the potential direct impact of the HVAC exhaust and impact with the added turbulence from the surrounding structures from each individual building.

The projected buildings are expected to use natural gas-fired boilers for HVAC and hot water purposes. The plume would be exhausted through the roof of each building. One boiler per building was assumed. Buildings on Projected Multi-Family Mixed-Use Development Sites 1, 2 and 3 were assumed to use low NO_x boilers, and the other Projected Multi-Family Mixed-Use Development Sites were assumed to use uncontrolled boilers. It was assumed that the

exhaust stacks will be elevated 3 feet above the roof of each of the projected buildings; the stack parameters were obtained from a NYCDEP database for similar boilers.

Emissions were estimated using the EPA's AP-42 emission factors for low NO_x or uncontrolled boilers, building size, and the annual natural gas consumption rates from the latest Energy Information Administration (EIA) Residential Building Energy Consumption Survey. Short-term emission rates were estimated assuming that all fuel would be consumed in 100 days of the winter heating season. Annual emission rates were calculated by averaging annual fuel use over 365 days per year (see **Table 13-12**).

Table 13-12 Projected Multi-Family Development Site HVAC Emissions Rates (g/sec)

Projected Development Site	1-hr NO_2	Annual NO_2	24-hr $PM_{2.5}$	Annual $PM_{2.5}$
Site 1	4.88E-02	1.34E-02	7.42E-03	2.03E-03
Site 2	2.45E-02	6.70E-03	3.72E-03	1.02E-03
Site 3	2.05E-02	5.63E-03	3.12E-03	8.56E-04
Site 4	1.90E-02	5.20E-03	1.44E-03	3.95E-04
Site 5	1.53E-02	4.20E-03	1.16E-03	3.19E-04
Site 6	1.45E-02	3.97E-03	1.10E-03	3.02E-04
Site 7	4.11E-02	1.13E-02	3.12E-03	8.56E-04
Site 8	2.25E-02	6.15E-03	1.71E-03	4.68E-04
Site 9	4.41E-02	1.21E-02	3.35E-03	9.19E-04

Source: VHB, Inc. August 2021

A dispersion analysis was then performed to estimate impacts of each building's HVAC and hot water system emissions on surrounding buildings and cumulative impacts of all buildings. The results of the HVAC analysis are presented in **Table 13-13** through **Table 13-15** for all pollutants of concern.

Table 13-13 Highest Cumulative Concentrations from Projected Multi-Family Development Site HVAC Systems (µg/m³)

Pollutant	Time period	Unit	Predicted Impact	Background Concentration	Total Concentration	NAAQS/*De minimis*
Nitrogen Dioxide	1-hour	µg/m³	177.0[1]		177.0	188
	Annual	µg/m³	1.8[2]	25.8	27.1	100
Particulate Matter ($PM_{2.5}$)	24-Hour	µg/m³	8.7	--	--	9.2
	Annual	µg/m³	0.27	--	--	0.3

Notes:

[1] The total 1-hour NO_2 concentration includes the predicted impact and the background level, as they were added by AERMOD during the modeling run.

[2] As per EPA guidance, the highest predicted impact of annual NO_2 includes a NO_2/NO_x conversion ratio of 0.75.

Source: VHB, Inc. August 2021

Table 13-14 Highest NO_2 Concentrations from Projected Multi-Family Development Site HVAC Systems (µg/m³)

Source Bld.	Impacted Bld.	1-Hour NO_2[1]	Annual NO_2 Impact[2]	Total Annual NO_2[3]
Site 1	Peninsula_E1	176.5	0.9	26.6
Site 2	Site1 (Annual NO_2) Peninsula_E1 (1-hour NO_2)	154.4	0.5	26.3
Site 3	Site 4	97.6	0.1	25.9
Site 4	Site 5	101.1	0.2	26.0
Site 5	Site 6	114.2	0.4	26.2
Site 6	Site 5	100.5	0.2	26.0
Site 7	Site 6	94.4	0.2	25.9
Site 8	Site 9	103.3	0.5	26.3
Site 9	Site 8	106.8	0.3	26.0
NAAQS		***188***		***100***

Notes:

[1] 1-hour NO_2 concentrations includes predicted impact and the background level as they were added by AERMOD during the modeling run.

[2] As per EPA guidance, the highest predicted impact of annual NO_2 includes a NO_2/NO_x conversion ratio of 0.75.

[3] The annual NO_2 background from **Table 13-**2 was added to the highest predicted impact to estimate total annual NO_2 concentration.

Source: VHB, Inc. August 2021

Table 13-15 Highest $PM_{2.5}$ Concentration from Projected Multi-Family Development Site HVAC Systems (µg/m³)

Source Bld.	Impacted Bld.	24-Hour $PM_{2.5}$	Annual $PM_{2.5}$
Site 1	Peninsula_E1	8.3	0.16
Site 2	Site 1	5.6	0.10
Site 3	Site 4	0.8	0.01
Site 4	Site 5	0.5	0.01
Site 5	Site 6	0.4	0.02
Site 6	Site 5	1.0	0.02
Site 7	Site 6	0.8	0.01
Site 8	Site 9	0.7	0.03
Site 9	Site 8	1.2	0.03
CEQR Thresholds		***9.2***	***0.3***

Source: VHB, Inc. August 2021

As shown in **Table 13-13** through **Table 13-15**, the highest predicted concentrations for all pollutants do not exceed NAAQS or CEQR *de minimis* criteria. As such, there is no potential for a significant adverse air quality impact from the Projected Multi-Family Mixed-Use Development Sites' HVAC systems emissions.

Commitments

To ensure that there are no significant adverse impacts from HVAC system, certain restrictions would be required through the mapping of an (E) Designation for privately-owned lots and LDAs for City-owned sites as it relates to air quality regarding the HVAC systems and stack heights (see **Table 13-16**).

The (E) Designation (E-655) / LDA text would be as follows:

Projected Development Sites 1, 2 and 3

Any new residential development on the above-referenced property must utilize only natural gas in any fossil fuel-fired heating and hot water system, be fitted with low NOx burners (50 lb/Mcf) and ensure that the exhaust stack(s) are located at the highest tier and at least 88 feet above grade to avoid any potential significant adverse air quality impact. Furthermore, Projected Development Site 1's exhaust stack must be no less than 74 feet away from the southwestern façade of the building adjacent to the Projected Development Site 2 building, facing Rockaway Beach Boulevard.

Projected Development Sites 4, 5, 6, and 7

Any new residential development on the above-referenced property must utilize only natural gas in any fossil fuel-fired heating and hot water system and ensure that the exhaust stack(s) are located at the highest tier and at least 88 feet above grade to avoid any potential significant adverse air quality impact.

Projected Development Sites 8 and 9

Any new residential development on the above-referenced property must utilize only natural gas in any fossil fuel-fired heating and hot water system and ensure that the exhaust stack(s) are located at the highest tier and at least 83 feet above grade to avoid any potential significant adverse air quality impact. Furthermore, Projected Development Site 9's exhaust stack must be no less than 20 feet away from façade facing the Projected Development Site 8 building, i.e., facade facing Beach Channel Drive.

Projected Infill Development Sites 13, 22, 23, 28, 29, 33, and 34

Any new residential development on the above-referenced property must utilize only natural gas in any fossil fuel-fired heating and hot water system. Projected Development Sites 22, 23, 28, 29, 33, and 34 also have to ensure that the exhaust stack(s) are located at the highest tier and at least 38 feet above grade to avoid any potential significant adverse air quality impact.

Table 13-16 Projected Development Site Recommendations and Restrictions

Site No.	Tax Block	Tax Lot	Address	Minimum Height of Exhaust Stack	Recommendation	Regulatory Control
Site 1	15841	19R	19 Beach 50th St	88	fossil fuel-fired heating and hot water system using natural gas; boiler fitted with low NO_x burners (50 lb/Mcf); exhaust stack no less than 74 feet away from the southwestern façade of the building adjacent to the site 2 building, facing Rockaway Beach Boulevard	E
		40	Beach Channel Dr			E
		50	49-01 Beach Channel Dr			E
Site 2	15841	3	Rockaway Beach Blvd	88	fossil fuel-fired heating and hot water system using natural gas; boiler fitted with low NO_x burners (50 lb/Mcf)	E
		5	Rockaway Beach Blvd			E
		7	Rockaway Beach Blvd			E
		8	Rockaway Beach Blvd			E
		10	Rockaway Beach Blvd			E
		14	Beach 50th St			E
		70	Beach Channel Drive			E
Site 3	15852	64	Rockaway Beach Blvd	88	fossil fuel-fired heating and hot water system using natural gas; boiler fitted with low NO_x burners (50 lb/Mcf)	LDA
		68	Beach 43rd St			LDA
	15851	33	Rockaway Beach Blvd			LDA
		35	Rockaway Beach Blvd			E
		40	Rockaway Beach Blvd			E
		42	Rockaway Beach Blvd			LDA
		44	Beach 42nd St			E
		58	216 Beach 43rd St			LDA
		59	Beach 43rd St			LDA
Site 4	15850	6	Beach 41st St	88	fossil fuel-fired heating and hot water system using natural gas	LDA

Table 13-16 Projected Development Site Recommendations and Restrictions

Site No.	Tax Block	Tax Lot	Address	Minimum Height of Exhaust Stack	Recommendation	Regulatory Control
Site 5	15849	6	Beach 41st St	88	fossil fuel-fired heating and hot water system using natural gas	LDA
		8	Beach 41st St			LDA
		9	Beach 41st St			LDA
		10	Beach 41st St			LDA
		17	Rockaway Beach Blvd			E
		18	Rockaway Beach Blvd			LDA
Site 6	15849	19	Rockaway Beach Blvd	88	fossil fuel-fired heating and hot water system using natural gas	LDA
		20	Rockaway Beach Blvd			LDA
		27	Beach 40th St			LDA
		28	Beach 40th St			LDA
		29	Beach 40th St			LDA
Site 7	15847	79	Beach 39th St	88	fossil fuel-fired heating and hot water system using natural gas	LDA
		80	2-04 Beach 39th St			LDA
		81	Beach 39th St			LDA
		82	Beach 39th St			LDA
		83	Beach 39th St			LDA
		84	Rockaway Beach Blvd			LDA
		85	Rockaway Beach Blvd			LDA
		86	Rockaway Beach Blvd			LDA
		87	Rockaway Beach Blvd			LDA
		88	Rockaway Beach Blvd			LDA
		89	Rockaway Beach Blvd			LDA
	15848	52	Rockaway Beach Blvd			LDA
		54	Rockaway Beach Blvd			LDA
		55	Rockaway Beach Blvd			E

Table 13-16 Projected Development Site Recommendations and Restrictions

Site No.	Tax Block	Tax Lot	Address	Minimum Height of Exhaust Stack	Recommendation	Regulatory Control
		57	Rockaway Beach Blvd			LDA
		58	Rockaway Beach Blvd			LDA
		60	Rockaway Beach Blvd			LDA
		62	2-19 Beach 39th St			LDA
		63	Beach 39th St			LDA
		65	Beach 39th St			LDA
		67	Beach 39th St			LDA
Site 8	15834	38	363 Beach 43rd St	83	fossil fuel-fired heating and hot water system using natural gas	LDA
		42	357 Beach 43rd St			LDA
Site 9	15965	114	415 Beach 43rd St	83	fossil fuel-fired heating and hot water system using natural gas; exhaust stack no less than 20 feet away from façade facing Site 8, i.e., façade facing Beach Channel Drive	E
		112	415 Beach 43rd St			E
		111	415 Beach 43rd Street			E
		3	402 Beach 44th St			E
		115	43-00 Beach Channel Dr			E
Site 13	15838	13	Beach 47th St	38	fossil fuel-fired heating and hot water system using natural gas	E
		15	Beach 47th St			LDA
		17	Beach 47th St			LDA
		19	Beach 47th St			LDA
		20	Beach 47th St			LDA
Site 22	15969	59	439 Beach 46th St	38	fossil fuel-fired heating and hot water system using natural gas	LDA
		60	431 Beach 46th St			LDA
Site 23	15969	57	443 Beach 46th St	38	fossil fuel-fired heating and hot water system using natural gas	LDA

Table 13-16 Projected Development Site Recommendations and Restrictions

Site No.	Tax Block	Tax Lot	Address	Minimum Height of Exhaust Stack	Recommendation	Regulatory Control
Site 28	15968	84	455 Beach 45th St	38	fossil fuel-fired heating and hot water system using natural gas	LDA
		85	453 Beach 45th St			E
		86	451 Beach 45th St			E
		87	Beach 45th St			E
		88	447 Beach 45th St			LDA
		89	445 Beach 45th St			E
		90	443 Beach 45th St			LDA
Site 29	15968	92	439 Beach 45th St	38	fossil fuel-fired heating and hot water system using natural gas	E
		94	435 Beach 45th St			E
Site 33	15966	23	480 Beach 45th St	38	fossil fuel-fired heating and hot water system using natural gas	LDA
		25	482 Beach 45th St			LDA
Site 34	15966	27	Beach 45th St	38	fossil fuel-fired heating and hot water system using natural gas	LDA
		28	504 Beach 45th St			LDA
		29	506 Beach 45th St			LDA
		30	Beach 45th St			E

Source: VHB, Inc. August 2021

Industrial Sources

To assess potential air quality impacts on the Projected Development Sites from existing industrial sources that emit toxic air contaminants, an investigation of existing land uses within a 400-foot radius of the Project Area was conducted to identify potential sources and determine if there are active permits associated with those sources.

As a first step, land use maps were reviewed to identify surrounding land uses that could have NYCDEP-issued industrial permits (i.e., sites classified as Industrial/Manufacturing, Transportation/Utility, or Public Facilities/Institutions). Once the potential facilities were identified, an additional review of NYCDEP's Clean Air Tracking System (NYCDEP CATS) was undertaken to assess whether the identified facilities have associated permits. **Table 13-17** lists the industrial sources.

Table 13-17 Industrial Sources within 400 Feet of the Project Area

Address	Block	Lot	Lot Owner Name[1]	NYCDEP CATS
50-01 Rockaway Beach Blvd.	15857	7	Singh Hardwood Company, Inc.	PW006019
49-15 Rockaway Beach Blvd.	15857	42	Fast Action Truck Body Repair	No record

[1] Source: NYCDEP's Clean Air Tracking System (NYCDEP CATS). https://a826-web01.nyc.gov/DEP.BoilerInformationExt/

Both facilities are located across Rockaway Beach Boulevard from Projected Development Sites 1 and 2. The Singh Hardwood Company performs woodworking using equipment that emits sawdust. Emissions are captured by the Donaldson Baghouse Dust Collector that reduces total emissions by 99.9 percent as indicated in the permit record. The Fast Action Truck Body Repair facility does not have a permit record, but it was assumed that a spray booth is employed at this facility. The analysis for this facility used data from the generic report for a spray booth provided by NYCDEP.

A *CEQR Technical Manual* industrial screening analysis was conducted to assess potential air quality impacts from emissions of the Singh Hardwood Company on Projected Development Sites 1 and 2. The results of this analysis are presented in **Table 13-18**. Results indicate that contaminant concentrations would be below the short-term and annual guideline levels.

Table 13-18 Results of Industrial Source Analysis for Singh Hardwood Company

Chemical Name	CAS	Total Short-term Concentration ($\mu g/m^3$)[1]	SGC ($\mu g/m^3$)	Total Annual Concentration ($\mu g/m^3$)[1]	AGC ($\mu g/m^3$)
Solids ($PM_{2.5}$)	NY075-02-5	17.3	**35**	5.9	**12**

[1] $PM_{2.5}$ 24-hour and annual background concentrations included
Source: VHB, Inc. August 2021

A *CEQR Technical Manual* industrial screening analysis was also conducted to assess potential air quality impacts from all emissions from the Fast Action Truck Body Repair facility except for $PM_{2.5}$ and Ethyl 3-Ethoxypropionate. These two pollutants failed the screening and therefore a more refined analysis, an AERSCREEN modeling, was performed for them. The results of both analyses are presented in **Table 13-19**. The results indicate that

all individual contaminant concentrations would be below their respective short-term and annual guideline levels.

Table 13-19 Results of Industrial Source Analysis for Fast Action Truck Body Repair

Chemical Name	CAS	Total Short-term Concentration (µg/m³)	SGC (µg/m³)	Total Annual Concentration (µg/m³)	AGC (µg/m³)
Solids ($PM_{2.5}$)	NY075-02-5	19.7	**35**	10.3	**12**
Solids (PM_{10})	NY0795-00-0	123.4	**150**	-	-
Acetone	00067-64-1	1841.7	**180,000**	11.3	**30,000**
Aliphatic Hydrocarbon	64742-89-8	-	-	2.6	**3,200**
Aromatic Petroleum Distillates	64742-94-5	-	-	1.3	**100**
Butane	00106-97-8	471.1	**238,000**	-	-
Ethanol	00064-17-5	-	-	0.5	**45,000**
Ethyl 3-Ethoxypropionate	00763-69-9	15.7	**140**	2.4	**64**
Ethylbenzene	00100-41-4	-	-	1.3	**1,000**
Methyl Ethyl Ketone	00078-93-3	342.6	**13,000**	2.1	**5,000**
N-Butyl Acetate	00123-86-4	214.2	**95,000**	1.3	**17,000**
Propane	00074-98-6	-	-	2.9	**43,000**
Stoddard Solvent	08052-41-3	-	-	2.6	**900**
Toluene	00108-88-3	428.3	**37,000**	2.6	**5,000**
Xylene	01330-20-7	428.3	**22,000**	2.6	**100**

Source: VHB, Inc. August 2021

Note: Two pollutants, $PM_{2.5}$ and Ethyl 3-Ethoxypropionate, that failed screening were modeled using AERSCREEN.

Health risk is characterized using excess cancer risks per one million people for carcinogenic compounds and as hazard index for non-carcinogens. The sawdust and the compounds used in the spray booth are not considered carcinogens and therefore, cancer risk was not assessed. The non-cancer health risk was estimated using procedures from the NYSDEC DAR-1 based on the annual concentrations and AGC levels. The results of the hazard index assessment are presented in **Table 13-20**.

Table 13-20 Hazard Index Assessment

Chemical Name	CAS	DAR-1 classification	Hazard Quotient
Acetone	00067-64-1	High toxicity	0.0004
Aliphatic Hydrocarbon	64742-89-8	Medium toxicity	0.001
Aromatic Petroleum Distillates	64742-94-5	Medium toxicity	0.013
Butane	00106-97-8	Low toxicity	-
Ethanol	00064-17-5	Low toxicity	0.00001
Ethyl 3-Ethoxypropionate	00763-69-9	Medium toxicity	0.037
Ethylbenzene	00100-41-4	Medium toxicity	0.001
Methyl Ethyl Ketone	00078-93-3	Medium toxicity	0.0004
N-Butyl Acetate	00123-86-4	Low toxicity	0.0001
Propane	00074-98-6	Low toxicity	0.0001
Stoddard Solvent	08052-41-3	Medium toxicity	0.003
Toluene	00108-88-3	Low toxicity	0.001
Xylene	01330-20-7	Medium toxicity	0.026
Hazard Index			**0.083**

Source: VHB, Inc. August 2021

The results of the analysis indicate the hazard index is much smaller than the threshold of 2 for non-carcinogenic pollutants. As a result, no adverse air quality impacts are anticipated, and no elevated health risks are expected from the industrial sources.

14

Greenhouse Gas Emissions and Climate Change

This section describes the potential impact of the Proposed Actions on greenhouse gas (GHG) emissions and considers whether the Proposed Actions are consistent with the Citywide GHG emissions reduction goals.

Introduction

The Department of Housing Preservation and Development (HPD) is proposing a series of land use actions (collectively the Proposed Actions) to implement recommendations of the Resilient Edgemere Community Planning Initiative—an interagency, community-based effort to align New York City's Sandy Recovery and rebuilding investments in Edgemere with a long-term, comprehensive community vision.

The Proposed Actions are expected to result in 1,222 residential units in approximately 1,313,659 gsf, including up to 465 affordable units; approximately 115,849 gsf of local retail uses; and approximately 640 parking spaces. This new development would occur at a number of different sites within the Project Area, including Projected Multi-Family Mixed-Use Development Sites 1–9 which would range from approximately 61,900 gross square feet (gsf) to approximately 417,000 gsf and Projected Residential Infill Sites which would be a maximum of approximately 16,853 gsf. Together, these sites are referred to as the Projected Development Sites.

The Proposed Area is located within the areas vulnerable to flooding—marked as Special Flood Hazard Areas (prone to flooding by 1 percent annual chance of storm) or 500-year flood plain (prone to flooding from 0.2 percent annual chance of storm)—as defined by Federal Emergency Management Agency (FEMA). Therefore, a storm surge or coastal flooding assessment was conducted for the Proposed Actions.

As discussed in the *2020 CEQR Technical Manual* (*CEQR Technical Manual*), increased concentrations of greenhouse gases change the global climate and result in wide-ranging effects on the environment, including rising sea levels, increases in temperature, and changes in precipitation levels. Although this is occurring on a global scale, the environmental effects of climate change are also likely to be felt at the local level. New York City's sustainable development policy, starting with PlaNYC and continued and enhanced in OneNYC, established sustainability initiatives and goals for greatly reducing GHG emissions and for adapting to climate change in the City. In 2014, the City Council passed a bill to reduce citywide greenhouse gas emissions by 80 percent by 2050 (Local Law 66 of 2014). The New York Climate Mobilization Act, Local Law 97 of 2019, the most recent legislation, is the most aggressive climate legislation to date. It requires buildings larger than 25,000 square feet to meet strict GHG emission limits starting in 2024. Buildings are the largest source of greenhouse gas emissions, representing nearly 70 percent of NYC's total emissions. Focusing on the city's largest buildings will promote energy efficiency and renewable energy and discourage reliance on fossil fuels. The GHG emission reduction goal for NYC buildings is 40 percent by 2030 and 80 percent by 2050, compared to 2005.

The contribution of a proposed project's GHG emissions to global GHG emissions is likely to be considered insignificant when measured against the scale and magnitude of global climate change. However, certain projects' contribution of GHG emissions still should be analyzed to determine their consistency with the City's GHG reduction goal, which is currently the most appropriate standard by which to analyze a project under CEQR. The GHG consistency assessment focuses on those projects that have the greatest potential to produce GHG emissions and evaluates their potential to result in significant inconsistencies with the GHG reduction goal.

Principal Conclusions

The Proposed Actions would be consistent with the applicable City GHG emissions reduction and climate change goals, and there would be no significant adverse GHG emission or climate change impacts as a result of the Proposed Actions.

Following the methodology provided in the *CEQR Technical Manual*, it is estimated that the Proposed Actions would result in approximately 5,913 metric tons of carbon dioxide equivalent (CO_2e) emissions from its annual operations and 6,623 metric tons a year of CO_2e emissions from mobile sources. This represents less than 0.02 percent of the City's overall 2017 GHG emissions of 50.7 million metric tons, an insignificant contribution.

Although the estimated carbon emissions are above projected goals according to the Local Law 97, Climate Mobilization Act, the Proposed Actions would need to comply with the 2020 Energy Conservation Construction Code of New York State and 2020 NYC Energy Conservation Code, which govern performance requirements of heating, ventilation, and air conditioning systems, as well as the exterior building envelope of new buildings. As a result,

the Proposed Actions ultimately generate emissions below the Local Law 97 requirements and would contribute towards the NYC GHG reduction goals.

Since the Project Area is located within the 1 percent annual chance floodplain, the potential effects of global climate change have been considered and are presented in **Appendix A: Waterfront Revitalization Program Consistency Assessment**. The assessment considers the effects of climate change on rising sea levels, storm surge, and coastal flooding resulting from the Proposed Actions. As detailed in the Appendix, it was determined that the Proposed Actions would be supportive of Policy 6.2 of the New York City Waterfront Revitalization Program (WRP). Therefore, adverse impacts to climate change are not anticipated as a result of the Proposed Actions.

Pollutants of Concern

GHGs are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds. This property causes the general warming of the Earth's atmosphere, or the "greenhouse effect." Some GHGs, such as carbon dioxide (CO_2), occur both naturally and are emitted into the atmosphere through human activities. The *CEQR Technical Manual* lists six GHGs that could potentially be included in the scope of an environmental impact assessment: CO_2, nitrous oxide (N_2O), methane (CH_4), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur Hexafluoride (SF_6).

GHGs differ in their ability to trap heat. To compare emissions of GHGs, compilers use a weighting factor called a Global Warming Potential (GWP), where the heat-trapping ability of 1 metric ton (1,000 kilograms) of CO_2 is taken as the standard, and emissions are expressed in terms of CO_2 equivalents (CO_2e) but can also be expressed in terms of carbon equivalents. The GHGs which are emitted as a result of human activities and their GWPs are presented in **Table 14-1**.

Table 14-1 Global Warming Potential for Primary Greenhouse Gases

Greenhouse Gas	Common Sources	Global Warming Potential
CO_2 - Carbon Dioxide	Fossil fuel combustion, forest clearing, cement production	1
CH_4 - Methane	Landfills, production and distribution of natural gas and petroleum, anaerobic digestion, rice cultivation, fossil fuel combustion	21
N_2O - Nitrous Oxide	Fossil fuel combustion, fertilizers, nylon production, manure	310
HFCs - Hydrofluorocarbons	Refrigeration gases, aluminum smelting, semiconductor manufacturing	140–11,700
PFCs - Perfluorocarbons	Aluminum production, semiconductor manufacturing	6,500–9,200
SF_6 - Sulfur Hexafluoride	Electrical transmissions and distribution systems, circuit breakers, magnesium production	23,900

- Carbon Dioxide (CO_2). CO_2 enters the atmosphere via the combustion of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement). CO_2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle. Although not the GHG with the strongest effect per molecule, CO_2 is by far the most abundant and, therefore, the most influential GHG.
- Methane (CH_4). CH_4 is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, as well as by the decay of organic waste in municipal solid waste landfills. Methane, in addition to nitrous oxide (noted below), plays an important role in GHG emissions since the removal processes for these compounds are limited and they have a relatively high impact on global climate change as compared to an equal quantity of CO_2 as reflected in their high global warming potential.
- Nitrous Oxide (N_2O). N_2O is emitted during agricultural and industrial activities, as well as during the combustion of fossil fuels and solid waste.
- Fluorinated Gases. Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are powerful synthetic greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (e.g., chlorofluorocarbons [CFCs], hydrochlorofluorocarbons [HCFCs], and halons). These gases are typically emitted in smaller quantities. However, because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases (High GWP gases).

This analysis focuses on CO_2, N_2O, and CH_4 (collectively as CO_2e) as there are no significant direct or indirect sources of HFCs, PFCs, or SF_6 associated with the Proposed Actions.

Because of the growing consensus that GHG emissions resulting from human activity have the potential to profoundly impact the Earth's climate, countries around the world have undertaken efforts to reduce emissions by implementing both global and local measures that address energy consumption and production, land use, and other areas. Although the U.S. has not ratified the international agreements that set emissions targets for GHGs, in December 2015, the U.S. signed the international Paris Agreement[1], which pledged deep cuts in emissions and has a stated goal of reducing annual emissions to a level that, by 2025, would be between 26 and 28 percent lower than 2005 emissions.[2]

Regardless of the Paris Agreement, the U.S. Environmental Protection Agency (EPA) is required to regulate GHGs under the Clean Air Act and has begun preparing and implementing regulations. In coordination with the National Highway Traffic Safety Administration (NHTSA), EPA currently regulates GHG emissions from newly manufactured on-road vehicles. In addition, EPA regulates transportation fuels via the Renewable Fuel Standard program, which will phase in a requirement for the inclusion of renewable fuels, increasing annually up to 36.0 billion gallons in 2022. In 2015, EPA also finalized rules to address GHG emissions from both new and existing power plants that would, for the first time, set national limits on the amount of carbon pollution that power plants can emit. The Clean Power Plan sets carbon pollution emissions guidelines and performance standards for existing, new, and modified and reconstructed electric utility generating units. On February 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan pending judicial review. On March 28, 2017, the President of the U.S. signed an executive order directing the EPA to review the Clean Power Plan, and, in May 2019, the EPA administrator announced plans to change the way the EPA calculates health risks of air pollution, known as the Affordable Clean Energy Rule.

There are also regional and local efforts to reduce GHG emissions. In 2009, Governor Paterson issued Executive Order No. 24, establishing a goal of reducing GHG emissions in New York State by 80 percent, compared with 1990 levels, by 2050, and creating a Climate Action Council tasked with preparing a climate action plan outlining the policies required to attain the GHG reduction goal; an interim draft plan has been published.[3] The State is now seeking to achieve some of the emission reduction goals via local and regional planning and projects and though its Cleaner Greener Communities and Climate Smart Communities programs. The State also has adopted California's GHG vehicle standards (which are at least as strict as the federal standards).

The New York State Energy Plan outlines the State's energy goals and provides strategies and recommendations for meeting them. The latest version of the plan was published in June 2015. The new plan outlines a vision for transforming the state's energy sector that would result in increased energy efficiency (both demand and supply), increased carbon-free power production, and cleaner transportation in addition to achieving other goals not related to GHG emissions. The 2015 plan also establishes new targets: (1) reducing GHG emissions in New York State by 40 percent, compared with 1990 levels, by 2030; (2) providing 50 percent of electricity generation in the state from renewable sources by 2030;

[1] Conference of the Parties, 21st Session. *Adoption of The Paris Agreement, decision -/CP.21*. Paris, December 12, 2015.

[2] Unites States of America. *Intended Nationally Determined Contributions (INDCs)* as submitted. March 31, 2015.

[3] New York State Climate Action Council. New York State Climate Action Plan Interim Report. November 2010.

and (3) increasing building energy efficiency gains by 600 trillion British thermal units (Btu) by 2030.

To meet its commitment to the Regional Greenhouse Gas Initiative (RGGI), New York State has also developed regulations to cap and reduce CO_2 emissions from power plants. Under the RGGI agreement, the governors of nine northeastern and Mid-Atlantic states have committed to regulate the amount of CO_2 that power plants are allowed to emit, gradually reducing annual emissions to half the 2009 levels by 2020. The RGGI states and Pennsylvania have also announced plans to reduce GHG emissions from transportation, through the use of biofuel, alternative fuel, and efficient vehicles.

Many local governments worldwide, including New York City, are participating in the Cities for Climate Protection™ campaign and have committed to adopting policies and implementing quantifiable measures to reduce local GHG emissions, improve air quality, and enhance urban livability and sustainability. New York City's long-term comprehensive plan for a sustainable and resilient New York City, which began as PlaNYC 2030 in 2007, and continues to evolve today as OneNYC, includes GHG emissions reduction goals, many specific initiatives that can result in emission reductions, and initiatives aimed at adapting to future climate change impacts. The goal to reduce citywide GHG emissions to 30 percent below 2005 levels by 2030 ("30 by 30") was codified by Local Law 22 of 2008, known as the New York City Climate Protection Act (the "GHG reduction goal").[4] The City also has announced a longer-term goal of reducing emissions to 80 percent below 2005 levels by 2050 ("80 by 50"), which was codified by Local Law 66 of 2014, and has published a study evaluating the potential for achieving that goal. More recently, as part of OneNYC, the City has announced a more aggressive goal for reducing emissions from building energy down to 30 percent below 2005 levels by 2025.

In December 2009, the New York City Council enacted four laws addressing energy efficiency in large new and existing buildings, in accordance with PlaNYC. The laws require owners of existing buildings larger than 50,000 square feet to conduct energy efficiency audits and retro-commissioning every 10 years, to optimize building energy efficiency, and to "benchmark" the building energy and water consumption annually, using an EPA online tool. By 2025, commercial buildings over 50,000 square feet also will require lighting upgrades, including the installation of sensors and controls, more efficient light fixtures, and the installation of submeters, so that tenants can be provided with information on their electricity consumption. The legislation also creates a local New York City Energy Conservation Code, which along with the Energy Conservation Construction Code of New York State (as updated in 2016), requires equipment installed during a renovation to meet current efficiency standards.

To achieve the 80 by 50 goal, the City is convening Technical Working Groups to analyze the GHG reduction pathways from the building, power, transportation, and solid waste sectors to develop action plans for these sectors. The members of the Technical Working Groups will develop and recommend the data analysis, interim metrics and indicators, voluntary actions, and potential mandates to effectively achieve the City's emissions reduction goal. In 2016, the City published the building sector Technical Working Group report, which included

[4] Administrative Code of the City of New York, §24-803.

commitments by the City to change building energy codes and take other measures aimed at substantially reducing GHG emissions.

A number of benchmarks for energy efficiency and green building design have also been developed. For example, the LEED system is a benchmark for the design, construction, and operation of high-performance green buildings that includes energy efficiency components. EPA's Energy Star is a voluntary labeling program designed to identify and promote the construction of new energy efficient buildings, facilities, and homes and the purchase of energy efficient appliances, heating and cooling systems, office equipment, lighting, home electronics, and building envelopes.

In 2021, HPD published a revised set of guidelines for construction of new affordable housing developments that are HPD-funded.[5] These guidelines aim to ensure that newly constructed buildings promote equity, health, and sustainability by either meeting or exceeding what is required by local policies and laws. Newly designed and constructed building must follow the guidelines in Enterprise Green Communities and Energy Star for Ventilation for system design and verification. The guidelines recommend the incorporation of low or no-energy design features ("passive design") in all projects to reduce overall energy use and to contribute to resident comfort such as the installation of Energy Star ceiling fans. Furthermore, Passive House principles may be implemented such as continuous insulation, airtight enclosure, and heat recovery to provide residents with improved air quality and energy efficiency.

For certain projects subject to CEQR (e.g., projects with 350,000 gsf or more of development or other energy intense projects), an analysis of the projects' contributions to GHG emissions is required to determine consistency with the City's reduction goal, which is currently the most appropriate standard by which to analyze a project under CEQR and is therefore applied in this chapter.

Climate Change Initiatives

There are also several local initiatives related to assessing the potential local impacts to global climate change and development strategies to make existing and proposed infrastructure and development more resilient to the effects of climate change.

One such initiative is the Climate Change Adaptation Task Force that the City launched in 2008. The Task Force was charged with developing strategies to secure City's critical infrastructure against the potential threats introduced by the climate changes such as rising sea levels and temperatures and changing precipitation patterns. It is composed of 40 City, State, and federal agencies, public authorities, and private companies that are involved in the operations of maintaining and regulating critical infrastructure in New York City. At least 100 types of infrastructure were identified that would be vulnerable to the impacts of climate chance and this inventory will help the Task Force develop coordinated strategies to increase the resilience of the region's infrastructure.

The City convened the New York City Panel on Climate Change (NPCC) composed of academic, policy advisors, and agencies to develop climate change projections of New York

[5] 2021 New Construction Design Guidelines, New York City Housing Preservation and Development, nyc.gov

City. The 2009 *Climate Risk Information* report was prepared by the NPCC as part of PlaNYC to advice the Mayor and the Task Force on issue related to potential impacts on infrastructure due to climate change including, temperature, precipitation, rising sea levels, and extreme weather events. The NPCC developed projections using the Intergovernmental Panel on Climate Change (IPCC)-based methods to generate model-based probabilities for temperature, precipitation, sea level rise, and extreme events including coastal flooding in the 1 percent annual chance floodplain for the 2020s to the 2080s. These projections were developed using 16 global climate model (GCM) simulations and three GHGH emission scenarios. The NPCC released *Climate Change Adaptation in New York City: Building a Risk Management Response* in 2010 to serve as a basis for climate change adaptation in the City. In June 2013, the NPCC published *Climate Risk Information 2013: Observations, Climate Change Projections, and Maps* which outlines the most recent NPCC future climate projections. The NPCC regularly assesses climate change projections and updates those projections regularly. The resulting reports serve as a guide in the City's policymaking process.

The City established an interagency group to work with the Federal Emergency Management Agency (FEMA) to revise the Flood Insurance Rate Maps (FIRMs) for the City, which set the base flood elevations for development on the floodplain and triggers the City's building code flood protection requirements. Currently, the FIRMs are undergoing revision to reflect changes in coastal shorelines and elevation, but the city's Building Code requirements will continue to reflect the 2015 Preliminary FIRMs.

There are also several plans to prepare the City for extreme climate events outlined in the: Natural Hazard Mitigation Plan, Coastal Storm Plan, Heat Emergency Plan, Debris Management Plan, Power Disruption Plan, Winter Weather Emergency Plan, and Flash Flood Emergency Plan. The Natural Hazard Mitigation Plan will be integrated with climate projections and include climate change as a hazard.

The NYC Department of Environmental Protection (NYCDEP) also issued several plans aimed at evaluating and implementing adaptive strategies for infrastructure. These include the New York City Green Infrastructure Plan and Sustainable Stormwater Management Plan. In 2013, NYCDEP released the NYC Wastewater Resiliency Plan that identifies wastewater treatment plants and pumping stations vulnerable to flooding, estimates potential coasts of future damages, and recommends protective measures such as waterproofing or elevation critical equipment out of flood elevations to reduce the risk of damage and loss of services.

The Department of City Planning (DCP) developed the WRP which serves as the City's principal coastal management tool and established the City's policies for development and use on the waterfront. It requires that proposed developments in the 1 percent annual change floodplain meet the goals set forth in the policies outlined in WRP, including Policy 6, where a development would need to assess current and future sea-level rise and flooding scenarios and implement flood resiliency measures.

DCP also published the Zoning for Coastal Flood Resiliency (ZCFR), a series of zoning changes for developments on the floodplain. ZCFR expands the geography where optional zoning rules apply to include the 0.2 percent annual chance floodplain, allows optional flexibility to adjust the building envelope from a reference plane, allows certain exemptions in floor area, introduces flexibility for existing non-compliant and/or non-conforming buildings to be retrofitted or reconstructed to meet or exceed flood-resistant construction

standards, and permitted obstruction rules for buildings to elevate mechanical, electrical and plumbing equipment., among other modifications and provisions.

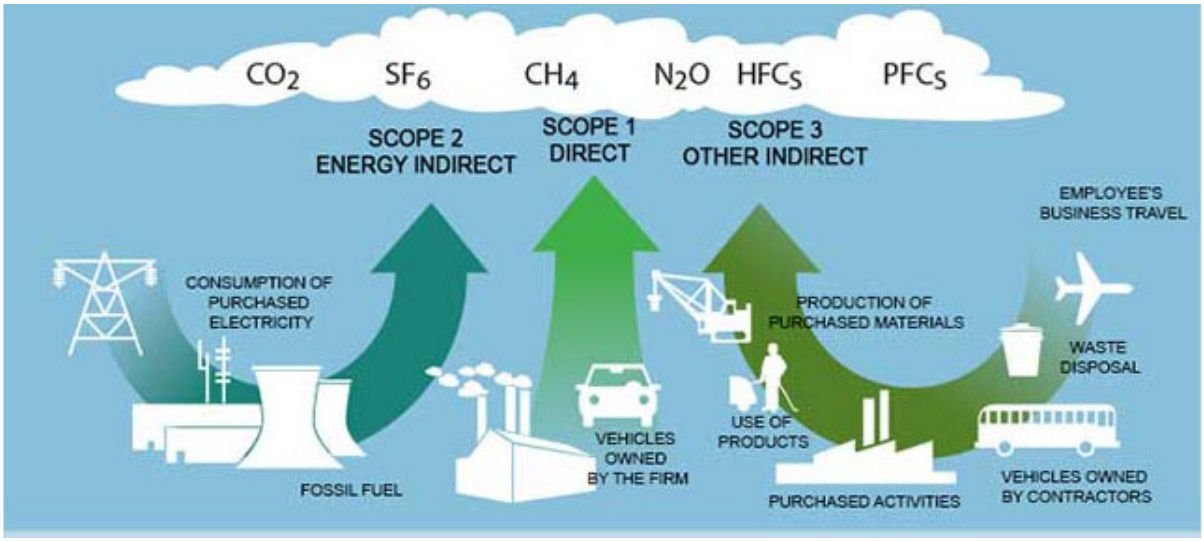
Methodology

GHG Emissions Assessment

According to the *CEQR Technical Manual*, a GHG emissions assessment is typically conducted for larger projects undergoing an environmental impact statement, especially projects that would result in development of 350,000 square feet or greater. The Proposed Actions would result in the total development of approximately 1,429,508 gsf on the Projected Development Sites.

GHG emissions are generally divided into three types, three scopes, as illustrated in **Figure 14-1**.

Figure 14-1 Three Scopes of GHG Emissions



Scope 1, or direct emissions, are emissions resulting from the fossil fuel combustion by the proposed buildings or by vehicles owned or operated by the proposed building management. Emissions from heating, ventilation, and air conditioning (HVAC) systems are the most typical source of GHG emissions for new building projects in New York City. Scope 2, or indirect emissions, are emissions from the generation of purchased electricity used by the buildings. Scope 3 are all other GHG emissions, including emissions from the vehicular trips generated by the proposed building, like employees' commute.

A project's GHG emissions under CEQR are assessed in two steps: first, GHG emissions of the proposed action are estimated, and second, the proposed action is assessed in comparison with the City goals for reducing GHG emissions. The *CEQR Technical Manual* recommends that the project's emissions be estimated with respect to the following main emissions sources: on-site operational emissions (direct and indirect); mobile source emissions (direct and indirect); and, when applicable, construction emissions and emissions from solid waste

management. Pursuant to *CEQR Technical Manual* methodology, the assessment is based on the GHG emissions associated with the Proposed Actions.

Operational and mobile source emissions were quantified for this analysis. Emissions associated with construction are described qualitatively. The Proposed Actions are not expected to fundamentally change the City's solid waste management system, therefore, no estimate of emissions from solid waste management is warranted.

Climate Change Assessment

According to the *CEQR Technical Manual*, an analysis of consistency with Policy 6.2 of the WRP may provide sufficient information to access the potential effects of sea-level rise, storm surge, and coastal flooding.

Assessment

Direct GHG Emissions

Operational GHG emissions would be generated by the Proposed Actions' HVAC systems. Direct emissions from the operation of the natural gas-fired boilers of HVAC systems in the Proposed Actions would result in a total of 3,764 metric ton of CO_2e annually as shown in **Table 14-2**.

Table 14-2 GHG Emissions from Natural Gas-Fired HVAC Systems

		Unit
HVAC Energy Use Intensity	49.5	kBtu/gsf
***2020 CEQR TM* CO_2e Carbon Conversion Factor**	53.196	kg CO_2e/MMBtu
HVAC CO_2e	3,764,183	kg CO_2e
	3,764	MT CO_2e

Indirect GHG Emissions

Indirect GHG emissions would be generated to produce electricity for the Proposed Actions. Electricity consumption is consistent with a DOAS HVAC systems. Estimates of the GHG emissions from the electricity are presented in **Table 14-3**. A total of 2,149 metric tons of CO_2e per year would be generated to satisfy the Proposed Actions' annual consumption.

Table 14-3 GHG Emissions from Electricity Generation

		Unit
Building Electricity Use Intensity	12.28	kWhr/gsf
***2020 CEQR TM* CO_2e Carbon Conversion Factor**	35.902	kg CO_2e/MMBtu
Electricity CO_2e	2,148,798	kg CO_2e
	2,149	MT CO_2e

Mobile Source Emissions

The number of annual vehicle trips by mode (cars, taxis, and trucks) that would be generated by the Proposed Actions was calculated using the transportation planning assumptions developed for the traffic analysis and presented in **Chapter 12, Transportation**. The number of project-generated trips by autos, taxis and trucks was obtained from the transportation analysis. Annual VMT was estimated based on the weekday trips and the average one-way distances as shown in Table 18-6 and Table 18-7 of the *CEQR Technical Manual*. The average truck trip was assumed to be 38 miles as per the *CEQR Technical Manual*. Tables 18-6 and 18-7 of the *CEQR Technical Manual* were used to determine the one-way trip distances for personal and taxi trips in Queens and the mobile GHG emissions calculator provided in the *CEQR Technical Manual* was used to obtain an estimate of auto, taxi, and truck CO_2e emissions attributable to the Proposed Actions. The resultant GHG emissions are presented in **Table 14-4**. The total CO_2e emissions from the mobile sources attributable to the Proposed Action would be 6,623 metric tons annually.

Table 14-4 GHG Emissions from Mobile Sources

Vehicle Type	Annual VMT generated	Annual CO_2e [MT]
Auto	12,522,384	4,818
Taxi	140,989	48
Truck	1,082,088	1,757
Total	13,745,461	6,623

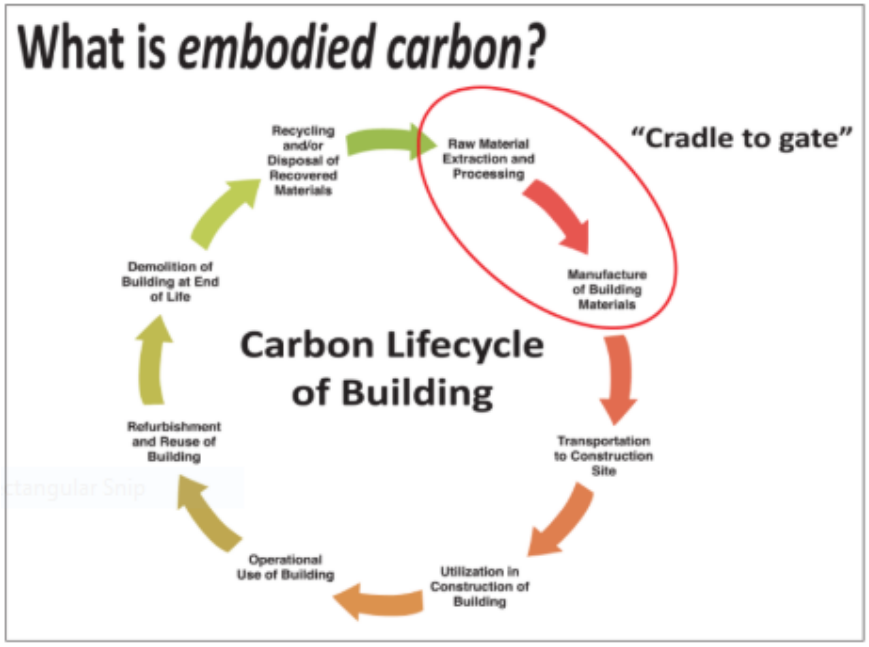
Note: All trips were assumed on arterial roadways in Queens

Construction Emissions

Construction of the Proposed Actions would comply with the New York City Air Pollution Control Code, the latest version of which was adopted on May 12, 2020. As per *CEQR Technical Manual* guidance, emissions associated with construction of the Proposed Actions have been assessed qualitatively. Typical construction emissions and emissions of embodied carbon (see **Figure 14-2**) can account for about 5-10 years of building operational GHG emissions, i.e., approximately from 19,150 to 38,300 MT of CO_2e. The actual amount of CO_2e could change depending on the efficiency of building operations and efficiency and use of sustainable practices during construction.

Construction of the Proposed Actions would follow New York City regulations and codes for construction that require the use of recycled materials, reduced diesel emissions, limited idle time for vehicles and equipment on-site, and other measures to reduce carbon emissions. In addition, following these practices would contribute to the overall goal of reducing GHG emissions from construction.

Figure 14-2 Embodied Carbon of a Building



Source: NE Sustainable Energy Association

Thus, construction of the Proposed Actions would adhere to the City goals to reduce GHG.

Consistency with the GHG Reduction Goals

According to the *CEQR Technical Manual*, the assessment of consistency with the City GHG reduction goals should answer the following question: Is the project consistent with the goal of reducing GHG emissions, specifically the attainment of the City's established goal of reducing Citywide GHG emissions by 80 percent below 2005 levels by 2050? The other more immediate goal is to meet the requirements of the Local Law 97, Climate Mobilization Act. This Act requires that all newly constructed New York buildings larger than 25,000 square feet become more efficient and reduce their GHG under a certain level depending on the building size. The largest Projected Multi-Family Mixed Use buildings (Projected Development Sites 1 and 2) were selected for comparison. It is assumed that if these buildings together would meet the Local Law 97, then the smaller Projected Multi-Family Mixed Use Development Sites and Projected Residential Infill Sites that have similar HVAC and hot water systems certainly would.

Table 14-5 presents the Local Law 97 carbon intensity rates by the future year for the City residential uses that include the residential square footages of Projected Development Sites 1 and 2 and business uses that include local retail square footage of these Projected Development Sites.

Table 14-5 GHG Emission Limits for the Proposed Actions

	2024-2029		2030-2034	
Land Use	Carbon Intensity Rate Kg of CO2e/sq ft	Total Operational CO2e Emission Limit in MT	Carbon Intensity Rate Kg of CO2e/sq ft	Total Operational CO2e Emission Limit in MT
Residential	6.75	3,884	4.07	2,342
Commercial	8.46	427	4.53	229

Total Proposed Development 1,429,508 gsf (residential = 1,313,659 gsf and commercial = 115,849 gsf)
Projected Development Site 1: 392,040 gsf residential; 24,960 gsf commercial
Projected Development Site 2: 183,440 gsf residential; 25,560 gsf commercial

The Proposed Actions total direct and indirect operational emissions estimated using the *CEQR Technical Manual* CO_2e conversion factors would be 5,913 metric tons. This is above the Local Law 97 limit for the years 2024-2029 and the limit for 2030-2034. The operational CO_2e limits include the full scope of buildings introduced by the Proposed Actions and therefore, provide conservative estimates. Operational emissions would be even lower if the more recent CO_2e conversion factors were used for NYC electricity and natural gas. Additionally, recently constructed buildings New York City utilize electric instead of natural gas-fired boilers for heating, which has lower carbon emissions. Therefore, it is likely that the buildings introduced by the Proposed Actions would use electric heating which would contribute to lower emissions than currently estimated. Furthermore, the estimate based on the 2017 NYC GHG Inventory, based on the most recent inventory available from the NYSDEC, showed that the total operational GHG emissions for the Proposed Actions could be approximately 881 metric tons lower than emissions calculated from the *2020 CEQR Technical Manual* factors.

The overall GHG emissions from the Proposed Actions constitute approximately 0.02 percent of the 2017 NYC annual GHG emissions of 50.7 million metric tons (MMT) of CO_2e.

In addition, *CEQR Technical Manual* outlines four major goals towards the GHG reduction:

- Pursue transit-oriented development;
- Generate clean, renewable power through replacement of inefficient power plants with state-of-the-art technology and expand the use of clean distributed generation; (not applicable in case of the Proposed Action);
- Construct new resource- and energy-efficient buildings (including the use of sustainable construction materials and practices) and improve the efficiency of existing buildings; and
- Encourage sustainable transportation through improving public transit, improving the efficiency of private vehicles, and decreasing the carbon intensity of fuels.

The Proposed Actions are consistent with some of these goals, as follows:

- The Proposed Actions would allow increases in commercial density along the *Commercial Corridor* of the Project Area, and would expand opportunities for commercial uses, as well as directing higher densities to areas that can accommodate future growth, such as those close to subway lines.

› The Proposed Actions would exceed the NYC GHG reduction goals for large buildings. However, the Proposed Actions would be built in accordance with the latest NYS and NYC codes, including the 2020 Energy Conservation Construction Codes of New York State (ECCNYS) and 2020 New York City Energy Conservation Code (NYCECC) as well as HPD's design guidelines for new construction—all of which govern building efficiency in the choice of HVAC system and the exterior building envelope.

Resilience to Climate Change

As discussed in **Appendix A: Waterfront Revitalization Program Consistency Assessment**, the Project Area is located within the City's Coastal Zone, specifically the 1 percent annual flood chance and 0.2 percent annual flood chance, also referred to as the 100-year floodplain and 500-year floodplain, respectively. The Project Area is mapped within Flood Zone AE and would likely experience moderate to high flooding and is also located in Flood Zone VE or wave action from storms.

Because the Projected Development Sites would be constructed in the 1 percent annual floodplain, the potential effects of climate change as it relates to current and future sea-level rise scenarios are considered in this assessment. According to the *CEQR Technical Manual*, an analysis of consistency with Policy 6.2 of the WRP may provide sufficient information to access the potential effects of sea-level rise, storm surge, and coastal flooding. Policy 6.2 identifies three basic steps to determine the consistency of a project with this policy: (1) identify vulnerabilities and consequences; (2) identify adaptive strategies; and (3) assess policy consistency.

Building features are defined in one of four categories: (1) vulnerable: project features that have the potential to incur significant damage if flooded; (2) critical: project features that if damaged would have severe impacts on the project and its ability to function as designed; (3) potentially hazardous: project features that if damaged or made unsecure by flooding could potentially adversely affect the health and safety of the public and the environment; and (4) other: project features that are entirely open and unenclosed spaces, except the open storage of potentially hazardous materials, which may be damaged by flooding, but are not likely to present significant consequences and are more easily repaired. These features are assessed against sea level rise and Mean Higher High Water (MHHW) projections ranging from low to high estimates produced by the NPCC. Adaptive strategies to mitigate the impacts of sea-level rise and flooding on vulnerable and critical features and additional measures taken to protect the project from additional coastal hazards such as waves, high winds, or debris are discussed.

As detailed in **Appendix A**, the Proposed Actions would promote Policy 6.2. The ground floors of the proposed single-family houses and the midrise buildings along Rockaway Beach Boulevard would be elevated above the design flood elevation. Vulnerable project features below the projected elevation of the future high estimate of MHHW or 1 percent chance annual flood and sea level rise would be made resilient through the implementation of site-specific adaptive strategies, as well as a large-scale flood protection plan proposed for the neighborhood. Because the floodplain within NYC is controlled by astronomic tide and meteorological forces (e.g., nor'easters and hurricanes) and not by fluvial flooding, the proposed modifications would not have the potential to adversely affect the floodplain or result in increased coastal flooding at adjacent sites or within the study area.

15

Noise

The goal of this chapter is to determine whether the Proposed Actions would have a significant adverse impact on the environment at existing sensitive receptors and whether noise levels at any new receptors in the Project Area would exceed applicable New York City noise limits.

Introduction

The Proposed Actions would facilitate the development of market rate and affordable housing and community amenities within the Project Area to benefit the neighborhood in transit-oriented areas and discourage future development in areas at greater risk to coastal hazards. Since the Proposed Actions would introduce new residential and commercial uses, there would be new noise-sensitive receptors. The purpose of the noise assessment under City Environmental Quality Review (CEQR) is to determine if:

- The Proposed Actions would have a significant adverse environmental impact by significantly increasing sound levels from mobile and stationary sources at existing sensitive noise receptors in the Project Area, including residential, commercial, and institutional land uses; and
- New noise receptors introduced in the Project Area would be in an acceptable ambient sound level environment as defined in applicable provisions of the City's noise code.

Per the *2020 CEQR Technical Manual*, a noise analysis is appropriate if an action would generate mobile or stationary sources of noise or would be located in an area with high

ambient noise levels. Mobile sources include vehicular traffic; stationary sources include rooftop equipment such as emergency generators, cooling towers, and other mechanical equipment. Noise assessment includes the following:

- Background on metrics used to describe noise,
- The methodology and criteria used to assess potential impacts,
- An assessment of the potential for the Proposed Actions to significantly affect existing receptors due to the introduction of new mobile or stationary sources,
- Results from a sound level monitoring program in the Project Area, and
- An evaluation of the ambient sound levels at new receptor locations.

This noise analysis considers two receptor types when evaluating noise: existing and new receptor(s). Since the Proposed Actions would introduce new noise-sensitive receptors, these are considered "new receptors." The analysis also considers "existing receptors," which are the current noise-sensitive uses such as commercial and residential properties within the Project Area. The following describes the results of the noise assessment for these two types of receptors.

Principal Conclusions

A noise assessment was conducted to determine whether the Proposed Actions would significantly increase sound levels from mobile and stationary sources at existing noise receptors, and if new noise receptors that would be introduced would be in an acceptable ambient sound level environment as defined in applicable provisions of the City's noise code.

Existing Noise Receptors

As described in **Chapter 12, Transportation,** a detailed transportation analysis was conducted at 27 intersections in the Project Area during the weekday morning, midday, afternoon, and Saturday afternoon peak periods. The traffic analysis includes existing (2020), No-Action (2031), and With-Action (2031) conditions at the 27 intersections in the Project Area. Mobile source noise levels were evaluated based on proportional traffic modeling.

The transportation analysis indicated that the Proposed Actions would result in significant adverse traffic and bus impacts. The traffic mitigation measures identified in **Chapter 19, Mitigation** would not affect the traffic volumes, which are the basis of the mobile source noise analysis. Therefore, the mobile source noise analysis to assess potential noise impact for existing receptors is the same with and without potential traffic mitigation measures.

Due to the trip generation in the No-Action condition, mobile source noise levels would increase up to 3.1 dBA compared to existing conditions. The Proposed Actions would result in mobile source noise levels increasing by up to 2.2 dBA the With-Action condition compared to the No-Action condition. Since mobile source noise levels would increase by less than 3 dBA due to traffic generated by the Proposed Actions, there would be no potential for significant adverse noise impacts due to mobile sources.

Noise from stationary sources such as mechanical equipment that would be introduced by the Proposed Actions have also been considered for potential noise impact. The Proposed Actions would not introduce significant stationary sources of noise except for typical rooftop

mechanical equipment or residential heating, ventilation, and air conditioning (HVAC) equipment (i.e., air conditioner condenser units). The design and specifications of mechanical equipment in the Project Area, such as heating, ventilation, and air conditioning, are not known at this time. As the Project Development Sites are developed, building mechanical systems would be designed to meet all applicable noise regulations (i.e., Subchapter 5 Section 24-227 of the NYC Noise Code and the NYC Department of Buildings (DOB) Building Code). The mechanical equipment would be selected to ensure that it does not result in any significant increases in noise levels by itself or cumulatively with other project noise sources at residential or commercial receptors. Therefore, the Proposed Actions do not have the potential to result in a significant adverse noise impact on existing receptors from stationary sources.

New Noise Receptors

The Proposed Actions would include the development of nine Multi-Family Projected Development Sites (Sites 1 to 9) and 32 Residential Infill Sites (Sites 10 to 41), as shown in **Figure 15-1**.

Noise monitoring and previous noise measurements conducted as part of the Peninsula Hospital Site Redevelopment Environmental Impact Statement (EIS) (CEQR No. 18DCP124) were used to determine the existing sound levels in the Project Area. The measured L_{eq} sound levels ranged from 53.5 to 75.0 dBA, and the L_{10} sound levels ranged from 54.8 to 74.2 dBA.

The No-Action and With-Action noise conditions were then determined using proportional modeling of the traffic as presented in the Transportation analysis. The No-Action L_{eq} sound levels would range from 55.2 to 76.4 dBA and the L_{10} sound levels ranged from 55.5 to 76.5 dBA. The With-Action L_{eq} sound levels ranged from 55.6 to 76.5 dBA and the L_{10} sound levels ranged from 56.8 to 76.5 dBA.

The increase in noise at upper floor receptors compared to measurements at ground-level has been calculated for Projected Development Sites along the elevated A/C/E subway line using the Federal Transit Administration's (FTA) assessment methodology. The analysis indicated that upper floor receptors would be 6.5 dBA higher at the nearest facades than measurements conducted at Site 3. At Site 2, upper floor receptors would be 1.6 dBA higher than the measurements.

Projected Development Sites 1 and 2 would require a minimum composite window/wall OITC rating of up to 31. Projected Development Sites 3 to 7 would require a minimum composite window wall OITC of 38 on the southern facades adjacent to the elevated train line, including the nearest 50 feet of the eastern and western facades and a minimum OITC of 28 on the other facades. Projected Development Sites 8 and 9 would have a minimum OITC requirement of 33 and Projected Development Site 11 would have a minimum OITC requirement of 31. Standard building materials would be sufficient to provide the required interior noise levels for residential spaces for all Project Development Infill Sites except Projected Development Site 11.

To implement these attenuation requirements, it is anticipated that the requirements specifying the appropriate amount of window/wall attenuation and an alternate means of

ventilation would be incorporated into a Land Disposition Agreement (LDA) for those sites under City control and an (E) Designation (E-655) for privately-owned sites.

Noise Background

Noise is defined as unwanted or excessive sound. Sound becomes unwanted when it interferes with normal activities such as sleep, work, or recreation. How people perceive sound depends on several measurable physical characteristics. These factors include:

- Level - Sound level is based on the amplitude of sound pressure fluctuations and is often equated to perceived loudness.
- Frequency - Sounds are comprised of acoustic energy distributed over a variety of frequencies. Acoustic frequencies, commonly referred to as tone or pitch, are typically measured in Hertz (Hz). Pure tones have energy concentrated in a narrow frequency range and can be more audible to humans than broadband sounds. Sound levels are most often measured on a logarithmic scale of decibels (dB). The decibel scale compresses the audible acoustic pressure levels which can vary from the threshold of hearing (0 dB) to the threshold of pain (120 dB). Because sound levels are measured in dB, the addition of two sound levels is not linear. Adding two equal sound levels results in a 3 dB increase in the overall level. Research indicates the following general relationships between sound level and human perception:
  - A 3-dB increase is a doubling of acoustic energy and is the threshold of perceptibility to the average person.
  - A 10-dB increase is a tenfold increase in acoustic energy and is perceived as a doubling in loudness to the average person.

Audible sound is comprised of acoustic energy over a range of frequencies typically from 20 to 20,000 Hz. The human ear does not perceive sound levels at each frequency as equally loud. To compensate for this phenomenon in perception, a frequency filter known as A-weighting (dBA) is used to evaluate environmental noise levels. **Table 15-1** presents a list of common outdoor and indoor sound levels.

Table 15-1 Common Indoor and Outdoor Sound Levels

Outdoor Sound Levels	Sound Pressure µPa		Sound Level dBA	Indoor Sound Levels
	6,324,555	-	110	Rock Band at 5 m
Jet Over-Flight at 300 m		-	105	
	2,000,000	-	100	Inside New York Subway Train
Gas Lawn Mower at 1 m		-	95	
	632,456	-	90	Food Blender at 1 m
Diesel Truck at 15 m		-	85	
Noisy Urban Area—Daytime	200,000	-	80	Garbage Disposal at 1 m
		-	75	Shouting at 1 m
Gas Lawn Mower at 30 m	63,246	-	70	Vacuum Cleaner at 3 m
Suburban Commercial Area		-	65	Normal Speech at 1 m
	20,000	-	60	
Quiet Urban Area—Daytime		-	55	Quiet Conversation at 1 m
	6,325	-	50	Dishwasher Next Room
Quiet Urban Area—Nighttime		-	45	
	2,000	-	40	Empty Theater or Library
Quiet Suburb—Nighttime		-	35	
	632	-	30	Quiet Bedroom at Night
Quiet Rural Area—Nighttime		-	25	Empty Concert Hall
Rustling Leaves	200	-	20	
		-	15	Broadcast and Recording Studios
	63	-	10	
		-	5	
Reference Pressure Level	20	-	0	Threshold of Hearing

µPA: MicroPascals describe pressure. The pressure level is what sound level monitors measure.
dBA: A-weighted decibels describe pressure logarithmically with respect to 20 µPa (the reference pressure level).
Source: Highway Noise Fundamentals, Federal Highway Administration, September 1980.

Because sound levels change over time, a variety of sound level metrics can be used to describe environmental noise. The following is a list of sound level descriptors that are used in the noise analysis:

- L_{10} is the sound level which is exceeded for 10 percent of the time during a given time period. Therefore, it represents the higher end of the range of sound levels. The unit is commonly used in the *2020 CEQR Technical Manual* to evaluate acceptable thresholds for noise exposure for new receptors that would be introduced by a proposed development.
- L_{eq} is the energy-average A-weighted sound level. The L_{eq} is a single value that is equivalent in sound energy to the fluctuating levels over a period of time. Therefore, the L_{eq} considers how loud noise events are during the period, how long they last, and how many times they occur. L_{eq} is commonly used to describe environmental noise and relates well to human annoyance. In accordance with the *2020 CEQR Technical Manual*,

the L_{eq} sound level is used to assess the potential for significant increases in noise due to a proposed development at existing receptors in the study area.

Noise Assessment for Existing Receptors

Mobile Sources

Noise impact at existing nearby sensitive receptors is assessed according to the relative increase between No-Action and With-Action L_{eq} sound level in accordance with the *2020 CEQR Technical Manual*. If mobile or stationary sources associated with a proposed development would increase L_{eq} sound levels by 3 dB or more and absolute levels would exceed 65 dBA L_{eq}, the proposed development would cause a significant adverse impact prior to mitigation. Additionally, if No-Action condition noise levels are 60 dBA L_{eq} or less, a 5 dB increase would be considered a significant adverse noise impact.

The mobile source noise analysis evaluates the Existing, No-Action, and With-Action traffic noise conditions at the following 27 intersections (see **Figure 15-1**):

- Beach Channel Drive/Seagirt Boulevard and Beach 35th Street
- Beach Channel Drive and Beach 37th Street
- Beach Channel Drive and Beach 40th Street
- Beach Channel Drive and Beach 44th Street
- Beach Channel Drive and Beach 49th Street
- Beach Channel Drive and Beach 50th Street
- Beach Channel Drive and Beach 62nd Street
- Arverne Boulevard/Rockaway Boulevard and Beach 54th Street
- Arverne Boulevard and Beach 56th Street (the signalized intersection)
- Arverne Boulevard and Beach 59th Street
- Rockaway Beach Boulevard and Beach 38th Street
- Rockaway Beach Boulevard and Beach 41st Street
- Rockaway Beach Boulevard and Beach 44th Street
- Rockaway Beach Boulevard and Beach 49th Street
- Rockaway Beach Boulevard and Beach 50th Street
- Rockaway Beach Boulevard and Beach 56th Street
- Rockaway Beach Boulevard and Beach 59th Street
- Rockaway Freeway and Beach 44th Street
- Rockaway Freeway and Beach 54th Street
- Rockaway Freeway and Beach 56th Street
- Rockaway Freeway and Beach 59th Street
- Seagirt Boulevard and Rockaway Freeway
- Seagirt Boulevard/Edgemere Avenue and Beach 32nd Street
- Edgemere Avenue and Beach 38th Street

- Edgemere Avenue and Beach 41st Street
- Edgemere Avenue and Beach 44th Street
- Edgemere Avenue and Beach 54th Street

Figure 15-1 Noise Study Area



Source: VHB, 2021.

The traffic analysis evaluated vehicle classification counts as part of the turning movement counts at 20 of these intersections. With-Action noise conditions have been determined based on ambient sound monitoring results and proportional modeling of noise passenger-car equivalents (PCEs) to determine the potential increase in noise due to traffic that would be generated in the With-Action condition.

If the Proposed Actions would result in a doubling or more of PCEs, it would result in a 3 dBA or greater increase in noise levels. If PCEs would not double due to the Proposed Actions, there would not be a significant adverse vehicular noise impact, and no further mobile source noise analysis is warranted. The *2020 CEQR Technical Manual* describes the process to determine PCEs. Vehicle classes are defined to have the following PCEs based on typical vehicles speeds:

- Each automobile or light truck: 1 noise PCE
- Each medium truck: 13 noise PCEs
- Each bus: 18 noise PCEs
- Each heavy truck: 47 noise PCEs

Future With-Action noise increases are calculated using the following equation:

$$With\ Action\ L_{eq}\ Increase = 10 * \log\left(\frac{With\ Action\ PCE}{No\ Action\ PCE}\right)$$

As shown in **Table 15-2**, the No-Action mobile source noise levels would typically increase by 1 to 2 dBA compared to the existing condition with a maximum increase of 3.1 dBA at the intersection of Edgemere Avenue and Beach 38th Street. With-Action mobile source noise levels would typically increase a few tenths of a decibel compared to the No-Action condition with a maximum increase of 2.2 dBA at the intersection of Rockaway Beach Boulevard at Beach 41st Street. Since the With-Action noise condition would not increase by 3 dBA or more there would be no significant adverse noise impact due to mobile sources.

Table 15-2 Mobile Source Noise Analysis

Intersection	Period	Existing PCEs	No-Action PCEs	No-Action minus Existing Sound Increment (dBA)	With-Action PCEs	With-Action minus No-Action Sound Increment (dBA)	With-Action minus Existing Sound Increment (dBA)
1 Beach Channel Dr/Seagirt Blvd and Beach 35th St	Morning	6,044	8,066	1.3	8,260	0.1	1.4
	Afternoon	3,719	5,482	1.7	5,735	0.2	1.9
	Evening	2,533	2,782	0.4	2,973	0.3	0.7
	Saturday	1,894	3,249	2.3	3,467	0.3	2.6
2 Beach Channel Dr and Beach 37th St	Morning	6,679	9,067	1.3	9,286	0.1	1.4
	Afternoon	4,321	6,307	1.6	6,683	0.3	1.9
	Evening	3,224	4,379	1.3	4,645	0.3	1.6
	Saturday	2,355	3,265	1.4	3,575	0.4	1.8
3 Beach Channel Dr and Beach 40th St	Morning	6,039	8,494	1.5	8,599	0.1	1.5
	Afternoon	4,407	6,528	1.7	6,713	0.1	1.8
	Evening	2,833	3,992	1.5	4,122	0.1	1.6
	Saturday	2,032	2,865	1.5	3,018	0.2	1.7
4 Beach Channel Dr and Beach 44th St	Morning	6,026	8,437	1.5	8,552	0.1	1.5
	Afternoon	4,196	6,523	1.9	6,687	0.1	2.0
	Evening	2,785	4,051	1.6	4,166	0.1	1.7
	Saturday	1,947	2,855	1.7	2,991	0.2	1.9
5 Beach Channel Dr and Beach 49th St	Morning	5,505	7,978	1.6	8,116	0.1	1.7
	Afternoon	4,677	7,151	1.8	7,403	0.2	2.0
	Evening	2,723	3,999	1.7	4,183	0.2	1.9
	Saturday	2,103	3,134	1.7	3,343	0.3	2.0
6 Beach Channel Dr and Beach 62nd St	Morning	7,547	10,802	1.6	11,087	0.1	1.7
	Afternoon	5,270	8,225	1.9	8,476	0.1	2.1
	Evening	3,628	5,347	1.7	5,581	0.2	1.9
	Saturday	2,890	4,392	1.8	4,659	0.3	2.1
7 Arverne Blvd and Beach 56th St	Morning	1,296	2,236	2.4	2,332	0.2	2.6
	Afternoon	1,096	1,896	2.4	1,998	0.2	2.6
	Evening	1,638	2,578	2.0	2,681	0.2	2.1
	Saturday	860	1,596	2.7	1,714	0.3	3.0
8 Rockaway Beach Blvd and Beach 38th St	Morning	1,067	1,184	0.5	1,322	0.5	0.9
	Afternoon	495	628	1.0	894	1.5	2.6
	Evening	475	534	0.5	718	1.3	1.8
	Saturday	428	509	0.8	720	1.5	2.3
9 Rockaway Beach Blvd and Beach 41st St	Morning	1,113	1,164	0.2	1,336	0.6	0.8
	Afternoon	600	636	0.2	976	1.9	2.1
	Evening	635	660	0.2	910	1.4	1.6
	Saturday	413	435	0.2	723	2.2	2.4

Table 15-2 Mobile Source Noise Analysis

Intersection	Period	Existing PCEs	No-Action PCEs	No-Action minus Existing Sound Increment (dBA)	With-Action PCEs	With-Action minus No-Action Sound Increment (dBA)	With-Action minus Existing Sound Increment (dBA)
10 Rockaway Beach Blvd and Beach 44th St	Morning	1,147	1,454	1.0	1,645	0.5	1.6
	Afternoon	803	1,095	1.3	1,381	1.0	2.4
	Evening	644	820	1.1	1,044	1.0	2.1
	Saturday	465	629	1.3	885	1.5	2.8
11 Rockaway Beach Blvd and Beach 49th St	Morning	2,552	3,143	0.9	3,306	0.2	1.1
	Afternoon	2,542	3,390	1.2	3,657	0.3	1.6
	Evening	1,948	2,427	1.0	2,637	0.4	1.3
	Saturday	1,197	1,594	1.2	1,835	0.6	1.9
12 Rockaway Beach Blvd and Beach 56th St	Morning	2,822	4,680	2.2	4,716	0.0	2.2
	Afternoon	1,653	2,910	2.5	2,984	0.1	2.6
	Evening	1,379	2,532	2.6	2,585	0.1	2.7
	Saturday	930	1,810	2.9	1,873	0.1	3.0
13 Rockaway Beach Blvd and Beach 59th St	Morning	3,715	5,786	1.9	5,824	0.0	2.0
	Afternoon	2,120	3,601	2.3	3,678	0.1	2.4
	Evening	1,777	3,046	2.3	3,101	0.1	2.4
	Saturday	1,110	2,034	2.6	2,100	0.1	2.8
14 Rockaway Freeway and Beach 56th St	Morning	1,180	1,318	0.5	1,318	0.0	0.5
	Afternoon	520	588	0.5	588	0.0	0.5
	Evening	707	789	0.5	789	0.0	0.5
	Saturday	637	709	0.5	709	0.0	0.5
15 Seagirt Blvd and Rockaway Freeway	Morning	5,478	8,612	2.0	8,735	0.1	2.0
	Afternoon	3,822	6,668	2.4	6,954	0.2	2.6
	Evening	2,600	4,176	2.1	4,351	0.2	2.2
	Saturday	2,041	3,557	2.4	3,770	0.3	2.7
16 Seagirt Blvd/Edgemere Ave and Beach 32nd St	Morning	5,881	6,895	0.7	6,974	0.0	0.7
	Afternoon	3,945	4,938	1.0	5,170	0.2	1.2
	Evening	2,947	3,486	0.7	3,636	0.2	0.9
	Saturday	2,202	2,655	0.8	2,829	0.3	1.1
17 Edgemere Ave and Beach 44th St	Morning	2,381	4,024	2.3	4,054	0.0	2.3
	Afternoon	1,147	2,313	3.0	2,380	0.1	3.2
	Evening	1,195	2,128	2.5	2,176	0.1	2.6
	Saturday	699	1,350	2.9	1,405	0.2	3.0

Table 15-2 Mobile Source Noise Analysis

Intersection	Period	Existing PCEs	No-Action PCEs	No-Action minus Existing Sound Increment (dBA)	With-Action PCEs	With-Action minus No-Action Sound Increment (dBA)	With-Action minus Existing Sound Increment (dBA)
18 Arverne Blvd and Beach 59th St	Morning	1,822	2,682	1.7	2,780	0.2	1.8
	Afternoon	1,471	2,190	1.7	2,295	0.2	1.9
	Evening	1,565	2,220	1.5	2,325	0.2	1.7
	Saturday	1,034	1,495	1.6	1,616	0.3	1.9
19 Rockaway Beach Blvd and Beach 59th St	Morning	1,231	1,449	0.7	1,451	0.0	0.7
	Afternoon	575	672	0.7	675	0.0	0.7
	Evening	818	938	0.6	940	0.0	0.6
	Saturday	658	766	0.7	769	0.0	0.7
20 Arverne Blvd/Rockaway Blvd and Beach 54th St	Morning	1,972	3,108	2.0	3,223	0.2	2.1
	Afternoon	1,546	2,747	2.5	2,899	0.2	2.7
	Evening	1,957	3,206	2.1	3,340	0.2	2.3
	Saturday	1,301	2,502	2.8	2,657	0.3	3.1
21 Rockaway Freeway and Beach 54th St	Morning	1,562	2,110	1.3	2,129	0.0	1.3
	Afternoon	973	1,514	1.9	1,564	0.1	2.1
	Evening	903	1,329	1.7	1,360	0.1	1.8
	Saturday	494	753	1.8	790	0.2	2.0
22 Edgemere Ave and Beach 54th St	Morning	2,400	4,025	2.2	4,063	0.0	2.3
	Afternoon	1,530	2,758	2.6	2,850	0.1	2.7
	Evening	1,308	2,446	2.7	2,509	0.1	2.8
	Saturday	1,058	2,088	3.0	2,162	0.2	3.1
23 Rockaway Beach Blvd and Beach 50th St	Morning	2,445	3,327	1.3	3,442	0.1	1.5
	Afternoon	707	1,042	1.7	1,191	0.6	2.3
	Evening	1,556	2,067	1.2	2,200	0.3	1.5
	Saturday	797	1,154	1.6	1,308	0.5	2.1
24 Rockaway Freeway and Beach 44th St	Morning	1,614	1,897	0.7	1,910	0.0	0.7
	Afternoon	861	1,083	1.0	1,116	0.1	1.1
	Evening	1,540	1,866	0.8	1,889	0.1	0.9
	Saturday	600	738	0.9	763	0.1	1.0
25 Beach Channel Dr and Beach 50th St	Morning	6,027	9,022	1.8	9,219	0.1	1.8
	Afternoon	3,709	5,813	2.0	6,009	0.1	2.1
	Evening	2,408	3,636	1.8	3,789	0.2	2.0
	Saturday	1,946	3,014	1.9	3,191	0.2	2.1

Table 15-2 Mobile Source Noise Analysis

Intersection	Period	Existing PCEs	No-Action PCEs	No-Action minus Existing Sound Increment (dBA)	With-Action PCEs	With-Action minus No-Action Sound Increment (dBA)	With-Action minus Existing Sound Increment (dBA)
26 Edgemere Ave and Beach 41st St	Morning	2,422	3,997	2.2	4,041	0.0	2.2
	Afternoon	1,744	3,228	2.7	3,342	0.2	2.8
	Evening	1,425	2,426	2.3	2,501	0.1	2.4
	Saturday	951	1,849	2.9	1,937	0.2	3.1
27 Edgemere Ave and Beach 38th St	Morning	2,090	3,480	2.2	3,538	0.1	2.3
	Afternoon	1,516	2,976	2.9	3,136	0.2	3.2
	Evening	1,348	2,358	2.4	2,459	0.2	2.6
	Saturday	988	2,015	3.1	2,132	0.2	3.3

Source: VHB, 2021.

Stationary Sources

Noise from stationary sources such as mechanical equipment that would be introduced by the Proposed Actions must also be considered for potential noise impact. The design and specifications for mechanical equipment, such as heating, ventilation, and air conditioning, are not known at this time. As the Project Development Sites are developed, building mechanical systems would be designed to meet all applicable noise regulations (i.e., Subchapter 5 Section 24-227 of the New York Noise Code and the NYC DOB Building Code). The mechanical equipment will be selected to ensure that it does not result in any significant increases in noise levels by itself or cumulatively with other project noise sources at residential or commercial receptors. Therefore, the Proposed Actions do not have the potential to result in a significant adverse noise impact on existing receptors from stationary sources.

Noise Assessment for New Receptors

The Proposed Actions would include the development of nine Projected Development Sites (Sites 1 to 9) and 32 Projected Development Residential Infill Sites (Sites 10 to 41) as shown in **Figure 15-1**.

With-Action noise conditions at new sensitive receptors that would be introduced by the Proposed Actions are evaluated according to absolute exterior sound level. The noise exposure guidelines for acceptable ambient conditions depend on the type of land use. The *2020 CEQR Technical Manual* provides noise exposure guidelines for assessing ambient noise conditions as shown in **Table 15-3**.

Residential and community facility uses must maintain an interior noise level of 45 dBA and commercial uses must maintain an interior noise level of 50 dBA. With-Action exterior sound levels are evaluated to determine if receptors would be in an acceptable ambient sound level environment. As shown in **Table 15-3**, exterior ambient sound levels exceeding 70 dBA at

residential, community facility, and commercial office spaces are considered to be Marginally Unacceptable and require a minimum window/wall sound attenuation sufficient to reduce interior sound levels to acceptable levels.

Table 15-3 Noise Exposure Guidelines

Receptor Type	Time Period	Acceptable External Exposure	Marginally Acceptable External Exposure	Marginally Unacceptable External Exposure	Clearly Unacceptable External Exposure
Commercial, Office and Community Facilities	All Times	$L_{10} \leq 65$ dBA	$65 < L_{10} \leq 70$ dBA	$70 < L_{10} \leq 80$ dBA	$L_{10} > 80$ dBA
Residence	7 AM to 10 PM				
Residence	10 PM to 7 AM	$L_{10} \leq 55$ dBA	$55 < L_{10} \leq 70$ dBA	$70 < L_{10} \leq 80$ dBA	$L_{10} > 80$ dBA

Source: Table 19-2, *2020 CEQR Technical Manual*.

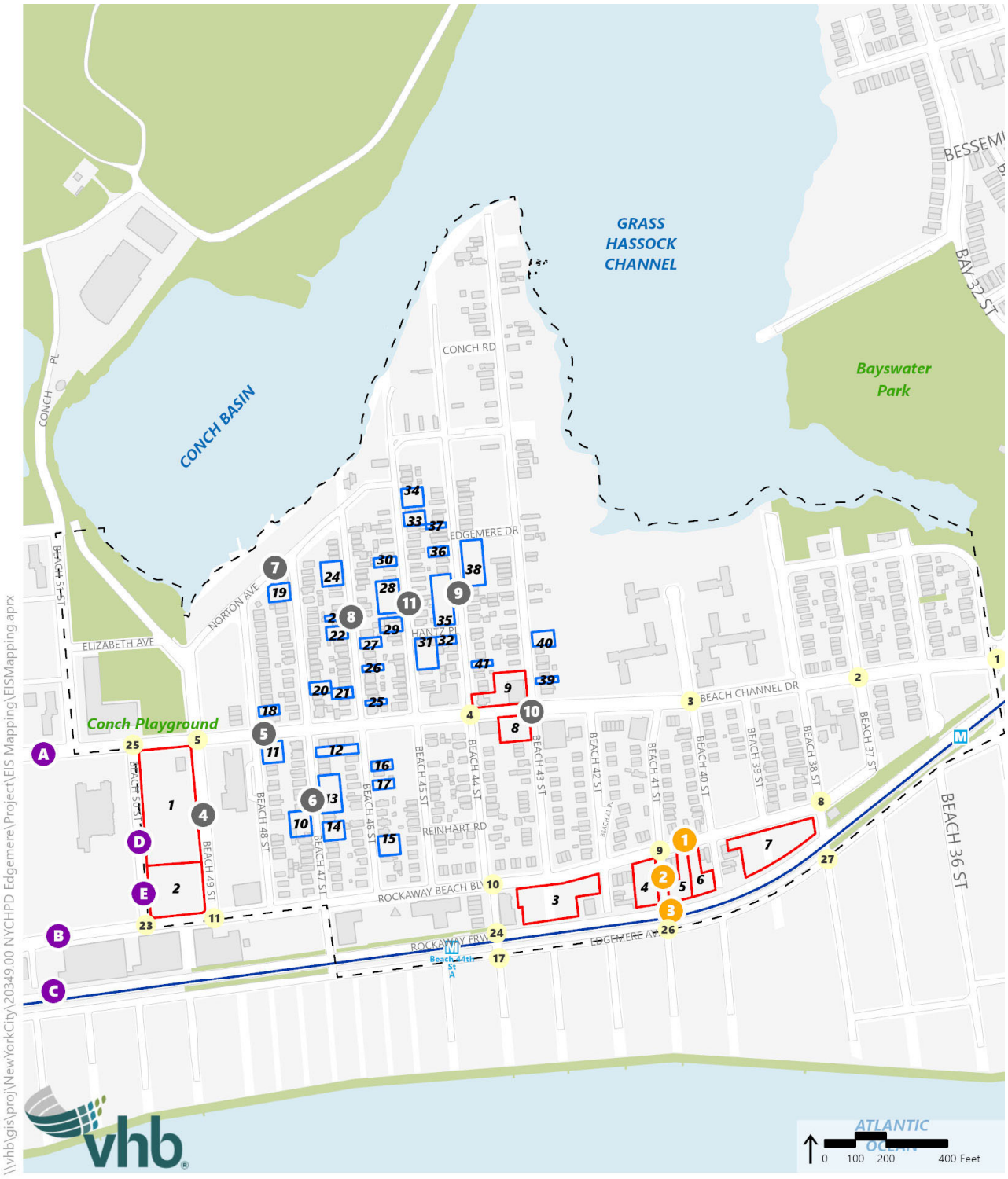
Since the Proposed Actions would introduce new residential developments, the highest L_{10} sound level among the weekday morning, midday, and afternoon peak periods is used to evaluate whether the Proposed Actions would introduce new receptors into an acceptable noise environment. The analysis presents the results of the ambient noise monitoring and the assessment of whether new receptors would be in a high ambient noise environment.

Existing Sound Levels

Noise monitoring was conducted at 11 sites, as shown in **Figure 15-2**, on Wednesday October 28, 2020, Thursday November 5, 2020, and Thursday June 24, 2021, to determine the existing sound levels in the Project Area. These measurement dates are approved by NYCDOT for traffic counts and were not subject to a measurement pause due to COVID-related traffic effects. Measurements were conducted using Type I sound level meters at ground level and followed the procedures outlined in the *2020 CEQR Technical Manual*, which include documenting significant sources of sound, conducting spot counts of traffic by vehicle classification, and documenting train passbys. Data collected included A-weighted overall and one-third octave band sound levels including minimum (L_{min}), maximum (L_{max}), statistics (L_{xx}), and energy-average noise levels (L_{eq}). Atmospheric conditions including air temperature, wind speed, wind direction, relative humidity, and precipitation were recorded from a nearby weather station. The atmospheric conditions were within acceptable ranges and did not influence the measurement results.

The noise monitors were placed with a minimum of four feet between the microphone and nearby reflecting surfaces. At Sites 4 to 11, where roadway activity dominated the overall sound levels, measurements were conducted for 20 minutes during the weekday morning peak period (7:00 – 9:00 AM), midday period (12:00 – 2:00 PM) and evening peak period (4:30 – 6:30 PM). At Sites 1 to 3, where train activity on the elevated A train contributes to the overall sound levels, measurements were conducted for one hour during the weekday morning, midday, and evening peak periods. These measurement locations are representative of ground-level receptors in the Project Area.

Figure 15-2 Noise Measurement Locations



Source: VHB, 2021

Existing noise conditions have also been characterized by previous ambient noise measurements conducted as part of the Peninsula Hospital Site Redevelopment EIS (CEQR No. 18DCP124) at Site A (Peninsula Site 1), Site B (Peninsula Site 3), Site C (Peninsula Site 4), Site D (Peninsula Site 8), and Site E (Peninsula Site 5). The measurements for the Peninsula Hospital EIS were conducted during the weekday morning, midday, and evening and Saturday peak periods at Site A for 20 minutes in duration and at Sites B, C, D, and E for 1 hour in duration due to the influence of noise from rail and transit sources. The project area for the Peninsula Hospital Site Redevelopment remains unchanged compared to when noise monitoring was conducted for the EIS and therefore the monitored sound level data used to describe current existing conditions below is still representative. These measurements show that sound levels during the Saturday peak period were quieter than weekday peak periods.

Table 15-4 presents the PCE results and differences in sound levels between the traffic counted during the sound monitoring and the existing traffic data for the network. Sixteen of 18 time periods evaluated are within 3 decibels, which demonstrates that the traffic conditions during the measurements were consistent with the overall existing traffic network data. At Site 2 during the peak morning period, the sound level difference based on PCEs is 4.3 dBA. Traffic counts during the morning monitoring event were a subset of roadway traffic counts in the midday and evening events and therefore do not account for the additional noise contributions from surrounding roadways. Based on the similarities between the monitored sound levels for the three timeframes (64.0 to 66.9 dBA), it is assumed that no adjustments to the existing noise levels are necessary at this location and that existing sound levels at Site 2 are consistent with existing traffic data. At Site 4, the evening sound level difference based on the PCE comparison is 10.7 dBA. This discrepancy is due to the low overall volume of roadway on this segment and the fact that zero trucks or buses were counted during the measurements while the existing traffic volume data had two heavy trucks and three buses. Since the monitored sound levels for the morning, midday, and evening periods are similar (59.3 to 61.4 dBA), it is assumed that no adjustments the existing traffic sound levels are necessary at this location and that existing sound levels at Site 4 are consistent with existing traffic data.

Table 15-4 PCE Comparison Results

Location	Period	Monitored PCEs	Existing Traffic PCEs	Sound Level Difference (dBA)
Site 1	Morning	2184	2600	0.8
Rockaway Beach Boulevard and	Midday	1860	3183	2.3
Beach 41st Street	Evening	2163	3536	2.1
Site 2	Morning	618	1666	4.3
Beach 41st Street between Rockaway	Midday	2307	3161	1.4
Beach Boulevard and Rockaway Freeway	Evening	2619	3553	1.3
Site 3	Morning	2184	2600	0.8
Rockaway Freeway and Beach 41st Street	Midday	372	600	2.1
	Evening	2163	3536	2.1
Site 4	Morning	480	235	-3.1
Beach 49th Street between Beach Channel	Midday	438	314	-1.4
Drive and Rockaway Beach Boulevard	Evening	15	176	10.7
Site 5	Morning	3933	5223	1.2
Beach Channel Drive and	Midday	3978	4329	0.4
Beach 48th Street	Evening	3210	2630	-0.9
Site 10	Morning	3879	5880	1.8
Beach Channel Drive and	Midday	3147	4112	1.2
Beach 43rd Street	Evening	1728	2746	2.0

Note: Sound Level Differences greater than +/- 3 dBA is attributed to low traffic volumes during time of noise monitoring.
Source: VHB, 2021.

Table 15-5 presents existing sound level measurement results including L_{eq}, L_{max}, L_{10}, L_{50}, L_{90}, and L_{min}. The measured L_{eq} sound levels ranged from 53.5 to 75.0 dBA and the L_{10} sound levels ranged from 54.8 to 74.2 dBA.

Table 15-5 Existing Measured Sound Levels

Receptor/Location	Time Period	Duration	L_{eq}	L_{max}	L_{10}	L_{50}	L_{90}	L_{min}
Site 1	Morning	1 hour	69.0	98.3	69.6	60.0	53.9	46.8
Rockaway Beach Boulevard and	Midday	1 hour	65.4	84.7	68.5	59.2	52.7	42.6
Beach 41st Street	Evening	1 hour	65.9	88.9	69.1	60.0	51.7	45.9
Site 2	Morning	1 hour	66.9	86.1	66.3	58.8	52.2	47.4
Beach 41st Street between Rockaway	Midday	1 hour	64.0	83.2	64.0	55.5	47.9	42.6
Beach Boulevard and Rockaway Freeway	Evening	1 hour	65.7	89.6	64.6	56.6	48.5	44.1
Site 3	Morning	1 hour	71.4	95.3	73.1	63.1	53.5	47.6
Rockaway Freeway and Beach 41st	Midday	1 hour	69.9	93.4	72.4	62.8	54.7	47.8
Street	Evening	1 hour	70.5	93.0	72.1	62.4	52.2	47.4

Table 15-5 Existing Measured Sound Levels

Receptor/Location	Time Period	Duration	L_{eq}	L_{max}	L_{10}	L_{50}	L_{90}	L_{min}
Site 4 Beach 49th Street between Beach Channel Drive and Rockaway Beach Boulevard	Morning	20 Mins	61.4	83.6	62.5	56.4	53.4	51.7
	Midday	20 Mins	59.3	80.6	62.0	55.6	51.6	50.5
	Evening	20 Mins	59.8	73.0	62.9	56.1	54.2	52.2
Site 5 Beach Channel Drive and Beach 48th Street	Morning	20 Mins	70.7	84.8	74.2	66.7	53.2	46.7
	Midday	20 Mins	71.1	89.3	74.0	66.8	54.7	46.6
	Evening	20 Mins	70.2	89.4	73.4	67.8	55.1	50.1
Site 6 Beach 42nd Street between Beach Channel Drive and Rockaway Beach Boulevard	Morning	20 Mins	57.1	77.1	60.3	53.0	47.1	43.8
	Midday	20 Mins	59.8	81.7	60.8	56.0	48.4	41.0
	Evening	20 Mins	57.9	81.6	59.3	53.9	50.5	48.8
Site 7 Norton Avenue and Beach 42nd Street	Morning	20 Mins	59.0	75.5	62.0	50.7	45.2	43.2
	Midday	20 Mins	53.6	72.5	55.2	44.4	41.6	39.9
	Evening	20 Mins	56.7	68.3	61.7	50.8	48.0	46.3
Site 8 Beach 46th Street between Norton Avenue and Beach Channel Drive	Morning	20 Mins	53.9	67.7	58.4	47.8	42.5	39.2
	Midday	20 Mins	55.6	75.9	58.8	49.3	46.9	45.3
	Evening	20 Mins	56.9	74.4	61.1	53.1	49.6	47.3
Site 9 Beach 44th Street between Hough Place and Beach Channel Drive	Morning	20 Mins	57.3	72.4	61.4	52.7	45.4	42.5
	Midday	20 Mins	60.0	85.0	60.8	47.8	44.2	41.4
	Evening	20 Mins	56.5	77.7	56.4	50.6	48.8	46.2
Site 10 Beach Channel Drive and Beach 43rd Street	Morning	20 Mins	75.0	100.2	73.7	66.6	59.7	49.0
	Midday	20 Mins	71.7	94.2	72.2	64.9	55.0	50.4
	Evening	20 Mins	71.6	97.5	70.2	64.0	55.2	51.6
Site 11 Beach 45th Street between Norton Avenue and Beach Channel Drive	Morning	20 Mins	57.8	74.1	60.4	49.8	44.8	41.5
	Midday	20 Mins	54.3	74.5	54.8	45.2	41.5	39.2
	Evening	20 Mins	56.6	70.7	60.9	52.2	49.4	47.8
Site A (Peninsula Hospital Site 1) Beach Channel Drive between Beach 50th and Beach 53rd Street	Morning	20 Mins	68.5	81.9	72.6	63.7	55.9	52.9
	Midday	20 Mins	69.1	85.5	72.2	65.2	57.1	52.2
	Evening	20 Mins	68.7	81.3	72.3	65.7	54.6	51.6
	Saturday	20 Mins	64.5	79	68.2	58.9	52.4	50.9
Site B (Peninsula Hospital Site 3) Rockaway Boulevard between Beach 50th and Beach 53rd Street	Morning	1 hour	69.0	90.3	72.2	63.3	55.6	52.2
	Midday	1 hour	65.4	86.1	68.9	58.1	52.1	49.6
	Evening	1 hour	72.3	99.4	69.6	60.5	52.4	48.2
	Saturday	1 hour	66.0	85.1	69.8	60.6	53.3	50.7
Site C (Peninsula Hospital Site 4) Beach 52nd Street and Rockaway Freeway	Morning	1 hour	71.0	87.9	74	67.9	62.2	52.9
	Midday	1 hour	68.9	87.6	71.9	64.8	58.1	51.4
	Evening	1 hour	70.1	86.3	73.7	66.3	56.1	51.3
	Saturday	1 hour	69.0	83.3	73.1	64.3	56.8	53.8

Table 15-5 Existing Measured Sound Levels

Receptor/Location	Time Period	Duration	L_{eq}	L_{max}	L_{10}	L_{50}	L_{90}	L_{min}
Site D (Peninsula Hospital Site 8) Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard	Morning	1 hour	60.1	79.5	62.9	56.6	54.3	51.8
	Midday	1 hour	60.3	76.3	63.0	57.2	54.2	51.9
	Evening	1 hour	59.9	84.8	62.0	54.8	51.5	51.9
Site E (Peninsula Hospital Site 5) Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard	Morning	1 hour	67.1	80.9	70.6	64.8	54.4	48.7
	Midday	1 hour	53.5	68.4	56.7	50.7	39.2	31.6
	Evening	1 hour	67.6	84.4	71.0	64.2	53.6	44.7

Source: VHB, 2021 and Peninsula Hospital Site Redevelopment FEIS, 2018.

No-Action and With-Action Sound Levels

No-Action and With-Action sound levels at each measurement location have been determined based on the measurement results and the mobile source noise analysis. **Table 15-6** presents each measurement receptor location and the intersections used as the basis to determine the No-Action and With-Action sound levels due to the change in traffic. The intersection with the highest increase for each period was used.

Table 15-6 Monitoring Sites, Intersections, and Development Sites

Receptor	Location	Intersections
1	Rockaway Beach Boulevard and Beach 41st Street	8, 9, 10
2	Beach 41st Street between Rockaway Beach Boulevard and Rockaway Freeway	9, 26
3	Rockaway Freeway and Beach 41st Street	17, 24, 26, 27
4	Beach 49th Street between Beach Channel Drive and Rockaway Beach Boulevard	5, 11
5	Beach Channel Drive and Beach 48th Street	4, 5
6	Beach 42nd Street between Beach Channel Drive and Rockaway Beach Boulevard	4, 5, 10, 11
7	Norton Avenue and Beach 42nd Street	4, 5
8	Beach 46th Street between Norton Avenue and Beach Channel Drive	4, 5
9	Beach 44th Street between Hough Place and Beach Channel Drive	4
10	Beach Channel Drive and Beach 43rd Street	3, 4
11	Beach 45th Street between Norton Avenue and Beach Channel Drive	4, 5
A	Beach Channel Drive between Beach 50th and Beach 53rd Street	5, 25
B	Rockaway Boulevard between Beach 50th and Beach 53rd Street	20, 23
C	Beach 52nd Street and Rockaway Freeway	17, 21, 22, 24
D	Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard	23, 25
E	Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard	23, 25

Source: VHB, 2021.

Table 15-7 presents the No-Action sound levels at the measurement sites including the change in noise between the Existing and No-Action traffic. No-Action sound levels range

from 1.0 to 3.0 dBA higher than existing conditions. The No-Action L_{eq} sound levels would range from 55.5 to 76.5 dBA and the L_{10} sound levels would range from 56.7 to 76.4 dBA.

Table 15-7 No-Action Sound Levels

Receptor/Location	Time Period	Duration	L_{eq}	L_{max}	L_{10}	L_{50}	L_{90}	L_{min}
Site 1 Rockaway Beach Boulevard and Beach 41st Street	Morning	1 hour	70.0	99.3	70.6	61.0	54.9	47.8
	Midday	1 hour	66.7	86.0	69.8	60.5	54.0	43.9
	Evening	1 hour	67.0	90.0	70.2	61.1	52.8	47.0
Site 2 Beach 41st Street between Rockaway Beach Boulevard and Rockaway Freeway	Morning	1 hour	69.1	88.3	68.5	61.0	54.4	49.6
	Midday	1 hour	66.7	85.9	66.7	58.2	50.6	45.3
	Evening	1 hour	68.0	91.9	66.9	58.9	50.8	46.4
Site 3 Rockaway Freeway and Beach 41st Street	Morning	1 hour	73.7	97.6	75.4	65.4	55.8	49.9
	Midday	1 hour	72.9	96.4	75.4	65.8	57.7	50.8
	Evening	1 hour	73.0	95.5	74.6	64.9	54.7	49.9
Site 4 Beach 49th Street between Beach Channel Drive and Rockaway Beach Boulevard	Morning	20 Mins	63.0	85.2	64.1	58.0	55.0	53.3
	Midday	20 Mins	61.1	82.4	63.8	57.4	53.4	52.3
	Evening	20 Mins	61.5	74.7	64.6	57.8	55.9	53.9
Site 5 Beach Channel Drive and Beach 48th Street	Morning	20 Mins	72.3	86.4	75.8	68.3	54.8	48.3
	Midday	20 Mins	73.0	91.2	75.9	68.7	56.6	48.5
	Evening	20 Mins	71.9	91.1	75.1	69.5	56.8	51.8
Site 6 Beach 42nd Street between Beach Channel Drive and Rockaway Beach Boulevard	Morning	20 Mins	58.7	78.7	61.9	54.6	48.7	45.4
	Midday	20 Mins	61.7	83.6	62.7	57.9	50.3	42.9
	Evening	20 Mins	59.6	83.3	61.0	55.6	52.2	50.5
Site 7 Norton Avenue and Beach 42nd Street	Morning	20 Mins	60.6	77.1	63.6	52.3	46.8	44.8
	Midday	20 Mins	55.5	74.4	57.1	46.3	43.5	41.8
	Evening	20 Mins	58.4	70.0	63.4	52.5	49.7	48.0
Site 8 Beach 46th Street between Norton Avenue and Beach Channel Drive	Morning	20 Mins	55.5	69.3	60.0	49.4	44.1	40.8
	Midday	20 Mins	57.5	77.8	60.7	51.2	48.8	47.2
	Evening	20 Mins	58.6	76.1	62.8	54.8	51.3	49.0
Site 9 Beach 44th Street between Hough Place and Beach Channel Drive	Morning	20 Mins	58.8	73.9	62.9	54.2	46.9	44.0
	Midday	20 Mins	61.9	86.9	62.7	49.7	46.1	43.3
	Evening	20 Mins	58.1	79.3	58.0	52.2	50.4	47.8
Site 10 Beach Channel Drive and Beach 43rd Street	Morning	20 Mins	76.5	101.7	75.2	68.1	61.2	50.5
	Midday	20 Mins	73.6	96.1	74.1	66.8	56.9	52.3
	Evening	20 Mins	73.2	99.1	71.8	65.6	56.8	53.2
Site 11 Beach 45th Street between Norton Avenue and Beach Channel Drive	Morning	20 Mins	59.4	75.7	62.0	51.4	46.4	43.1
	Midday	20 Mins	56.2	76.4	56.7	47.1	43.4	41.1
	Evening	20 Mins	58.3	72.4	62.6	53.9	51.1	49.5

Table 15-7 No-Action Sound Levels

Receptor/Location	Time Period	Duration	L_{eq}	L_{max}	L_{10}	L_{50}	L_{90}	L_{min}
Site A (Peninsula Hospital Site 1) Beach Channel Drive between Beach 50th and Beach 53rd Street	Morning	20 Mins	70.3	83.7	74.4	65.5	57.7	54.7
	Midday	20 Mins	71.1	87.5	74.2	67.2	59.1	54.2
	Evening	20 Mins	70.5	83.1	74.1	67.5	56.4	53.4
	Saturday	20 Mins	66.4	80.9	70.1	60.8	54.3	52.8
Site B (Peninsula Hospital Site 3) Rockaway Boulevard between Beach 50th and Beach 53rd Street	Morning	1 hour	71.0	92.3	74.2	65.3	57.6	54.2
	Midday	1 hour	67.9	88.6	71.4	60.6	54.6	52.1
	Evening	1 hour	74.4	101.5	71.7	62.6	54.5	50.3
	Saturday	1 hour	68.8	87.9	72.6	63.4	56.1	53.5
Site C (Peninsula Hospital Site 4) Beach 52nd Street and Rockaway Freeway	Morning	1 hour	73.3	90.2	76.3	70.2	64.5	55.2
	Midday	1 hour	71.9	90.6	74.9	67.8	61.1	54.4
	Evening	1 hour	72.8	89.0	76.4	69.0	58.8	54.0
	Saturday	1 hour	72.0	86.3	76.1	67.3	59.8	56.8
Site D (Peninsula Hospital Site 8) Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard	Morning	1 hour	61.9	81.3	64.7	58.4	56.1	53.6
	Midday	1 hour	62.3	78.3	65.0	59.2	56.2	53.9
	Evening	1 hour	61.7	86.6	63.8	56.6	53.3	53.7
Site E (Peninsula Hospital Site 5) Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard	Morning	1 hour	68.9	82.7	72.4	66.6	56.2	50.5
	Midday	1 hour	55.5	70.4	58.7	52.7	41.2	33.6
	Evening	1 hour	69.4	86.2	72.8	66.0	55.4	46.5

Source: VHB, 2021 and Sam Schwartz Engineering, 2018.

Table 15-8 presents the With-Action sound levels at the measurement sites, including the change in noise between the existing and With-Action traffic. With-Action sound Levels would range from 1.5 to 3.2 dBA higher than existing levels. The With-Action L_{eq} sound levels would range from 55.6 to 76.5 dBA and the L_{10} levels would range fro,m 56.8 to 76.5 dBA.

Table 15-8 With-Action Sound Levels

Receptor/Location	Time Period	Duration	L_{eq}	L_{max}	L_{10}	L_{50}	L_{90}	L_{min}
Site 1 Rockaway Beach Boulevard and Beach 41st Street	Morning	1 hour	70.6	99.9	71.2	61.6	55.5	48.4
	Midday	1 hour	68.0	87.3	71.1	61.8	55.3	45.2
	Evening	1 hour	68.0	91.0	71.2	62.1	53.8	48.0
Site 2 Beach 41st Street between Rockaway Beach Boulevard and Rockaway Freeway	Morning	1 hour	69.1	88.3	68.5	61.0	54.4	49.6
	Midday	1 hour	66.8	86.0	66.8	58.3	50.7	45.4
	Evening	1 hour	68.1	92.0	67.0	59.0	50.9	46.5
Site 3 Rockaway Freeway and Beach 41st Street	Morning	1 hour	73.7	97.6	75.4	65.4	55.8	49.9
	Midday	1 hour	73.1	96.6	75.6	66.0	57.9	51.0
	Evening	1 hour	73.1	95.6	74.7	65.0	54.8	50.0

Table 15-8 With-Action Sound Levels

Receptor/Location	Time Period	Duration	L_{eq}	L_{max}	L_{10}	L_{50}	L_{90}	L_{min}
Site 4 Beach 49th Street between Beach Channel Drive and Rockaway Beach Boulevard	Morning	20 Mins	63.1	85.3	64.2	58.1	55.1	53.4
	Midday	20 Mins	61.3	82.6	64.0	57.6	53.6	52.5
	Evening	20 Mins	61.7	74.9	64.8	58.0	56.1	54.1
Site 5 Beach Channel Drive and Beach 48th Street	Morning	20 Mins	72.4	86.5	75.9	68.4	54.9	48.4
	Midday	20 Mins	73.1	91.3	76.0	68.8	56.7	48.6
	Evening	20 Mins	72.1	91.3	75.3	69.7	57.0	52.0
Site 6 Beach 42nd Street between Beach Channel Drive and Rockaway Beach Boulevard	Morning	20 Mins	58.8	78.8	62.0	54.7	48.8	45.5
	Midday	20 Mins	62.2	84.1	63.2	58.4	50.8	43.4
	Evening	20 Mins	60.0	83.7	61.4	56.0	52.6	50.9
Site 7 Norton Avenue and Beach 42nd Street	Morning	20 Mins	60.7	77.2	63.7	52.4	46.9	44.9
	Midday	20 Mins	55.6	74.5	57.2	46.4	43.6	41.9
	Evening	20 Mins	58.6	70.2	63.6	52.7	49.9	48.2
Site 8 Beach 46th Street between Norton Avenue and Beach Channel Drive	Morning	20 Mins	55.6	69.4	60.1	49.5	44.2	40.9
	Midday	20 Mins	57.6	77.9	60.8	51.3	48.9	47.3
	Evening	20 Mins	58.8	76.3	63.0	55.0	51.5	49.2
Site 9 Beach 44th Street between Hough Place and Beach Channel Drive	Morning	20 Mins	58.8	73.9	62.9	54.2	46.9	44.0
	Midday	20 Mins	62.0	87.0	62.8	49.8	46.2	43.4
	Evening	20 Mins	58.2	79.4	58.1	52.3	50.5	47.9
Site 10 Beach Channel Drive and Beach 43rd Street	Morning	20 Mins	76.5	101.7	75.2	68.1	61.2	50.5
	Midday	20 Mins	73.7	96.2	74.2	66.9	57.0	52.4
	Evening	20 Mins	73.3	99.2	71.9	65.7	56.9	53.3
Site 11 Beach 45th Street between Norton Avenue and Beach Channel Drive	Morning	20 Mins	59.5	75.8	62.1	51.5	46.5	43.2
	Midday	20 Mins	56.3	76.5	56.8	47.2	43.5	41.2
	Evening	20 Mins	58.5	72.6	62.8	54.1	51.3	49.7
Site A (Peninsula Hospital Site 1) Beach Channel Drive between Beach 50th and Beach 53rd Street	Morning	20 Mins	70.3	83.7	74.4	65.5	57.7	54.7
	Midday	20 Mins	71.2	87.6	74.3	67.3	59.2	54.3
	Evening	20 Mins	70.7	83.3	74.3	67.7	56.6	53.6
	Saturday	20 Mins	66.6	81.1	70.3	61.0	54.5	53.0
Site B (Peninsula Hospital Site 3) Rockaway Boulevard between Beach 50th and Beach 53rd Street	Morning	1 hour	71.1	92.4	74.3	65.4	57.7	54.3
	Midday	1 hour	68.1	88.8	71.6	60.8	54.8	52.3
	Evening	1 hour	74.6	101.7	71.9	62.8	54.7	50.5
	Saturday	1 hour	69.1	88.2	72.9	63.7	56.4	53.8
Site C (Peninsula Hospital Site 4) Beach 52nd Street and Rockaway Freeway	Morning	1 hour	73.3	90.2	76.3	70.2	64.5	55.2
	Midday	1 hour	72.1	90.8	75.1	68.0	61.3	54.6
	Evening	1 hour	72.9	89.1	76.5	69.1	58.9	54.1
	Saturday	1 hour	72.1	86.4	76.2	67.4	59.9	56.9

Table 15-8 With-Action Sound Levels

Receptor/Location	Time Period	Duration	L_{eq}	L_{max}	L_{10}	L_{50}	L_{90}	L_{min}
Site D (Peninsula Hospital Site 8) Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard	Morning	1 hour	61.9	81.3	64.7	58.4	56.1	53.6
	Midday	1 hour	62.6	78.6	65.3	59.5	56.5	54.2
	Evening	1 hour	61.9	86.8	64.0	56.8	53.5	53.9
Site E (Peninsula Hospital Site 5) Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard	Morning	1 hour	68.9	82.7	72.4	66.6	56.2	50.5
	Midday	1 hour	55.8	70.7	59.0	53.0	41.5	33.9
	Evening	1 hour	69.6	86.4	73.0	66.2	55.6	46.7

Source: VHB, 2021 and Sam Schwartz Engineering, 2018

Sound Levels at Development Sites 3, 4, 5, 6, and 7

As shown in **Table 15-2**, the south facades of the Projected Multi-Family Mixed-Use Development Sites 3, 4, 5, 6, and 7 would be adjacent to the elevated A/C/E subway. Ambient sound measurements were conducted at ground-level at Sites 2 and 3, which included acoustic shielding between the train wheels and the measurement location from the solid concrete viaduct. The viaduct, however, would not provide acoustic shielding to upper floor receptors (i.e., second floor and higher) at the Projected Development Sites. The increase in noise at these upper floor receptors has been evaluated using the Federal Transit Administration's (FTA) assessment methodology for barriers and other intervening objects using the path-length difference calculation. The analysis indicated that upper floor receptors would be 6.5 dBA higher at the nearest facades than ground-level conditions at Site 3. At Site 2, upper floor receptors would be 1.6 dBA higher than ground-level conditions.

Acceptability Assessment

The *2020 CEQR Technical Manual* provides noise exposure guidelines for assessing ambient sound levels, as shown in **Table 15-3**. Based on these noise exposure guidelines, the acceptability of With-Action sound levels has been determined at each receptor location.

Table 15-9 summarizes the maximum With-Action L_{10} or L_{eq} level and whether the sound levels are considered to be acceptable according to the *2020 CEQR Technical Manual*.

Table 15-9 Receptor Sound Level Acceptability

Receptor	Location	With-Action Sound Level (dBA)	Acceptability
1	Rockaway Beach Boulevard and Beach 41st Street	71.2 (L_{10})	Marginally Unacceptable
2[A]	Beach 41st Street between Rockaway Beach Boulevard and Rockaway Freeway	70.7 (L_{10})	Marginally Unacceptable
3[A]	Rockaway Freeway and Beach 41st Street	82.1 (L_{10})	Clearly Unacceptable
4	Beach 49th Street between Beach Channel Drive and Rockaway Beach Boulevard	64.8 (L_{10})	Marginally Acceptable
5	Beach Channel Drive and Beach 48th Street	76.0 (L_{10})	Marginally Unacceptable
6	Beach 42nd Street between Beach Channel Drive and Rockaway Beach Boulevard	63.2 (L_{10})	Acceptable
7	Norton Avenue and Beach 42nd Street	63.7 (L_{10})	Acceptable
8	Beach 46th Street between Norton Avenue and Beach Channel Drive	63.0 (L_{10})	Acceptable
9	Beach 44th Street between Hough Place and Beach Channel Drive	62.9 (L_{10})	Acceptable
10	Beach Channel Drive and Beach 43rd Street	76.5 (L_{eq})	Marginally Unacceptable
11	Beach 45th Street between Norton Avenue and Beach Channel Drive	62.8 (L_{10})	Acceptable
A	Beach Channel Drive between Beach 50th and Beach 53rd Street	74.4 (L_{10})	Marginally Unacceptable
B	Rockaway Boulevard between Beach 50th and Beach 53rd Street	74.6 (L_{eq})	Marginally Unacceptable
C	Beach 52nd Street and Rockaway Freeway	76.5 (L_{10})	Marginally Unacceptable
D	Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard	65.3 (L_{10})	Marginally Acceptable
E	Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard	73.0 (L_{10})	Marginally Unacceptable

A: Sound level represents noise exposure at upper floor receptors adjusted for noise reduction of viaduct based on Federal Transit Administration methodology.

Source: VHB, 2021.

Noise Attenuation Measures

The most common measure for reducing interior noise from ambient sources is to specify sufficient outdoor-to-indoor sound attenuation for the proposed building. As shown in **Table 15-10**, the required level of attenuation varies based on the exterior sound levels and type of receptor. The composite outdoor-to-indoor transmission classification (OITC) value of the window-wall structure is used to determine the necessary sound attenuation. Sound attenuation measures would be achieved through construction materials and techniques with sufficient OITC-rated windows and walls.

Table 15-10 Required Attenuation Values

	Marginally Unacceptable				Clearly Unacceptable
With-Action Sound Level	$70<L_{10}\leq73$	$73<L_{10}\leq76$	$76<L_{10}\leq78$	$78<L_{10}\leq80$	$80<L_{10}$
Attenuation [A]	(I) 28 dBA	(II) 31 dBA	(III) 33 dBA	(IV) 35 dBA	$36+(L_{10}-80)^{B}$ dBA

Note: [A] Per CEQR Technical Manual, commercial office composite window-wall attenuation values are 5 dBA less than the residential requirements in each category. All of the above categories require a closed window situation and hence an alternate means of ventilation.

[B] Required attenuation values increase by 1 dBA increments for L_{10} values greater than 80 dBA.

Source: New York City Department of Environmental Protection (*2020 CEQR Technical Manual*, Table 19-3)

Table 15-11 presents the Projected Multi-Family Mixed-Use Development Sites (1 to 9) and Projected Residential Infill Sites (10 to 41), the tax blocks, tax lots, corresponding measurement receptor location, With-Action sound level, and the OITC requirement. The OITC requirements have been defined for each façade of the Projected Development Sites 1 to 9.

Projected Development Sites 1 and 2 would require a minimum composite window/wall OITC rating of up to 31. Projected Development Sites 3 to 7 would require a minimum composite window wall OITC of 38 on the southern facades adjacent to the elevated train line including the nearest 50 feet of the eastern and western facades and a minimum OITC of 28 on the other facades. Projected Development Sites 8 and 9 would have a minimum OITC requirement of 33 and Projected Development Site 11 would have a minimum OITC requirement of 31. Standard building materials would be sufficient to provide the required interior noise levels for residential spaces for all Project Development Infill Site except Projected Development Site 11.

Table 15-11 OITC Requirements for Development Sites

Development Site	Block	Lots	Receptor	With-Action Sound Level (dBA)	OITC Requirement
1 (east façade)	15841	19, 40, 50	4	64.8	--
1 (north façade)			A	**74.4**	31
1 (west façade)			D	65.3	--
1 (south façade)			E	**73.0**	28
2 (east façade)	15841	3, 5, 7, 8, 10, 14, 70	4	64.8	--
2 (north façade)			E	**73.0**	28
2 (west façade)			E	**73.0**	28
2 (south façade)			B	**74.6**	31
3 (south façade)	15851/ 15852	33, 35, 40, 42, 44, 58, 59/ 64, 68	3	**82.1**	38
3 (east and west façades)			2	**70.7**	28
3 (north façade)			1	**71.2**	28
4 (south façade)	15850	6	3	**82.1**	38
4 (east and west façades)			2	**70.7**	28
4 (north façade)			1	**71.2**	28

Table 15-11 OITC Requirements for Development Sites

Development Site	Block	Lots	Receptor	With-Action Sound Level (dBA)	OITC Requirement
5 (south façade)	15849	6, 8, 9, 10, 17, 18	3	**82.1**	38
5 (east and west façades)			2	**70.7**	28
5 (north façade)			1	**71.2**	28
6 (south façade)	15849	19, 20, 27, 28, 29	3	**82.1**	38
6 (east and west façades)			2	**70.7**	28
6 (north façade)			1	**71.2**	28
7 (south façade)	15847/ 15848	79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89 / 52, 54, 55, 57, 58, 60, 62, 63, 65, 67	3	**82.1**	38
7 (east and west façades)			2	**70.7**	28
7 (north façade)			1	**71.2**	28
8	15834	38, 42	10	**76.5**	33
9	15965	3, 111, 112, 114, 115	10	**76.5**	33
10	15839	51	6	63.2	--
11	15839	26	5	**76.0**	31
12	15838	25, 37	6	63.2	--
13	15838	13, 15, 17, 19, 20	6	63.2	--
14	15838	7, 9	6	63.2	--
15	15837	9, 10, 12	6	63.2	--
16	15837	27	6	63.2	--
17	15837	23	6	63.2	--
18	15972	3	7	63.7	--
19	15972	33	7	63.7	--
20	15969	6, 7	6	63.2	--
21	15969	73	8	63.0	--
22	15969	59, 60	8	63.0	--
23	15969	57	8	63.0	--
24	15969	47, 48, 49, 50	8	63.0	--
25	15968	5	8	63.0	--
26	15968	11	8	63.0	--
27	15968	16, 17	8	63.0	--
28	15968	84, 85, 86, 87, 88, 89, 90	11	62.8	--
29	15968	92, 94	11	62.8	--
30	15968	79, 80	11	62.8	--
31	15967	10, 12, 13, 14, 111	11	62.8	--
32	15967	18	9	62.9	--
33	15966	23, 25	11	62.8	--
34	15966	27, 28, 29, 30	11	62.8	--

Table 15-11 OITC Requirements for Development Sites

Development Site	Block	Lots	Receptor	With-Action Sound Level (dBA)	OITC Requirement
35	15966	72, 74, 75, 76, 77, 78, 79, 80, 81	9	62.9	--
36	15966	66	9	62.9	--
37	15966	61	9	62.9	--
38	15965	29, 31, 34, 35, 36, 37, 38	9	62.9	--
39	15960	7	9	62.9	--
40	15960	15, 16, 17	9	62.9	--
41	15965	12	9	62.9	--

Bold values are Marginally Unacceptable or Clearly Unacceptable.
Source: VHB, 2021.

To implement these attenuation requirements, it is anticipated that that the requirements specifying the appropriate amount of window/wall attenuation and an alternate means of ventilation would be incorporated into an LDA for those sites under City control and an (E) Designation (E-655) for privately-owned sites. The requirement would state:

In order to ensure an acceptable interior noise environment, future development must provide minimum building façade attenuation as shown in Table 15-10 in order to maintain an interior noise level not greater than 45 dBA for residential and community facility uses or not greater than 50 dBA for commercial uses. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.

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Public Health

This chapter addresses the Proposed Actions' effect on public health. As defined by the *2020 City Environmental Quality Review Technical Manual* (*CEQR Technical Manual*), public health is the organized effort of society to protect and improve the health and well-being of the population through monitoring; assessment and surveillance; health promotion; prevention of disease, injury, disorder, disability, and premature death; and reducing inequalities in health status. The goal of CEQR with respect to public health is to determine whether adverse impacts on human health may occur as a result of a proposed action, and if so, to identify measures to mitigate such effects.

Introduction

The *CEQR Technical Manual* states that a public health assessment is not necessary for most projects. Where no significant unmitigated adverse impact is found in other CEQR analysis areas related to public health—such as air quality, water quality, hazardous materials, or noise—no public health analysis is warranted. If, however, an unmitigated significant adverse impact is identified in any of these other CEQR analysis areas, the lead agency may determine that a public health assessment is warranted for that specific technical area.

As described in **Chapter 1, Project Description**, the Proposed Actions involve a series of land use actions that would limit development in flood-prone areas near the waterfront of

the Project Area (also known as the *Hazard Mitigation Area*) while facilitating development in the upland areas (*Limited Development Area*, *Neighborhood Infill Area*, and *Commercial Corridor*). The Proposed Actions would facilitate the development of new residential and commercial uses, with an anticipated incremental increase of 1,222 residential units in approximately 1,313,659 gsf, including up to 465 affordable units; approximately 113,491 gsf of local retail uses; and approximately 640 parking spaces over the No-Action condition.

Principal Conclusions

As described in the relevant analyses of this Environmental Impact Statement, the Proposed Actions would not result in unmitigated significant adverse impacts in any of the technical areas related to public health: hazardous materials, water quality, air quality, or noise.

As a conservative measure due to the potential for community facility use in the buildings, an (E) Designation (E-655) for hazardous materials and noise would be placed on privately-owned sites and a land disposition agreement (LDA) would be placed on City-Owned sites in the Project Area. The (E) Designation and LDA for hazardous materials requires sampling and remedial protocols be implemented under the administration of the New York City Mayor's Office of Environmental Remediation (OER) prior to the issuance of any permits that allow for soil disturbance related to the inclusion of a community facility use, or prior to applying for or accepting a temporary or permanent Certificate of Occupancy (C/O) that reflects a change in use group to community facility use. The (E) Designation and LDA for noise would require a minimum window/wall sound attenuation, interior partition sound attenuation, and building sound transmission requirements for new community facility spaces, if and as necessary, to meet an interior noise condition of 45 dBA.

As described in **Chapter 9, Natural Resources** and **Chapter 11, Water and Sewer Infrastructure**, the Proposed Actions would not result in significant adverse impacts. Therefore, no water quality impacts are anticipated as a consequence of the Proposed Actions.

The analysis of operational air quality showed that the Proposed Actions would not result in stationary source impacts if specific Projected Development Sites use natural gas in their fossil fuel-fired heating and hot water systems and ensure that the exhaust stacks are located at the highest tier and at least 88 feet above grade or use boilers with the low NO_x burners. These commitments would be memorialized in either an LDA or an (E) Designation for the Proposed Actions (E-655). No impacts are anticipated from light industrial sources. The analysis of mobile sources showed that at the intersection of Beach Channel Drive and 37th Street, the maximum predicted annual $PM_{2.5}$ would exceed the City's annual *de minimis* and result in an air quality impact. However, with the application of traffic mitigation measures to this intersection as presented in **Chapter 19, Mitigation**, the maximum predicted annual $PM_{2.5}$ would comply with the City's annual *de minimis* and no significant adverse air quality impacts would be expected from the project's mobile sources.

An analysis of construction air quality showed that based on the location of nearby sensitive receptors relative to the sources of construction air quality emissions, the duration and intensity of construction activities, a comparison of emissions profiles, and the use of emission control measures, the construction at the Projected Development Sites would not result in significant adverse construction air quality impacts. Moreover, the maximum

number of construction-related vehicle trips is not expected to exceed the *CEQR Technical Manual* thresholds for conducting a mobile source analysis.

Construction period mobile source noise levels, set forth by the *CEQR Technical Manual*, would not increase by 3 dBA or more. The construction noise assessment at each noise-sensitive building and façade in the Project Area determined that construction noise levels five feet above the ground do not exceed 85 dBA at any receptor location. Therefore, there would not be significant adverse impacts to public health due to noise.

Methodology

As noted above, the *CEQR Technical Manual* states that where no significant unmitigated adverse impact is found in other CEQR analysis areas related to public health—such as air quality, water quality, hazardous materials, or noise—no public health analysis is warranted. While no significant unmitigated adverse impacts have been identified in these technical areas, a summary of the Proposed Actions' potential to affect operational air quality, hazardous materials, noise, and construction is provided.

Assessment

Operational Period

Hazardous Materials

As detailed in **Chapter 10, Hazardous Materials**, under the Proposed Actions, the majority of the 41 Projected Development Sites would be expected to be redeveloped as a part of the larger urban renewal of the Project Area. At sites identified with potential subsurface contamination from hazardous materials, construction activity involving soil disturbance may create or increase pathways for exposure to potential subsurface impacts.

The hazardous materials assessment identified environmental conditions at certain Projected Development Sites and neighboring sites consistent with the listed uses and environmental conditions provided in Appendix A of Title 15, Chapter 24, and are generally considered the equivalent of a Recognized Environmental Condition (REC) as defined under ASTM E1527-13 for the presence or likely presence of hazardous materials. Under the Proposed Actions, the Projected Development Sites and neighboring sites identified with environmental conditions would be assigned institutional control measures including LDAs for hazardous materials for City-owned sites and hazardous materials (E) Designations (E-655) for privately-owned Projected Development Sites.

By placing an institutional control on these sites, the potential for an adverse impact to human health and the environment resulting from the Proposed Actions would be largely mitigated or avoided altogether. These measures would ensure investigation, mitigation, and remediation of any hazardous materials under the Proposed Actions would be completed in a safe, and comprehensive manner. In addition to applying institutional controls in support of regulatory oversight for the respective Projected Development Sites, regulatory requirements relating to asbestos, lead-based paint and PCBs in building materials would

also be followed for any remaining buildings as part of standard demolition practices on all Projected Development Sites.

Given this, the Proposed Actions would not result in any significant adverse impacts with respect to hazardous materials, and there would be no impact on public health.

Air Quality

As discussed in **Chapter 13, Air Quality**, the detailed stationary sources analysis of Projected Multi-Family Mixed-Use Development Sites 1 through 9 demonstrated that these projected developments must use natural gas in their fossil fuel-fired heating and hot water systems and ensure that the exhaust stacks are located at the highest tier and at least 88 feet (83 for Sites 8 and 9) above grade to avoid any potential significant adverse air quality impact. Also, Projected Multi-Family Mixed-Use Development Sites 1, 2, and 3 must use boilers with the low NO_x burners in order to avoid any potential significant adverse air quality impact. No significant adverse air quality impacts at Projected Residential Infill Sites are anticipated with the following commitments: Sites 13, 22, 23, 28, 29, 33, and 34 must use natural gas in their HVAC and hot water systems; in addition, Sites 22, 23, 28, 29, 33, and 34 must also ensure that the exhaust stacks are located at the highest tier and at least 38 feet above grade. These commitments would be memorialized in either an LDA or an (E) Designation for the Proposed Actions (E-655). An analysis of the potential for industrial sources was undertaken to determine if such sources would adversely affect the Projected Development Sites. The identified light industrial sources would not emit any carcinogenic air toxic pollutants. The analysis of non-carcinogenic non-criteria pollutants resulted in concentrations below guideline levels and demonstrated the hazard index below the threshold. Hence, no adverse air quality impacts on the Projected Development Sites are expected from the nearby industrial sources.

The analysis of mobile sources showed that the number of incremental trips generated by the Proposed Actions would be higher than the screening thresholds for carbon monoxide (CO) and particulate matter ($PM_{2.5}$) identified in the *CEQR Technical Manual*. A screening assessment was undertaken, which indicated the need for additional analysis. Three intersections were selected as worst-case locations, and a microscale analysis for CO and PM was conducted. The highest predicted CO and 24-hour and annual $PM_{2.5}$ concentrations were below respective National Ambient Air Quality Standards (NAAQS) and the City's de minimis value at all intersections except Beach Channel Drive and Beach 37th Street. However, with the application of traffic mitigation measures to this intersection as presented in **Chapter 19, Mitigation**, the maximum predicted annual $PM_{2.5}$ would comply with the City's annual *de minimis* and no significant adverse air quality impacts would be expected from the Proposed Actions' mobile sources.

Noise

As detailed in **Chapter 15, Noise**, analyses were conducted to determine whether the Proposed Actions would significantly increase sound levels from mobile and stationary sources at existing noise receptors, and if new noise receptors that would be introduced would be in an acceptable ambient noise sound level environment as defined in applicable provisions of the City's noise code. The analysis of existing noise receptors showed that With-Action noise conditions would not increase by more than 3 dBA compared to the No-

Action noise conditions and there would be no significant adverse noise impact to existing receptors per *CEQR Technical Manual* guidance. The analysis of new noise receptors showed that, Projected Development Sites 1 and 2 would require a minimum composite window/wall OITC rating of up to 31. Projected Development Sites 3 to 7 would require a minimum composite window wall OITC of 38 on the southern facades adjacent to the elevated train line including the nearest 50 feet of the eastern and western facades and a minimum OITC of 28 on the other facades. Projected Development Sites 8 and 9 would have a minimum OITC requirement of 33 and Projected Development Site 11 would have a minimum OITC requirement of 31. Standard building materials will be sufficient to provide the required interior noise levels for residential spaces for all Project Development Infill Site except 11, which would require a minimum composite window wall OITC of 31.

To implement these attenuation requirements, it is anticipated that that the requirements specifying the appropriate amount of window/wall attenuation and an alternate means of ventilation would be incorporated into a LDA for those sites under City control and an (E) Designation (E-655) for privately-owned sites. The requirement would state:

In order to ensure an acceptable interior noise environment, future development must provide minimum building façade attenuation as shown in **Table 15-10** in **Chapter 15, Noise** in order to maintain an interior noise level not greater than 45 dBA for residential and community facility uses or not greater than 50 dBA for commercial uses. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, air conditioning.

With these requirements, the Proposed Actions would not result in any significant adverse impacts with respect to noise, and there would be no impact on public health.

Construction Period

Hazardous Materials

As discussed above and detailed in **Chapter 10, Hazardous Materials**, to avoid the potential for significant adverse impacts relating to hazardous materials on the Proposed Actions, LDAs for hazardous materials for City-owned sites and hazardous materials (E) Designations (E-655) for privately-owned Projected Development Sites would be placed on the sites to ensure the further investigation and remediation of any hazardous materials. As detailed in **Chapter 18, Construction**, OER (or in the case of City-owned lots, the NYC Department of Environmental Protection) would provide regulatory oversight of the environmental scope, including investigations and remediation during the development process and prior to occupancy. The Proposed Actions may increase exposure pathways for hazardous materials due to various environmental conditions identified during the analyses. However, all sites assigned institutional controls would be required to be developed under regulatory oversight. This would ensure investigation, mitigation, and remediation of any hazardous materials under the Proposed Actions would be completed in a safe, and comprehensive manner to the maximum extent practicable. Therefore, significant adverse impacts to public health are not expected, and further analysis is not warranted.

Air Quality

As discussed in **Chapter 18, Construction**, no traffic lane closures are anticipated as a result of construction activities and the maximum number of construction-related truck trips is not expected to exceed the CEQR mobile source screening thresholds.

To determine the construction phase that constitutes peak $PM_{2.5}$ emissions, construction-related emissions were calculated throughout the duration of construction on a monthly basis using peak daily emissions for short term $PM_{2.5}$ and average monthly usage for annual $PM_{2.5}$. Based on the results of the $PM_{2.5}$ emissions analysis for the entire construction period, the third month of construction, or March 2022, was identified as having the highest daily $PM_{2.5}$ emissions. The highest annual emissions were identified for the first year of construction between March 2022 and February 2023. This period falls into Phase 1 or construction of Projected Multi-Family Mixed-Use Sites 1 and 2, the largest of the Projected Development Sites.

To determine whether there is a potential for construction emissions from the Projected Development Sites to adversely impact air quality levels in the neighborhood, the peak daily emissions were compared to the peak daily emissions from other projects where dispersion analyses was conducted and where no significant adverse construction-period air quality impacts would occur. The sites are geographically dispersed and occur at different construction time periods. Thus, the peak emissions from each phase do not overlap and do not occur at the same location. Peak daily and annual $PM_{2.5}$ emissions from Projected Development Sites 1-9 would be similar to construction emissions of projects that have recently undergone City review. For instance, the 343 Madison Avenue building is approximately 550,000 gsf less than, or 37 percent smaller than, the total development gsf of Projected Development Sites 1-9. Similarly, the overall peak daily emissions from Projected Development Sites 1-9 would be 51 percent lower than construction emissions from 175 Park Avenue. The 175 Park Avenue building is twice the size of the total development of Projected Development Sites 1-9. The project as currently proposed would fall within the range of construction emissions and would not exceed emissions when compared to current developments in New York City. In addition, sensitive receptors surrounding the comparison projects' construction sites were located much closer than the receptors for the peak period (Phase 1 – Buildings 1 and 2) of the Projected Development Sites 1-9 construction. The sensitive receptors for the comparison projects were at similar distances to the Projected Development Sites 1-9 construction site at other phases, e.g., at least 10 feet away. Furthermore, the distance of sensitive receptors to the Projected Development Sites is not unusual and is similar to the sensitive receptors of other current development projects in New York City.

Based on the location of nearby sensitive receptors relative to the sources of construction air quality emissions, the duration and intensity of construction activities, a comparison of emissions profiles of similar projects in New York City, and the use of emission control measures, the construction at the Projected Development Sites would not result in significant adverse construction air quality impacts and the maximum number of construction-related vehicle trips is not expected to exceed the *CEQR Technical Manual* thresholds for conducting a mobile source analysis. Therefore, significant adverse impacts to public health as a result of construction period air quality are not expected, and further analysis is not warranted.

Noise

As discussed in **Chapter 18, Construction**, construction of the Projected Development Sites would involve standard construction activities and practices for buildings in New York City. The excavation, foundation, and superstructure phases of construction are typically when the noisiest activities occur. The interior fitout phase of construction typically involves minimal exterior equipment and substantially quieter noise conditions. The Project Area includes existing residential land uses which are often in close proximity to Projected Development Sites. Therefore, there is the potential for construction to cause significant adverse noise impacts, and a detailed construction noise analysis is warranted.

Construction noise from mobile sources (i.e., construction worker vehicles and trucks) would not cause ambient noise levels to increase by 3 dBA or more, which is the standard set in the *CEQR Technical Manual*. Therefore, there would be no significant adverse noise impact from construction mobile sources. Construction noise levels would increase by 20 dBA or more over ambient conditions and exceed the interior noise criterion for 3 months or longer at 136 receptors which are in close proximity to Projected Development Sites. Construction noise levels would increase by 15 dBA or more over ambient conditions and exceed the interior noise criterion for 12 months or longer at 64 receptors and would increase by 3 to 5 dBA or more over ambient conditions at 55 receptors. In total, future construction noise levels would exceed the thresholds for interior noise impact and exterior noise impact at 255 receptors throughout the Project Area. Therefore, there would be significant adverse impact due to construction noise. The impact is due primarily to the relatively quiet existing ambient sound levels in the Project Area, the close proximity of receptors to the Projected Development Sites, and the duration of construction activities throughout the Project Area. Construction noise levels would not exceed 85 dBA at any receptor at ground level, therefore, construction noise would not cause a significant adverse noise impact due to the Public Health noise criterion (85 dBA for a prolonged period of time) described in the *CEQR Technical Manual*. Therefore, significant adverse impacts to public health are not expected as a result of construction period noise, and further analysis is not warranted.

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Neighborhood Character

This chapter considers how the Proposed Actions would affect neighborhood character, which is defined as the elements of the environment that combine to create the context and feeling of a neighborhood.

Introduction

This analysis of neighborhood character follows the guidelines set forth in the *2020 City Environmental Quality Review (CEQR) Technical Manual*. As defined within the manual, neighborhood character is an amalgam of various elements that give neighborhoods a distinct "personality," including, land use, socioeconomic conditions, open space, shadows, historic resources, urban design, transportation, and noise. Not all of these elements affect neighborhood character in all cases; a neighborhood usually draws its distinctive character from a few defining elements. For a proposed project, a neighborhood character assessment under CEQR first identifies the defining features of the neighborhood and then evaluates whether the project has the potential to affect these defining features, either through the potential for a significant adverse impact or a combination of moderate effects in relevant technical analysis areas. Thus, to determine the effects of a proposed project on neighborhood character, the salient features of neighborhood character are considered together. According to the *CEQR Technical Manual*, neighborhood character impacts are rare and occur under unusual circumstances. Moreover, a significant adverse impact identified in one of the technical areas that contribute to a neighborhood's character is not automatically equivalent to a significant adverse impact on neighborhood character, but, rather, serves as an indication that neighborhood character should be examined.

This section includes a preliminary assessment of neighborhood character; the assessment was prepared in conformance with the *CEQR Technical Manual* using information from the technical analyses presented in other relevant chapters of this EIS.

Principal Conclusions

Overall, the Proposed Actions would not result in significant adverse impacts to neighborhood character. With the exception of open space and transportation, the Proposed Actions would not result in significant adverse impacts in any of the technical areas that contribute to neighborhood character (i.e., the Proposed Actions would not result in significant adverse impacts to land use, zoning, and public policy; socioeconomic conditions; historic and cultural resources; urban design and visual resources; shadows; or noise). While the Proposed Actions would result in significant adverse impacts to active open space ratios, other projects are underway to increase accessibility to open space resources in the Project Area. Although there is a significant adverse impact on traffic, buses, and pedestrian safety, the increase in travel demand would not result in changes to traffic patterns nor substantial increases in traffic on the residential street network. Furthermore, density in the area is expected to increase independent of the Proposed Actions, due to the number of development projects already underway in the surrounding areas. Overall, the potential traffic, bus, and pedestrian safety impacts would not result in a significant change to the defining features of neighborhood character.

The Proposed Actions would enhance the urban design of the neighborhood by revitalizing vacant lots, increasing access to the waterfront, and mitigating exposure to coastal hazards by downscaling development at the Jamaica Bay shoreline and encouraging development in transit-oriented areas near the center of the peninsula. Additionally, the open space resources and natural and nature-based features that define the landscape of this unique coastal neighborhood would not be impacted by the Proposed Actions, but potentially enhanced.

Finally, the elevated A-train line, which delineates the southern border of the Project Area would continue to serve as both a critical transportation option and a prominent visual feature of the neighborhood, would not be altered by the Proposed Actions.

Together, the Proposed Actions facilitate a more resilient and economically viable future for the neighborhood, working toward the goals of the Resilient Edgemere Community Plan.

Methodology

A neighborhood character assessment is generally needed, per the *CEQR Technical Manual*, when a proposed project has the potential to result in significant adverse impacts in certain technical areas (land use, zoning, and public policy; socioeconomic conditions; open space; shadows; historic and cultural resources; urban design and visual resources; transportation; or noise) or when the project may have moderate effects on several of the elements that define a neighborhood's character. A "moderate" effect is generally defined as an effect considered reasonably close to the significant adverse impact threshold for a particular technical analysis area.

In the absence of an impact on any of the relevant technical areas, a combination of moderate effects to the neighborhood could result in an impact to neighborhood character. A significant impact identified in one of the technical areas that contribute to a neighborhood's character is not necessarily equivalent to a significant impact on neighborhood character. Therefore, an assessment of neighborhood character is generally appropriate if a proposed project has the potential to result in any significant adverse impacts in the technical areas listed above. Examples of possible changes in those technical areas that could result in an adverse effect on neighborhood character, should those technical areas be defining features of the neighborhood, are as follows:

- **Land Use, Zoning, and Public Policy:** If development resulting from a proposed action would conflict with surrounding uses, conflict with land use policy or other public plans for the area, or change land use character, neighborhood character could be affected.
- **Socioeconomic Conditions:** If a proposed action results in direct or indirect displacement or addition of population, employment, or businesses; or substantial differences in population or employment density, neighborhood character could be affected.
- **Open Space:** If an action would result in a reduction or displacement of an open space or result in additional population that would place a substantial demand on open space, neighborhood character could be affected.
- **Shadows:** If a proposed project would cast an incremental shadow on sun-sensitive resources, neighborhood character could be affected.
- **Historic and Cultural Resources:** If a proposed action would result in substantial direct changes to a historic resource or substantial changes to public views of a historic resource, neighborhood character could be affected.
- **Urban Design and Visual Resources:** If a proposed action would result in substantially different building form, size, scale, or arrangement; block form, street pattern, or street hierarchy; streetscape elements; or substantial direct changes to a visual feature, such as unique and important public view corridors and vistas, or to public visual access to such a feature, neighborhood character could be affected.
- **Transportation:** When a proposed project would result in a change in traffic patterns or would substantially increase traffic volumes on residential streets, neighborhood character could be affected.
- **Noise:** When a proposed action would substantially increase noise levels in an area, neighborhood character could be affected.

A preliminary assessment of neighborhood character determines whether changes expected in other technical analysis areas may affect a defining feature of neighborhood character. As part of a neighborhood character analysis, the defining features of the neighborhood are identified and then a determination is made as to whether a project has the potential to adversely affect these defining features, either through the potential for a significant adverse impact or a combination of moderate effects in relevant technical areas. A neighborhood that has a more varied context is typically able to tolerate greater change without experiencing significant adverse impacts. If the assessment concludes that a proposed project has the potential to adversely affect defining features of a neighborhood, a detailed

analysis is undertaken to determine whether the project would result in a significant adverse impact on neighborhood character.

The neighborhood character analysis draws from the technical assessments listed above. As recommended in the *CEQR Technical Manual*, the study area for the neighborhood character analysis is consistent with the study areas in the relevant technical areas assessed under CEQR that contribute to the defining elements of the neighborhood. As such, the study area for neighborhood character is consistent with the 400-foot study area used for the analysis of land use, zoning, and public policy.

As detailed in the relevant chapters of this EIS, the Proposed Actions would not result in significant adverse impacts in the technical areas of land use, zoning and public policy, socioeconomic conditions, open space, shadows, historic and cultural resources, urban design and visual resources, and noise. The Proposed Actions would result in significant adverse impacts in transportation (traffic, bus transit, and pedestrian safety). Therefore, a preliminary assessment of neighborhood character impacts is provided below. The analysis begins with the identification of the defining features of the neighborhood and then assesses whether the Proposed Actions would adversely affect those defining features within the framework of the above technical areas.

Preliminary Assessment

Identification of the Defining Features of the Neighborhood-Existing Conditions

Area Land Uses

Residential, open space, and vacant land uses dominate the Project Area, with some limited commercial uses and higher-density residential uses throughout. Built form throughout the neighborhood is dominated by low-density residential buildings (with one-to-four dwelling units in two-to-four stories, including attached, semi-detached, and detached residences). The area is punctuated by a few low-rise commercial buildings, and higher-density residential buildings including the NYCHA Beach 41st Street Houses (consisting of four buildings up to 13 stories each), and a recently constructed mixed-use apartment complex known as Beach Green Dunes I and II. Located on Rockaway Beach Boulevard, between Beach 48th Street and Beach 45th Street, Beach Green Dunes I and II includes 227 affordable residential units across two eight-story buildings. Adjacent to Beach Green Dunes is the three-story Seaview Manor retirement home. Other mid-rise buildings in the area include the five-story La Quinta hotel on the corner of Beach 44th Street and Rockaway Beach Blvd, the six-story Rockaway Care Center on Beach 48th Street and Beach Channel Drive, and the four-story Peninsula Rehabilitation Center on Beach 50th Street and Beach Channel Drive. Public School 105, on the corner of Beach 51st Street and Beach Channel Drive, is the only public school in the Project Area serving 571 local students grades PreK-8.

The presence of vacant land is a prevailing condition across the Project Area, though many of these parcels do not add significant value to the neighborhood.

Overall, the study area is experiencing a trend toward increased density and mixed-use developments through the rehabilitation of vacant land and abandoned buildings. Within the study area, the development of Edgemere Commons on the site of the former Peninsula Hospital, and Beach Green Dunes III and Arverne East on presently vacant land, are currently underway and represent efforts to convert vacant or abandoned parcels into functional resources within the neighborhood.

Community-Centered Open Space

A defining feature of both the Project Area and study area is the presence of open spaces that serve as community hubs. Within the Project Area there are three community farms/gardens and a recently renovated playground. The study area also includes two public parks: Bayswater Park, which intersects the northeastern portion of the study area, and Rockaway Community Park, which intersects the northwest portion of the study area. Each of these sites provide recreational and social amenities to the neighborhood.

The three community farms/gardens within the Project Area include: The Edgemere Urban Renewal Park (Edgemere Farm), on Beach 45th Street, The Campaign Against Hunger's "Far Rock Urban Agro-Ecological Center," adjacent to Edgemere Farm on the corner of Beach 45th Street and Beach Channel Drive, and the Edgemere Coalition Community Garden, on Beach 43rd Street, abutting Grass Hassock Channel.

All of these community farms/gardens are under the jurisdiction of NYC Department of Parks and Recreation (NYC Parks). Edgemere Farm and the Far Rock Urban Agro Ecological Center were both founded in the wake of Hurricane Sandy in 2012 to transform vacant city-owned lots into productive farmland and spaces for community members to convene. These two farms host community events, farmers markets, free educational programs for school groups, and youth internships focused on sustainable agriculture and food justice. The Edgemere Coalition Community Garden, founded in 2019, is working toward similar ends.

Conch Playground is located on the grounds of Public School 105 in the Project Area and is co-managed by the NYC Department of Education (DOE) and NYC Parks. Recently renovated, the playground now contains basketball courts, handball courts, a running track, jungle-gym, sitting areas, and landscaped features.

Within the study area, there are portions of both Bayswater Park and Rockaway Community Park that are accessible to the public. The accessible portion of Bayswater Park contains a skate park, ball fields, and basketball, handball and tennis courts. Similarly, the accessible portion of Rockaway Community Park hosts tennis courts and ball fields.

Together, these community-centered open spaces serve as crucial resources for promoting community health, outdoor recreation, civic engagement, and social connectivity across the neighborhood. The Arverne East development project will provide additional community-centered spaces, including a community farm, several parks, an outdoor event space, and a greenway, totaling 15.5 acres of passive open space and 3.30 acres of active open space.

Natural and Nature-based Features

The neighborhood is defined by its location on the Rockaway peninsula and its relative proximity to both the bayside and oceanside waterfronts. The Project Area is bound on its northern side by Jamaica Bay, and is flanked by Conch Basin to the west and Grass Hassock

Channel to the east. To the south of the study area is the Atlantic Ocean and Rockaway Beach. Though there is no direct access to the waterfront within the study area, these large bodies of water give the neighborhood its unique coastal feel.

The study area is also defined by a variety of natural and nature-based features. Bayswater Park, in the northeast portion of the study area, and Rockaway Community Park, in the northwest portion of the study area, both border Jamaica Bay, providing open space and a buffer zone to the neighborhood at-large. Bayswater Park hosts a number of resiliency measures, including a wetlands restoration effort led by NYC Parks and a community oyster reef led by the Billion Oyster Project. Rockaway Community Park is undergoing reconstruction with new pathways, berms and wetlands expected to be completed in August 2021.

In the southern portion of the study area, the expansive dune system south of Rockaway Freeway will be converted into the Arverne East development project—the project will maintain 35 acres of the site as a nature preserve, and an additional 18.8 acres included in additional open space including a dune preserve and various other spaces, in addition to integrating other resiliency measures such as bioswales and native plantings. South of the study area, between Beach 57th and Beach 38th Streets, is the endangered piping plover preserve, which hosts vegetated, rolling dunes on the ocean side of the Rockaway Beach Boardwalk. Taken together, these natural and nature-based features provide important ecosystem services and improve the resilience of the neighborhood.

Elevated Rail Line

The presence of the elevated A-train line is a prominent feature across the Rockaway Peninsula. This elevated rail line crosses through the southern boundary of the Project Area, delineating the Project Area from the presently vacant and flat land that is the site of the future Arverne East development. The street grid in the Project Area mostly dead-ends at the elevated rail line, with several inaccessible and de-mapped roads to the south of the line. The elevated rail line serves as both a transportation feature that includes two train stations within the Project Area (Beach 44th Street and Beach 36th Street stations), and a prominent element of the built environment. As the only subway line on the peninsula, the A-train provides essential transit access to the Edgemere community. Additionally, the space beneath the elevated tracks is often unofficially used as a walking and biking path.

No Action Condition

As described in **Chapter 1, Project Description**, in the future without the Proposed Actions (No-Action condition), the Project Area is assumed to mostly remain unchanged from existing conditions. The Projected Development Sites are assumed to remain vacant, with the exception of the existing 2,358 gsf of commercial space and 118 parking spaces on Projected Multi-Family Development Site 1 and 44 parking spaces on Projected Multi-Family Development Site 2 that would remain. However, several new developments are planned for both the Project Area and the study area independent of the Proposed Actions.

Project Area

Future development within the Project Area would introduce additional residential uses as well as low-density commercial spaces. One new development within the Project Area, Beach Green Dunes III, will be completed by the 2031 build year. The Beach Green Dunes III development will be located at the south side of Beach Channel Drive, bounded by Beach 35th Street, Rockaway Freeway and Beach 36th Street. It would consist of a mixed-use, eight-story building with 138 affordable housing units, of which, 31 will be allocated to seniors under the City Affordable Independent Residences for Seniors program and include commercial retail space and residential parking, and a transit plaza to connect to the Beach 36 Street-Edgemere Station on the A line. This development project is consistent with existing built form throughout the neighborhood, and the Beach Green Dunes I and II developments. The project is expected to complete full construction buildout by 2022.

Study Area

Within the study area, there are two planned developments that are expected to be completed (in whole or in part) by the 2031 build year. These include Edgemere Commons and Arverne East, both of which will increase density by developing a significant amount of residential and commercial space in the neighborhood. Edgemere Commons will consist of the redevelopment of the former 9.3-acre Peninsula Hospital site, including approximately 72,000 sf of commercial uses and 77,000 gsf of community facility space, in addition to approximately 1,791 dwelling units across 8 buildings that are expected to be built by 2031. The redevelopment will also include 24,000 sf of publicly accessible open space, including parking.

The Arverne East project will be located south of the Project Area, between Beach 32nd Street and Beach 56th Place, bound by Rockaway Freeway to the north and the Rockaway Beach Boardwalk to the south. This project will include approximately 1,650 dwelling units, approximately 262,000 sf of commercial floor area, and approximately 150 hotel rooms. The project will develop a number of open spaces, including a 35-acre dune preserve, an urban farm, and a plaza area as well as neighborhood parks, pocket parks, and greenways. Additionally, the Arverne East project will improve access points to Rockaway Beach and Boardwalk at Beach 56th Street, Beach 54th Street, Beach 52nd Street, Beach 49th and Beach 47th just south of the Edgemere neighborhood where those connections are most lacking.

With-Action Condition

Potential to Affect the Contributing Elements of Neighborhood Character

The sections below discuss potential changes resulting from the Proposed Actions in the following technical areas that are considered in a neighborhood character assessment under CEQR: land use, zoning, and public policy; socioeconomic conditions; open space; shadows; historic and cultural resources; urban design and visual resources; transportation; and noise. The assessment uses the findings from the respective chapters of this EIS to identify whether the Proposed Actions would result in any significant adverse impacts or moderate adverse effects in these technical areas, and whether any such changes would have the potential to affect the defining features of neighborhood character. As described below, defining

features of the study area would not be affected either through the potential of any significant adverse impact or combination of moderate effects in these technical areas.

Land Use, Zoning, Public Policy

As described in **Chapter 2, Land Use, Zoning, and Public Policy**, the Proposed Actions would not result in significant adverse impacts on land use, zoning, or public policy in the Project Area or the 400-foot study area in the 2031 build year. The Proposed Actions would be consistent with surrounding land uses and underlying zoning, and would reduce the prevalence of vacant land across the Project Area. The Proposed Actions would downscale development in areas that are at greatest risk of coastal hazards and encourage higher-density development in transit-oriented areas toward the center of the peninsula. The Proposed Actions would be consistent with existing policies and frameworks, including the New York City Waterfront Revitalization Program, the Edgemere Urban Renewal Plan, and the Resilient Edgemere Community Plan. Additionally, the land use changes expected in the future with the Proposed Actions would be consistent with existing and planned developments in both the Project Area and study area.

Socioeconomic Conditions

As discussed in **Chapter 3, Socioeconomic Conditions**, the Proposed Actions would have no significant impacts on socioeconomic conditions of the study area. Because the 41 Projected Development Sites within the Project Area currently comprise vacant land or vacant structures and no existing residential population, no direct residential displacement would occur under the With-Action condition; thus, no further direct displacement analysis was conducted.

However, because the Proposed Actions would introduce a new population that exceeds CEQR thresholds, an indirect residential displacement analysis was conducted, pursuant to the *CEQR Technical Manual* standards. The analysis found that the Proposed Actions would result in the introduction of new households with higher incomes as compared to the average household income in the study area, but the Proposed Actions would also 465 new permanently affordable housing units, 38 percent of the total new incremental units. Furthermore, the study area has experienced a readily observable trend toward increasing market rents, even despite the COVID-19 pandemic, and the Proposed Actions are unlikely to impact this pre-existing trend. Additionally, the Proposed Actions would provide for significant new housing opportunities and investment in Edgemere and nearby neighborhoods by introducing 122 units of ownership housing to the study area where, currently, only 13 percent of dwelling units are owner occupied.

Open Space

As described in **Chapter 5, Open Space**, residential analysis of indirect effects on residential open space ratios was conducted for a half-mile study area due to the expected increase in residential population from the Proposed Actions.

Under the With-Action condition, the Proposed Actions would not result in the physical loss or direct displacement of open space.

However, the Proposed Actions would result in a significant adverse impact on open space due to reduced active open space ratios. The active open space ratio would decrease from 1.01 acres per 1,000 residents in the No-Action condition to 0.94 in the With-Action condition, a percent change of -6.93. With the Proposed Actions, the total and passive open space ratios of acres per 1,000 residents would remain above City guidelines of 2.5 acres and 1.0 acre, respectively. However, the active open space ratio would continue to be below City guidelines of 1.5 acres, and the Proposed Actions would result in a greater than five percent decrease in the active open space ratio, which constitutes a significant adverse impact. Potential mitigation measures are discussed in **Chapter 19, Mitigation**.

Despite these impacts, several key open spaces that are considered defining features of neighborhood character, including The Edgemere Urban Renewal Park (Edgemere Farm), The Campaign Against Hunger's "Far Rock Urban Agro-Ecological Center," and the Edgemere Coalition Community Garden, were not considered in the quantitative open space analysis and will not be impacted by the Proposed Actions. Similarly, only the portion of Rockaway Beach and Boardwalk located within the study area was included in the quantitative analysis. However, the remainder of the beach beyond the study area, which provides ample active and passive recreation space, would be easily accessible to residents and workers from the study area. Furthermore, the Proposed Actions are expected to facilitate the creation of new open space from presently vacant land on select waterfront sites.

Shadows

Because the Proposed Actions would result in developments that will exceed 50 feet in height, a shadows analysis was undertaken for Projected Development Sites 1-7. Based on the shadows analysis, it was determined that the study area's open spaces, including Conch Playground and two potential future open spaces—one in Edgemere Commons and one in Arverne East—would not experience significant adverse impacts due to shadows (see **Chapter 6, Shadows**).

Historic and Cultural Resources

As discussed in **Chapter 7, Historic and Cultural Resources**, there are two historic resources within the overall Project Area: St. Gertrude the Good Church Complex, which is bounded by Beach Channel Drive, Beach 37th Street and Beach 38th Street, and the Housing Complex on Beach Channel Drive between Beach 38th Street and Beach 40th Street. There is one historic resource within the 400-foot radius study area: PS 106Q, located on Beach 35th Street south of the Rockaway Freeway and Project Area boundary. The New York City Landmarks Preservation Commission (LPC) has determined that the Proposed Actions would not adversely affect these historic resources. The LPC also determined that the Projected Development Sites within the Project Area have no archaeological significance, and no buildings or structures on the Projected Development Sites hold architectural significance. Therefore, the Proposed Actions, overall, would not result in significant adverse impacts on the historic and cultural resources of the Project Area.

Urban Design and Visual Resources

As discussed in **Chapter 8, Urban Design and Visual Resources,** overall, the Proposed Actions would improve the urban design of the Project Area by providing infill development

on vacant lots, increasing access to the waterfront, and mitigating exposure to coastal hazards by limiting development at the Jamaica Bay shoreline and encouraging development in transit-oriented areas near the center of the peninsula. Additionally, the built forms and building types resulting from the Proposed Actions would be similar in height and bulk to the existing buildings within the study area. In terms of visual resources, there is the potential that the Proposed Actions would improve views to Jamaica Bay from inland by decreasing the allowable building density along the waterfront. As such, the Proposed Actions would not result in significant adverse impacts on the urban design and visual resources of the Project Area.

Transportation

As discussed in **Chapter 12, Transportation,** a detailed transportation analysis determined that the Proposed Actions would result in significant adverse impacts related to traffic, buses, and pedestrian safety, but no significant adverse impacts to subway station, subway line-haul, or pedestrian street network elements.

As described in **Chapter 12, Transportation**, 27 intersections within the study area were analyzed. Of those 27 intersections, it was determined that the Proposed Actions would result in significant adverse traffic impacts at 13 intersections (at 27 movements) during the weekday AM peak hour, 12 intersections (at 17~~16~~ movements) during the weekday midday peak hour, 13 intersections (at 22~~20~~ movements) during the weekday PM peak hour, and 11 intersections (at 14 movements) during the Saturday peak hour. A line-haul analysis of the Q22 local bus route indicated that the Proposed Actions would result in a significant impact to the eastbound and westbound directions of this route during both the weekday AM and PM commuter peak hours. Measures identified to fully or partially mitigate these significant adverse traffic and bus impacts are presented in **Chapter 19, Mitigation**.

A parking analysis determined that there would be sufficient off-street parking availability to accommodate demand generated by the Proposed Actions throughout the weekday day period. Shortfalls forecasted for the weekday overnight and Saturday peak periods would be fully accommodated by on-street parking spaces projected in the future.

As there is currently no marked pedestrian crossing on Rockaway Beach Boulevard between Beach ~~39th~~45th Street and Beach 53rd Street, it is likely that pedestrians en route to and from Projected Developments Sites 1 and 2 would choose to cross Rockaway Beach Boulevard at a proximate location where a marked crosswalk is not present~~. These locations would include~~ such as at the intersection of Rockaway Beach Boulevard ~~intersections at the following cross-streets: Beach 40th Street, Beach 41st Street, Beach 42nd Street, Beach 44th Street, Beach 47th Street and~~ at Beach 49th Street. There is a potential for a significant pedestrian safety impact at~~ these locations~~ this location. Measures needed to mitigate the potential for safety impacts are presented in **Chapter 19, Mitigation**.

Noise

As discussed in **Chapter 15, Noise**, analysis indicated that any increase in mobile source noise levels resulting from the Proposed Actions would remain below 3 dbA and would not exceed the expected increased noise levels in the No-Action condition. Therefore, there would be no potential for significant adverse noise impacts due to mobile sources.

Additionally, the Proposed Actions would not introduce significant stationary sources of noise except for typical rooftop mechanical equipment or residential HVAC equipment (i.e., air conditioner condenser units), which would incorporate sufficient noise reduction to comply with applicable noise regulations and standards.

Potential to Affect the Defining Features of the Neighborhood

Overall, the Proposed Actions would not adversely affect the defining features of the neighborhood.

The Proposed Actions are consistent with New York City policies and neighborhood plans that aim to integrate resiliency into future development projects and reduce residents' exposure to coastal hazards. The Proposed Actions would accomplish this by encouraging higher-density development in inland, transit-oriented areas, while down-scaling development in areas closest to the waterfront. Furthermore, the Proposed Actions would reduce the prevalence of vacant land across the Project Area, converting it into functional resources for the neighborhood. As such, the Proposed Actions would not result in significant adverse impacts on neighborhood character due to changes in land use, zoning, or public policy.

The Proposed Actions would also provide significant new housing opportunities, including an additional 456 permanently affordable dwelling units in the study area, which has experienced a trend toward increasing market rents that exceeds the increases observed in Queens and New York City as a whole. The project would also introduce 122 units of ownership housing to the Study Area where, currently, only 13 percent of dwelling units are owner occupied. As such, the Proposed Actions would not result in significant adverse impacts on neighborhood character due to changes in socioeconomic conditions.

Although the Proposed Actions would decrease the active open space ratio in the study area due to expected population increases, this change does not constitute an adverse impact on neighborhood character. Key open space resources that constitute defining features of neighborhood character were not included in the quantitative open space analysis and would not be impacted by the Proposed Actions. Also not included in the analysis are other planned and potential open space improvements for the area that would increase the amount of open space available to current and future residents, including open spaces associated with the U.S. Army Corps of Engineers (USACE) Rockaway projects, the Bayside Walking Path, and the additional active open space created by the Arverne East and Edgemere Commons development projects.

With the Proposed Actions, HPD would issue Request For Proposals (RFPs) to transform vacant City-owned assemblages into mixed-use, multi-family, affordable housing developments (i.e., the Projected Multi-Family Mixed-Use Development Sites), advance development of scattered vacant City-owned lots into low density housing (i.e., the Projected Residential Infill Sites and Projected Multi-Family Mixed-Use Sites), as well as reserve land for open space uses throughout the neighborhood and on select waterfront sites. It is anticipated that these new publicly accessible open spaces, coupled with the yard requirements of the residential infill sites, would help to meet some of the open space needs of the population introduced by the Proposed Actions. The quantitative open space analysis took a conservative approach and did not include either of these anticipated open space resources. Therefore, since the project would not impair the existing open spaces in the

neighborhood and would add new open space in addition to planned No-Action open spaces, the Proposed Actions would not affect this defining feature of neighborhood character.

Defining features of neighborhood character would not be adversely impacted due to potential effects of the Proposed Actions on shadows or historical and cultural resources.

In terms of urban design and visual resources, the Proposed Actions would improve the overall design of the neighborhood by revitalizing vacant land, creating waterfront access, and drawing development away from the shoreline. The actions may also improve views of Jamaica Bay from inland. This improved access to waterfront resources and shift of development away from ecologically sensitive shorelines would not adversely affect the character of the neighborhood.

While the Proposed Actions would generate increases in traffic volumes, these increases would not result in changes to traffic patterns nor substantial increases in traffic on the residential street network. Traffic patterns are expected to remain similar to current patterns as the Proposed Actions would introduce land uses already present in the Edgemere neighborhood. The increases in volumes would be most concentrated and prevalent along corridors serving a mix of uses - e.g., Beach Channel Drive, which serves residential, commercial, religious, and community facility spaces. In addition, increases in traffic volumes on residential streets would be limited to sections of the street network approaching the Multi-Family Projected Development Sites. Lastly, while the Proposed Actions would result in significant adverse impacts to the Q22 local bus route and pedestrian safety due to lack of existing marked crossings, bus service and pedestrian crossing treatments are not considered a defining feature of the neighborhood.

Therefore, significant adverse impacts on transportation elements would not result in a significant impact on neighborhood character. Furthermore, density in the area is expected to increase independent of the Proposed Actions, due to the number of development projects already underway in the surrounding areas.

Despite the expected increases in traffic volume, it was determined that the Proposed Actions would not substantially increase mobile or stationary source noise in the study area.

With the Proposed Actions, the Edgemere neighborhood would continue to have mixed-use developments with fewer vacant parcels, add a significant amount of affordable housing, retain its coastal feel while improving access and views of the waterfront, and the natural features and open space that defines the area's landscape would not be adversely affected. Therefore, the Proposed Actions would not result in significant adverse impacts to neighborhood character through a combination of moderate effects and identified impacts in the technical areas that contribute to neighborhood character.

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Construction

Construction activities, although temporary in nature, can sometimes result in significant adverse impacts. A project's construction activities may affect a number of technical areas analyzed for the operational period, such as air quality, noise, and traffic. This chapter assesses the potential for the Proposed Actions to result in significant adverse impacts during construction.

Introduction

This chapter provides an assessment of the potential for construction resulting from the Proposed Actions to result in significant adverse impacts during the construction period. The Proposed Actions would facilitate mid-rise development of multi-family housing and commercial amenities in those portions of the Project Area that are nearest to transit, namely along Beach Channel Drive, Rockaway Beach Boulevard, and Rockaway Freeway (the "Projected Multi-Family Development Sites," which are identified as Sites 1 through 9 in **Figure 18-1**). In addition, the Proposed Actions would facilitate infill development in other portions of the Project Area (Projected Residential Infill Sites 10 through 41 in **Figure 18-1**).

The *2020 City Environmental Quality Review* (*CEQR) Technical Manual* recommends that a construction assessment be performed if a proposed action involves construction or could induce construction for an overall construction period lasting two years or longer and that is near to sensitive receptors (i.e., residences, open spaces, etc.). Each of the projected infill sites are estimated to take approximately eighteen to twenty-four months to complete, depending on the size of the development. The nine larger multifamily development sites

would be constructed in stages and are expected to take twenty-four to thirty-six months to complete, with construction duration on the larger sites lasting longer. There is also the potential for construction activities to be underway at multiple sites in the Project Area with overlapping construction timelines within the same geographic area. Accordingly, an assessment of potential construction impacts was prepared in accordance with the guidelines of the *CEQR Technical Manual*. The assessment of potential impacts of construction activity focuses on transportation, air quality, noise, and vibration, as well as consideration of other technical areas including land use, neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, and hazardous materials.

Figure 18-1 Project Area Map



Principal Conclusions

Transportation

An assessment of the potential for temporary transportation impacts due to peak construction activity was undertaken according to the same methodology used in the operational analysis presented in **Chapter 12, Transportation**. This assessment focuses on the first quarter of 2023, when, based on a conceptual construction schedule, the average daily trips generated by construction workers and trucks would be highest (when Projected Development Sites 1 and 2, "the construction sites" are under construction).

Based on a forecast of construction worker vehicle trips and truck trips during the first quarter of 2023, a total of 155 passenger car equivalent (PCE) trips and 115 PCE trips are expected during the weekday AM (6:00 AM to 7:00 AM) and PM (3:00 PM to 4:00 PM) construction peak hours, respectively. During this quarter, it is assumed that Projected Development Sites 3 and 4 would be made available for worker vehicle parking and staging. Based on these trip estimates and anticipated vehicular travel patterns to and from the parking sites and the construction site, no intersection within the Edgemere study area is expected to attract 50 or more construction vehicle trips (worker autos plus trucks) in PCEs in either the weekday AM or PM construction peak hour. Therefore, per *CEQR Technical Manual* screening guidelines (Level 2), no detailed level of service analysis is warranted for construction traffic.

A peak of approximately 29 bus person trips and 35 subway person trips are estimated for the weekday AM (6:00 AM to 7:00 AM) and PM (3:00 PM to 4:00 PM) construction peak hours, respectively. Per *CEQR Technical Manual* guidelines, as these levels of transit trips are less than the 200 trip Level 1 screening threshold as well as the 50 trip Level 2 screening threshold, detailed transit analyses are not warranted for the peak construction period.

Overall, a peak of 208 pedestrian trips are anticipated in both the weekday AM and PM construction peak hours. These volumes include walk-only trips to and from the construction sites plus walking connections between the construction site and bus stops, subway stations and off-street parking lots. This level of peak pedestrian trips would exceed the *CEQR Technical Manual* Level 1 screening threshold. Considering the location of nearby bus stops and subway stations, as well as the location of off-street worker parking, it is unlikely that any potential concentration of construction worker pedestrian trips would result in 200 or more trips taking place at any point of the street network. As there would no exceedances of the *CEQR Technical Manual* Level 2 screening thresholds, a detailed pedestrian analysis is not warranted.

Air Quality

As discussed in the *CEQR Technical Manual*, several factors, such as location of construction activities in relation to existing residential uses or other sensitive receptors, the intensity of the construction activity, and the extent to which a project incorporates commitments to appropriate emission control measures, are taken into account to determine the potential for construction air quality impacts.

Construction air quality impacts were considered for the Projected Multi-Family Mixed-Use Sites since these sites are projected to have a construction duration greater than 24 months. As the Projected Residential Infill Sites are expected to be constructed in less than 24 months and are much smaller in scale, the analysis focuses on the Projected Multi-Family Mixed-Use Sites, which are expected to have greater air quality impacts.

Based on the location of nearby sensitive receptors relative to the sources of construction air quality emissions, the duration and intensity of construction activities, a comparison of emissions profiles, and the use of emission control measures, the Proposed Actions would not result in any significant adverse construction air quality impacts. Further, the maximum number of construction-related vehicle trips is not expected to exceed the *CEQR Technical Manual* thresholds for conducting a mobile source analysis.

Noise

Construction of the Projected Development Sites would involve standard construction activities and practices for buildings in New York City. The excavation, foundation, and superstructure phases of construction are typically when the noisiest activities occur. The interior fit out phase of construction typically involves minimal exterior equipment and substantially quieter noise conditions. The Project Area includes existing residential land uses which are often in close proximity to Projected Development Sites. Therefore, there is the potential for construction to cause significant adverse noise impacts, and a detailed construction noise analysis is warranted.

Construction noise from mobile sources (i.e., construction worker vehicles and trucks) would not cause ambient noise levels to increase by 3 dBA or more. Therefore, there would be no significant adverse noise impact from construction mobile sources. Construction noise levels would increase by 20 dBA or more over ambient conditions and exceed the interior noise criterion for 3 months of longer at 136 receptors which are in close proximity to Projected Development Sites. Construction noise levels would increase by 15 dBA or more over ambient conditions and exceed the interior noise criterion for 12 months or longer at 64 receptors and would increase by 3 to 5 dBA or more over ambient conditions at 55 receptors. In total, future construction noise levels would exceed the thresholds for interior noise impact and exterior noise impact at 255 receptors throughout the Project Area. Therefore, there would be significant adverse impact due to construction noise. The impact is due primarily to the relatively quiet existing ambient sound level in the Project Area, the close proximity of receptors to the Projected Development Sites, and the duration of construction activities throughout the Project Area. Construction noise levels would not exceed 85 dBA at any receptor at ground level, therefore, construction noise would not cause a significant adverse noise impact due to the Public Health noise criterion.

Vibration

Construction activities have the potential to generate ground-borne vibration that can potentially cause structural or architectural damage or annoy people in nearby vibration-sensitive spaces, such as residences. The most substantial sources of construction vibration are equipment associated with the excavation and foundation phase, such as pile drivers, drill rigs, bulldozers, and jack hammers.

There are no buildings within the Project Area listed by the New York City Landmarks Preservation Commission (LPC) or the State and/or National Register of Historic Places (S/NR) which would require special protections from potential damage due to vibration. There is the potential for construction vibration from some construction equipment, such as pile drivers, to cause annoyance in nearby residences. However, these construction activities would only occur for limited periods of time at any particular location and there would be no significant adverse impact as a result of construction vibration.

Other Technical Areas

Land Use and Neighborhood Character

While construction of the new buildings under the Proposed Actions would cause temporary disruption, particularly related to noise, it is expected that such effects in any given area would be relatively short in duration, even under the worst-case construction sequencing and, therefore, would not create a neighborhood character impact. Therefore, no significant adverse construction impacts to land use and neighborhood character are expected.

Socioeconomic Conditions

Construction could, in some instances, temporarily affect pedestrian and vehicular access on street frontages immediately adjacent to the development sites. However, lane and/or sidewalk closures are not expected during construction and therefore, would not restrict access to any existing or planned retail businesses. Utility service would also be maintained to all businesses, although there may be very short-term interruptions. Overall, construction resulting from the Proposed Actions is not expected to result in any significant adverse impacts on surrounding businesses.

Community Facilities

The construction sites would be surrounded by construction fencing and barriers that would limit the potential for impacts of construction on nearby community facilities. Construction of the projected buildings would not block or restrict access to any facilities in the area and would not affect emergency response times of the New York City Police Department (NYPD) and New York City Fire Department (FDNY) given the geographic distribution of the police and fire facilities and their respective coverage areas. Therefore, no construction impacts would be expected to community facilities as a result of the Proposed Actions.

Open Space

As described in **Chapter 5, Open Space** there are no publicly accessible open spaces on any of the Projected Development Sites. While one of the Projected Development Sites (Site 1) is located near existing open space resources (Conch Playground), no access to publicly accessible open space would be impeded during construction within the Project Area. In addition, measures would be implemented across all Projected Development Sites to control air emissions, dust, noise, and vibration on the construction sites.

Historic and Cultural Resources

There is one historic resource within 400 feet of Projected Development Site 7, the S/NR eligible St. Gertrude the Good Church Complex. There are no archaeological resources within the historic resources study area. The NYC LPC indicated that there would be no adverse impacts to any of these historic resources anticipated as a result of the Proposed Actions (Santucci 1/14/2021, **Appendix B**).

Hazardous Materials

As discussed in greater detail in **Chapter 10, Hazardous Materials**, the potential for significant adverse impacts related to hazardous materials resulting from the Proposed Actions would be precluded through the placement of institutional controls such as (E) designations and Land Disposition Agreements (LDAs) for the Projected Development Sites identified with potential hazardous or contaminated materials concerns.

Methodology

Construction impacts may be analyzed for any project that involves construction or could induce construction. An analysis of construction activities assesses the construction stages and activities, including numbers and types of equipment, and the anticipated duration of each construction stage or activity. The number of daily construction vehicles and deliveries is provided (presented in Passenger Car Equivalents (PCEs)), along with the temporal distribution for each stage and activity. The number of daily construction workers is also provided, along with the associated temporal distribution for each stage and activity.

The assessment is targeted only to issues where potential impacts may result from the Proposed Actions' construction activities in the areas of transportation, air quality, and noise. It is also possible that construction assessment may be needed in other technical areas depending on the location of the projected construction. As described above, the assessment of potential impacts of construction activity also considers other technical areas, including land use, neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, and hazardous materials.

Construction Regulations and General Practices

Construction Oversight

Governmental oversight of construction in New York City is extensive and involves a number of City, State, and Federal agencies, each with specific areas of responsibility, as follows:

- The New York City Department of Buildings (DOB) has primary oversight of construction. DOB oversees compliance with the New York City Building Code to ensure that buildings are structurally, electrically, and mechanically safe. In addition, DOB enforces safety regulations to protect both workers and the general public during construction. Areas of oversight include installation and operation of equipment such as cranes and lifts, sidewalk sheds, safety netting, and scaffolding.

- The New York City Department of Environmental Protection (DEP) enforces the New York City Noise Code, reviews and approves any needed Remedial Action Plans (RAPs) and associated Construction Health and Safety Plans (CHASPs) as well as the removal of fuel tanks and abatement of hazardous materials. NYC Department of Environmental Protection (NYCDEP) also regulates water disposal into the sewer system and reviews and approves any rerouting of wastewater flow.
- The FDNY has primary oversight of compliance with the New York City Fire Code and the installation of tanks containing flammable materials.
- The New York City Department of Transportation (DOT) Office of Construction Mitigation and Coordination (OCMC) reviews and approves any traffic lane and sidewalk closures.[1]
- New York City Transit (NYCT) is responsible for bus stop relocations and subsurface construction within 200 feet of a subway, if needed.
- The NYC LPC approves studies and testing to prevent loss of archaeological resources and to prevent damage to architectural resources.
- The New York State Department of Environmental Conservation (NYSDEC) regulates disposal of hazardous materials, and construction, operation, and removal of bulk petroleum and chemical storage tanks. NYSDEC also regulates discharge of water into rivers and streams.
- The New York State Department of Labor (DOL) licenses asbestos workers.
- The New York State Department of Transportation (NYSDOT) reviews and approves any traffic lane closures on its roadways, should any be necessary.
- The U.S. Environmental Protection Agency (EPA) has wide-ranging authority over environmental matters, including air emissions, noise, hazardous materials, and the use of poisons, however, much of its responsibility is delegated to the state level.
- The Occupational Safety and Health Administration (OSHA) sets standards for work site safety and construction equipment.

Construction Hours

New York City regulates the hours of construction work through the New York City Noise ~~Control~~ Code, as amended in December 2005 and effective July 1, 2007. Construction is limited to weekdays between the hours of 7:00 AM and 6:00 PM, and noise limits are set for certain specific pieces of construction equipment. The City may permit work outside of these hours to accommodate: (1) emergency conditions; (2) public safety; (3) construction projects by or on behalf of City agencies; (4) construction activities with minimal noise impacts; and (5) undue hardship resulting from unique site characteristics, unforeseen conditions, scheduling conflicts, and/or financial considerations. The DOB issues these work permits, and for new building construction, like the Proposed Actions, approval of a noise mitigation plan from the NYCDEP under the City's Noise Code is also required.

In New York City, construction work typically occurs on weekdays and begins at 7:00 AM, with most workers arriving between 6:00 AM and 7:00 AM. Work typically ends at 3:00 PM,

[1] No traffic lane or sidewalk closures of existing streets are anticipated during project construction.

with some exceptions when certain critical tasks (e.g., finishing a concrete pour for a floor deck, completing the drilling of piles, or completing the bolting of a steel frame erected that day) require that the workday be extended beyond normal work hours. The numbers of workers and pieces of equipment in operation for work outside normal hours is generally limited to those needed to complete the authorized task. Overall, the level of activity for any work outside of normal construction hours is less than a normal workday.

Construction Practices

Access, Deliveries and Staging Area

Access to construction sites is controlled. Work areas are fenced off, and limited access points for workers and construction-related trucks are provided. Typically, worker vehicles are not allowed into the construction area, and workers or trucks without a need to be on the site are not allowed entry. After work hours, all gates and other access points are closed and locked. Security guards may patrol the construction site after work hours and over weekends to prevent unauthorized access.

Material deliveries to each site are controlled and scheduled. To aid in adhering to the delivery schedules, as is normal for building construction in New York City, flaggers are employed at each of the construction site's access points. Flaggers are typically supplied by either the subcontractor on-site at the time or by the construction manager. The flaggers control trucks entering and exiting the construction site so that they would not interfere with one another. In addition, they provide an additional traffic aid as trucks enter and exit the on-street traffic streams.

Lane and Walkway Closures

Temporary curb lane and sidewalk closures are ~~typical~~common for construction projects in New York City. ~~To manage~~If a project will require such closures, a Maintenance and Protection of Traffic (MPT) plan is developed consistent with DOT requirements.[2] DOT OCMC reviews and approves MPT plans, and the implementation of the closures is also coordinated with DOT OCMC. In general, construction managers for major projects on adjacent sites also coordinate their activities to avoid delays and inefficiencies. ~~Considering the lot sizes of the Projected Development Sites, it is expected that all construction activity would occur within the limits of each site.~~

Public Safety

A variety of measures are employed to ensure public safety during construction at sites within New York City. Examples include the use of sidewalk sheds to provide overhead protection for pedestrians passing by the construction site and the employment of flaggers to control trucks entering and exiting the construction site, to provide guidance to pedestrians, and/or to alert or slow down the traffic. Other safety measures include following DOB requirements during the installation and operation of tower cranes to ensure safe operation of the equipment and the installation of safety nettings on the sides of the project

[2] Given the lot sizes of the Projected Development Sites, it is expected that all construction activity would occur within the limits of each site. As such, temporary closure of traffic lanes and/or sidewalk spaces are not expected during construction.

as the superstructure advances upward to prevent debris from falling to the ground. These safety measures are required as part of a Site Safety Plan reviewed and approved by DOB.

Rodent Control

Construction projects in New York City typically include provisions for a rodent (i.e., mouse and rat) control program with provisions for this formalized in construction contracts for the development. Rodent control programs are typically carried out throughout construction, beginning with surveying and baiting appropriate areas prior to construction and providing for proper site sanitation and maintenance during construction. Signage is posted, and coordination is conducted with appropriate public agencies. Only EPA- and NYSDEC-registered rodenticides are permitted, and the contractor is required to implement the rodent control program in a manner that is not hazardous to the general public, domestic animals, and non-target wildlife.

Air Emissions Reduction Measures

In addition to the measures described above, the evaluation performed in this section assumes a combination of emission reduction measures that are mandated by law and are common practice in large-scale New York City construction projects, and follow the requirements included in NYC Law 77 and the NYC Air Pollution Control Code. These include the following:

- Fugitive Dust Control Plans. In compliance with the NYC Air Pollution Control Code provisions regarding control of fugitive dust, contractors are required to ensure that all trucks carrying loose material use water as a dust suppression measure, that trucks hauling loose material be equipped with tight-fitting tailgates and their loads securely covered prior to leaving the site, that streets adjacent to the site be cleaned as frequently as needed by the construction contractor, and that water sprays be used for transfer of spoils to ensure that materials are dampened as necessary to avoid the suspension of dust into the air. These measures would be expected to reduce dust generation by more than 50 percent.
- Clean Fuel. Ultra-low sulfur diesel (ULSD) is required to be used exclusively for diesel engines related to construction activities. This is a federal requirement since 2010 that enables the use of tailpipe reduction technologies that reduce diesel particulate matter and SO_2 emissions.
- Restrictions on Vehicle Idling. New York City's local law restricts unnecessary idling. On-site vehicle idle time is restricted to three minutes for all equipment and vehicles that are not using their engines to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) or otherwise required for the proper operation of the engine.
- Perimeter Fencing. Perimeter fencing, which is required at construction sites (8-foot minimum), reduces both fugitive dust and tailpipe emissions from reaching sensitive receptors.
- Nonroad Diesel Engines. Given the construction timeframe for the Proposed Actions (2022-2031), equipment meeting Tier 4 standards for diesel engines (model years 2011/2012 and beyond) would be expected to be in wide use and comprise the majority of contractors' fleets. If contractors choose to use older diesel equipment, the use of diesel particulate filters (DPF) in Tier 3 emission standard for diesel engines (model years

2006-2011) will have to be implemented. Tier 3 with DPF achieves the same $PM_{2.5}$ emission reductions as a newer Tier 4 emission standard for diesel engines. The combination of Tier 4 and Tier 3 engines with DPF would achieve DPM reductions of approximately 90 percent when compared to older uncontrolled engines.

- Diesel Equipment Reduction. To the extent practical, hoists and small equipment, such as lifts, compressors, welders, and pumps, use electric engines that operate on grid power instead of diesel power engines. This is a common practice that has been achieving wider use as technology improves.
- Source Location and Shielding. To reduce concentration increments at sensitive receptors, large emissions sources and activities such as concrete trucks, generators, and large compressors can be located away from the sensitive receptors to the extent practical.

Noise Reduction Measures

Noise from construction activities and some construction equipment is regulated by the NYCDEP Noise ~~Control~~ Code. The NYCDEP Noise Code (Section 24-228) limits noise from non-impulsive construction equipment to a maximum of 85 dBA as measured 50 feet from the source. The code also limits noise from paving breakers, such as jackhammers, to 95 dBA at a distance of one (1) meter and requires that a pneumatic discharge muffler be used that provides an insertion loss of 5 dBA.

In addition, the NYCDEP Noise ~~Control~~ Code limits construction activities to weekdays between the hours of 7:00 AM and 6:00 PM and requires that a Construction Noise Mitigation Plan be implemented. For construction on weekends or weekdays between 6:00 PM and 7:00 AM, NYCDEP Noise Code requires after hours work authorization. In accordance with the NYCDEP Noise Code §24-223, the afterhours work must be conducted in compliance with the Construction Noise Mitigation Plan, shall not exceed 7 dBA above ambient sound levels within a residential receptor, and must involve activities with minimal noise impact. Project-specific noise control measures are described in the Construction Noise Mitigation Plan and can include a variety of source and path controls, such as the following:

- The contractor would self-certify that all construction tools and equipment have been maintained to not generate excessive or unnecessary noise and that the noise emissions would not exceed the levels specified in the Federal Highway Administration's Roadway Construction Noise Model User's Guide, January 2006.
- All construction equipment would be equipped with necessary noise reduction equipment, including mufflers. All equipment with internal combustion engines would be operated with the doors closed, including noise-insulating materials, and at the lowest engine speed allowable.
- Where feasible, practical, and safe, the use of back-up alarms would be minimized and/or quieter back-up alarms would be installed in accordance with OSHA standards.
- Vehicles would not be allowed to idle more than three minutes in accordance with New York City Administrative Code §24-163.
- The contractor shall utilize a training program to inform workers on methods that can minimize construction noise.

› For impact equipment, such as pile drivers and jackhammers, the quietest equipment shall be selected taking into consideration the structural and geotechnical conditions.

The following path noise controls would be implemented to the extent feasible, practical and safe as required by the New York City Noise Code:

› The DOB regulations require a perimeter barrier or "construction noise barrier" when the site is within 200 feet of a receptor, the barrier shall be constructed in a specific manner (as described in the New York City Noise Code) to provide sufficient sound attenuation. Section 3307.7 of the New York City Building Code requires a solid perimeter noise barrier made out of wood or other suitable material be constructed where a new building is being constructed or a building is being demolished to grade.

› Should noise complaints occur during construction, the contractor shall use path noise control measures such as temporary noise barriers and jersey barriers.

› In general, the quietest equipment and methods shall be used for excavators, dump trucks, cranes, auger drills and concrete saws to the extent feasible and practical.

Construction Description

Construction facilitated by the Proposed Actions would be subject to the government regulations and oversight detailed above and would employ the general construction practices described above. Forty-one Projected Development Sites have been identified as likely to be developed with new buildings during the construction analysis period through 2031. A projected construction schedule is described in greater detail below. The general construction stages and activities that take place within them are described in detail below.

Conceptual Construction Phasing and Schedule

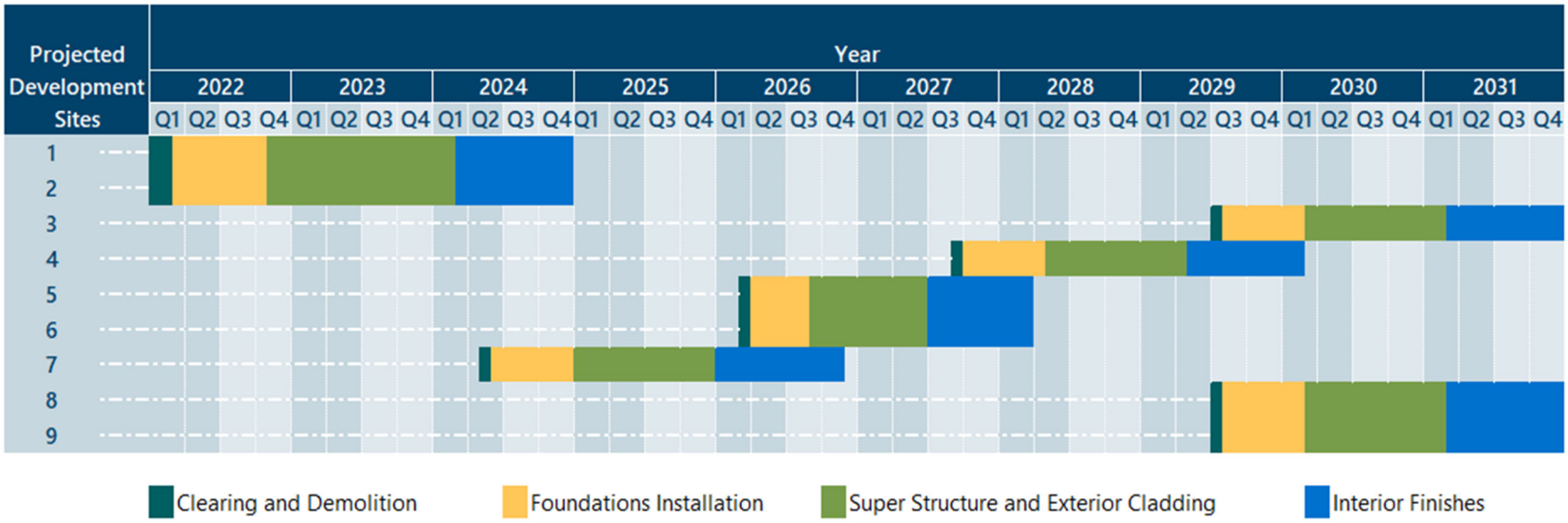
Currently, there are no finalized building programs or designs for the 41 Projected Development Sites. As the Proposed Actions involve an areawide rezoning and not a site-specific development, this assessment evaluates the Reasonable Worst-Case Development that could be constructed across the Project Area. Actual construction methods and materials may vary for each of the Projected Development Sites, depending on how the construction contractors choose to implement work to be most cost-effective within the requirements set forth in bid, contract, and construction documents. The City may ultimately elect to dispose of several properties to one developer through a request for proposals (RFP) process and may also impose certain requirements or restrictions for the developer through the LDA that would be in place between the City and the developer that is ultimately selected through the RFP process. Construction specifications would require that construction contractors comply with applicable environmental regulations and obtain necessary permits for the duration of construction. Construction of each Projected Development Site would follow applicable federal, state, and local laws for building and safety, as well as local noise ordinances, as appropriate.

For analysis purposes, conceptual construction phasing for the Projected Development Sites was prepared by HPD to illustrate how development is expected to proceed through 2031. In estimating the duration of the construction for each development site, it is generally assumed that all infill developments would take several months to complete (start to finish),

whereas Projected Development Sites with more floor area are assumed to take longer. The conceptual construction schedule conservatively accounts for overlapping construction activities at Projected Development Sites in proximity to one another to capture the cumulative nature of construction impacts with respect to number of worker vehicles, trucks, and construction equipment at any given time within reasonable construction scheduling constraints for each of the development sites in the Project Area.

Figure 18-2 shows the conceptual construction schedule. In the conceptual construction schedule, construction activities on the two privately owned development sites are assumed to begin in the first quarter of 2022 and construction would continue across the Projected Development Sites through 2031. It is conservatively assumed that construction of all Projected Development Sites would be completed by the end of the 2031 analysis year. Based on their size, construction of 32 of the Projected Development Sites (projected infill sites 10 through 41) is considered to be short term (i.e., several months from start to finish) per the *CEQR Technical Manual*. Despite being short term, the transportation, air quality, and noise analyses provided below each evaluated the potential for the infill development sites to result in cumulative construction impacts. As described below, it was determined that the construction related to the infill sites would not exceed CEQR thresholds for transportation and air quality analyses, while additional screening was needed to determine whether a more refined noise analysis was warranted for the infill sites.

Figure 18-2 Anticipated Construction Schedules Across Projected Development Sites 1 through 9



General Construction Stages

Clearing and Demolition

Construction at each site would begin with a number of activities to prepare the site for construction work. The first task is construction startup, which involves installing public safety measures (i.e., signs and fences) and siting of work trailers. A majority of the sites in the study area are vacant and clearing work would largely involve the removal of vegetation.

If there are existing buildings on a development site, the next step would involve abatement of any potential hazardous materials, such as asbestos, prior to general demolition. A New York City-certified asbestos investigator would inspect the building for asbestos-containing materials (ACM); if present, those materials would be removed by a DOL-licensed asbestos abatement contractor prior to interior demolition. Asbestos abatement is strictly regulated by NYCDEP, DOL, EPA, and OSHA to protect the health and safety of construction workers and nearby residents. Depending on the extent and type of ACMs, if any, these agencies would be notified of the asbestos removal project and may inspect the abatement site to ensure that work is being performed in accordance with applicable regulations. Any activities with the potential to disturb lead-based paint (LBP) would be performed in accordance with applicable OSHA regulations (including federal OSHA regulation 29 CFR 1926.62—Lead Exposure in Construction). In addition, any suspected polychlorinated biphenyls (PCB)-containing equipment (such as fluorescent light ballasts) that would be disturbed would be evaluated prior to disturbance. Unless labeling or test data indicate the contrary, such equipment would be assumed to contain PCBs, and would be removed and disposed of at properly licensed facilities in accordance with all applicable regulatory requirements.

General demolition is the next step (if needed), beginning with removal of any economically salvageable materials that could be reused. Hand tools, excavators with hoe ram attachments, and front-end loaders are typically used in the demolition of the small structures that are located within the Study Area. Where practicable, demolition debris would be sorted prior to being disposed of at landfills to maximize recycling opportunities.

Regarding excavation activities, where necessary, sheeting is installed to stabilize soil around the excavation area and excavators are then used to excavate soil. The soil is loaded onto dump trucks with front-end loaders for transport to a licensed disposal facility or for reuse on any portion of the development site that needs fill.

Water from rain and snow collected in the excavation area during construction would be removed as necessary using a dewatering pump. If dewatering is required, testing would be performed to ensure compliance with NYCDEP sewer discharge permit/approval requirements and, if necessary, pretreatment would be conducted prior to discharge to the sewer.

Foundations Installation

This stage of construction includes the construction of the new building's foundation and below-grade elements. Foundation work for the larger Projected Development Sites would include pile driving and columns and concrete walls would be built to the grade level. The foundations for the infill developments would not involve pile driving.

Superstructure and Exterior Cladding

Construction of the core and shell involves construction of the building's framework, core, and exterior. The superstructure is the building's framework (beams and columns) and floor decks. Construction of the core, or interior structure, includes construction of the building's elevator shafts; vertical risers for mechanical, electrical, and plumbing systems; electrical and mechanical equipment rooms; core stairs; and restroom areas. Construction of the exterior involves the installation of the façade (exterior walls, windows, and cladding and the roof).

During this stage, steel would be installed for the superstructure and concrete would be poured for the core and the superstructure. An electric hoist would be installed and operated to facilitate these activities, including the delivery of various materials to the site. During steel installation, a safety cocoon would be erected around floors that are undergoing construction. A sidewalk shed also would be installed along the curb edge around the site. Equipment used during this stage typically includes air compressors, generators, delivery and concrete trucks, concrete pumps, concrete trowels, welding equipment, and a variety of handheld tools.

Interior Finishes

Interior fit-out activities include the construction of interior partitions, installation of lighting fixtures and interior finishes (i.e., flooring, painting, etc.); mechanical and electrical work; and lobby finishes. In addition, final cleanup and touchup of the proposed building and final building systems (i.e., electrical system, fire alarm, plumbing, etc.) testing and inspections are part of this stage of construction.

Equipment used during interior construction typically includes exterior hoists, compressors, delivery trucks, and a variety of small hand-held tools. This stage of construction is typically the quietest and does not generate fugitive dust since this work occurs within the building with the façades substantially complete.

This stage of construction is also when the construction protection measures (fencing, sidewalk enclosures, bridges, temporary sidewalks, remaining scaffolding, etc.) around the construction site would be removed. This stage of construction would also include punch list completion activities, which are typically small tasks that were not completely finished, and project commissioning to ensure compliance with contract requirements.

The interior finishes for the residential infill sites are similar to those described above, although at a much smaller scale (i.e., fewer workers, a more compressed timeline, etc.).

Number of Construction Workers and Material Deliveries

Construction is labor intensive, and the number of workers varies with the general construction task and/or building size. Likewise, material deliveries and removals generate truck trips, and the number also varies depending on the task and/or the building size. Workers and truck projections were based on representative sites of similar size and use and information for a variety of similar known construction projects in the City. Projected development sites were categorized based on similar size and use, and the most intense month from each stage of construction (demolition/excavation/foundation, superstructure/ exterior, and interior) for each site was identified and used as a scaling factor for projections. Each of the 41 Projected Development Sites was then assigned to the appropriate size

category, and worker and truck projections were scaled on a per-square-foot basis. The resultant estimate of the number of trucks and workers per quarter is summarized in **Table 18-1**. As indicated in the table, the number of workers would be expected to peak in the first quarter of 2023, with an estimated 260 workers per day. The number of trucks would also be expected to peak in the first quarter of 2023, with an estimated 50 trucks per day. Projected Development Sites 1 and 2 are assumed to be under construction during the first quarter of 2023.

Table 18-1 Average Number of Daily Construction Workers and Trucks by Quarter

Year	2022				2023				2024				2025				2026			
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Workers	67	123	170	230	260	140	157	173	120	113	130	120	143	167	130	130	127	160	203	223
Trucks	35	4	6	35	50	46	25	25	23	19	19	18	13	12	12	12	8	8	12	13
Year	**2027**				**2028**				**2029**				**2030**				**2031**			
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Workers	140	140	123	140	177	140	100	100	100	83	140	160	107	100	100	100	93	80	80	80
Trucks	9	9	5	6	7	6	6	6	6	5	7	6	7	12	12	12	10	7	7	7

Source: VHB 2021

It is anticipated that the City-owned Projected Development Sites (Sites 3 through 7) would be used for construction staging and construction worker parking at different stages of the construction phases. This would help to satisfy worker parking demand and reduce the demand for on-street parking spaces.

Assessment of Project Construction

In accordance with the guidelines of the *CEQR Technical Manual*, this preliminary assessment evaluates the effects associated with the Proposed Actions' construction related activities—including transportation, air quality, noise, vibration, land use and neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, and hazardous materials.

Transportation

An assessment of the potential for temporary transportation impacts due to peak construction activity was undertaken according to the same methodology used in the operational analysis presented in **Chapter 12, Transportation**. This assessment focuses on the quarter where the average daily trips generated by construction workers and trucks are projected to be highest (when Projected Development Sites 1 and 2, "the construction sites" are under construction). As indicated in **Table 18-1**, the number of workers is projected to peak in the first quarter of 2023, with an estimated 260 workers per day. The number of trucks is also projected to peak in the first quarter of 2023, with an estimated 50 trucks per day. Therefore, the period selected for analysis was the first quarter of 2023.

Traffic

Peak Hour Construction Worker Vehicle and Truck Trips

Construction activities would be expected to occur on weekdays and would typically occur in one shift, from 7:00 AM to 3:00 PM. Construction truck trips would typically be distributed throughout the day — depending upon the specific types of construction activities taking place — and most trucks would remain in the area for short durations. Auto trips associated with construction worker travel would typically take place during the hour before and the hour after the daily work shift. For analysis purposes, each worker vehicle was assumed to arrive in the morning and depart in the afternoon or evening, and each truck delivery was assumed to result in one "in" trip and one "out" trip during the same hour.

The estimated daily vehicle trips for the peak hour of construction traffic were distributed throughout the workday based on projected arrival/departure patterns of construction workers, and the projected pattern of truck deliveries was based on the types of construction activities that would occur during the first quarter of 2023. For construction workers, typical arrival patterns show that most arrivals (approximately 80 percent) occur during the 6:00 AM to 7:00 AM hour (the hour before the beginning of a day shift) and the same percentage of departure trips occurs during the end of the shift. For trucks, deliveries are usually spread throughout the day, but the peak activity (approximately 25 percent) would occur during the 6:00 AM to 7:00 AM hour.

The modal split and vehicle occupancy rate assumptions used to determine construction worker trips were based on the 2016 *Downtown Far Rockaway FEIS* per the request of NYCDOT. Based on the data provided in the *Downtown Far Rockaway EIS*, it was assumed that 63 percent of worker trips would occur by auto with a vehicle occupancy rate of 1.25. No taxi trips were assumed.

The number of auto and truck trips generated by construction activity was determined based on the auto modal split, vehicle occupancy and trip temporal and directional distribution assumptions described above. It should be noted that as larger vehicles such as trucks typically make up a significant portion of construction traffic, a passenger car equivalent (PCE) factor was applied to these vehicles to account for their size difference. Per the *CEQR Technical Manual*, it is assumed that one truck is equivalent to two passenger cars. The hourly PCE trips are summarized **Table 18-2**. As shown in **Table 18-2**, a total of 155 PCE trips (130 "in" and 25 "out") and 115 PCE trips (5 "in" and 110 "out") are expected during the weekday AM (6:00 AM to 7:00 AM) and PM (3:00 PM to 4:00 PM) construction peak hours, respectively. As the number of vehicle trips generated by peak construction activity would exceed the 50-vehicle trip threshold (Level 1) during both the construction AM and PM peak hours, a Level 2 trip assignment is necessary to determine if a detailed traffic and parking analysis is warranted per *CEQR Technical Manual* guidelines.

Table 18-2 Construction PCE Trips by Peak Hour

Time Period							
From	To	Auto In	Auto Out	Truck In	Truck Out	Total In	Total Out
6:00 AM	**7:00 AM**	**105**	**0**	**25**	**25**	**130**	**25**
7:00 AM	8:00 AM	26	0	10	10	36	10
8:00 AM	9:00 AM	0	0	10	10	10	10
9:00 AM	10:00 AM	0	0	10	10	10	10
10:00 AM	11:00 AM	0	0	10	10	10	10
11:00 AM	12:00 PM	0	0	10	10	10	10
12:00 PM	1:00 PM	0	0	10	10	10	10
1:00 PM	2:00 PM	0	0	5	5	5	5
2:00 PM	3:00 PM	0	6	5	5	5	11
3:00 PM	**4:00 PM**	**0**	**105**	**5**	**5**	**5**	**110**
4:00 PM	5:00 PM	0	20	0	0	0	20
	Total	**131**	**131**	**100**	**100**	**231**	**231**

Peak Hour Construction Vehicle Trip Distribution Assessment

Construction vehicles were assigned to the same study area street network reflected in the operational traffic analysis (the area between Beach 32nd Street to the east and Beach 62nd Street to west). Construction worker vehicle trip assignments were based on 2012-2016 AASHTO CTPP reverse journey-to-work data for local Queens Tracts 964, 972.02, 972.03, 72.04, 992, 998.01, 998.02 and 1008.02. Based on the CTTP data, approximately 87 percent of trips were assigned to local streets and arterials en route to and from major highways and bridges into the Rockaway Peninsula, while the remaining 13 percent were assigned to local streets en route to and from neighboring areas in the peninsula. Overall, within the Rockaway Peninsula, approximately 70 percent of inbound worker trips were assigned arriving from east of the construction sites and the other 30 percent coming from the west. Once in the study area, construction worker vehicles were assigned to and from Projected Development Sites 3 and 4, which would be used for parking and staging during the first quarter of 2023. Construction trucks were restricted to Beach Channel Drive, the only local truck route in the project area.

Based on the construction peak hour travel demand estimates and the vehicular travel patterns discussed above, no intersection within the Edgemere study area is expected to attract 50 or more construction vehicle trips (worker autos plus trucks) in PCEs in either the weekday AM or PM construction peak hour. Therefore, per *CEQR Technical Manual* screening guidelines (Level 2), no detailed level of service analysis is warranted for construction traffic.

Transit and Pedestrians

Based on the modal split data provided in the *Downtown Far Rockaway FEIS*, it is anticipated that approximately 31 percent of construction workers would commute by public transportation (14 percent via bus and 17 percent via subway) and six percent would walk. The estimated number of bus and subway trips for construction workers during the

construction peak hour were determined based on the same projected arrival/departure pattern described above under the "Traffic" section. Overall, approximately 29 bus trips and 35 subway trips can be expected during the weekday AM (6:00 AM to 7:00 AM) and PM (3:00 PM to 4:00 PM) construction peak hours, respectively. Per *CEQR Technical Manual* guidelines, as these levels of transit trips are less than the 200 trip Level 1 screening threshold as well as the 50 trip Level 2 screening threshold, detailed transit analyses are not warranted.

Pedestrian trips include walk-only trips to and from the construction sites plus walking connections between the construction site and bus stops, subway stations and off-street parking lots. Overall, a total of 208 pedestrian trips are anticipated in both the weekday AM and PM construction peak hours (80 percent of the 260 daily workers). This number of pedestrian trips includes 13 walk-only trips and walking components from 29 bus trips, 35 subway trips, and 131 auto person trips. As the number of construction worker pedestrian peak hour trips is expected to exceed the threshold of 200 pedestrian trips per hour, a Level 2 trip assignment is necessary to determine if detailed pedestrian analyses are warranted per *CEQR Technical Manual* guidelines.

Pedestrian Trip Distribution

The following describes how workers are expected to traverse the surrounding street network based on logical routes to and from the construction site and whether the level of pedestrian volumes would warrant detailed pedestrian analyses. As pedestrian trips include both start and end points, the location of key pedestrian origin and destination locations were identified. As explained above, pedestrian trips consist of pedestrians walking entirely on foot as well as to and from subway entrances, bus stops, and where their vehicles are parked.

The subway station nearest the construction sites, the Beach 44th Street/Franklin Avenue Station, is located a few blocks east of the construction sites. As the station entrances are located on Rockaway Freeway subway pedestrian trips en route to and from the construction sites and this station would concentrate along portions of Rockaway Beach Boulevard, Beach 47th Street, and Rockaway Freeway. The nearest bus stops are located along Beach Channel Drive and are less than two minutes from the construction sites. Construction workers arriving via auto are expected to park at Projected Development Sites 3 and 4 as they are City-owned sites that would be made available for construction parking. These lots are located a few blocks to the east of the construction sites. As these lots border Rockaway Beach Boulevard, workers parking there would utilize the Rockaway Beach Boulevard corridor to reach the construction sites. Lastly, walk-only trips are expected to be well-distributed along direct walking paths to and from the construction sites and nearby attractions and destinations.

Considering the routing assumptions detailed above, it is expected that construction worker pedestrian trips would be distributed between access points at the construction sites and many different trip sources across the neighborhood. Therefore, it is unlikely that any potential concentration of construction worker pedestrian trips would result in 200 or more trips taking place at any point of the street network. As there would no exceedances of the *CEQR Technical Manual* Level 2 screening thresholds, a detailed pedestrian analysis is not warranted.

Air Quality

Construction impacts on air quality may occur because of particulate matter (fugitive dust) created by excavation and other earth moving operations, from emissions of increased truck traffic to and from the construction site on local roadways or because of temporary road closings, and from emissions of the construction equipment. As discussed in the *CEQR Technical Manual*, the determination of whether it is sufficient to conduct a qualitative analysis of these emissions or whether a quantitative analysis is required should take into account factors such as the location of the construction activities associated with a proposed action in relation to existing residential uses or other sensitive receptors, the intensity of the construction activity, and the extent to which the project incorporates commitments to appropriate emission control measures. These factors are analyzed below.

Construction air quality impacts were considered for the Projected Multi-Family Mixed-Use Sites since these sites are projected to have a construction duration greater than 24 months. As the Projected Residential Infill Sites are expected to be constructed in less than 24 months each, are much smaller in scale (ranging in size from single-family developments up to 11 units in total, with most being three to four units), and are geographically dispersed, this analysis focused on the Projected Multi-Family Mixed-Use Sites, which would have a larger scale construction effort, with more equipment and a longer duration, and are therefore expected to have greater air quality impacts.

On-Site Construction Related Emissions

For stationary source emissions, the most intense construction activities in terms of air pollutant emissions are typically the demolition, excavation, and foundation stages since it is during these stages that the largest number of large non-road diesel engines would be employed, resulting in the highest levels of air emissions. The other stages of construction, including superstructure, exterior façades, interior finishes, and site work, typically result in lower air emissions since they require fewer pieces of heavy-duty diesel equipment. Equipment used in the latter stages of construction generally have small engines and are dispersed vertically throughout the building, resulting in low concentration increments in adjacent areas. Additionally, the latter stages of construction do not involve soil disturbance activities and therefore result in significantly lower dust emissions. Interior finishes activities are better shielded from nearby sensitive receptors by the proposed structures themselves.

The overall construction period for the Projected Multi-Family Mixed-Use Sites would be longer than two years; however, the most intense construction activities in terms of air pollutant emissions are anticipated to occur for substantially less than two years. Specifically, clearing, demolition and foundation installation activities would occur for one to ten months at a time depending on the size of the building constructed. The demolition activities for the Proposed Developments would be very limited because the construction would occur on primarily vacant land. Furthermore, construction of the Projected Multi-Family Mixed-Use Sites would adhere to the applicable laws, regulations, and building codes that focus on clean fuel, dust suppression measures, and idling restrictions for on-road vehicles.

Off-Site Construction Related Emissions

Mobile source emissions typically result from trucks delivering materials and removing debris, workers' private vehicles, or occasional disruptions in traffic near the construction site. As described above in the **Transportation** section, it is unlikely that there would be the potential for significant adverse construction-related traffic impacts. Additionally, no traffic lane closures are anticipated as a result of construction activities. The maximum number of construction-related truck trips is not expected to exceed the CEQR mobile source screening thresholds. Therefore, a more detailed assessment of construction-related mobile source air quality analysis is not warranted, and it is not anticipated that the project construction would result in significant adverse mobile source air quality impacts.

Emission Intensity Analysis

A construction emissions intensity analysis was conducted for the Projected Multi-Family Mixed-Use Sites. The construction emission intensity analysis includes estimating construction $PM_{2.5}$ emissions, which are the emissions of primary concern from construction, for the full duration of construction, then comparing the peak daily $PM_{2.5}$ emissions and proximity to nearby sensitive receptors to those of a comparable project that conducted a dispersion analysis and demonstrated no significant adverse air quality impacts.

The approach to estimate emissions includes a determination of the peak emission period based on an estimated monthly construction work schedule in which the number of on-site construction equipment types and rated horsepower of each unit, quantities of materials to be excavated, and number of trucks arriving, working, and leaving the site vary from month to month.

The peak daily emissions and the maximum annual emissions (based on a 12-month rolling average) for construction were determined based on the construction schedule activities and equipment projected to be required. The assessment considered four phases of construction—demolition, foundation, superstructure-exterior, and interiors.

The specific construction information used to calculate emissions generated from the construction process included, but is not limited to, the following:

- The number of units and fuel-type of construction equipment to be used;
- Rated horsepower and load factors for each piece of equipment;
- Utilization rates for equipment;
- Hours of operation on-site;
- Excavation processing rates; and
- Average distance to approach the site and idling time by dump trucks, cement trucks, and trailers for equipment delivery.

Emission Reduction Measures

Overall, control measures described above in **Construction Practices, Air Emissions Reduction Measures** section would be expected to significantly reduce particulate matter emissions. As recommended in the *CEQR Technical Manual*, all the necessary measures

would be implemented to ensure that the New York City Air Pollution Control Code regulating construction-related dust emissions is followed.

Emissions Intensity Assessment

Emission factors for construction equipment were estimated using the MOVES3 NONROAD model for each piece of equipment for Queens County as a weighted average between the years 2008 and 2022 and assuming Tier 4 or Tier 3 with DPF diesel equipment. Emission factors for trucks were also estimated using MOVES3 for Queens County. Idling was limited to NYC restrictions for heavy trucks with the exception of cement trucks, for which one hour idling was assumed. Unpaved road dust emissions were estimated using EPA AP-42, Section 13.2.2 equations.[3] Emissions from material transfer operations for loading debris during demolition were estimated using equations from AP-42, Section 13.2.4.[4]

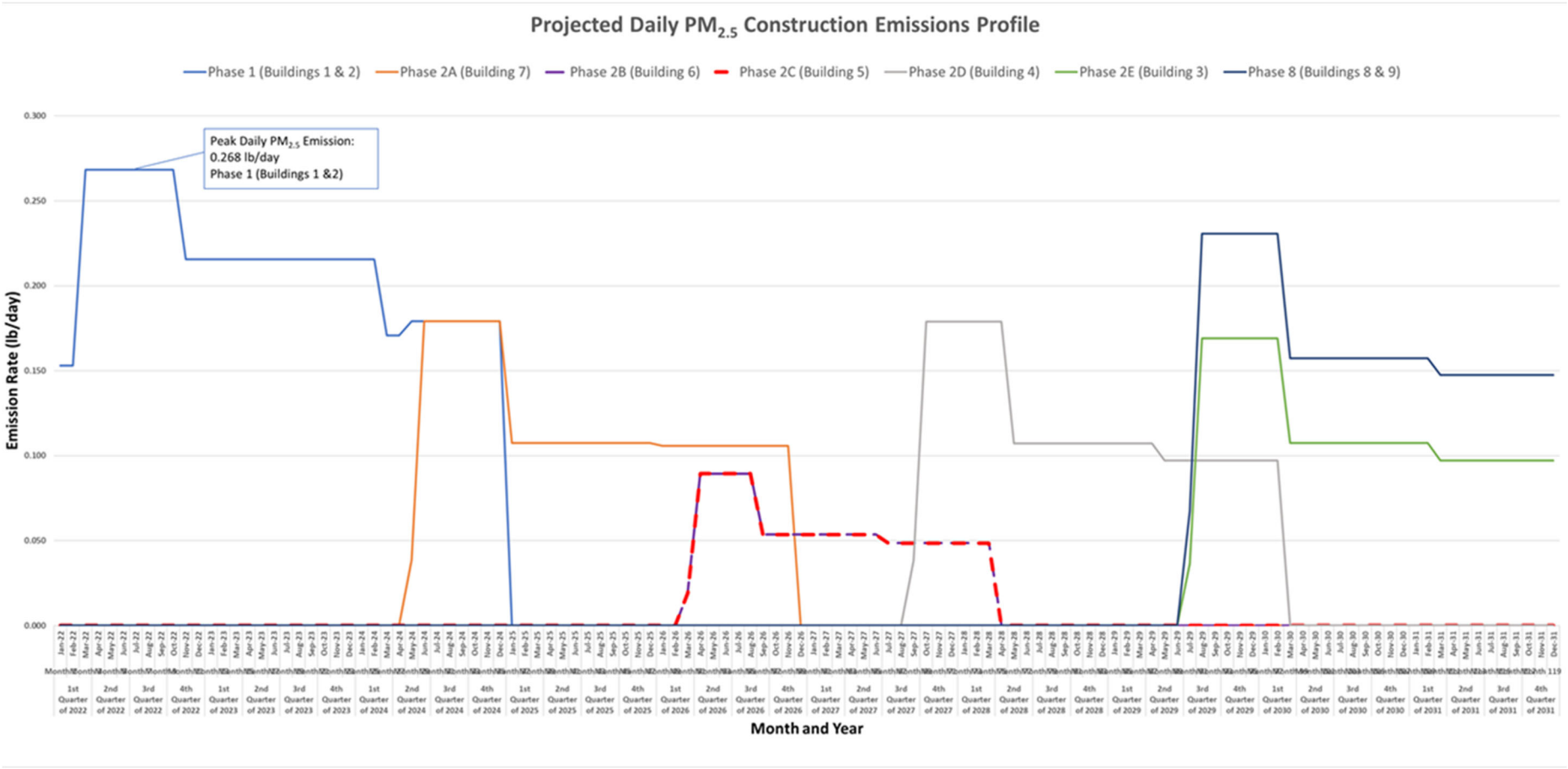
To determine the construction phase that constitutes peak $PM_{2.5}$ emissions, construction-related emissions were calculated throughout the duration of construction on a monthly basis using peak daily emissions for short term $PM_{2.5}$ and average monthly usage for annual $PM_{2.5}$. Based on the results of the $PM_{2.5}$ emissions analysis for the entire construction period, the third month of construction, or March 2022, was identified as having the highest daily $PM_{2.5}$ emissions. The highest annual emissions were identified for the first year of construction between March 2022 and February 2023. This period falls into Phase 1 or construction of Projected Multi-Family Mixed-Use Sites 1 and 2, the largest of the Projected Development Sites.

Figure 18-4~~**Figure 18-3**~~ presents the projected peak daily $PM_{2.5}$ emissions during construction of the developments facilitated by the Proposed Actions. The other phases of construction (phases 2A, 2B and 2C, 2D, 2E and 8) or construction of the other Projected Multi-Family Mixed-Use Development Sites (Site 3-9) would be smaller in scale and therefore have lower emissions. Additionally, the sites are geographically dispersed, and occur at different construction time periods. Thus, the peak emissions from each phase do not overlap and do not occur at the same location.

[3] AP-42: Compilation of Air Emission Factors: https://www.epa.gov/sites/production/files/2020-10/documents/13.2.2_unpaved_roads.pdf

[4] AP-42: Compilation of Air Emission Factors: https://www.epa.gov/sites/production/files/2020-10/documents/13.2.4_aggregate_handling_and_storage_piles.pdf

Figure 18-3 Projected Peak Daily $PM_{2.5}$ Construction Emissions



Location of Nearby Sensitive Receptors

The Projected Multi-Family Mixed-Use Sites are shown on **Figure 18-1**. The highest peak month and the highest peak year would occur during Phase 1 while constructing on Site 1 and 2. The closest receptors to construction of the Projected Development Sites 1 and 2 would be located across Beach 50th Street at Sites E1 and E2 of the Peninsula Hospital Developments from the No-Action buildings, more than 70 feet away, and across Beach 49th Street at the Rockaway Care Center from the existing buildings, more than 100 feet away. Additionally, the closest residential receptors are at least 10 feet from a construction site—namely, 10 feet away from Projected Multi-Family Mixed-Use Development Sites 4, 5 and 6.

Analysis of Results

To determine whether there is a potential for construction emissions from the Projected Development Sites to adversely impact air quality levels in the neighborhood, the peak daily emissions were compared to the peak daily emissions from other projects where dispersion analyses was conducted and where no significant adverse construction-period air quality impacts would occur. **Table 18-3** presents the results of this comparison. As shown in this table, peak daily and annual $PM_{2.5}$ emissions from Projected Development Sites 1-9 would be similar to construction emissions of projects that have recently undergone City review. For instance, the 343 Madison Avenue building is approximately 550,000 gsf less than, or 37 percent smaller than the total development gsf of Projected Development Sites 1-9. Similarly, the overall peak daily emissions from Projected Development Sites 1-9 would be 51 percent lower than construction emissions from 175 Park Avenue. The 175 Park Avenue building is twice the size of the total development of Projected Development Sites 1-9.

Additionally, peak annual emissions from Projected Development Sites 1-9 would be lower than peak annual emissions of the 175 Park Avenue project and similar to the peak annual emissions of the 343 Madison Avenue project.

Sensitive receptors surrounding the comparison projects' construction sites were located much closer than the receptors for the peak period (Phase 1 – Buildings 1 and 2) of the Projected Development Sites 1-9 construction. The sensitive receptors for the comparison projects were at similar distances to the Projected Development Sites 1-9 construction site at other phases, e.g., at least 10 feet away.

Table 18-3 Comparison between Peak Daily $PM_{2.5}$ Construction Emissions from Projected Development Sites 1-9 to Other Projects.

Project Name	Proposed Building Size(s) (gsf)	Construction Duration (months)	Peak Daily $PM_{2.5}$ Emissions (lb/day)	Peak Annual $PM_{2.5}$ Emissions (lb/day)
175 Park Avenue	2,992,161	106	0.545	0.532
343 Madison Avenue	925,630	42	0.252	0.246
Edgemere Projected Development Sites 1-9	**1,469,700**	**120**	**0.268**	**0.251**

Conclusion

Based on the location of nearby sensitive receptors relative to the sources of construction air quality emissions, the duration and intensity of construction activities, a comparison of emissions profiles of similar projects in New York City, and the use of emission control measures, the construction at the Projected Development Sites would not result in significant adverse construction air quality impacts. Further, the maximum number of construction-related vehicle trips is not expected to exceed the *CEQR Technical Manual* thresholds for conducting a mobile source analysis. Therefore, no further analysis is required.

Noise

Construction activities have the potential to affect the noise conditions of receptors near each of the Projected Development Sites. Construction noise can vary widely depending on the phase of construction (e.g., demolition, excavation, foundation, superstructure, and interior fit out) and the specific equipment and methods being used. The most significant construction noise sources at a construction site are generally back-up alarms, and equipment such as jack hammers, excavators, pile drivers, and cranes. The noisiest phase of construction is typically during demolition, excavation, and foundation work. The superstructure phase of construction can also have higher noise levels associated with concrete trucks and cranes. Similar to air emissions, interior fit out typically results in lower noise emissions, since it requires fewer pieces of heavy-duty diesel equipment.

As discussed in the *CEQR Technical Manual,* the need to conduct a qualitative analysis of construction noise emissions or a quantitative analysis is considered based on factors such as the location of the development in relation to existing residential uses or other sensitive receptors, the intensity of the construction activity, and the extent to which the project incorporates commitments to appropriate noise control measures.

Construction Methods

Currently, there are no finalized building programs or designs for the 41 Projected Development Sites since this is an areawide rezoning and not a site-specific development. It is generally assumed that all infill developments (Sites 10 through 41) would take less than 24 months to complete, whereas Projected Developments Sites (Sites 1 through 9) are assumed to take longer given the larger total square footage of these projected developments. The conceptual construction phasing and scheduling of the 41 Projected Development Sites assumes that there would be eight overall development phases as follows:

- Phase 1 – Projected Development Sites 1 to 2 (Month 1 to 36)
- Phase 2A – Projected Development Site 7 (Month 29 to 59)
- Phase 2B – Projected Development Site 6 (Month 51 to 75)
- Phase 2C – Projected Development Site 5 (Month 51 to 75)
- Phase 2D – Projected Development Site 4 (Month 69 to 98)
- Phase 2E – Projected Development Site 3 (Month 91 to 120)
- Phase 3 – Projected Development Sites 10 to 12 (Month 1 to 24)

- Phase 4 – Projected Development Sites 13 to 17 (Month 19 to 42)
- Phase 5 – Projected Development Sites 18, 20, 21, 25 to 27, 31, 32, and 39 to 41 (Month 37 to 60)
- Phase 6 – Projected Development Sites 22, 23, 28, 29, and 35 (Month 55 to 78)
- Phase 7 – Projected Development Sites 19, 24, 30, 36, and 38 (Month 73 to 96)
- Phase 8 – Projected Development Sites 8, 9, 33, 34, and 37 (Month 91 to 120)

The construction methods for the Projected Development Sites generally include clearing the site and demolition of existing structures (although the vast majority of the sites are vacant), excavating the site, installing the foundation, constructing the superstructure and exterior cladding, followed by finishing the building interior.

Construction Noise Criteria

As discussed in the *CEQR Technical Manual*, Chapter 22 (Construction), Section 400, thresholds for significant construction noise impact are based on operational noise impact criteria. As described in Chapter 19 (Noise), Section 410, there would be significant noise impact from long-term operational conditions if ambient sound levels increase by 3 dBA (L_{eq}) or more and absolute levels would exceed 65 dBA L_{eq}, or, if No-Action ambient sound levels are 60 dBA L_{eq} or less if noise levels would increase by 5 dBA (L_{eq}) or more. Between 10:00 PM and 7:00 AM, when there is a greater sensitivity to noise, there would be significant impact from long-term operational conditions if ambient sound levels increase by 3 dBA (L_{eq}) regardless of whether No-Action or existing ambient sound levels exceed 60 dBA L_{eq}.

The detailed construction noise analysis evaluates the specific activities, types of equipment, duration of activities, and locations of nearby sensitive receptors. Based on the results of the detailed analysis, there would be significant adverse noise impact if construction noise due to the Proposed Actions exceeds the screening criteria for a prolonged period of 24 months or more. The 41 Projected Development Sites are located near existing residential and commercial land uses. Based on the proximity of these noise-sensitive land uses, there is the potential for construction noise levels to exceed the screening criteria.

The significance of construction noise effects depends on the intensity and duration of construction activities. If construction noise levels would exceed the screening criteria for 24 months or more, a detailed construction noise analysis is warranted and there is a potential for significant adverse noise impact. Construction noise occurring for shorter durations would not typically result in significant impact unless there is a higher intensity of noise. For example, construction may cause significant impact if noise would increase by 15 dBA or more above existing background ambient conditions for a prolonged period of 12 months or more, or by 20 dBA or more for a prolonged period of 3 months or more. These criteria apply to residential, hotel, and commercial office spaces, but do not apply to retail spaces.

Interior noise criteria for construction activities are similar to operational noise criteria which are 45 dBA (L_{10}) for residential and hotel locations and 50 dBA (L_{10}) for commercial office spaces.

Based on the results of the detailed analysis, there would be significant adverse noise impact if construction noise due to the Proposed Actions exceeds the following:

› A significant adverse noise impact would result if the maximum exterior noise level exceeds 85 dBA at ground-level receptors for a prolonged period of time, as indicated in the *CEQR Technical Manual* Public Health chapter.

The following criteria must all be met:

› Exterior construction noise levels exceed ambient levels by 3 to 5 dBA (depending on existing ambient level) for 24 continuous months or more, exceed ambient levels by 15 dBA or more for 12 continuous months or more, or exceed ambient levels by 20 dBA or more for 3 continuous months or more, and

› Interior construction noise levels exceed the interior noise criteria which are 45 dBA (L_{10}) for residential and hotel uses and 50 dBA (L_{10}) for commercial office uses.

Construction Noise Assessment Methodology

Construction activities for the Proposed Actions would be expected to result in increased noise levels as a result of (1) the operation of stationary construction equipment at the Projected Development Sites and (2) the movement of construction-related vehicles (i.e., worker vehicles and trucks to move material and equipment) on the roadways within the Project Area. The construction noise analysis includes the activities due to both on-site construction equipment and construction-related vehicle activities.

Construction noise has been evaluated using Cadna-A, a sound prediction model. The Cadna-A model implements the International Standards Organization standard 9613-2 "Outdoor Sound Propagation" which accounts for ground type, intervening objects such as buildings, sound reflections, and atmospheric conditions. The construction noise model assumes that the ground is acoustically hard (ground absorption coefficient of 0), that buildings have a brick façade with minimal acoustic absorption (0.07 or lower), and three orders of sound reflections.

A detailed modeling analysis was used to evaluate construction noise at existing receptors (e.g., residences, community facilities, and commercial office space) near the Projected Development Sites. Specifically, the construction noise analysis involved the following process:

1. A construction mobile source noise analysis was conducted to assess the potential increase in traffic noise due to construction vehicles (i.e., trucks and worker vehicles). Existing traffic volumes and existing with construction vehicle passenger car equivalents (PCEs) throughout all 27 intersections were determined for the morning period from 6:00 AM to 7:00 AM. Comparing the existing and existing with construction vehicle PCE values determine the incremental increase in traffic noise based on proportional noise modeling.
2. A noise intensity analysis was performed for the entire Development Phase based on the construction equipment and schedule at all sites. A construction noise intensity analysis provides an indication of the total construction noise emissions from the Project Area based on the equipment operating during each month and the utilization factor (percentage of time equipment with full horsepower used). The intensity analysis assumes that all construction equipment is operating simultaneously at the same location and does not account for noise control measures such as perimeter noise walls. Since the intensity analysis does not account for how equipment will be distributed

throughout all Projected Development Sites or within each site, the noise intensity levels do not represent the actual noise construction levels that would be received by nearby receptors. The noise intensity analysis provides an indication of which months of construction have the greatest potential for construction noise impact.

3. The months to be included in the detailed analysis were selected to include an analysis for each the four phases of construction (i.e., demolition, excavation/foundation, superstructure, and interior fitout) for each Development Phase (i.e., 1 to 8).
4. The detailed analysis includes construction equipment within each applicable Projected Development Site and a standard 8-foot perimeter noise wall. Noise from construction equipment is distributed across all Projected Development Sites where construction occurs during that month. For example, Month 4 would have construction activities at Development Phases 1 and 3 simultaneously. Phase 1 has two Projected Development Sites and Phase 3 has three Projected Development Sites. The noise intensity level for Phase 1 was equally distributed over the two Projected Development Sites and the intensity level for Phase 3 was equally distributed over the three projected Development Sites.
5. Existing noise levels were determined for all receptors within the Study Area. Noise levels were measured at several locations throughout the Project Area (see **Figure 15-1** in the **Noise** section). The existing noise level at all receptors was based on the proximity to the nearest measurement site and whether the receptor is on a street with similar traffic volumes as the measurement site.
6. The detailed analysis evaluates construction noise levels at each noise-sensitive building in the Project Area and each façade of the building (including each floor of the buildings) using the Cadna-A Building Evaluation Tool. Construction noise levels for each receptor were calculated for each analysis month. The increase in exterior noise level over ambient was computed and the total future interior noise level (ambient and construction sources) was estimated. An outdoor-to-indoor noise reduction of 25 dBA has been assumed for all noise receptors based on visual inspection of the residential buildings in the area.
7. The potential for a significant adverse construction noise impact was assessed at each receptor according to the impact criteria which address duration of construction, increase in exterior noise levels above ambient levels, and whether interior noise levels exceed the applicable criterion (i.e., 45 dBA for residences and community facilities and 50 dBA for commercial office space). See **Appendix ~~E~~D** for all construction noise results at each receptor.

Construction Mobile Source Noise Assessment

Construction mobile sources include worker vehicles and trucks. Construction noise has been evaluated for the construction mobile source peak period from 6:00 AM to 7:00 AM. During this period, there would be no construction noise from stationary sources. Construction mobile source noise between 7:00 AM and 8:00 AM has been evaluated and included with noise from stationary sources. The construction mobile source noise assessment evaluated the 27 intersections listed in the **Noise** section.

The potential for construction mobile sources to increase ambient sound conditions has been determined based on proportional modeling of noise PCEs. If construction mobile

sources would result in a doubling or more of PCEs, it would result in a 3 dBA or greater increase in noise levels. If PCEs would not double during construction, there would not be a significant adverse vehicular noise impact, and no further mobile source noise analysis is warranted. The *2020 CEQR Technical Manual* describes the process to determine PCEs. Vehicle classes are defined to have the following PCEs based on typical vehicles speeds:

- Each automobile or light truck: 1 noise PCE
- Each medium truck: 13 noise PCEs
- Each bus: 18 noise PCEs
- Each heavy truck: 47 noise PCEs

Increases in noise due to construction mobile sources are calculated using the following equation:

$$Sound\ Level\ Increase\ (Leq) = 10 * \log\left(\frac{Existing\ and\ Construction\ PCEs}{Existing\ PCEs}\right)$$

Automated traffic recorder (ATR) data was collected over 24-hours at 34 locations throughout the study area. The total traffic volumes across all 34 ATRs between 6:00 AM and 7:00 AM was 66 percent of the traffic volumes between 7:30 and 8:30 AM when the morning peak period traffic conditions occur. Therefore, as shown in **Table 18-4** the existing traffic volumes without construction vehicles were assumed to be 66 percent of the peak morning PCE values.

As described in the **Construction Traffic** section, the peak construction vehicle trips during the peak construction quarter (first quarter of 2024) would include 83 automobiles and 25 truck trips in the 6:00 AM to 7:00 AM period. These vehicle trips would be distributed throughout the Project Area.

As shown in **Table 18-4** noise from construction mobile sources between 6:00 AM and 7:00 AM would typically increase by 0.1 to 1.1 dBA compared to the existing condition with a maximum of 1.2 dBA at the intersection of Beach Channel Drive and Beach 49th Street. As the mobile source noise levels during the With-Action condition would not increase by 3 dBA or more, there would be no significant adverse noise impact.

Table 18-4 Construction Mobile Source Noise Analysis

Site	Intersection	Existing (6:00 to 7:00 AM) PCEs	Existing with Construction PCEs	Construction Mobile Source Sound Increase (dBA)
1	Beach Channel Drive/Seagirt Boulevard and Beach 35th Street	3,962	5,156	1.1
2	Beach Channel Drive and Beach 37th Street	4,378	5,572	1.0
3	Beach Channel Drive and Beach 40th Street	3,959	5,134	1.1
4	Beach Channel Drive and Beach 44th Street	3,951	5,126	1.1
5	Beach Channel Drive and Beach 49th Street	3,609	4,784	1.2
6	Beach Channel Drive and Beach 62nd Street	4,948	6,142	0.9
7	Arverne Boulevard and Beach 56th Street	850	869	0.1
8	Rockaway Beach Boulevard and Beach 38th Street	699	718	0.1
9	Rockaway Beach Boulevard and Beach 41st Street	730	748	0.1
10	Rockaway Beach Boulevard and Beach 44th Street	752	776	0.1
11	Rockaway Beach Boulevard and Beach 49th Street	1,673	1,693	0.1
12	Rockaway Beach Boulevard and Beach 56th Street	1,850	1,854	0.0
13	Rockaway Beach Boulevard and Beach 59th Street	2,436	2,440	0.0
14	Rockaway Freeway and Beach 56th Street	773	773	0.0
15	Seagirt Boulevard and Rockaway Freeway	3,591	3,621	0.0
16	Seagirt Boulevard/Edgemere Ave and Beach 32nd Street	3,856	3,867	0.0
17	Edgemere Avenue and Beach 44th Street	1,561	1,565	0.0
18	Arverne Boulevard and Beach 59th Street	1,194	1,214	0.1
19	Rockaway Beach Boulevard and Beach 59th Street	807	807	0.0
20	Arverne Blvd/Rockaway Boulevard and Beach 54th Street	1,293	1,312	0.1
21	Rockaway Freeway and Beach 54th Street	1,024	1,024	0.0
22	Edgemere Avenue and Beach 54th Street	1,573	1,578	0.0
23	Rockaway Beach Boulevard and Beach 50th Street	1,603	1,623	0.1
24	Rockaway Freeway and Beach 44th Street	1,058	1,062	0.0
25	Beach Channel Drive and Beach 50th Street	3,951	5,126	1.1
26	Edgemere Avenue and Beach 41st Street	1,588	1,628	0.1
27	Edgemere Avenue and Beach 38th Street	1,370	1,410	0.1

Source: VHB, 2021

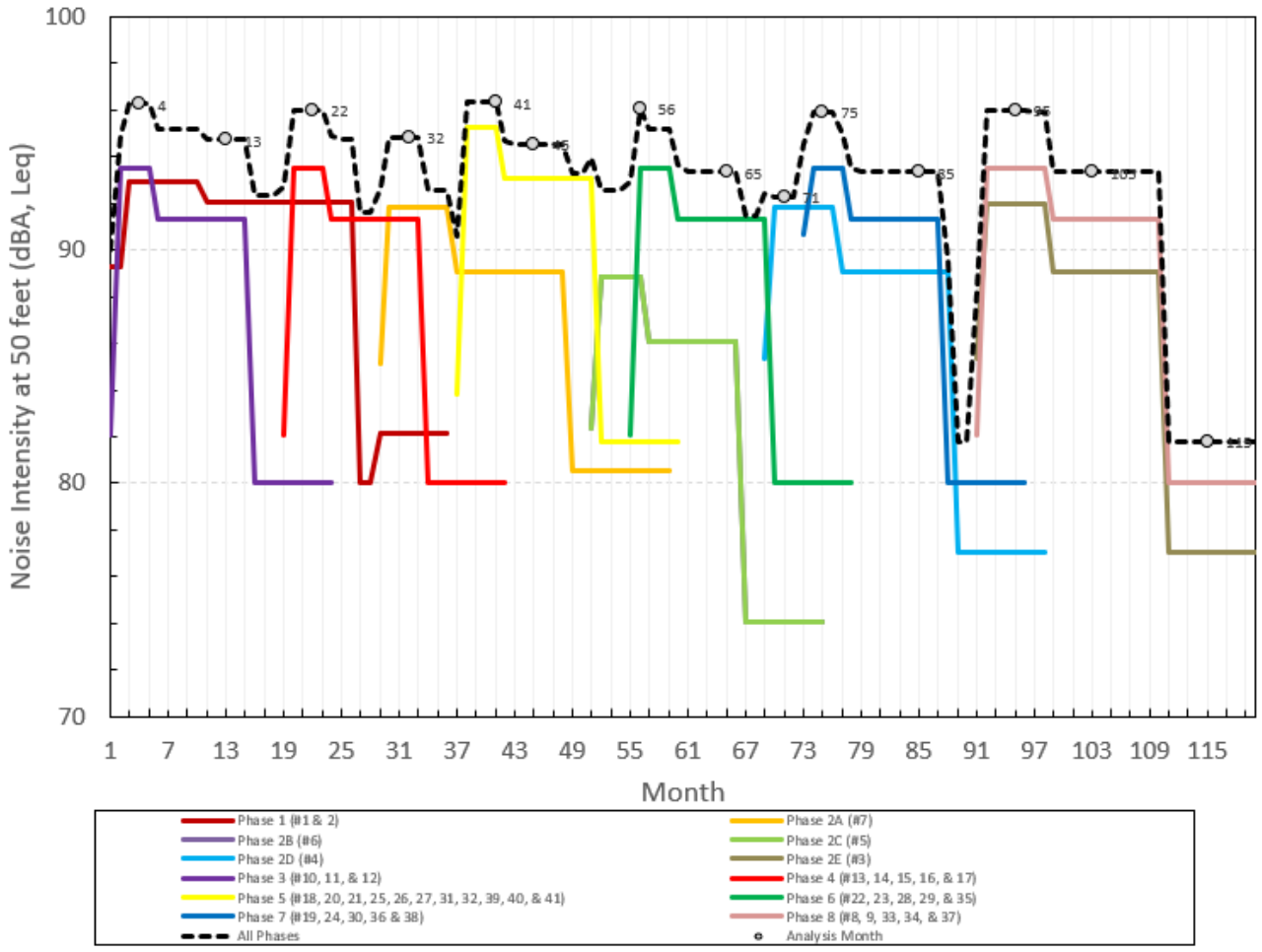
Construction Noise Intensity

A construction noise intensity analysis was conducted for the entire Development Phase based on the construction equipment and schedule at all sites. As shown in **Figure 18-4**, the noise intensity for each Phase of Development (i.e., Phase 1, Phase 2, etc.) shows the following construction noise emissions:

- The demolition phase of construction is typically in the low to mid 80's dBA and lasts for one month;
- The excavation and foundation phase of construction generally has the highest noise intensity level with sound levels in the low to mid 90's dBA lasting typically for 3 to 6 months;
- The superstructure phase of construction has noise intensity levels ranging from the upper 80's to lower 90's dBA lasting for approximately 8 to 10 months; and,
- The interior fit out phase of construction has noise intensity levels from 77 to 80 dBA and lasts for approximately 8 months.

The cumulative noise intensity of all phases of construction and all Development Phases (dotted black line) shows that the noise intensity level typically ranges from low to mid 90's dBA with the highest levels occurring during the excavation/foundation phase of construction.

Figure 18-4 Construction Noise Intensity Analysis



Source: VHB, 2021.

Based on this construction noise intensity analysis, noise has been evaluated during the following months (grey circles) and respective duration in months: 4 (10), 13 (8), 22 (10), 32 (8), 41 (6), 45 (8), 56 (9), 65 (9), 71 (5), 75 (5), 85 (12), 95 (8), 103 (12), and 115 (10).

Table 18-5 presents the type of equipment, the maximum sound level at 50 feet, utilization factors (percentage of time the equipment is operating at full power), and the estimated number of pieces of equipment used for each month of analysis based on the *CEQR Technical Manual*. These equipment assumptions are based on conceptual site plans and construction schedules. Therefore, these represent a worst-case condition in regard to the number of pieces of construction equipment and the duration of construction activities. This table does not include trucks at the project site such as box trucks, pickup trucks, tractor trailers, packer trucks, container trucks, and dump trucks since they are not allowed to idle more than three minutes in accordance with New York City Administrative Code §24-163.

Table 18-5 Construction Equipment Noise Emissions and Quantities by Month of Analysis

Equipment	Max Sound Level at 50 feet (dBA)	Utilization Factor (%)	Quantity by Month													
			4	13	22	32	41	45	56	65	71	75	85	95	103	115
Backhoe	80	40	4	0	2	1	3	0	3	0	1	3	0	3	0	0
Cherry Picker	84	40	5	4	4	4	4	4	4	3	2	4	3	4	3	0
Compressor	80	40	5	0	2	2	3	0	4	0	2	4	0	3	0	0
Concrete Mixing Truck	85	40	5	8	6	6	5	8	4	6	2	4	6	5	6	0
Concrete Pump Truck	82	20	5	4	4	4	4	4	4	3	2	4	3	3	3	0
Concrete Saw	90	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crane	85	16	3	10	10	7	8	9	7	7	4	6	7	6	7	3
Forklift	85	20	5	4	4	5	4	4	5	3	2	4	3	4	3	0
Generator	82	50	0	2	2	0	1	1	0	1	0	0	1	0	1	0
Jack Hammer	85	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Loader	80	40	5	0	2	2	3	0	4	0	2	4	0	4	0	0
Pile Driver	95	20	3	0	2	1	3	0	3	0	1	3	0	3	0	0
Spray Pump	77	50	0	4	2	2	1	4	0	3	0	0	3	0	3	0
Valla	85	16	0	8	4	4	2	8	0	6	0	0	6	0	6	0

Source: VHB, 2021

Construction Stationary Source Noise Assessment

A detailed analysis was conducted of stationary construction equipment at each noise-sensitive building in the Project Area and each façade of the building (includes each floor of the buildings). The analysis includes estimating the existing ambient sound level at each receptor location, predicting future noise levels with construction activities during each analysis month, estimating interior noise levels, and assessing impact according to applicable criteria.

Existing Sound Levels

Existing ambient sound levels (L_{eq}) at all receptor locations have been determined based on the measurements conducted throughout the Project Area during the morning (8:00 AM to 9:00 AM) as shown in **Table 18-6**. The ambient sound level at each receptor was determined based on the measured sound level at the closest measurement location with similar traffic conditions. Based on this analysis, the existing ambient sound levels range from 53.9 to 75.0 dBA (L_{eq}).

Table 18-6 Ambient Sound Level Measurements

Site	Location	Existing Ambient (8:00 to 9:00 AM) (dBA, L_{eq})
1	Rockaway Beach Boulevard and Beach 41st Street	69.0
2	Beach 41st Street between Rockaway Beach Boulevard and Rockaway Freeway	66.9
3	Rockaway Freeway and Beach 41st Street	71.4
4	Beach 49th Street between Beach Channel Drive and Rockaway Beach Boulevard	61.4
5	Beach Channel Drive and Beach 48th Street	70.7
6	Beach 42nd Street between Beach Channel Drive and Rockaway Beach Boulevard	57.1
7	Norton Avenue and Beach 42nd Street	59.0
8	Beach 46th Street between Norton Avenue and Beach Channel Drive	53.9
9	Beach 44th Street between Hough Place and Beach Channel Drive	57.3
10	Beach Channel Drive and Beach 43rd Street	75.0
11	Beach 45th Street between Norton Avenue and Beach Channel Drive	57.8
A	Beach Channel Drive between Beach 50th and Beach 53rd Street	68.5
B	Rockaway Boulevard between Beach 50th and Beach 53rd Street	69.0
C	Beach 52nd Street and Rockaway Freeway	71.0
D	Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard	60.1
E	Beach 50th Street between Beach Channel Drive and Rockaway Beach Boulevard	67.1

Source: VHB, 2021 and Peninsula Hospital Site Redevelopment FEIS, 2018

Construction Noise Levels

Exterior and interior construction noise levels for each receptor were calculated for each analysis month including an 8-foot-tall perimeter noise wall around each Projected Development Site. Based on observations of the residential buildings in the Project Area, it is assumed that the buildings provide 25 dBA of outdoor-to-indoor noise reduction.

Figure 18-4~~Figure 18-5~~ presents the loudest construction noise level among the results for each analysis month. The construction noise level also represents the loudest result on all facades and all floors of the building. This shows that maximum construction noise would be in the mid-80's dBA or higher at receptors that are immediately adjacent to the Projected Development Sites. Noise levels are typically 70 to 80 dBA at receptors that are within approximately 125 feet of the Projected Development Sites. Noise levels are typically 60 to 70 dBA at receptors that are within approximately 300 feet of the Projected Development

Sites. Based on the typical outdoor-to-indoor noise reduction of 25 dBA, construction noise levels would typically exceed the residential interior impact threshold (45 dBA L_{10}) within approximately 200 feet of the Projected Development Sites.

Construction noise levels at receptors five feet above the ground are generally lower than the results at all building floors due to the perimeter noise barriers. Construction noise levels five feet above the ground do not exceed 85 dBA at any receptor location. Therefore, construction noise would not cause a significant adverse impact due to the Public Health noise criterion.

Construction Noise Impact Assessment

Exterior construction noise levels were compared to the existing ambient condition to determine the increase in ambient noise during each analysis month. Interior construction noise levels were similarly evaluated for each analysis month. The number of continuous months that construction noise levels would exceed the interior impact criterion and increase ambient levels by 3 to 5 dBA for 24 months or longer, increase ambient levels by 15 months for 12 months or longer, or increase ambient levels by 20 dBA for 3 months or longer were calculated.

As shown in **Figure 18-5**~~**Figure 18-6**~~, there would be significant construction noise impact at receptors near the Projected Development Sites throughout the Project Area due to the close proximity of receptors to the Projected Development Sites and the relatively low existing ambient sound levels.

- There would be a total of 135 receptors where construction noise levels would increase by 20 dBA or more over ambient conditions and exceed the interior noise criterion for 3 months or longer. These impacts are generally within 50 feet of most Projected Development Sites.
- There would be a total of 62 receptors where construction noise levels would increase by 15 dBA or more over ambient conditions and exceed the interior criterion for 12 months or longer. These impacts are generally within 50 to 100 feet of most Projected Development Sites.
- There would also be 54 receptors where construction noise levels would increase by 3 to 5 dBA (depending on ambient level) and exceed the interior criterion for 24 months or longer. These impacts are generally within 100 to 200 feet of most Projected Development Sites.

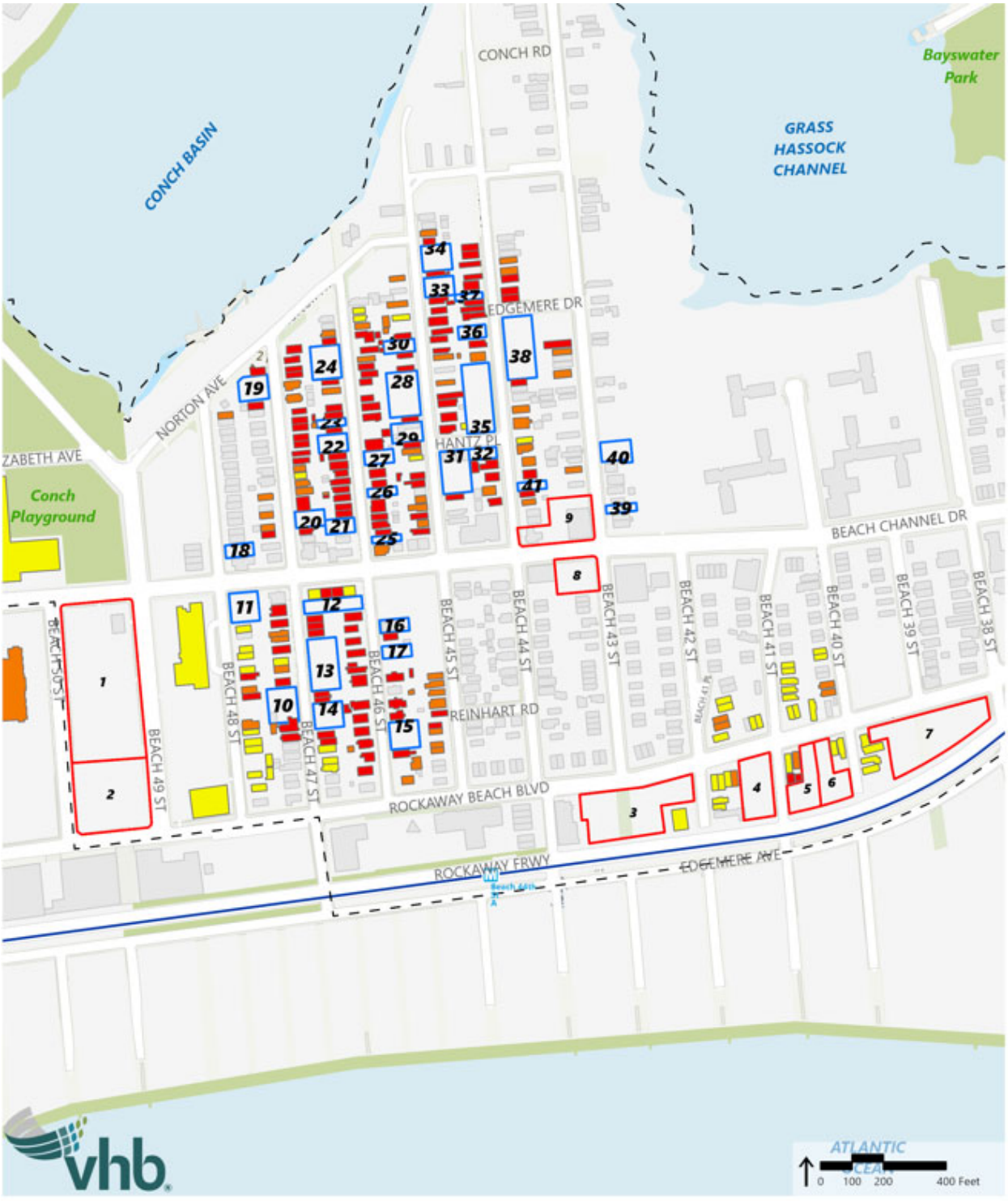
In total there would be significant adverse noise impact at 251 receptors throughout the Project Area. The impact is due primarily to the relatively quiet existing ambient sound level in the Project Area, the close proximity of receptors to the Projected Development Sites, and the duration of construction activities throughout the Project Area. As stated previously, the equipment assumptions are based on conceptual site plans and construction schedules and represent a worst-case condition. Actual construction noise may be of less magnitude or shorter duration particularly due to the relatively small size of most of the Projected Residential Infill Sites (Sites 10 through 41). Therefore, this construction noise assessment presents a conservative estimate of the potential for noise impact throughout the Project Area.

Figure 18-4 Construction Noise Level Results



Source: VHB, 2021.

Figure 18-5 Construction Noise Assessment Results



Source: VHB, 2021.

Vibration

Construction activities have the potential to generate ground-borne vibration that can potentially cause structural or architectural damage or annoy people in nearby vibration-sensitive spaces, such as residences. The most substantial sources of construction vibration are equipment associated with the excavation and foundation phase, such as pile drivers, bulldozers, and jack hammers. Vehicles such as trucks typically do not exceed the thresholds for potential structural damage even for the most fragile structures susceptible to vibration.

Buildings with the greatest potential for vibration impact are historic buildings and individual landmarks listed by the NYC LPC, however, no buildings within the Project Area are listed as such, therefore, there would be no significant adverse construction vibration impact. For non-historic buildings and structures adjacent to Proposed Development Sites, there is a potential for vibration damage or annoyance.

Construction vibration from pile driving may generate vibration levels that exceed the threshold potential damage for most buildings (0.5 in/s) within 29 feet. The distances to potential structural damage from most other construction equipment (i.e., drilling, bulldozers, or jackhammers) is 8 feet or less. Therefore, there is limited potential for structural damage to most buildings from most construction activities.

In terms of construction vibration causing potential annoyance, the threshold for potential annoyance is typically 75 VdB inside buildings. Assuming a 10 VdB outdoor to indoor vibration attenuation, there is potential for human annoyance within 107 feet from pile driving and up to 29 feet for most other equipment. These construction activities would only occur for limited periods of time at any particular location. Therefore, there would be no significant adverse impact as a result of construction vibration (**Table 18-7**).

Table 18-7 Vibration Source Levels for Construction Equipment

Equipment	Vibration Level at 25 feet (PPV, in/s)	Distance to Potential Structural Damage for 0.5 in/s threshold (feet)	Distance to Potential Annoyance for 75 VdB threshold (feet)
Impact Pile Driver (typical)	0.644	29	107
Drilling	0.089	8	29
Large Bulldozer	0.089	8	29
Small Bulldozer	0.003	1	3
Jackhammer	0.035	4	16

Source: Transit Noise and Vibration Impact Assessment, FTA-VA-90-1003-06, 2006.

Land Use and Neighborhood Character

According to the *CEQR Technical Manual*, a construction impact analysis for land use and neighborhood character is typically needed if construction requires continuous use of property for an extended duration, thereby having the potential to affect that land use and/or neighborhood character. A land use and neighborhood character assessment for construction impacts examines construction activities at a site (or portions of the site) and the duration. The analysis determines whether the type and duration of the activities would

affect neighborhood land use patterns or neighborhood character. For example, a single property might be used for staging for several years, resulting in a "land use" that is industrial in nature. Depending upon the types of land uses in the surrounding area, the use of a single piece of property for an extended duration and its compatibility with surrounding properties may be assessed to determine whether it would have a significant adverse impact on the surrounding land uses or neighborhood character.

Construction of the 41 Projected Development Sites would be phased from 2023 to 2031, throughout an approximately 22-block area. As noted above, construction of most of the Projected Development Sites (32 sites) would be short-term (i.e., lasting less than 24 months). Construction activities resulting from the Proposed Actions would affect land use on the development sites but would not alter surrounding land uses. As is typical with construction projects, during periods of construction there would be some disruption, predominantly noise, in the immediate vicinity of these sites. There would also be construction trucks and construction workers travelling to the various development sites. There would also be noise, sometimes intrusive, from building construction as well as trucks and other vehicles backing up, loading, and unloading. These disruptions would be temporary with limited effects on land uses in the study area, particularly as construction activities would be located within each of the development sites.

Throughout the construction period, as required by City regulations, access to residences, businesses, and institutions in the area surrounding the development sites must be maintained. In addition, as discussed in detail above in the **Air Quality**, **Noise,** and **Vibration** sections, measures would be implemented to control air pollutant emissions, noise, and vibration on construction sites. While construction of the new buildings under the Proposed Actions would cause temporary disruption, particularly related to noise, it is expected that such effects in any given area would be relatively short in duration, even under the worst-case construction sequencing and, therefore, would not create a neighborhood character impact. Therefore, no significant adverse construction impacts to land use and neighborhood character are expected.

Socioeconomic Conditions

According to the *CEQR Technical Manual*, construction impacts on socioeconomic conditions are possible if a proposed action would involve construction of a long duration that could affect access to and the viability of businesses, and if the failure of those businesses has the potential to affect neighborhood character.

Construction could, in some instances, temporarily affect pedestrian and vehicular access on street frontages immediately adjacent to the development sites. However, lane and/or sidewalk closures are not expected during construction and therefore, would not restrict access to any existing or planned retail businesses (i.e., alternative access routes need to be provided). Utility service would also be maintained to all businesses, although there may be very short-term interruptions (i.e., hours) when new equipment (e.g., a transformer, or a sewer or water line) is put into operation. Overall, construction resulting from the Proposed Actions is not expected to result in any significant adverse impacts on surrounding businesses.

Construction would create direct benefits resulting from expenditures on labor, materials, and services. Construction activities would also create indirect benefits created by expenditures by materials suppliers, construction workers, and other employees at the project sites. Construction would also contribute to increased tax revenues for New York City and New York State, including those from personal income taxes.

Community Facilities

According to the *CEQR Technical Manual*, construction impacts to community facilities are possible if a community facility were directly affected by construction (e.g., if construction would disrupt services provided at the facility or close the facility temporarily, etc.).

The construction sites would be surrounded by construction fencing and barriers that would limit the potential for impacts of construction on nearby community facilities. Construction of the projected buildings would not block or restrict access to any facilities in the area and would not affect emergency response times of the NYPD and FDNY given the geographic distribution of the police and fire facilities and their respective coverage areas.

Engine 265, Ladder 121 and Battalion 47/FDNY EMS Station 47 is located at 303 Beach 49th Street, Far Rockaway, with frontage on Rockaway Beach Boulevard between Beach 48th and Beach 49th Streets. While Projected Development Sites 1 and 2 would be constructed on the block immediately west of this FDNY facility. no construction activities would interfere with the operations of or access to the FDNY facility. Therefore, no construction impacts would be expected to community facilities as a result of the Proposed Actions.

Open Space

According to the *CEQR Technical Manual*, construction impacts to open space are possible if the open space is taken out of service for a period of time during the construction process. As described in **Chapter 5, Open Space** there are no publicly accessible open spaces on any of the Projected Development Sites. While one of the Projected Development Sites (Site 1) is located near existing open space resources (Conch Playground), no access to publicly accessible open space would be impeded during construction within the Project Area. In addition, measures would be implemented across all Projected Development Sites to control air emissions, dust, noise, and vibration on the construction sites. While construction under the Proposed Actions may cause temporary disruptions to the community, particularly related to noise, it is expected that such disruptions in any given area would be temporary and would not be ongoing for the full duration of the construction period. As shown in **Figure 18-1**, there are no existing publicly accessible open space resources within the areas where potential significant adverse construction noise impacts are identified.

Historic and Cultural Resources

According to the *CEQR Technical Manual*, a construction assessment is needed for historic and cultural resources if the project involves construction within 400 feet of a historic resource. An assessment of potential impacts on historic and cultural resources (including both archaeological and architectural resources) is described in **Chapter 7, Historic and Cultural Resources**.

There is one historic resource within 400 feet of Projected Development Site 7, the S/NR eligible St. Gertrude the Good Church Complex. There are no archaeological resources within the historic resources study area. The NYC LPC indicated that there would be no adverse impacts to any of these historic resources anticipated as a result of the Proposed Actions (Santucci 1/14/2021, **Appendix B**).

Hazardous Materials

As discussed in greater detail in **Chapter 10, Hazardous Materials**, the potential for significant adverse impacts related to hazardous materials resulting from the Proposed Actions would be precluded through the placement of institutional controls such as (E) designations and LDAs for the Projected Development Sites identified with potential hazardous or contaminated materials concerns. The OER (or in the case of City-owned Lots, NYCDEP) would provide regulatory oversight of the environmental scope, including investigations and remediation during the development process and prior to occupancy. In summary, the Proposed Actions may increase exposure pathways for hazardous materials due to various environmental conditions identified during the analyses. However, all sites assigned institutional controls would be required to be developed under regulatory oversight. This would ensure investigation, mitigation, and remediation of any hazardous materials under the Proposed Actions would be completed in a safe, and comprehensive manner to the maximum extent practicable.

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Mitigation

In accordance with the *2020 City Environmental Quality Review (CEQR) Technical Manual,* where significant adverse impacts are identified, mitigation measures to reduce or eliminate the impacts to the fullest extent practicable are to be developed and evaluated.

Introduction

As detailed in the preceding chapters, upon completion, the Proposed Actions have the potential to result in significant adverse early childhood programs, active open space, traffic, transit, mobile air source impacts, and construction noise at certain locations. Mitigation measures have been identified to address those impacts where feasible and/or practical. As discussed below in more detail, partial mitigation is proposed for some of the significant adverse impacts of the Proposed Actions. If no mitigation has been identified, an unavoidable significant adverse impact may result.

Principal Conclusions

Community Facilities and Services

The Proposed Actions would result in a significant adverse impact on publicly funded childcare and Head Start Centers. Possible mitigation measures may include provision of suitable space on-site for a childcare center, provision of a suitable location off-site and within a reasonable distance (at a rate affordable to DOE providers), or funding or making program or physical improvements to support adding capacity to existing facilities if

determined feasible through consultation with DOE's Division of Early Childhood Education, or providing new early childhood programs within or near the Projected Development Sites. As described below, at this time, it is not feasible to determine precise mitigation measures that would be appropriate for the study area. The childcare analysis is conservatively based on the existing inventory of publicly funded early childhood programs in the area and does not reflect likely shifts in demand or the creation of new childcare capacity. Because this impact would remain unmitigated, further discussion of this technical area is provided in **Chapter 21, Unavoidable Adverse Impacts**.

Open Space

Based on detailed analysis of indirect effects on open space, the Proposed Actions would result in a significant adverse impact to open space due to reduced active open space ratios. The Project Area is located in an area that is neither underserved nor well-served by publicly accessible open space. In spite of the anticipated increase in residential population that would result from the Proposed Actions within the open space study area, the total and passive open space ratios of acres per 1,000 residents would continue to exceed city guidelines. The active open space ratio would decrease from 1.01 acres per 1,000 residents in the No-Action condition to 0.94 in the With-Action condition, a percent change of -6.93. As such, the active open space ratio would continue to be below city guidelines of 1.5 acres. Therefore, a significant adverse impact to active open space is anticipated.

The *CEQR Technical Manual* lists potential mitigation measures for open space impacts. These measures include, but are not limited to, creating new open space within the study area; funding for improvements, renovation, or maintenance at existing local parks; or improving existing open spaces to increase their utility or capacity to meet identified open space needs in the area, such as through the provision of additional open space facilities. As described below, while a variety of qualitative considerations have been identified that could help to ameliorate the active open space impact, no feasible mitigation measures have been identified to eliminate this impact. Because this impact would remain unmitigated, further discussion of this technical area is provided in **Chapter 21, Unavoidable Adverse Impacts.**

Transportation

Of the 27 intersections analyzed, the Proposed Actions would result in significant adverse traffic impacts at 13 intersections during the weekday AM peak hour, 12 intersections during the weekday midday peak hour, 13 intersections during the weekday PM peak hour, and 11 intersections during the Saturday peak hour. Some of the impacts could be fully mitigated with implementation of an all-way stop control, signal phasing and timing modifications, and lane configuration changes, which are subject to review and approval by the New York City Department of Transportation (NYCDOT). These measures would provide full mitigation for seven of the 13 intersections significantly impacted in the weekday AM peak hour, ~~four~~five of the 12 intersections impacted in the weekday midday peak hour, six of the 13 intersections impacted in the weekday PM peak hour, and six of the 11 intersections impacted in the Saturday peak hour. In terms of significantly impacted movements, the measures would fully mitigate 15 out of 27 movements impacted in the weekday AM peak hour, ~~five~~six out of 17 movements impacted during the weekday midday peak hour, 11 out

of 22 movements impacted in the weekday PM peak hour, and seven out of 14 movements impacted in the Saturday peak hour.

One or more traffic movements at the following intersections could not be mitigated in at least one peak hour:

- Beach Channel Drive and Beach 37th Street (all four peak hours)
- Beach Channel Drive and Beach 40th Street (weekday midday, weekday PM and Saturday peak hours)
- Beach Channel Drive and Beach 44th Street (weekday midday peak hour)
- Beach Channel Drive and Arverne Boulevard and Beach 62nd Street (all four peak hours)
- Edgemere Avenue and Beach 41st Street (weekday AM and weekday PM peak hours)
- Edgemere Avenue and Beach 54th Street (weekday AM and weekday PM peak hours)
- Rockaway Beach Boulevard and Beach 59th Street (all four peak hours)
- Beach Channel Drive and Beach 49th Street (weekday midday peak)
- Beach Channel Drive and Beach 50th Street (all four peak hours)
- ~~Rockaway Beach Boulevard and Beach 49th Street (weekday midday peak)~~

The Q22 bus is expected to be significantly impacted by the Proposed Actions in the weekday AM and PM peak hours in both the eastbound and westbound directions. The introduction of one additional bus in each direction in both peak hours would fully accommodate future projected demand. Implementation of these service changes requires approval and implementation by the operator (MTA Bus Company) and is subject to fiscal and operational constraints. Overall, with the proposed service adjustment, the Q22 bus route in the weekday AM peak hour would be able to accommodate 46 additional passengers in the eastbound direction and 50 additional passengers in the westbound direction. In the weekday PM peak hour, the Q22 route would be able to accommodate 42 and 33 additional passengers, in the eastbound and westbound directions, respectively.

Currently there is no marked crossing in the north/south direction on Rockaway Beach Boulevard between Beach ~~39th~~45th Street and Beach 53rd Street. As a result, it is likely that pedestrians en route to and from ~~projected developments sites~~Projected Development Sites 1 and 2 would choose to cross Rockaway Beach Boulevard at a proximate location where a marked crosswalk is not present, such as at the ~~intersections~~intersection of Rockaway Beach Boulevard at Beach ~~40th Street, Beach 41st Street, Beach 42nd Street, Beach 44th Street, Beach 47th Street and Beach~~ 49th Street. This would have the potential for a significant pedestrian safety impact. The installation of new pedestrian crossings ~~at~~as part of the ~~locations listed above would fully mitigate the Proposed Action's potential for a pedestrian safety impact. A new crossing would involve the installation of a new~~proposed traffic ~~signal, a new~~ control conversion from a two-way stop control to all-way stop control~~, or an Enhanced Pedestrian crossing. Between the DEIS and FEIS, the appropriate traffic control measure to be installed will be finalized in consultation with the lead agency and NYCDOT to~~ at this location would facilitate the safe and efficient movement of pedestrians crossing Rockaway Beach Boulevard. ~~If, however, no control device is found to be warranted or~~Therefore, this proposed measure would fully mitigate the Proposed Action's potential for a pedestrian safety impact. However, these improvements are under further review by

NYCDOT. In the event these improvements are not feasible, the ~~significant pedestrian safety~~ impact would remain unmitigated.

Air Quality

The air quality analysis demonstrated that one intersection would be adversely impacted by the With-Action traffic emissions. Results of the air quality analysis for the intersection of Beach Channel Drive and Beach 37th Street were above the CEQR *de minimis* annual threshold. In order to mitigate the impact, the intersection's signal phasing plan was modified to improve traffic flow along Beach Channel Drive as described in the **Traffic** section below. The mitigated scenario improved traffic speeds. As a result, the mitigation was able to eliminate the air quality impact and reduce emissions to a level that meets the CEQR *de minimis* annual criteria. Therefore, with the proposed traffic mitigation measure in place, no significant adverse air quality impacts are anticipated.

Construction

The construction analysis showed a significant adverse impact on noise as a result of the Proposed Actions.

Community Facilities and Services

Early Childhood Programs

As discussed in **Chapter 4, Community Facilities and Services**, the Proposed Actions would result in a significant adverse impact on publicly funded childcare and Head Start Centers according to the thresholds set forth by the *CEQR Technical Manual*.

There are seven publicly funded early childhood programs within the 1.5-mile radius study area. These early childhood programs have a total capacity of 537 seats and have 49 available seats or a collective utilization of 90.88 percent. In the No-Action condition, there are five planned or proposed developments which would introduce a total of 4,672 affordable units and 657 childcare-eligible children resulting in a utilization rate of 213.1 percent. In the With-Action condition, the Proposed Actions would introduce 470 affordable units resulting in an increment of 66 additional childcare-eligible children. This would increase the projected enrollment to 1,211 children, and early childhood program facilities would operate with a capacity at 225.4 percent utilization. The Proposed Actions would decrease the total available slots and change the utilization by 12.39 percent, which exceeds the five percent threshold set by the *CEQR Technical Manual* or a significant adverse impact on early childhood programs.

Given the planned and proposed developments within the 1.5-mile radius study area, mitigation measures would need to be undertaken to avoid significant adverse impacts. For example, a suggested mitigation strategy for two developments – the Peninsula Hospital Site Redevelopment and Downtown Far Rockaway Rezoning – would be to introduce 426 childcare slots to the study area for a total capacity of 963. With this mitigation, the study area would only operate at a deficit of 2,486 slots and the study area utilization rate would be 125.75 percent. The change in utilization for the Proposed Actions would be 6.96 percent.

Accounting for mitigation by the above developments for their childcare impacts, the Proposed Actions could result in the provision or 15 childcare slots within the Projected Developments or pay for them to be provided offsite. Alternatively, the impact could be eliminated by reducing the number of affordable units provided from 470 to 342 to ensure that the Proposed Actions do not result in impacts to childcare services. ~~Consideration of providing additional childcare facility capacity and/or other measures is being explored in consultation with ACS and will be further explored between DEIS and FEIS.~~

Several factors may reduce the number of children in need of slots for publicly funded early childhood programs slots in DOE-contracted early childhood facilities. Families in the study area could make use of alternatives to publicly funded early childhood programs. There are slots at homes licensed to provide family-based early childhood programs that families of eligible children could elect to use instead of public early childhood programs. As noted above, these facilities provide additional slots in the study area but are not included in the quantitative analysis. Parents of eligible children are also not restricted to enrolling their children in childcare facilities in a specific geographical area and could use public early childhood programs outside of the study area.

Possible mitigation measures for this significant adverse impact may include provision of suitable space on-site for a childcare center, provision of a suitable location off-site and within a reasonable distance (at a rate affordable to DOE providers), or funding or making program or physical improvements to support adding capacity to existing facilities if determined feasible through consultation with DOE's Division of Early Childhood Education, or providing new early childhood programs within or near the project sites. As a City agency, DOE does not directly provide new childcare facilities, instead it contracts with providers in areas of need. DOE is also working to create public/private partnerships to facilitate the development of new early childhood programs where there is an area of need. As part of that initiative, DOE may be able to contribute capital funding, if it is available, towards such projects to facilitate the provision of new programs.

It is important to note, however, that publicly funded childcare is not only dependent on the number of new residential units that are introduced to an area but also to the number of families that meet the income eligibility requirements for these programs. In other words, new residents, including children, to the Project Area from the Proposed Actions and future developments may not all meet the income thresholds. At this time, it is not feasible to determine precise mitigation measures that would be appropriate for the study area. The childcare analysis is conservatively based on the existing inventory of publicly funded early childhood programs in the area and does not reflect likely shifts in demand or the creation of new childcare capacity. Because this impact would remain unmitigated, further discussion of this technical area is provided in **Chapter 21, Unavoidable Adverse Impacts**.

Open Space

Active Open Space

As discussed in **Chapter 5, Open Space,** the Proposed Actions would result in significant impacts to active open space resources in the study area. Based on detailed analysis of indirect effects on open space, the Proposed Actions would result in a significant adverse

impact to open space due to reduced active open space ratios. The Project Area is located in an area that is neither underserved nor well-served by publicly accessible open space. Despite the anticipated increase in residential population that would result from the Proposed Actions within the open space study area, the total and passive open space ratios of acres per 1,000 residents would continue to exceed city guidelines. The active open space ratio would decrease from 1.01 acres per 1,000 residents in the No-Action condition to 0.94 in the With-Action condition, a percent change of -6.93. As such, the active open space ratio would continue to be below city guidelines of 1.5 acres. Therefore, a significant adverse impact to active open space is anticipated.

The *CEQR Technical Manual* lists potential mitigation measures for open space impacts. These measures include, but are not limited to, creating new open space within the study area; funding for improvements, renovation, or maintenance at existing local parks; or improving existing open spaces to increase their utility or capacity to meet identified open space needs in the area, such as through the provision of additional open space facilities. As described below, while a variety of qualitative considerations have been identified that could help to ameliorate the active open space impact, no feasible mitigation measures have been identified to eliminate this impact.

As discussed in **Chapter 5, Open Space,** while only the portion of Rockaway Beach and Boardwalk located within the Study Area is included in the quantitative analysis, the remainder of the beach beyond the Study Area boundaries would be easily accessible to residents and workers from the Study Area. The beach and boardwalk provide ample active recreation space in the form of basketball courts, baseball fields, and playgrounds, as well as access to the beach and waterfront for unprogrammed active recreation or passive recreation. In addition, the quantitative analysis took a conservative approach and did not include the vacant land that would be converted to open space on select waterfront sites as part of the Proposed Actions. It is anticipated that these new publicly accessible open spaces would also help to meet new project-generated demand for open space resources in the Project Area. Moreover, the residential infill development sites would have yard requirements to meet zoning, which could help to meet some of the open space needs of the population resulting from the Proposed Actions as residents would be able to use their yards for active or passive recreation.

In addition to open spaces in the study area considered for the quantitative analysis, there are other planned and potential open space improvements for the area that would increase the amount of open space available to current and future residents. They include open spaces associated with the Army Corps of Engineers (USACE) Rockaway projects, the Bayside Walking Path (still in its visioning phase), a proposed open space by the Department of Parks and Recreation (DPR), and the potential for open space amenities on multi-family development sites. While these planned or potential open spaces do not change the conclusion of this chapter that a significant adverse impact to active open space would occur as a result of the Proposed Actions, they demonstrate that there are several plans to deliver more recreational open space in the coming years. Therefore, the open space impact would remain unmitigated. Further discussion of this technical area is provided in **Chapter 21, Unavoidable Adverse Impacts**.

Transportation

As discussed in **Chapter 12, Transportation,** the Proposed Actions would result in significant impacts to traffic, bus service, and safety in the study area. This section describes the mitigation measures that could reduce or eliminate significant impacts and indicates where impacts would remain unmitigated (see **Chapter 21, Unavoidable Significant Adverse Impacts**).

Traffic

Of the 27 intersections analyzed, the Proposed Actions would result in significant adverse traffic impacts at 13 intersections (at 27 movements) during the weekday AM peak hour, 12 intersections (at 17 movements) during the weekday midday peak hour, 13 intersections (at 22 movements) during the weekday PM peak hour, and 11 intersections (at 14 movements) during the Saturday peak hour. **Table 19-1** summarizes the number of significantly impacted intersections and whether they could be fully mitigated or partially mitigated. **Table 19-2** summarizes the significantly impacted traffic movements that could be fully mitigated by the proposed mitigation measures. Details of the intersection capacity analyses and the proposed traffic mitigation measures are summarized in **Table 19-3** through **Table 19-6**.

Table 19-1 Traffic Impact Mitigation Summary

Intersections	AM	Midday	PM	SAT
No significant impact	14	15	14	16
Fully mitigated impact	7	~~4~~5	6	6
Partially mitigated impact	1	0	0	0
Unmitigated impact	5	~~8~~7	7	5

Table 19-2 Summary of Significantly Impacted Traffic Movements

Intersections	AM	Midday	PM	SAT
Beach Channel Drive and Beach 35th Street and Seagirt Boulevard	SW-R EB-TR EB-L	SW-R	SW-R EB-L	SW-R
Beach Channel Drive and Beach 37th Street	EB-LTR WB-LTR	WB-LTR	WB-LTR	WB-LTR
Beach Channel Drive and Beach 40th Street	EB-LTR WB-LTR	WB-LTR	WB-LTR	WB-LTR
Beach Channel Drive and Beach 44th Street	EB-TR WB-LT	WB-LT	EB-TR WB-LT	WB-LT
Beach Channel Drive and Arverne Boulevard and Beach 62nd Street	EB-LT SB-LTR WB-T NW-LR	EB-R SB-LTR	EB-LT EB-R SB-LTR NW-LR	EB-R NW-LR
Arverne Boulevard/Rockaway Beach Boulevard and Beach 54th Street	 WB-LTR		EB-TR WB-LTR	
Edgemere Avenue and Beach 38th Street	EB-LTR WB-LT	WB-LT	EB-LTR WB-LT	WB-LT
Edgemere Avenue and Beach 41st Street	EB-LTR WB-LTR		EB-LTR	
Edgemere Avenue and Beach 44th Street	EB-LTR WB-LTR		EB-LTR	EB-LTR
Edgemere Avenue and Beach 54th Street	EB-LTR WB-LTR	EB-LTR	EB-LTR	EB-LTR
Rockaway Beach Boulevard and Beach 56th Street (West)	EB-T WB-TR	EB-T WB-TR	EB-T WB-TR	EB-T WB-TR
Rockaway Beach Boulevard and Beach 59th Street	EB-TR WB-LT	EB-TR WB-LT	EB-TR WB-LT	EB-TR WB-LT
Beach Channel Drive and Beach 49th Street		NB-L NB-TR		
Beach Channel Drive and Beach 50th Street	 NB-LR	WB-LT NB-LR	 NB-LR	 NB-LR
Rockaway Beach Boulevard and Beach 49th Street		SB-L		
Number of unmitigated traffic movements	12	11	11	7

Notes:
Shading denotes an unmitigated impact
EB=Eastbound; WB=Westbound; NB=Northbound; SB=Southbound; NW=Northwestbound; SW=Southwestbound; L=Left turn; T=Through; R=Right turn

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Beach 35th Street and Seagirt Boulevard														
Beach Channel Drive	SW	R	1.14	116.5	F	R	1.21	143.6	F	R	1.09	94.3	F	- Modify signal timing: Shift 3 s green time from NB/SB phase to EB/SWB phase [EB/SWB phase shifts from 32 s to 35 s].
	EB	TR	0.97	33.3	C	TR	1.10	73.4	E	TR	1.03	42.8	D	
	EB	L	1.31	162.3	F	L	1.45	220.3	F	L	1.30	156.9	F	
Seagirt Boulevard	WB	T	0.80	24.5	C	T	0.85	27.7	C	T	0.85	27.7	C	
Beach 35th Street	NB	LT	0.03	20.4	C	LT	0.03	20.4	C	LT	0.04	22.5	C	
	NB	R	0.18	21.9	C	R	0.18	21.9	C	R	0.20	24.2	C	
	SB	LTR	0.28	23.3	C	LTR	0.28	23.3	C	LTR	0.31	25.9	C	
Overall Intersection		-	-	**83.9**	**F**	-	-	**117.9**	**F**	-	-	**82.5**	**F**	
Seagirt Boulevard and Rockaway Freeway														
Seagirt Boulevard	EB	L	0.09	16.5	B	L	0.15	17.5	B	L	0.15	16.8	B	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	EB	TR	0.42	20.8	C	TR	0.43	21.5	C	TR	0.43	20.8	C	
	WB	LT	0.85	48.9	D	LT	0.88	50.7	D	LT	0.88	50.7	D	
	WB	R	0.30	34.6	C	R	0.30	34.3	C	R	0.30	34.3	C	
Rockaway Freeway at Seagirt Boulevard WB	NE	T	0.37	1.1	A	T	0.41	1.6	A	T	0.41	1.6	A	
	SW	TR	0.89	43.1	D	TR	0.91	46.7	D	TR	0.91	46.7	D	
Rockaway Freeway at Seagirt Boulevard EB	NE	TR	0.98	58.1	E	TR	0.98	58.1	E	TR	0.98	58.1	E	
	SW	T	1.06	53.2	D	T	1.06	52.0	D	T	1.06	52.0	D	
Overall Intersection		-	-	**40.1**	**D**	-	-	**40.1**	**D**	-	-	**40.0**	**D**	

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Beach 37th Street														
Beach Channel Drive	EB	LTR	1.13	95.0	F	LTR	1.21	128.0	F	LTR	1.21	128.0	F	- Unmitigated; improvements needed to mitigate air quality impacts - Modify signal timing: Add a new lead phase for the WB approach. The With-Action signal phasing [EB/WB would have 49 s of green time; NB/SB would have 31 s of green time] would be modified to the following: WB lead phase will have 6 s of green time, EB/WB phase will have 49 s of green time, and NB/SB will have 20 s of green time [all phases will have 3 s amber and 2 s all red].
	WB	LTR	2.72	600+	F	LTR	3+	600+	F	LTR	2.76	600+	F	
Beach 37th Street	NB	LTR	0.21	21.9	C	LTR	0.35	24.~~1~~0	C	LTR	0.56	38.~~9~~4	D	
	SB	LTR	0.06	20.0	B	LTR	0.06	20.1	C	LTR	0.10	28.6	C	
Overall Intersection		**-**	**-**	**430.5**	**F**	**-**	**-**	**600+**	**F**	**-**	**-**	**451.4~~3~~**	**F**	

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Beach 40th Street														
Beach Channel Drive	EB	LTR	1.12	92.6	F	LTR	1.20	121.4	F	LTR	1.13	91.9	F	- Modify signal timing: Shift 3 s green time from SB phase to EB/WB phase [EB/WB phase shifts from 54 s to 57 s].
	WB	LTR	1.28	155.9	F	LTR	1.33	179.2	F	LTR	1.26	144.6	F	
Beach 40th Street	SB	LTR	0.12	20.7	C	LTR	0.13	20.8	C	LTR	0.14	23.~~1~~0	C	
Overall Intersection		-	-	**122.4**	**F**	-	-	**147.3**	**F**	-	-	**116.2**	**F**	
Beach Channel Drive and Beach 44th Street														
Beach Channel Drive	EB	TR	1.23	135.2	F	TR	1.30	~~166.6~~ 165.8	F	TR	1.23	132.1	F	- Modify signal timing: Shift 3 s green time from SB phase to EB/WB phase [EB/WB phase shifts from 54 s to 57 s].
	WB	LT	1.74	361.5	F	LT	2.04	496.2	F	LT	1.65	319.2	F	
Beach 44th Street	SB	LTR	0.08	20.1	C	LTR	0.11	20.5	C	LTR	0.12	22.7	C	
Overall Intersection		-	-	**250.1**	**F**	-	-	**330.~~7~~ 4**	**F**	-	-	**224.6**	**F**	

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Arverne Boulevard and Beach 62nd Street														
Beach Channel Drive at Beach 62nd Street	EB	LT	1.67	342.4	F	LT	1.78	392.8	F	LT	1.78	392.8	F	- Unmitigated.
	EB	R	0.70	42.5	D	R	0.76	46.1	D	R	0.76	46.1	D	
Beach 62nd Street	NB	L	0.56	39.4	D	L	0.56	39.3	D	L	0.56	39.3	D	
	NB	TR	0.58	38.7	D	TR	0.58	38.8	D	TR	0.58	38.8	D	
	SB	LTR	1.11	133.4	F	LTR	1.14	142.8	F	LTR	1.14	142.8	F	
Beach Channel Drive at WB Arverne Blvd	WB	T	1.27	161.6	F	T	1.44	233.1	F	T	1.44	233.1	F	
Arverne Boulevard	NW	LR	0.78	47.8	D	LR	1.00	81.7	F	LR	1.00	81.7	F	
Overall Intersection		-	-	**151.9**	**F**	-	-	**192.4**	**F**	-	-	**192.4**	**F**	
Rockaway Beach Boulevard and Beach 38th Street														
Rockaway Beach Blvd	EB	TR	0.25	9.9	A	TR	0.39	11.5	B	TR	0.39	11.5	B	- Mitigation not required.
	WB	LT	0.16	9.2	A	LT	0.21	9.7	A	LT	0.21	9.7	A	
Beach 38th Street	NB	LR	0.10	13.5	B	LR	0.12	13.7	B	LR	0.12	13.7	B	
	SB	LTR	0.11	13.6	B	LTR	0.13	13.8	B	LTR	0.13	13.8	B	
Overall Intersection		-	-	**10.8**	**B**	-	-	**11.6**	**B**	-	-	**11.6**	**B**	

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Arverne Boulevard / Rockaway Beach Boulevard and Beach 54th Street														
Arverne Boulevard	EB	L	0.11	17.4	B	L	0.13	17.8	B	L	0.18	19.6	B	- Restripe the WB Rockaway Beach Boulevard approach from one travel lane to one 11-ft wide exclusive left-turn pocket lane (100 ft) and one 11-ft wide travel lane. - Install "No Standing Anytime" regulations along the north curb of the WB approach for 125 ft from the intersection.
	EB	TR	0.78	32.5	C	TR	0.83	35.9	D	TR	0.83	35.9	D	
Rockaway Beach Boulevard	WB	-	-	-	-	-	-	-	-	L	0.39	24.0	C	
	WB	-	-	-	-	-	-	-	-	TR	0.80	32.5	C	
	WB	LTR	1.03	73.7	E	LTR	1.45	242.9	F	LTR	-	31.5	C	
Beach 54th Street	NB	LTR	0.41	7.5	A	LTR	0.42	7.7	A	LTR	0.42	7.7	A	
	SB	LTR	0.12	22.8	C	LTR	0.12	22.8	C	LTR	0.12	22.8	C	
Overall Intersection		**-**	**-**	**44.3**	**D**	**-**	**-**	**122.0**	**F**	**-**	**-**	**28.8**	**C**	
Arverne Boulevard and Beach 56th Street (West)														

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Arverne Boulevard	EB	T	0.33	10.8	B	T	0.36	11.1	B	T	0.35	10.6	B	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	T	0.32	10.6	B	T	0.39	11.5	B	T	0.39	10.9	B	
Beach 56th Street	NB	LR	0.19	20.~~1~~2	C	LR	0.19	20.1	C	LR	0.20	20.8	C	
Overall Intersection		-	-	**11.7**	**B**	-	-	**12.1**	**B**	-	-	**11.7**	**B**	
Arverne Boulevard and Beach 59th Street														
Arverne Boulevard	EB	TR	0.58	13.4	B	TR	0.62	14.2	B	TR	0.62	14.2	B	- Mitigation not required.
	WB	L	0.30	10.3	B	L	0.32	10.7	B	L	0.32	10.7	B	
	WB	T	0.36	9.9	A	T	0.47	11.2	B	T	0.47	11.2	B	
Beach 59th Street	SB	LT	0.56	21.7	C	LT	0.56	21.8	C	LT	0.56	21.8	C	
	SB	R	0.00	14.0	B	R	0.00	14.0	B	R	0.00	14.0	B	
Overall Intersection		-	-	**14.2**	**B**	-	-	**14.6**	**B**	-	-	**14.6**	**B**	

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Freeway and Beach 44th Street														
Rockaway Freeway	EB	L	0.11	38.1	D	L	0.11	38.0	D	L	0.11	41.0	D	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	EB	TR	0.37	10.7	B	TR	0.37	11.1	B	TR	0.35	8.3	A	
	WB	L	0.13	37.5	D	L	0.13	37.5	D	L	0.13	37.5	D	
	WB	TR	0.56	21.2	C	TR	0.56	21.2	C	TR	0.52	18.5	B	
Beach 44th Street	NB	LTR	0.11	39.5	D	LTR	0.12	39.5	D	LTR	0.14	40.8	D	
	SB	LTR	0.27	~~29.5~~2 7.2	C	LTR	0.~~31~~ 30	~~30.2~~2 7.7	C	LTR	0.35	~~33.2~~231 .0	C	
Overall Intersection		-	-	**20.~~4~~2**	**C**	-	-	**20.~~8~~5**	**C**	-	-	**19.1**	**B**	
Rockaway Freeway and Beach 54th Street														
Rockaway Freeway	EB	TR	0.37	3.3	A	TR	0.37	3.3	A	TR	0.37	3.3	A	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	L	0.39	56.1	E	L	0.39	56.~~2~~0	E	L	0.39	55.~~6~~5	E	
	WB	TR	0.44	20.1	C	TR	0.44	20.~~1~~0	C	TR	0.44	19.~~5~~4	B	
Beach 54th Street	NB	LTR	0.36	41.2	D	LTR	0.37	41.4	D	LTR	0.37	41.~~4~~3	D	
	SB	LTR	0.31	36.3	D	LTR	0.34	36.0	D	LTR	0.34	40.2	D	
Overall Intersection		-	-	**24.3**	**C**	-	-	**24.5**	**C**	-	-	**24.~~9~~8**	**C**	
Rockaway Freeway and Beach 56th Street														

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Freeway	EB	TR	0.35	22.7	C	TR	0.35	22.6	C	TR	0.34	22.5	C	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	L	0.22	~~21.9~~2 2.0	C	L	0.22	21.9	C	L	0.22	22.~~6~~7	C	
	WB	TR	0.48	4.0	A	TR	0.48	4.0	A	TR	0.47	3.8	A	
Beach 56th Street	NB	LTR	0.07	36.9	D	LTR	0.07	36.9~~3~~ ~~7.0~~	D	LTR	0.07	37.~~7~~8	D	
Overall Intersection		-	-	**12.2**	**B**	-	-	**12.2**	**B**	-	-	**12.1**	**B**	
Rockaway Freeway and Beach 59th Street														
Rockaway Freeway	WB	L	0.93	71.~~2~~3	E	L	0.93	71.~~2~~3	E	L	0.93	71.2	E	- Mitigation not required.
	WB	T	0.16	22.0	C	T	0.16	22.0	C	T	0.16	22.0	C	
Beach 59th Street	SB	LT	1.04	92.8	F	LT	1.05	94.4	F	LT	1.05	94.4	F	
	SB	R	0.04	27.7	C	R	0.04	27.7	C	R	0.04	27.7	C	
Overall Intersection		-	-	**70.1**	**E**	-	-	**70.9**	**E**	-	-	**70.9**	**E**	
Edgemere Avenue and Beach 38th Street														

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Edgemere Avenue	EB	LTR	1.34	185.5	F	LTR	1.39	206.7	F	LTR	1.34	185.4	F	- Modify signal timing: Shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB phase shifts from 42 s to 43 s].
	WB	LT	1.55	283.4	F	LT	1.57	290.9	F	LT	1.53	270.6	F	
	WB	R	0.04	16.0	B	R	0.05	16.~~0~~1	B	R	0.05	15.4~~5~~	B	
Beach 38th Street	NB	LTR	0.01	21.5	C	LTR	0.01	21.5	C	LTR	0.01	22.2	C	
	SB	LTR	0.20	17.0	B	LTR	0.25	17.7	B	LTR	0.26	18.4	B	
Overall Intersection		-	-	**221.6**	**F**	-	-	**229.4**	**F**	-	-	**211.0**	**F**	
Edgemere Avenue and Beach 41st Street														
Edgemere Avenue	EB	LTR	1.15	96.5	F	LTR	1.40	208.3	F	LTR	1.36	190.1	F	- Modify signal timing: Shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB green time shifts from 45 s to 46 s].
	WB	LTR	1.28	149.4	F	LTR	1.29	154.5	F	LTR	1.26	139.9	F	
Beach 41st Street	NB	LTR	0.00	23.5	C	LTR	0.00	23.5	C	LTR	0.00	24.2	C	
	SB	LTR	0.07	17.5	B	LTR	0.11	18.0	B	LTR	0.12	18.6	B	
Overall Intersection		-	-	**125.0**	**F**	-	-	**170.4**	**F**	-	-	**155.0**	**F**	
Edgemere Avenue and Beach 44th Street														
Edgemere Avenue	EB	LTR	2.23	579.1	F	LTR	2.40	600+	F	LTR	2.19	559.6	F	- Modify signal timing: Shift 3 s green time from NB/SB phase to EB/WB phase [EB/WB phase shifts from 45 s to 48 s].
	WB	LTR	1.20	114.8	F	LTR	1.21	122.~~8~~ 9	F	LTR	1.13	81.3	F	
Beach 44th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	
	SB	LTR	0.11	~~2.4~~1.7	A	LTR	0.14	~~2.6~~1.9	A	LTR	0.15	2.~~8~~1	A	
Overall Intersection		-	-	**301.5**	**F**	-	-	**334.9**	**F**	-	-	**273.0**	**F**	

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Edgemere Avenue and Beach 54th Street														
Edgemere Avenue	EB	LTR	3+	600+	F	LTR	3+	600+	F	LTR	3+	600+	F	- Unmitigated. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	LTR	1.33	173.~~8~~ 9	F	LTR	1.35	181.~~5~~ 6	F	LTR	1.35	180.~~0~~1	F	
Beach 54th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	
	SB	LTR	0.24	2.4	A	LTR	0.27	2.4	A	LTR	0.27	2.4	A	
Overall Intersection		-	-	**600+**	**F**	-	-	**600+**	**F**	-	-	**600+**	**F**	
Rockaway Beach Boulevard and Beach 56th Street (West)														
Rockaway Beach Boulevard	EB	T	1.31	165.5	F	T	1.33	172.9	F	T	1.29	155.1	F	- Modify signal timing: Shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB phase shifts from 42 s to 43 s].
	WB	TR	1.61	302.2	F	TR	1.65	322.5	F	TR	1.61	301.5	F	
Beach 56th Street	SB	LR	0.05	1.6	A	LR	0.05	1.6	A	LR	0.05	1.7	A	
Overall Intersection		-	-	**235.1**	**F**	-	-	**249.9**	**F**	-	-	**230.7**	**F**	
Rockaway Beach Boulevard and Beach 59th Street**														

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Beach Boulevard	EB	TR	1.33	186.5	F	TR	1.35	193.4	F	TR	1.35	193.4	F	- Unmitigated.
	WB	LT	2.84	600+	F	LT	3+	600+	F	LT	3+	600+	F	
Beach 59th Street	NB	LTR	0.64	48.9	D	LTR	0.65	49.7	D	LTR	0.65	49.7	D	
	SB	LT	0.14	4.2	A	LT	0.14	4.1	A	LT	0.14	4.1	A	
	SB	R	1.03	75.4	E	R	1.03	76.8	E	R	1.03	76.8	E	
Overall Intersection		-	-	**426.7**	**F**	-	-	**473.3**	**F**	-	-	**473.3**	**F**	
Seagirt Boulevard and Beach 32nd Street														
Seagirt Boulevard	EB	LTR	0.50	17.8	B	LTR	0.53	18.3	B	LTR	0.53	18.3	B	- Mitigation not required.
	WB	LTR	0.59	17.8	B	LTR	0.60	18.0	B	LTR	0.60	18.0	B	
Beach 32nd Street	NB	LTR	0.21	18.7	B	LTR	0.22	18.9	B	LTR	0.22	18.9	B	
	SB	LTR	0.17	18.2	B	LTR	0.17	18.2	B	LTR	0.17	18.2	B	
Overall Intersection		-	-	**17.8**	**B**	-	-	**18.2**	**B**	-	-	**18.2**	**B**	
Beach Channel Drive and Beach 49th Street (Unsignalized)														

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive	EB	LTR	-	0.9	A	LTR	-	1.0	A	LTR	-	1.0	A	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	LTR	-	0.3	A	LTR	-	1.6	A	LTR	-	1.6	A	
Beach 49th Street	NB	L	-	600+	F	~~L~~L[3]	-	600+	F	~~L~~L[3]	-	600+	F	
	NB	TR	-	39.9	E	~~TR~~T R[3]	-	75.3	F	~~TR~~T R[3]	-	92.5	F	
	SB	L	-	600+	F	~~L~~L[3]	-	600+	F	~~L~~L[3]	-	600+	F	
	SB	TR	-	103.0	F	~~TR~~T R[3]	-	428.0	F	~~TR~~T R[3]	-	536.4	F	
Overall Intersection		**-**	**-**	**25.3**	**D**	**-**	**-**	**600+**	**F**	**-**	**-**	**600+**	**F**	
Beach Channel Drive and Beach 50th Street (Unsignalized)														
Beach Channel Drive	EB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	- Unmitigated.
	WB	LT	-	5.2	A	LT	-	9.2	A	LT	-	9.2	A	
Beach 50th Street	NB	LR	-	28.2	D	LR	-	600+	F	LR	-	600+	F	
Overall Intersection		**-**	**-**	**4.8**	**A**	**-**	**-**	**600+**	**F**	**-**	**-**	**600+**	**F**	
Rockaway Beach Boulevard and Beach 50th Street (Unsignalized)														
Rockaway Beach Boulevard	EB	LT	-	2.6	A	LT	-	2.9	A	LT	-	2.9	A	- Mitigation not required.
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	
Beach 50th Street	SB	LR	-	22.8	C	LR	-	29.3	D	LR	-	29.3	D	
Overall Intersection		**-**	**-**	**3.4**	**A**	**-**	**-**	**4.2**	**A**	**-**	**-**	**4.2**	**A**	

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Beach Boulevard and Beach 49th Street (Unsignalized)														
Rockaway Beach Boulevard	EB	LT	-	0.1	A	LT	-	0.1	A	LT	-	~~0.1~~16.5	~~A~~C	- Mitigation not required; improvements needed to mitigate impact in weekday midday period and safety impact in all periods Upgrade traffic control from Two-Way Stop to All-Way Stop with marked crosswalks on all three approaches.
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	~~0.0~~19.4	~~A~~C	
Beach 49th Street	SB	L	-	17.5	C	L	-	39.5~~9~~	E	L	-	~~39.5~~10.7	~~E~~B	
	SB	R	-	12.5	B	R	-	18.2	C	R	-	~~18.2~~9.3	~~C~~A	
Overall Intersection		**-**	**-**	**0.6**	**A**	**-**	**-**	**3.~~0~~1**	**A**	**-**	**-**	**~~3.0~~17.4**	**~~A~~B**	
Rockaway Beach Boulevard and Beach 44th Street (Unsignalized)														
Rockaway Beach Boulevard	EB	TR	-	~~0.0~~8.9	A	TR	-	~~0.0~~10.3	~~A~~B	TR	-	~~0.0~~10.3	~~A~~B	- Mitigation not required.
	WB	LT	-	~~0.6~~9.5	A	LT	-	~~0.5~~11.4	~~A~~B	LT	-	~~0.5~~11.4	~~A~~B	
Beach 44th Street	NB	LTR	-	~~13.3~~8.5	~~B~~A	LTR	-	~~18.7~~9.1	~~C~~A	LTR	-	~~18.7~~9.1	~~C~~A	
	SB	LTR	-	~~12.1~~8.3	~~B~~A	LTR	-	~~16.3~~8.9	~~C~~A	LTR	-	~~16.3~~8.9	~~C~~A	
Overall Intersection		**-**	**-**	**~~3.1~~9.0**	**A**	**-**	**-**	**~~3.2~~10.6**	**A**	**-**	**-**	**~~3.2~~10.6**	**~~A~~B**	

Table 19-3 Traffic Levels of Service Comparison – Weekday AM Peak Hour

Intersection & Approach		No-Action				With-Action				Mitigation				
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Proposed Measures
Rockaway Beach Boulevard and Beach 41st Street (Unsignalized)														
Rockaway Beach Boulevard	EB	LTR	-	0.2	A	LTR	-	0.4	A	LTR	-	0.4	A	- Mitigation not required.
	WB	LTR	-	0.3	A	LTR	-	0.8	A	LTR	-	0.8	A	
Beach 41st Street	NB	LTR	-	10.8	B	LTR	-	14.~~5~~4	B	LTR	-	14.~~5~~4	B	
Overall Intersection		-	-	**1.1**	**A**	-	-	**2.4**	**A**	-	-	**2.4**	**A**	

Note: Shading indicates impacted movement.

[1] Control delay is measured in seconds per vehicle.

[2] Overall intersection v/c ratio is the critical lane groups' v/c ratio.

[3] Per *CEQR Technical Manual* criteria, minor street lane groups at unsignalized intersections are not considered to be impacted when peak hour volume is below 90 passenger car equivalents (PCE).

*Northbound approaches to Edgemere Avenue at Beach 44th Street and Beach 54th Street have zero volume in field observed data.

**Synchro results used instead of HCM 2000 due to node clustering.

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Beach 35th Street and Seagirt Boulevard														
Beach Channel Drive	SW	R	0.90	50.5	D	R	1.09	96.3	F	R	0.95	53.9	D	- Modify signal timing: Shift 4 s green time from NB/SB phase to EB/SWB phase [EB/SWB phase shifts from 32 s to 36 s].
	EB	TR	0.62	23.4	C	TR	0.78	26.~~1~~2	C	TR	0.72	20.~~4~~6	B	
	EB	L	0.79	28.4	C	L	0.96	42.8	D	L	0.84	26.9	C	
Seagirt Boulevard	WB	T	0.64	15.9	B	T	0.90	36.1	D	T	0.90	36.1	D	
Beach 35th Street	NB	LT	0.04	20.4	C	LT	0.04	20.4	C	LT	0.04	23.~~2~~3	C	
	NB	R	0.10	21.0	C	R	0.10	21.0	C	R	0.12	24.0	C	
	SB	LTR	0.14	21.5	C	LTR	0.14	21.~~5~~6	C	LTR	0.17	24.~~6~~7	C	
Overall Intersection		-	-	**30.2**	**C**	-	-	**52.0**	**D**	-	-	**35.~~3~~4**	**D**	
Seagirt Boulevard and Rockaway Freeway														
Seagirt Boulevard	EB	L	0.08	15.2	B	L	0.17	~~17.9~~18.0	B	L	0.17	16.~~6~~4	B	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	EB	TR	0.28	16.1	B	TR	0.30	19.~~1~~2	B	TR	0.30	17.~~7~~6	B	
	WB	LT	0.61	40.4	D	LT	0.71	42.2	D	LT	0.71	42.2	D	
	WB	R	0.23	34.3	C	R	0.23	33.3	C	R	0.23	33.3	C	
Rockaway Freeway at Seagirt Boulevard WB	NE	T	0.29	1.6	A	T	0.36	2.4	A	T	0.36	2.4	A	
	SW	TR	0.52	25.2	C	TR	0.67	29.5	C	TR	0.67	29.5	C	
Rockaway Freeway at Seagirt Boulevard EB	NE	TR	0.75	32.4	C	TR	0.75	32.4	C	TR	0.75	32.4	C	
	SW	T	0.64	13.6	B	T	0.64	11.8	B	T	0.64	11.8	B	
Overall Intersection		-	-	**22.7**	**C**	-	-	**23.~~5~~6**	**C**	-	-	**23.3**	**C**	

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Beach 37th Street														
Beach Channel Drive	EB	LTR	0.76	22.4	C	LTR	0.87	29.9	C	LTR	0.95	43.7	D	- Unmitigated; improvements needed to mitigate air quality impacts - Modify signal timing: Add a new lead phase for the WB approach. The With-Action signal phasing [EB/WB would have 49 s of green time; NB/SB would have 31 s of green time] would be modified to the following: WB lead phase will have 8 s of green time, EB/WB phase will have 45 s of green time, and NB/SB will have 22 s of green time [all phases will have 3 s amber and 2 s all red].
	WB	LTR	1.19	105.8	F	LTR	2.06	~~490.4~~ 488.7	F	LTR	1.79	369.8	F	
Beach 37th Street	NB	LTR	0.16	21.2	C	LTR	0.~~44~~ 41	~~26.3~~2 5.5	C	LTR	0.~~69~~ 62	~~44.9~~40 .0	D	
	SB	LTR	0.03	19.7	B	LTR	0.~~04~~ 03	19.8	B	LTR	0.05	26.5	C	
Overall Intersection		-	-	**67.3**	**E**	-	-	~~281~~28 **0**.3	**F**	-	-	~~226.0~~2 **21.5**	**F**	

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Beach 40th Street														
Beach Channel Drive	EB	LTR	0.72	20.6	C	LTR	0.83	25.9	C	LTR	0.83	25.9	C	- Unmitigated.
	WB	LTR	0.98	47.6	D	LTR	1.17	111.2	F	LTR	1.17	111.2	F	
Beach 40th Street	SB	LTR	0.12	20.7	C	LTR	0.14	21.~~1~~0	C	LTR	0.14	21.~~1~~0	C	
Overall Intersection		-	-	**34.4**	**C**	-	-	**70.1**	**E**	-	-	**70.1**	**E**	
Beach Channel Drive and Beach 44th Street														
Beach Channel Drive	EB	TR	0.83	27.9	C	TR	0.95	~~42.2~~4 1.9	D	TR	0.95	41.9~~42~~ .2	D	- Unmitigated.
	WB	LT	1.02	61.0	E	LT	1.21	~~130.4~~ 129.6	F	LT	1.21	~~130.4~~1 29.6	F	
Beach 44th Street	SB	LTR	0.07	20.1	C	LTR	0.~~11~~ 10	20.6	C	LTR	0.~~11~~ 10	20.6	C	
Overall Intersection		-	-	**45.0**	**D**	-	-	**~~88.4~~8 7.8**	**F**	-	-	**~~88.4~~87 .8**	**F**	

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Arverne Boulevard and Beach 62nd Street														
Beach Channel Drive at Beach 62nd Street	EB	LT	0.65	28.1	C	LT	0.81	37.0	D	LT	0.81	37.0	D	- Unmitigated.
	EB	R	0.72	43.6	D	R	0.85	53.8	D	R	0.85	53.8	D	
Beach 62nd Street	NB	L	0.50	37.3	D	L	0.49	37.1	D	L	0.49	37.1	D	
	NB	TR	0.38	33.5	C	TR	0.39	33.7	C	TR	0.39	33.7	C	
	SB	LTR	0.80	59.1	E	LTR	0.87	67.9	E	LTR	0.87	67.9	E	
Beach Channel Drive at WB Arverne Blvd	WB	T	0.79	32.7	C	T	0.89	41.2	D	T	0.89	41.2	D	
Arverne Boulevard	NW	LR	0.51	36.0	D	LR	0.68	42.4	D	LR	0.68	42.4	D	
Overall Intersection		-	-	**36.7**	**D**	-	-	**44.3**	**D**	-	-	**44.3**	**D**	
Rockaway Beach Boulevard and Beach 38th Street														
Rockaway Beach Blvd	EB	TR	0.17	9.3	A	TR	0.~~45~~ 46	12.~~58~~	B	TR	0.45	12.~~58~~	B	- Mitigation not required.
	WB	LT	0.14	9.0	A	LT	0.32	10.~~89~~	B	LT	0.32	10.~~89~~	B	
Beach 38th Street	NB	LR	0.09	13.4	B	LR	0.23	15.6	B	LR	0.23	15.6	B	
	SB	LTR	0.05	13.1	B	LTR	0.~~12~~ 11	13.8	B	LTR	0.~~12~~ 11	13.8	B	
Overall Intersection		-	-	**10.2**	**B**	-	-	**12.~~4~~5**	**B**	-	-	**12.~~4~~5**	**B**	

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Arverne Boulevard / Rockaway Beach Boulevard and Beach 54th Street														
Arverne Boulevard	EB	L	0.05	16.2	B	L	0.05	16.3	B	L	0.05	16.4	B	- Mitigation not required. However, the results reflect the following measures proposed as weekday AM and PM peak hour mitigation: - Restripe the WB Rockaway Beach Boulevard approach from one travel lane to one 11-ft wide exclusive left-turn pocket lane (100 ft) and one 11-ft wide travel lane. - Install "No Standing Anytime" regulations along the north curb of the WB approach for 125 ft from the intersection.
	EB	TR	0.61	25.4	C	TR	0.70	28.7	C	TR	0.70	28.7	C	
Rockaway Beach Boulevard	WB	-	-	-	-	-	-	-	-	L	0.24	19.3	B	
	WB	-	-	-	-	-	-	-	-	TR	0.44	21.2	C	
	WB	LTR	0.42	20.9	C	LTR	0.69	29.4	C	LTR	-	20.9	C	
Beach 54th Street	NB	LTR	0.38	8.3	A	LTR	0.45	11.2	B	LTR	0.45	12.2	B	
	SB	LTR	0.10	22.5	C	LTR	0.11	22.7	C	LTR	0.11	22.7	C	
Overall Intersection		-	-	**20.1**	**C**	-	-	**25.0**	**C**	-	-	**22.3**	**C**	
Arverne Boulevard and Beach 56th Street (West)														

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Arverne Boulevard	EB	T	0.33	10.8	B	T	0.39	11.5	B	T	0.38	10.3	B	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	T	0.22	9.7	A	T	0.28	10.3	B	T	0.27	9.3	A	
Beach 56th Street	NB	LR	0.08	19.~~6~~5	B	LR	0.08	19.6	B	LR	0.08	20.8	C	
Overall Intersection		-	-	**10.9**	**B**	-	-	**11.4**	**B**	-	-	**10.4**	**B**	
Arverne Boulevard and Beach 59th Street														
Arverne Boulevard	EB	TR	0.47	11.4	B	TR	0.55	12.6	B	TR	0.55	12.6	B	- Mitigation not required.
	WB	L	0.13	8.2	A	L	0.15	8.4	A	L	0.15	8.4	A	
	WB	T	0.24	8.7	A	T	0.32	9.5	A	T	0.32	9.5	A	
Beach 59th Street	SB	LT	0.34	17.6	B	LT	0.34	17.7	B	LT	0.34	17.7	B	
	SB	R	0.02	14.3	B	R	0.02	14.3	B	R	0.02	14.3	B	
Overall Intersection		-	-	**11.9**	**B**	-	-	**12.5**	**B**	-	-	**12.5**	**B**	

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Freeway and Beach 44th Street														
Rockaway Freeway	EB	L	0.11	41.8	D	L	0.11	42.0	D	L	0.11	41.2	D	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	EB	TR	0.21	10.3	B	TR	0.21	11.2	B	TR	0.21	13.0	B	
	WB	L	0.05	36.3	D	L	0.05	36.3	D	L	0.05	36.3	D	
	WB	TR	0.34	17.4	B	TR	0.34	17.4	B	TR	0.34	17.4	B	
Beach 44th Street	NB	LTR	0.12	41.8	D	LTR	0.14	41.~~2~~1	D	LTR	0.14	41.3	D	
	SB	LTR	0.25	26.4~~8~~	C	LTR	0.33	28.~~1~~0	C	LTR	0.33	28.0	C	
Overall Intersection		-	-	**19.8~~9~~**	**B**	-	-	**20.92** ~~1.0~~	**C**	-	-	**21.4**	**C**	
Rockaway Freeway and Beach 54th Street														
Rockaway Freeway	EB	TR	0.21	3.2	A	TR	0.21	3.2	A	TR	0.20	2.9	A	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	L	0.33	~~55.0~~5 4.9	D	L	0.33	~~55.1~~5 4.9	~~E~~D	L	0.33	56.~~6~~4	E	
	WB	TR	0.30	17.4	B	TR	0.30	17.4	B	TR	0.28	17.1	B	
Beach 54th Street	NB	LTR	0.28	40.2	D	LTR	0.32	40.8	D	LTR	0.35	41.8	D	
	SB	LTR	0.30	41.2	D	LTR	0.36	41.3	D	LTR	0.39	44.8	D	
Overall Intersection		-	-	**26.3**	**C**	-	-	**27.4**	**C**	-	-	**28.3**	**C**	
Rockaway Freeway and Beach 56th Street														

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Freeway	EB	TR	0.18	21.2	C	TR	0.18	21.1	C	TR	0.17	21.1	C	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	L	0.06	20.11 ~~9.5~~	~~B~~C	L	0.06	19.9	B	L	0.06	21.~~1~~7	C	
	WB	TR	0.26	2.4	A	TR	0.26	2.4	A	TR	0.25	2.~~2~~3	A	
Beach 56th Street	NB	LTR	0.04	37.3	D	LTR	0.04	37.0	D	LTR	0.04	38.3	D	
Overall Intersection		-	-	**10.1**	**B**	-	-	**10.0**	**B**	-	-	**10.0~~0~~1**	**A**	
Rockaway Freeway and Beach 59th Street														
Rockaway Freeway	WB	L	0.69	50.~~5~~6	D	L	0.69	50.6	D	L	0.69	50.5	D	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	T	0.11	28.43	C	T	0.11	28.3	C	T	0.11	28.2	C	
Beach 59th Street	SB	LT	0.63	37.2	D	LT	0.63	37.4	D	LT	0.63	37.4	D	
	SB	R	0.03	26.1	C	R	0.03	26.1	C	R	0.03	26.1	C	
Overall Intersection		-	-	**38.7**	**D**	-	-	**38.8**	**D**	-	-	**38.7**	**D**	
Edgemere Avenue and Beach 38th Street														

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Edgemere Avenue	EB	LTR	0.80	37.03 6.8	D	LTR	0.87	36.69	D	LTR	0.82	32.25	C	- Modify signal timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB phase shifts from 42 s to 44 s].
	WB	LT	1.03	73.4	E	LT	1.12	100.5 101.3	F	LT	1.03	71.27	E	
	WB	R	0.01	15.7	B	R	0.06	16.12	B	R	0.05	14.915 .0	B	
Beach 38th Street	NB	LTR	0.01	21.4	C	LTR	0.01	21.4	C	LTR	0.01	22.8	C	
	SB	LTR	0.19	16.9	B	LTR	0.30 31	18.4	B	LTR	0.32	19.9	B	
Overall Intersection		-	-	**50.56**	**D**	-	-	**59.56 0.0**	**E**	-	-	**45.94 6.3**	**D**	
Edgemere Avenue and Beach 41st Street														
Edgemere Avenue	EB	LTR	0.74	21.0	C	LTR	0.85	26.5	C	LTR	0.85	26.6	C	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	LTR	0.65	21.3	C	LTR	0.71	21.5	C	LTR	0.71	22.8	C	
Beach 41st Street	NB	LTR	0.01	23.5	C	LTR	0.01	23.5	C	LTR	0.01	23.5	C	
	SB	LTR	0.06	17.4	B	LTR	0.15	18.54	B	LTR	0.15	18.54	B	
Overall Intersection		-	-	**21.0**	**C**	-	-	**23.8**	**C**	-	-	**24.4**	**C**	
Edgemere Avenue and Beach 44th Street														

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Edgemere Avenue	EB	LTR	0.78	20.6	C	LTR	0.93	25.~~8~~7	C	LTR	0.93	26.3	C	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	LTR	0.67	27.9	C	LTR	0.69	27.6	C	LTR	0.69	26.9	C	
Beach 44th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	
	SB	LTR	0.08	~~2.6~~1.9	A	LTR	0.~~15~~ 14	2.~~7~~1	A	LTR	0.15	2.~~7~~1	A	
Overall Intersection		-	-	**23.~~2~~1**	**C**	-	-	**25.~~1~~0**	**C**	-	-	**25.0**	**C**	
Edgemere Avenue and Beach 54th Street														
Edgemere Avenue	EB	LTR	2.99	600+	F	LTR	3+	600+	F	LTR	3+	600+	F	- Modify signal timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB phase shifts from 42 s to 44 s].
	WB	LTR	0.79	29.~~5~~6	C	LTR	0.81	30.~~6~~7	C	LTR	0.77	28.5	C	
Beach 54th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	
	SB	LTR	0.27	1.5	A	LTR	0.32	1.8	A	LTR	0.34	2.0	A	
Overall Intersection		-	-	**600+**	**F**	-	-	**600+**	**F**	-	-	**600+**	**F**	
Rockaway Beach Boulevard and Beach 56th Street (West)														
Rockaway Beach Boulevard	EB	T	1.15	94.3	F	T	1.20	118.8	F	T	1.14	88.4	F	- Modify signal timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB phase shifts from 42 s to 44 s].
	WB	TR	1.10	~~83.9~~8 4.0	F	TR	1.16	107.4	F	TR	1.10	80.9	F	
Beach 56th Street	SB	LR	0.02	4.7	A	LR	0.02	4.7	A	LR	0.02	5.1	A	
Overall Intersection		-	-	**88.~~6~~7**	**F**	-	-	**112.5**	**F**	-	-	**84.2**	**F**	

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Beach Boulevard and Beach 59th Street**														
Rockaway Beach Boulevard	EB	TR	1.08	88.0	F	TR	1.13	104.6	F	TR	1.13	104.6	F	- Unmitigated.
	WB	LT	2.45	600+	F	LT	3+	600+	F	LT	3+	600+	F	
Beach 59th Street	NB	LTR	0.29	31.5	C	LTR	0.33	32.3	C	LTR	0.33	32.3	C	
	SB	LT	0.15	3.4	A	LT	0.15	3.3	A	LT	0.15	3.3	A	
	SB	R	0.49	39.1	D	R	0.5	39.0	D	R	0.5	39.0	D	
Overall Intersection		-	-	**321.8**	**F**	-	-	**477.8**	**F**	-	-	**477.8**	**F**	
Seagirt Boulevard and Beach 32nd Street														
Seagirt Boulevard	EB	LTR	0.32	14.1	B	LTR	0.38	15.2	B	LTR	0.38	15.2	B	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	LTR	0.38	15.0	B	LTR	0.43	15.6	B	LTR	0.43	15.6	B	
Beach 32nd Street	NB	LTR	0.13	17.7	B	LTR	0.22	18.8	B	LTR	0.22	18.8	B	
	SB	LTR	0.13	17.7	B	LTR	0.14	17.7	B	LTR	0.14	17.7	B	
Overall Intersection		-	-	**14.8**	**B**	-	-	**15.7**	**B**	-	-	**15.7**	**B**	
Beach Channel Drive and Beach 49th Street (Unsignalized)														

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive	EB	LTR	-	0.6	A	LTR	-	0.9	A	LTR	-	0.9	A	- Unmitigated.
	WB	LTR	-	0.2	A	LTR	-	4.2	A	LTR	-	4.2	A	
Beach 49th Street	NB	L	-	150.1	F	L	-	600+	F	L	-	600+	F	
	NB	TR	-	34.5	D	TR	-	600+	F	TR	-	600+	F	
	SB	L	-	91.2	F	~~L~~L[3]	-	600+	F	~~L~~L[3]	-	600+	F	
	SB	TR	-	17.3	C	~~TR~~TR[3]	-	600+	F	~~TR~~TR[3]	-	600+	F	
Overall Intersection		**-**	**-**	**4.5**	**A**	**-**	**-**	**600+**	**F**	**-**	**-**	**600+**	**F**	
Beach Channel Drive and Beach 50th Street (Unsignalized)														
Beach Channel Drive	EB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	- Unmitigated.
	WB	LT	-	4.4	A	LT	-	246.8	F	LT	-	246.8	F	
Beach 50th Street	NB	LR	-	58.1	F	LR	-	600+	F	LR	-	600+	F	
Overall Intersection		**-**	**-**	**8.8**	**A**	**-**	**-**	**600+**	**F**	**-**	**-**	**600+**	**F**	
Rockaway Beach Boulevard and Beach 50th Street (Unsignalized)														
Rockaway Beach Boulevard	EB	LT	-	2.3	A	LT	-	3.5	A	LT	-	3.5	A	- Mitigation not required.
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	
Beach 50th Street	SB	LR	-	15.7	C	LR	-	28.2	D	LR	-	28.2	D	
Overall Intersection		**-**	**-**	**3.4**	**A**	**-**	**-**	**5.7**	**A**	**-**	**-**	**5.7**	**A**	

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Beach Boulevard and Beach 49th Street (Unsignalized)														
Rockaway Beach Boulevard	EB	LT	-	0.4	A	LT	-	0.5	A	LT	-	~~0.5~~13.1	~~A~~B	~~- Unmitigated.~~- Upgrade traffic control from Two-Way Stop to All-Way Stop with marked crosswalks on all three approaches.
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	~~0.0~~13.4	~~A~~B	
Beach 49th Street	SB	L	-	14.3	B	L	-	~~63.76~~9.2	F	L	-	~~63.7~~11.8	~~F~~B	
	SB	R	-	12.2	B	R	-	24.8~~9~~	C	R	-	~~24.8~~9.3	~~C~~A	
Overall Intersection		-	-	**1.0**	**A**	-	-	~~10.5~~11.3	**B**	-	-	~~10.5~~13.0	**B**	
Rockaway Beach Boulevard and Beach 44th Street (Unsignalized)														
Rockaway Beach Boulevard	EB	TR	-	~~0.0~~8.4	A	TR	-	~~0.0~~11.3	A	TR	-	~~0.0~~11.3	~~A~~B	- Mitigation not required.
	WB	LT	-	~~1.2~~8.4	A	LT	-	~~0~~10.8	~~A~~B	LT	-	~~0~~10.8	~~A~~B	
Beach 44th Street	NB	LTR	-	~~11.9~~8.2	~~B~~A	LTR	-	~~36.7~~9.2	~~E~~A	LTR	-	~~36.7~~9.2	~~E~~A	
	SB	LTR	-	~~11.1~~7.9	~~B~~A	LTR	-	~~29.5~~9.0	~~D~~A	LTR	-	~~29.5~~9.0	~~D~~A	
Overall Intersection		-	-	~~3~~8.3	**A**	-	-	~~5~~10.8	~~A~~B	-	-	~~5~~10.8	**A**	

Table 19-4 Traffic Levels of Service Comparison – Weekday Midday Peak Hour

Intersection & Approach		No-Action				With-Action				Mitigation				
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Proposed Measures
Rockaway Beach Boulevard and Beach 41st Street (Unsignalized)														
Rockaway Beach Boulevard	EB	LTR	-	0.4	A	LTR	-	0.5	A	LTR	-	0.5	A	- Mitigation not required.
	WB	LTR	-	0.5	A	LTR	-	1.~~7~~8	A	LTR	-	1.7	A	
Beach 41st Street	NB	LTR	-	10.0	A	LTR	-	27.~~4~~1	D	LTR	-	27.~~4~~1	D	
Overall Intersection		-	-	**1.0**	**A**	-	-	**4.7**	**A**	-	-	**4.7**	**A**	

Note: Shading indicates impacted movement.

[1] Control delay is measured in seconds per vehicle.

[2] Overall intersection v/c ratio is the critical lane groups' v/c ratio.

[3] Per *CEQR Technical Manual* criteria, minor street lane groups at unsignalized intersections are not considered to be impacted when peak hour volume is below 90 PCEs.

*Northbound approaches to Edgemere Avenue at Beach 44th Street and Beach 54th Street have zero volume in field observed data.

**Synchro results used instead of HCM 2000 due to node clustering.

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Beach 35th Street and Seagirt Boulevard														
Beach Channel Drive	SW	R	1.04	78.1	E	R	1.19	132.8	F	R	1.04	73.1	E	- Modify signal timing: Shift 4 s green time from NB/SB phase to EB/SWB phase [EB/SWB phase shifts from 32 s to 36 s].
	EB	TR	0.71	25.4	C	TR	0.80	27.0	C	TR	0.74	21.0~~20~~ ~~.9~~	C	
	EB	L	1.00	52.7	D	L	1.10	81.5	F	L	0.96	40.2	D	
Seagirt Boulevard	WB	T	0.73	19.9	B	T	0.86	28.4	C	T	0.86	28.4	C	
Beach 35th Street	NB	LT	0.02	20.2	C	LT	0.02	20.2	C	LT	0.02	23.0	C	
	NB	R	0.09	20.9	C	R	0.09	20.9	C	R	0.11	23.8	C	
	SB	LTR	0.22	22.5	C	LTR	0.22	22.~~5~~6	C	LTR	0.~~25~~ 26	26.0~~25~~ ~~.9~~	C	
Overall Intersection		-	-	**45.5**	**D**	-	-	**72.3**	**E**	-	-	**43.4**5	**D**	
Seagirt Boulevard and Rockaway Freeway														
Seagirt Boulevard	EB	L	0.11	17.3	B	L	0.16	18.9	B	L	0.16	17.~~5~~4	B	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	EB	TR	0.24	18.1	B	TR	0.24	19.6	B	TR	0.24	18.~~2~~1	B	
	WB	LT	0.75	43.7	D	LT	0.81	45.8	D	LT	0.81	45.8	D	
	WB	R	0.45	38.5	D	R	0.45	37.8	D	R	0.45	37.8	D	
Rockaway Freeway at Seagirt Boulevard WB	NE	T	0.38	1.7	A	T	0.43	2.2	A	T	0.43	2.2	A	
	SW	TR	0.68	29.5	C	TR	0.75	32.3	C	TR	0.75	32.3	C	
Rockaway Freeway at Seagirt Boulevard EB	NE	TR	0.76	33.0	C	TR	0.76	33.0	C	TR	0.76	33.0	C	
	SW	T	0.75	13.9	B	T	0.75	13.6	B	T	0.75	13.6	B	
Overall Intersection		-	-	**24.8**	**C**	-	-	**25.7**	**C**	-	-	**25.5**	**C**	

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Beach 37th Street														
Beach Channel Drive	EB	LTR	0.85	27.4	C	LTR	0.91	34.1	C	LTR	0.95	41.7	D	- Unmitigated; improvements needed to mitigate air quality impacts - Modify signal timing: Add a new lead phase for the WB approach. The With-Action signal phasing [EB/WB would have 49 s of green time; NB/SB would have 31 s of green time] would be modified to the following: WB lead phase will have 7 s of green time, EB/WB phase will have 47 s of green time, and NB/SB will have 21 s of green time [all phases will have 3 s amber and 2 s all red].
	WB	LTR	1.98	456.3	F	LTR	3+	600+	F	LTR	2.93	600+	F	
Beach 37th Street	NB	LTR	0.26	22.5	C	LTR	0.~~43~~ 42	25.~~7~~3	C	LTR	0.~~67~~ 64	~~43.~~441 .2	D	
	SB	LTR	0.03	19.6	B	LTR	0.03	19.7	B	LTR	0.05	27.1	C	
Overall Intersection		-	-	**260.9**	**F**	-	-	**600+**	**F**	-	-	**509.~~8~~7**	**F**	

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Beach 40th Street														
Beach Channel Drive	EB	LTR	0.83	25.4	C	LTR	0.89	30.~~5~~6	C	LTR	0.89	30.~~5~~6	C	- Unmitigated.
	WB	LTR	1.14	96.8	F	LTR	1.27	151.8	F	LTR	1.27	151.8	F	
Beach 40th Street	SB	LTR	0.09	20.3	C	LTR	0.10	20.4	C	LTR	0.10	20.4	C	
Overall Intersection		-	-	**63.3**	**E**	-	-	**95.7**	**F**	-	-	**95.7**	**F**	
Beach Channel Drive and Beach 44th Street														
Beach Channel Drive	EB	TR	0.92	37.1	D	TR	0.99	49.~~6~~2	D	TR	0.91	32.~~4~~3	C	- Modify signal timing: Shift 4 s green time from SB phase to EB/WB phase [EB/WB phase shifts from 54 s to 58 s].
	WB	LT	1.28	159.0	F	LT	1.52	264.9	F	LT	1.25	143.2	F	
Beach 44th Street	SB	LTR	0.05	19.9	B	LTR	0.07	20.2	C	LTR	0.09	23.~~2~~1	C	
Overall Intersection		-	-	**100.8**	**F**	-	-	**162.~~9~~7**	**F**	-	-	**90.8**	**F**	

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Arverne Boulevard and Beach 62nd Street														
Beach Channel Drive at Beach 62nd Street	EB	LT	0.77	32.8	C	LT	0.93	48.4	D	LT	0.93	48.4	D	- Unmitigated.
	EB	R	0.93	65.9	E	R	1.09	106.3	F	R	1.09	106.3	F	
Beach 62nd Street	NB	L	0.45	35.6	D	L	0.45	35.5	D	L	0.45	35.5	D	
	NB	TR	0.58	39.0	D	TR	0.59	39.3	D	TR	0.59	39.3	D	
	SB	LTR	1.00	99.6	F	LTR	1.06	117.5	F	LTR	1.06	117.5	F	
Beach Channel Drive at WB Arverne Blvd	WB	T	0.73	29.6	C	T	0.81	33.2	C	T	0.81	33.2	C	
Arverne Boulevard	NW	LR	0.74	45.8	D	LR	0.88	59.0	E	LR	0.88	59.0	E	
Overall Intersection		-	-	**45.6**	**D**	-	-	**60.3**	**E**	-	-	**60.3**	**E**	
Rockaway Beach Boulevard and Beach 38th Street														
Rockaway Beach Blvd	EB	TR	0.26	9.9	A	TR	0.41	11.~~6~~7	B	TR	0.41	11.~~6~~7	B	- Mitigation not required.
	WB	LT	0.13	8.9	A	LT	0.24	9.8	A	LT	0.24	9.8	A	
Beach 38th Street	NB	LR	0.06	13.2	B	LR	0.12	13.8	B	LR	0.12	13.8	B	
	SB	LTR	0.08	13.3	B	LTR	0.12	13.7	B	LTR	0.12	13.7	B	
Overall Intersection		-	-	**10.4**	**B**	-	-	**11.5**	**B**	-	-	**11.5**	**B**	

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

Intersection & Approach		No-Action				With-Action				Mitigation				
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Proposed Measures
Arverne Boulevard / Rockaway Beach Boulevard and Beach 54th Street														
Arverne Boulevard	EB	L	0.07	16.6	B	L	0.08	16.7	B	L	0.07	14.3	B	- Restripe the WB Rockaway Beach Boulevard approach from one travel lane to one 11-ft wide exclusive left-turn pocket lane (100 ft) and one 11-ft wide travel lane. - Install "No Standing Anytime" regulations along the north curb of the WB approach for 125 ft from the intersection to allow for the exclusive left-turn pocket lane. - Modify signal timing: Shift 4 s green time from NB phase to EB/WB phase [EB/WB phase shifts from 42 s to 46 s].
	EB	TR	0.97	54.6	D	TR	1.09	88.4	F	TR	0.98	53.7	D	
Rockaway Beach Boulevard	WB	-	-	-	-	-	-	-	-	L	0.59	37.8	D	
	WB	-	-	-	-	-	-	-	-	TR	0.48	19.3	B	
	WB	LTR	0.97	65.5	E	LTR	1.90	449.0	F	LTR	-	22.3	C	
Beach 54th Street	NB	LTR	0.58	16.2	B	LTR	0.63	19.5	B	LTR	0.70	22.7	C	
	SB	LTR	0.15	23.1	C	LTR	0.16	23.2	C	LTR	0.16	23.2	C	
Overall Intersection		-	-	**47.4**	**D**	-	-	**173.1**	**F**	-	-	**36.8**	**D**	
Arverne Boulevard and Beach 56th Street (West)														
Arverne Boulevard	EB	T	0.43	12.0	B	T	0.50	13.0	B	T	0.49	12.3	B	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	T	0.37	11.3	B	T	0.42	11.9	B	T	0.41	11.3	B	
Beach 56th Street	NB	LR	0.14	20.0	B	LR	0.14	20.1	C	LR	0.15	20.8	C	
Overall Intersection		-	-	**12.2**	**B**	-	-	**12.9**	**B**	-	-	**12.4**	**B**	

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Arverne Boulevard and Beach 59th Street														
Arverne Boulevard	EB	TR	0.64	13.8	B	TR	0.72	16.1	B	TR	0.72	16.1	B	- Mitigation not required.
	WB	L	0.43	12.5	B	L	0.50	15.1	B	L	0.50	15.1	B	
	WB	T	0.32	9.0	A	T	0.38	9.7	A	T	0.38	9.7	A	
Beach 59th Street	SB	LT	0.36	18.8	B	LT	0.36	18.9	B	LT	0.36	18.9	B	
	SB	R	0.03	15.1	B	R	0.03	15.1	B	R	0.03	15.1	B	
Overall Intersection		-	-	**13.3**	**B**	-	-	**14.8**	**B**	-	-	**14.8**	**B**	
Rockaway Freeway and Beach 44th Street														
Rockaway Freeway	EB	L	0.05	38.5	D	L	0.05	37.8	D	L	0.05	39.7	D	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	EB	TR	0.36	9.2	A	TR	0.36	9.7	A	TR	0.34	8.1	A	
	WB	L	0.12	37.3	D	L	0.12	37.3	D	L	0.12	37.3	D	
	WB	TR	0.45	19.1	B	TR	0.45	19.2	B	TR	0.43	17.6	B	
Beach 44th Street	NB	LTR	0.13	40.2	D	LTR	0.16	40.3	D	LTR	0.17	41.~~3~~2	D	
	SB	LTR	0.31	~~30.6~~2 8.0	C	LTR	0.36	~~31.5~~2 8.8	C	LTR	0.~~40~~ 39	~~33.8~~31 .2	C	
Overall Intersection		-	-	**19.~~3~~0**	**B**	-	-	**19.72~~2~~** **~~0.1~~**	**~~C~~B**	-	-	**19.4~~0~~**	**B**	
Rockaway Freeway and Beach 54th Street														

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Freeway	EB	TR	0.33	2.3	A	TR	0.33	2.3	A	TR	0.33	2.3	A	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	L	0.37	56.~~1~~0	E	L	0.37	56.~~2~~1	E	L	0.37	55.7	E	
	WB	TR	0.35	18.5	B	TR	0.35	18.5	B	TR	0.35	18.0	B	
Beach 54th Street	NB	LTR	0.40	41.8	D	LTR	0.42	42.1	D	LTR	0.42	42.1	D	
	SB	LTR	0.31	30.0	C	LTR	0.35	30.4	C	LTR	0.35	32.2	C	
Overall Intersection		-	-	**23.9**	**C**	-	-	**24.~~5~~4**	**C**	-	-	**24.6**	**C**	
Rockaway Freeway and Beach 56th Street														
Rockaway Freeway	EB	TR	0.36	22.6	C	TR	0.36	22.6	C	TR	0.36	22.5	C	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	L	0.08	19.9	B	L	0.08	19.8	B	L	0.08	20.~~6~~7	C	
	WB	TR	0.29	2.6	A	TR	0.29	2.5	A	TR	0.29	2.4	A	
Beach 56th Street	NB	LTR	0.05	36.7	D	LTR	0.05	36.6	D	LTR	0.05	36.9	D	
Overall Intersection		-	-	**13.2**	**B**	-	-	**13.1**	**B**	-	-	**13.1**	**B**	
Rockaway Freeway and Beach 59th Street														
Rockaway Freeway	WB	L	0.90	76.3	E	L	0.90	76.3	E	L	0.90	76.2	E	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	T	0.12	24.6	C	T	0.12	24.6	C	T	0.12	24.6	C	
Beach 59th Street	SB	LT	1.00	77.7	E	LT	1.00	78.2	E	LT	1.00	78.2	E	
	SB	R	0.01	25.9	C	R	0.01	25.9	C	R	0.01	25.9	C	
Overall Intersection		-	-	**67.0**	**E**	-	-	**67.3**	**E**	-	-	**67.3**	**E**	
Edgemere Avenue and Beach 38th Street														

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Edgemere Avenue	EB	LTR	1.28	156.2	F	LTR	1.41	~~214~~215.0	F	LTR	1.~~21~~22	~~124.7~~25.5	F	- Modify signal timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB phase shifts from 42 s to 44 s].
	WB	LT	1.26	158.7	F	LT	1.32	181.8	F	LT	1.21	~~135.2~~136.0	F	
	WB	R	0.02	15.8	B	R	0.05	16.1	B	R	0.05	14.9	B	
Beach 38th Street	NB	LTR	0.01	21.4	C	LTR	0.01	21.~~4~~5	C	LTR	0.01	22.9	C	
	SB	LTR	0.18	16.8	B	LTR	0.24	17.~~5~~6	B	LTR	0.~~25~~26	19.0	B	
Overall Intersection		-	-	**145.5**	**F**	-	-	**179.~~0~~5**	**F**	-	-	**~~116.7~~117.4**	**F**	
Edgemere Avenue and Beach 41st Street														
Edgemere Avenue	EB	LTR	1.02	38.9	D	LTR	1.~~34~~33	~~177.0~~176.1	F	LTR	1.34	~~178.0~~177.1	F	- Unmitigated. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	LTR	0.78	22.9	C	LTR	0.81	23.5	C	LTR	0.81	24.1	C	
Beach 41st Street	NB	LTR	0.00	23.5	C	LTR	0.00	23.5	C	LTR	0.00	23.5	C	
	SB	LTR	0.05	17.3	B	LTR	0.10	17.7	B	LTR	0.10	17.7	B	
Overall Intersection		-	-	**31.8**	**C**	-	-	**107.~~8~~3**	**F**	-	-	**108.~~6~~1**	**F**	
Edgemere Avenue and Beach 44th Street														

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Edgemere Avenue	EB	LTR	1.60	294.9	F	LTR	1.~~89~~ 90	~~426.7~~ 428.6	F	LTR	1.59	288.6	F	- Modify signal timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB phase shifts from 45 s to 47 s].
	WB	LTR	0.86	32.6	C	LTR	0.87	33.4	C	LTR	0.83	27.2	C	
Beach 44th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	
	SB	LTR	0.11	~~2.0~~1.5	A	LTR	0.14	~~2.3~~1.8	A	LTR	0.15	~~2.3~~1.9	A	
Overall Intersection		-	-	**163.8**	**F**	-	-	**~~229.6~~ 230.5**	**F**	-	-	**157.4**3	**F**	
Edgemere Avenue and Beach 54th Street														
Edgemere Avenue	EB	LTR	3+	600+	F	LTR	3+	600+	F	LTR	3+	600+	F	- Unmitigable.
	WB	LTR	0.96	41.~~34~~	D	LTR	0.98	43.~~89~~	D	LTR	0.98	43.~~67~~	D	
Beach 54th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	
	SB	LTR	0.25	2.5	A	LTR	0.28	2.5	A	LTR	0.28	2.5	A	
Overall Intersection		-	-	**600+**	**F**	-	-	**600+**	**F**	-	-	**600+**	**F**	
Rockaway Beach Boulevard and Beach 56th Street (West)														
Rockaway Beach Boulevard	EB	T	1.32	169.0	F	T	1.37	188.8	F	T	1.33	171.6	F	- Modify signal timing: Shift 1 s green time from NB/SB phase to EB/WB phase [EB/WB phase shifts from 42 s to 43 s].
	WB	TR	1.12	87.4	F	TR	1.15	101.3	F	TR	1.12	86.9	F	
Beach 56th Street	SB	LR	0.02	2.6	A	LR	0.02	2.6	A	LR	0.02	2.7	A	
Overall Intersection		-	-	**131.4**	**F**	-	-	**148.6**	**F**	-	-	**132.8**	**F**	

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Beach Boulevard and Beach 59th Street**														
Rockaway Beach Boulevard	EB	TR	1.37	201.2	F	TR	1.41	217.4	F	TR	1.41	217.4	F	- Unmitigated.
	WB	LT	3+	600+	F	LT	3+	600+	F	LT	3+	600+	F	
Beach 59th Street	NB	LTR	0.40	34.2	C	LTR	0.42	34.7	C	LTR	0.42	34.7	C	
	SB	LT	0.08	5.2	A	LT	0.08	5.2	A	LT	0.08	5.2	A	
	SB	R	0.56	42.7	D	R	0.57	42.5	D	R	0.57	42.5	D	
Overall Intersection		-	-	**457.4**	**F**	-	-	**545.9**	**F**	-	-	**545.9**	**F**	
Seagirt Boulevard and Beach 32nd Street														
Seagirt Boulevard	EB	LTR	0.42	15.7	B	LTR	0.46	16.4	B	LTR	0.46	16.4	B	- Mitigation not required.
	WB	LTR	0.54	17.0	B	LTR	0.58	17.6	B	LTR	0.58	17.6	B	
Beach 32nd Street	NB	LTR	0.08	17.1	B	LTR	0.12	17.5	B	LTR	0.12	17.5	B	
	SB	LTR	0.14	17.7	B	LTR	0.14	17.7	B	LTR	0.14	17.7	B	
Overall Intersection		-	-	**16.5**	**B**	-	-	**17.1**	**B**	-	-	**17.1**	**B**	
Beach Channel Drive and Beach 49th Street (Unsignalized)														

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive	EB	LTR	-	0.4	A	LTR	-	0.5	A	LTR	-	0.5	A	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	WB	LTR	-	0.3	A	LTR	-	3.0	A	LTR	-	3.0	A	
Beach 49th Street	NB	L	-	209.1	F	L	-	600+	F	~~L~~L[3]	-	600+	F	
	NB	TR	-	33.1	D	TR	-	265.3	F	~~TR~~TR[3]	-	362.4	F	
	SB	L	-	140.9	F	L	-	600+	F	~~L~~L[3]	-	600+	F	
	SB	TR	-	20.3	C	TR	-	362.2	F	~~TR~~TR[3]	-	473.2	F	
Overall Intersection		**-**	**-**	**3.8**	**A**	**-**	**-**	**175.8**	**F**	**-**	**-**	**600+**	**F**	
Beach Channel Drive and Beach 50th Street (Unsignalized)														
Beach Channel Drive	EB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	- Unmitigated.
	WB	LT	-	4.6	A	LT	-	23.6	C	LT	-	23.6	C	
Beach 50th Street	NB	LR	-	47.2	E	LR	-	600+	F	LR	-	600+	F	
Overall Intersection		**-**	**-**	**6.0**	**A**	**-**	**-**	**600+**	**F**	**-**	**-**	**600+**	**F**	
Rockaway Beach Boulevard and Beach 50th Street (Unsignalized)														

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Beach Boulevard	EB	LT	-	1.5	A	LT	-	2.1	A	LT	-	2.1	A	- Mitigation not required.
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	
Beach 50th Street	SB	LR	-	18.1	C	LR	-	26.5	D	LR	-	26.5	D	
Overall Intersection		**-**	**-**	**2.8**	**A**	**-**	**-**	**4.0**	**A**	**-**	**-**	**4.0**	**A**	
Rockaway Beach Boulevard and Beach 49th Street (Unsignalized)														
Rockaway Beach Boulevard	EB	LT	-	0.1	A	LT	-	0.2	A	LT	-	~~0.2~~23.8	~~A~~C	- Mitigation not required; improvements needed to mitigate impact in weekday midday period and safety impact in all periods. - Upgrade traffic control from Two-Way Stop to All-Way Stop with marked crosswalks on all three approaches.
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	~~0.0~~17.7	~~A~~C	
Beach 49th Street	SB	L	-	18.7	C	L	-	~~63.5~~65.6	F	L	-	~~63.5~~11.3	~~F~~B	
	SB	R	-	10.8	B	R	-	16.3	C	R	-	~~16.3~~8.1	~~C~~A	
Overall Intersection		**-**	**-**	**0.4**	**A**	**-**	**-**	**~~4.9~~5.1**	**A**	**-**	**-**	**~~4.9~~20.3**	**~~A~~C**	
Rockaway Beach Boulevard and Beach 44th Street (Unsignalized)														

Table 19-5 Traffic Levels of Service Comparison – Weekday PM Peak Hour

Intersection & Approach		No-Action				With-Action				Mitigation				
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Proposed Measures
Rockaway Beach Boulevard	EB	TR	-	~~0.0~~9.1	~~A~~	TR	-	~~0~~12.0	~~A~~B	TR	-	~~0~~12.0	~~A~~B	- Mitigation not required.
	WB	LT	-	~~1.3~~8.9	~~A~~	LT	-	~~1.0~~10.8	~~A~~B	LT	-	~~1.0~~10.8	~~A~~B	
Beach 44th Street	NB	LTR	-	~~13.5~~8.4	~~B~~A	LTR	-	~~26.6~~9.2	~~D~~A	LTR	-	~~26.6~~9.2	~~D~~A	
	SB	LTR	-	~~11.2~~8.1	~~B~~A	LTR	-	~~19.5~~9.0	~~C~~A	LTR	-	~~19.5~~9.0	~~C~~A	
Overall Intersection		-	-	~~3.1~~8.8	**A**	-	-	~~4.2~~11.1	~~A~~B	-	-	~~4.2~~11.1	~~A~~B	
Rockaway Beach Boulevard and Beach 41st Street (Unsignalized)														
Rockaway Beach Boulevard	EB	LTR	-	0.4	A	LTR	-	0.4	A	LTR	-	0.4	A	- Mitigation not required.
	WB	LTR	-	0.1	A	LTR	-	1.1	A	LTR	-	1.1	A	
Beach 41st Street	NB	LTR	-	10.4	B	LTR	-	~~18.0~~17.8	C	LTR	-	~~18.0~~17.8	C	
Overall Intersection		-	-	**0.8**	**A**	-	-	**2.6**	**A**	-	-	**2.6**	**A**	

Note: Shading indicates impacted movement.

[1] Control delay is measured in seconds per vehicle.

[2] Overall intersection v/c ratio is the critical lane groups' v/c ratio.

[3] Per *CEQR Technical Manual* criteria, minor street lane groups at unsignalized intersections are not considered to be impacted when peak hour volume is below 90 PCEs.

*Northbound approaches to Edgemere Avenue at Beach 44th Street and Beach 54th Street have zero volume in field observed data.

**Synchro results used instead of HCM 2000 due to node clustering.

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Beach 35th Street and Seagirt Boulevard														
Beach Channel Drive	SW	R	1.00	67.0	E	R	1.17	123.6	F	R	1.02	67.7	E	- Modify signal timing: Shift 4 s green time from NB/SB phase to EB/SWB phase [EB/SWB phase shifts from 32 s to 36 s].
	EB	TR	0.60	21.2	C	TR	0.72	23.4	C	TR	0.66	19.~~2~~3	B	
	EB	L	0.82	29.8	C	L	0.96	44.1	D	L	0.84	~~26.9~~27.2	C	
Seagirt Boulevard	WB	T	0.61	13.8	B	T	0.78	23.7	C	T	0.78	23.7	C	
Beach 35th Street	NB	LT	0.02	20.2	C	LT	0.02	20.2	C	LT	0.02	23.0	C	
	NB	R	0.11	21.1	C	R	0.11	21.1	C	R	0.13	24.1	C	
	SB	LTR	0.10	21.0	C	LTR	0.10	21.0	C	LTR	0.12	24.0	C	
Overall Intersection		-	-	**36.1**	**D**	-	-	**61.5**	**E**	-	-	**38.~~2~~5**	**D**	
Seagirt Boulevard and Rockaway Freeway														
Seagirt Boulevard	EB	L	0.09	14.7	B	L	0.15	17.1	B	L	0.15	15.~~5~~1	B	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections.
	EB	TR	0.23	15.2	B	TR	0.24	17.8	B	TR	0.24	~~16.2~~15.8	B	
	WB	LT	0.63	40.2	D	LT	0.70	41.6	D	LT	0.70	41.~~5~~6	D	
	WB	R	0.28	35.0	C	R	0.28	34.3	C	R	0.28	34.3	C	
Rockaway Freeway at Seagirt Boulevard WB	NE	T	0.32	1.7	A	T	0.37	2.3	A	T	0.37	2.3	A	
	SW	TR	0.57	26.2	C	TR	0.66	28.5	C	TR	0.66	28.5	C	
Rockaway Freeway at Seagirt Boulevard EB	NE	TR	0.66	28.9	C	TR	0.66	28.9	C	TR	0.66	28.9	C	
	SW	T	0.69	13.4	B	T	0.69	12.1	B	T	0.69	12.1	B	
Overall Intersection		-	-	**22.0**	**C**	-	-	**22.6**	**C**	-	-	**22.3**	**C**	

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

Intersection & Approach		No-Action Mvt	No-Action V/C	No-Action Ctrl Delay[1]	No-Action LOS	With-Action Mvt	With-Action V/C	With-Action Ctrl Delay[1]	With-Action LOS	Mitigation Mvt	Mitigation V/C	Mitigation Ctrl Delay[1]	Mitigation LOS	Proposed Measures
Beach Channel Drive and Beach 37th Street														
Beach Channel Drive	EB	LTR	0.68	19.0	B	LTR	0.76	22.0	C	LTR	0.93	43.6	D	- Unmitigated; improvements needed to mitigate air quality impacts - Modify signal timing: Add a new lead phase for the WB approach. The With-Action signal phasing [EB/WB would have 49 s of green time; NB/SB would have 31 s of green time] would be modified to the following: WB lead phase will have 14 s of green time, EB/WB phase will have 40 s of green time, and NB/SB will have 21 s of green time [all phases will have 3 s amber and 2 s all red].
	WB	LTR	1.28	142.8	F	LTR	2.48	600+	F	LTR	1.90	451.6	F	
Beach 37th Street	NB	LTR	0.22	21.9	C	LTR	0.~~42~~ 41	25.~~7~~2	C	LTR	0.~~67~~ 63	~~43.8~~41.2	D	
	SB	LTR	0.05	19.9	B	LTR	0.06	20.0	B	LTR	0.09	27.7	C	
Overall Intersection		-	-	**87.7**	**F**	-	-	**388.8**	**F**	-	-	**271.~~3~~1**	**F**	

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Beach 40th Street														
Beach Channel Drive	EB	LTR	0.64	17.7	B	LTR	0.71	19.9	B	LTR	0.71	19.9	B	- Unmitigated.
	WB	LTR	1.00	53.0	D	LTR	1.15	101.~~7~~1	F	LTR	1.15	101.~~7~~1	F	
Beach 40th Street	SB	LTR	0.10	20.4	C	LTR	0.11	20.6	C	LTR	0.11	20.6	C	
Overall Intersection		-	-	**37.6**	**D**	-	-	**~~66.1~~65.9**	**E**	-	-	**~~66.1~~65.8**	**E**	
Beach Channel Drive and Beach 44th Street														
Beach Channel Drive	EB	TR	0.74	22.0	C	TR	0.82	26.4	C	TR	0.76	20.1	C	- Modify signal timing: Shift 4 s green time from SB phase to EB/WB phase [EB/WB phase shifts from 54 s to 58 s].
	WB	LT	0.96	43.3	D	LT	1.07	73.~~7~~2	E	LT	0.99	~~47.0~~46.7	D	
Beach 44th Street	SB	LTR	0.06	19.9	B	LTR	0.08	20.2	C	LTR	0.10	23.2	C	
Overall Intersection		-	-	**33.7**	**C**	-	-	**52.4**1	**D**	-	-	**~~35.0~~34.9**	**D**	

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive and Arverne Boulevard and Beach 62nd Street														
Beach Channel Drive at Beach 62nd Street	EB	LT	0.60	26.0	C	LT	0.74	31.3	C	LT	0.74	31.3	C	- Unmitigated.
	EB	R	0.94	66.5	E	R	1.11	114.6	F	R	1.11	114.6	F	
Beach 62nd Street	NB	L	0.40	34.4	C	L	0.40	34.3	C	L	0.40	34.3	C	
	NB	TR	0.33	32.0	C	TR	0.33	32.1	C	TR	0.33	32.1	C	
	SB	LTR	0.50	37.9	D	LTR	0.56	39.9	D	LTR	0.56	39.9	D	
Beach Channel Drive at WB Arverne Blvd	WB	T	0.75	30.1	C	T	0.85	36.1	D	T	0.85	36.1	D	
Arverne Boulevard	NW	LR	0.57	37.4	D	LR	0.75	46.0	D	LR	0.75	46.0	D	
Overall Intersection		-	-	**37.9**	**D**	-	-	**51.7**	**D**	-	-	**51.7**	**D**	
Rockaway Beach Boulevard and Beach 38th Street														
Rockaway Beach Blvd	EB	TR	0.20	9.5	A	TR	0.39	11.6	B	TR	0.39	11.6	B	- Mitigation not required.
	WB	LT	0.13	8.9	A	LT	0.27	10.1	B	LT	0.27	10.1	B	
Beach 38th Street	NB	LR	0.08	13.3	B	LR	0.17	14.4	B	LR	0.17	14.4	B	
	SB	LTR	0.05	13.1	B	LTR	0.10	13.5	B	LTR	0.10	13.5	B	
Overall Intersection		-	-	**10.3**	**B**	-	-	**11.6**	**B**	-	-	**11.6**	**B**	

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Arverne Boulevard / Rockaway Beach Boulevard and Beach 54th Street														
Arverne Boulevard	EB	L	0.02	15.8	B	L	0.02	15.9	B	L	0.02	15.9	B	- Mitigation not required. However, the results reflect the following measures proposed as weekday AM and PM peak hour mitigation: - Restripe the WB Rockaway Beach Boulevard approach from one travel lane to one 11-ft wide exclusive left-turn pocket lane (100 ft) and one 11-ft wide travel lane. - Install "No Standing Anytime" regulations along the north curb of the WB approach for 125 ft from the intersection.
	EB	TR	0.59	24.7	C	TR	0.71	28.6	C	TR	0.71	28.6	C	
Rockaway Beach Boulevard	WB	-	-	-	-	-	-	-	-	L	0.31	21.5	C	
	WB	-	-	-	-	-	-	-	-	TR	0.51	22.4	C	
	WB	LTR	0.52	23.1	C	LTR	0.85	41.2	D	LTR	-	22.3	C	
Beach 54th Street	NB	LTR	0.22	5.0	A	LTR	0.24	4.8	A	LTR	0.24	4.8	A	
	SB	LTR	0.13	23.0	C	LTR	0.14	23.1	C	LTR	0.14	23.1	C	
Overall Intersection		-	-	**20.1**	**C**	-	-	**28.6**	**C**	-	-	**21.6**	**C**	
Arverne Boulevard and Beach 56th Street (West)														

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Arverne Boulevard	EB	T	0.33	10.8	B	T	0.41	11.8	B	T	0.40	11.2	B	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections
	WB	T	0.25	9.9	A	T	0.31	10.6	B	T	0.31	10.0	A	
Beach 56th Street	NB	LR	0.08	22.9	C	LR	0.08	22.9	C	LR	0.09	23.7	C	
Overall Intersection		-	-	**11.1**	**B**	-	-	**11.8**	**B**	-	-	**11.3**	**B**	
Arverne Boulevard and Beach 59th Street														
Arverne Boulevard	EB	TR	0.53	12.2	B	TR	0.61	13.8	B	TR	0.61	13.8	B	- Mitigation not required.
	WB	L	0.19	8.8	A	L	0.21	9.2	A	L	0.21	9.2	A	
	WB	T	0.25	8.8	A	T	0.33	9.6	A	T	0.33	9.6	A	
Beach 59th Street	SB	LT	0.53	21.0	C	LT	0.54	21.1	C	LT	0.54	21.1	C	
	SB	R	0.03	14.3	B	R	0.03	14.3	B	R	0.03	14.3	B	
Overall Intersection		-	-	**13.6**	**B**	-	-	**14.2**	**B**	-	-	**14.2**	**B**	

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Freeway and Beach 44th Street														
Rockaway Freeway	EB	L	0.07	41.6	D	L	0.07	41.6	D	L	0.07	42.9	D	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections
	EB	TR	0.32	6.9	A	TR	0.32	7.2	A	TR	0.31	6.4	A	
	WB	L	0.08	36.7	D	L	0.08	36.7	D	L	0.08	36.7	D	
	WB	TR	0.31	17.0	B	TR	0.31	17.0	B	TR	0.29	15.7	B	
Beach 44th Street	NB	LTR	0.09	40.5	D	LTR	0.11	~~39.9~~4 0.0	D	LTR	0.12	41.4	D	
	SB	LTR	0.22	26.5~~2~~	C	LTR	0.27	~~28.4~~2 7.0	C	LTR	0.30	~~30.0~~28 .9	C	
Overall Intersection		-	-	**16.6~~5~~**	**B**	-	-	**17.5~~3~~**	**B**	-	-	**~~17.1~~16. 9**	**B**	
Rockaway Freeway and Beach 54th Street														
Rockaway Freeway	EB	TR	0.32	2.0	A	TR	0.32	2.0	A	TR	0.30	1.1	A	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections
	WB	L	0.28	~~55.2~~5 4.8	~~E~~D	L	0.28	~~55.0~~5 4.7	D	L	0.28	55.9	E	
	WB	TR	0.25	17.~~1~~0	B	TR	0.25	17.1	B	TR	0.24	16.4	B	
Beach 54th Street	NB	LTR	0.28	40.4	D	LTR	0.31	40.7	D	LTR	0.34	41.8	D	
	SB	LTR	0.20	37.8	D	LTR	0.24	37.0	D	LTR	0.26	42.0	D	
Overall Intersection		-	-	**22.~~7~~6**	**C**	-	-	**23.4**	**C**	-	-	**24.1**	**C**	
Rockaway Freeway and Beach 56th Street														

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Freeway	EB	TR	0.36	22.3	C	TR	0.36	22.3	C	TR	0.36	22.3	C	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections
	WB	L	0.08	21.3	C	L	0.08	21.4	C	L	0.08	22.4	C	
	WB	TR	0.21	2.~~2~~3	A	TR	0.21	2.~~2~~3	A	TR	0.21	2.2	A	
Beach 56th Street	NB	LTR	0.04	37.4	D	LTR	0.04	37.1	D	LTR	0.04	37.6	D	
Overall Intersection		-	-	**14.3~~4~~**	**B**	-	-	**14.3~~4~~**	**B**	-	-	**14.4**	**B**	
Rockaway Freeway and Beach 59th Street														
Rockaway Freeway	WB	L	0.66	48.3	D	L	0.66	48.3	D	L	0.66	48.2	D	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections
	WB	T	0.07	26.8	C	T	0.07	26.8	C	T	0.07	26.7	C	
Beach 59th Street	SB	LT	1.03	87.3	F	LT	1.04	89.3	F	LT	1.04	89.3	F	
	SB	R	0.01	25.8	C	R	0.01	25.8	C	R	0.01	25.8	C	
Overall Intersection		-	-	**71.2**	**E**	-	-	**72.7**	**E**	-	-	**72.6**	**E**	
Edgemere Avenue and Beach 38th Street														

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Edgemere Avenue	EB	LTR	0.83	34.9	C	LTR	0.~~87~~88	~~33.83~~4.0	C	LTR	0.~~85~~83	~~32~~30.3	C	- Modify signal timing: Shift ~~1~~2 s green time from NB/SB phase to EB/WB phase [EB/WB phase shifts from 42 s to ~~43~~44 s].[JR1]
	WB	LT	1.02	69.0	E	LT	1.08	87.2	F	LT	1.~~04~~00	~~72.96~~2.3	E	
	WB	R	0.01	15.7	B	R	0.06	16.2	B	R	0.~~06~~05	15.~~6~~0	B	
Beach 38th Street	NB	LTR	0.01	21.5	C	LTR	0.01	21.5	C	LTR	0.01	22.~~2~~9	C	
	SB	LTR	0.12	16.2	B	LTR	0.20	17.0	B	LTR	0.~~20~~21	~~17.7~~18.4	B	
Overall Intersection		-	-	**48.5**	**D**	-	-	**54.~~1~~2**	**D**	-	-	**~~42.~~24 ~~7.5~~**	**D**	
Edgemere Avenue and Beach 41st Street														
Edgemere Avenue	EB	LTR	0.76	23.0	C	LTR	0.96	28.~~6~~5	C	LTR	0.96	37.4	D	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections
	WB	LTR	0.74	22.4	C	LTR	0.78	23.1	C	LTR	0.78	~~23.9~~24.5	C	
Beach 41st Street	NB	LTR	0.00	23.5	C	LTR	0.00	23.5	C	LTR	0.00	23.5	C	
	SB	LTR	0.05	17.3	B	LTR	0.11	17.9	B	LTR	0.11	17.9	B	
Overall Intersection		-	-	**22.6**	**C**	-	-	**25.5**	**C**	-	-	**30.~~2~~5**	**C**	
Edgemere Avenue and Beach 44th Street														

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Edgemere Avenue	EB	LTR	0.93	24.5	C	LTR	1.11	74.7	E	LTR	0.97	28.8	C	- Modify signal timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB phase shifts from 45 s to 47 s].
	WB	LTR	0.76	29.3	C	LTR	0.78	29.5	C	LTR	0.75	25.~~2~~0	C	
Beach 44th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	
	SB	LTR	0.10	~~6.0~~5.2	A	LTR	0.13	4.5~~.1~~	A	LTR	0.14	~~5~~.4.7	A	
Overall Intersection		-	-	**25.92** ~~**6.0**~~	**C**	-	-	**49.4**	**D**	-	-	**25.8~~2~~6**	**C**	
Edgemere Avenue and Beach 54th Street														
Edgemere Avenue	EB	LTR	3+	600+	F	LTR	3+	600+	F	LTR	3+	600+	F	- Modify signal timing: Shift 2 s green time from NB/SB phase to EB/WB phase [EB/WB phase shifts from 42 s to 44 s].
	WB	LTR	0.80	27.4~~5~~	C	LTR	0.81	28.4~~7~~	C	LTR	0.77	26.~~0~~1	C	
Beach 54th Street	NB*	LTR	0.00	0.0	-	LTR	0.00	0.0	-	LTR	0.00	0.0	-	
	SB	LTR	0.23	1.4	A	LTR	0.27	1.7	A	LTR	0.31	2.7	A	
Overall Intersection		-	-	**600+**	**F**	-	-	**600+**	**F**	-	-	**600+**	**F**	
Rockaway Beach Boulevard and Beach 56th Street (West)														
Rockaway Beach Boulevard	EB	T	1.02	37.2	D	T	1.06	54.2	D	T	1.03	41.8	D	- Modify signal timing: Shift 1 s green time from SB phase to EB/WB phase [EB/WB phase shifts from 42 s to 43 s].
	WB	TR	0.98	46.5	D	TR	1.02	56.9	E	TR	1.00	48.~~5~~6	D	
Beach 56th Street	SB	LR	0.02	2.8	A	LR	0.02	2.8	A	LR	0.02	2.9	A	
Overall Intersection		-	-	**41.2**	**D**	-	-	**54.9**	**D**	-	-	**44.~~5~~6**	**D**	

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Beach Boulevard and Beach 59th Street**														
Rockaway Beach Boulevard	EB	TR	1.09	91.2	F	TR	1.14	106.3	F	TR	1.14	106.3	F	- Unmitigated.
	WB	LT	1.96	460.4	F	LT	2.47	600+	F	LT	2.47	600+	F	Changes in delay are a result of mitigation measures at nearby intersections
Beach 59th Street	NB	LTR	0.29	31.4	C	LTR	0.32	32.0	C	LTR	0.32	32.0	C	
	SB	LT	0.11	2.7	A	LT	0.11	2.7	A	LT	0.11	2.7	A	
	SB	R	0.55	36.8	D	R	0.56	36.5	D	R	0.56	36.5	D	
Overall Intersection		-	-	**224.0**	**F**	-	-	**319.0**	**F**	-	-	**319.3**	**F**	
Seagirt Boulevard and Beach 32nd Street														
Seagirt Boulevard	EB	LTR	0.35	14.7	B	LTR	0.39	15.5	B	LTR	0.39	15.5	B	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections
	WB	LTR	0.38	14.9	B	LTR	0.41	15.3	B	LTR	0.41	15.3	B	
Beach 32nd Street	NB	LTR	0.17	18.1	B	LTR	0.23	18.9	B	LTR	0.23	18.9	B	
	SB	LTR	0.14	17.7	B	LTR	0.14	17.7	B	LTR	0.14	17.7	B	
Overall Intersection		-	-	**15.1**	**B**	-	-	**15.7**	**B**	-	-	**15.7**	**B**	
Beach Channel Drive and Beach 49th Street (Unsignalized)														

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Beach Channel Drive	EB	LTR	-	0.3	A	LTR	-	0.4	A	LTR	-	0.4	A	- Mitigation not required. Changes in delay are a result of mitigation measures at nearby intersections
	WB	LTR	-	0.1	A	LTR	-	2.4	A	LTR	-	2.4	A	
Beach 49th Street	NB	L	-	84.0	F	L	-	600+	F	~~L~~L[3]	-	600+	F	
	NB	TR	-	51.3	F	TR	-	376.1	F	~~TR~~TR[3]	-	402.2	F	
	SB	L	-	76.5	F	L	-	600+	F	~~L~~L[3]	-	600+	F	
	SB	TR	-	24.6	C	TR	-	254.4	F	~~TR~~TR[3]	-	270.4	F	
Overall Intersection		**-**	**-**	**3.1**	**A**	**-**	**-**	**600+**	**F**	**-**	**-**	**600+**	**F**	
Beach Channel Drive and Beach 50th Street (Unsignalized)														
Beach Channel Drive	EB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	- Unmitigated.
	WB	LT	-	2.8	A	LT	-	15.9	C	LT	-	15.9	C	
Beach 50th Street	NB	LR	-	34.4	D	LR	-	600+	F	LR	-	600+	F	
Overall Intersection		**-**	**-**	**3.9**	**A**	**-**	**-**	**600+**	**F**	**-**	**-**	**600+**	**F**	
Rockaway Beach Boulevard and Beach 50th Street (Unsignalized)														

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

		No-Action				With-Action				Mitigation				
Intersection & Approach		**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Mvt**	**V/C**	**Ctrl Delay[1]**	**LOS**	**Proposed Measures**
Rockaway Beach Boulevard	EB	LT	-	1.4	A	LT	-	2.0	A	LT	-	2.0	A	- Mitigation not required.
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A	
Beach 50th Street	SB	LR	-	13.8	B	LR	-	19.2	C	LR	-	19.2	C	
Overall Intersection		**-**	**-**	**2.2**	**A**	**-**	**-**	**3.0**	**A**	**-**	**-**	**3.0**	**A**	
Rockaway Beach Boulevard and Beach 49th Street (Unsignalized)														
Rockaway Beach Boulevard	EB	LT	-	0.2	A	LT	-	0.3	A	LT	-	~~0.3~~13.6	~~A~~B	- Mitigation not required; improvements needed to mitigate impact in weekday midday period and safety impact in all periods. - Upgrade traffic control from Two-Way Stop to All-Way Stop with marked crosswalks on all three approaches.
	WB	TR	-	0.0	A	TR	-	0.0	A	TR	-	~~0~~12.0	~~A~~B	
Beach 49th Street	SB	L	-	13.8	B	L	-	~~36.2~~37.4	E	L	-	~~36~~10.2	~~E~~B	
	SB	R	-	10.0	A	R	-	~~15.9~~16.0	C	R	-	~~15.9~~7.4	~~C~~A	
Overall Intersection		**-**	**-**	**0.3**	**A**	**-**	**-**	**3.~~6~~7**	**A**	**-**	**-**	**~~3~~12.6**	**~~A~~B**	
Rockaway Beach Boulevard and Beach 44th Street (Unsignalized)														

Table 19-6 Traffic Levels of Service Comparison – Saturday Peak Hour

Intersection & Approach		No-Action				With-Action				Mitigation				
		Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Mvt	V/C	Ctrl Delay[1]	LOS	Proposed Measures
Rockaway Beach Boulevard	EB	TR	-	~~0.0~~8.6	A	TR	-	~~0.0~~11.1	~~A~~B	TR	-	~~0.0~~11.1	~~A~~B	- Mitigation not required.
	WB	LT	-	~~0.7~~8.1	A	LT	-	~~0.5~~9.8	A	LT	-	~~0.5~~9.8	A	
Beach 44th Street	NB	LTR	-	~~12.1~~8.0	~~B~~A	LTR	-	~~24.6~~8.9	~~C~~A	LTR	-	~~24.6~~8.9	~~C~~A	
	SB	LTR	-	~~10.9~~7.8	~~B~~A	LTR	-	~~19.~~8.7	~~C~~A	LTR	-	~~19.~~8.7	~~C~~A	
Overall Intersection		-	-	~~2.9~~8.3	**A**	-	-	10.~~3.7~~	~~A~~B	-	-	10.~~3.7~~	~~A~~B	
Rockaway Beach Boulevard and Beach 41st Street (Unsignalized)														
Rockaway Beach Boulevard	EB	LTR	-	0.2	A	LTR	-	0.3	A	LTR	-	0.3	A	- Mitigation not required.
	WB	LTR	-	0.3	A	LTR	-	1.~~4~~5	A	LTR	-	1.~~4~~5	A	
Beach 41st Street	NB	LTR	-	10.2	B	LTR	-	18.~~8~~5	C	LTR	-	18.~~8~~5	C	
Overall Intersection		-	-	**0.7**	**A**	-	-	**3.~~2~~1**	**A**	-	-	**3.~~2~~1**	**A**	

Note: Shading indicates impacted movement.

[1] Control delay is measured in seconds per vehicle.

[2] Overall intersection v/c ratio is the critical lane groups' v/c ratio.

[3] Per *CEQR Technical Manual* criteria, minor street lane groups at unsignalized intersections are not considered to be impacted when peak hour volume is below 90 PCEs.

*Northbound approaches to Edgemere Avenue at Beach 44th Street and Beach 54th Street have zero volume in field observed data.

**Synchro results used instead of HCM 2000 due to node clustering.

As shown in **Table 19-1**, seven impacted intersections could be fully mitigated in the weekday AM peak hour, ~~four~~five in the weekday midday peak hour, six in the weekday PM peak hour, and six in the Saturday peak hour. As shown in **Table 19-2**, ~~15, five, ten~~fifteen, six, eleven, and seven impacted movements could be fully mitigated in the weekday AM, midday, and PM, and Saturday peak hours, respectively. Overall, with implementation of the proposed measures, ~~five~~six intersections (and 12 movements) in the weekday AM peak hour, ~~eight~~seven intersections (and ~~12~~11 movements) in the weekday midday peak hour, seven intersections (and 11 movements) in the weekday PM peak hour, and five intersections (and seven movements) in the Saturday peak hour would remain unmitigated.

One or more traffic movements at the following intersections could not be mitigated in at least one peak hour:

- Beach Channel Drive and Beach 37th Street (all four peak hours)
- Beach Channel Drive and Beach 40th Street (weekday midday, weekday PM and Saturday peak hours)
- Beach Channel Drive and Beach 44th Street (weekday midday peak hour)
- Beach Channel Drive and Arverne Boulevard and Beach 62nd Street (all four peak hours)
- Edgemere Avenue and Beach 41st Street (weekday AM and weekday PM peak hours)
- Edgemere Avenue and Beach 54th Street (weekday AM and weekday PM peak hours)
- Rockaway Beach Boulevard and Beach 59th Street (all four peak hours)
- Beach Channel Drive and Beach 49th Street (weekday midday peak)
- Beach Channel Drive and Beach 50th Street (all four peak hours)
- ~~Rockaway Beach Boulevard and Beach 49th Street (weekday midday peak)~~

Implementation

As detailed in **Table 19-3** through **Table 19-6** above, most of the traffic capacity improvement measures proposed as mitigation for significant traffic impacts are signal ~~timing and~~ phasing and timing modifications that are typically implemented by NYCDOT. Other mitigation measures identified for implementation include converting a two-way stop controlled intersection to all-way stop controlled, lane re-striping to provide a left turn pocket lane and parking regulation modifications at one location that would enable that left turn pocket lane to be accommodated. Implementation of the proposed measures would be subject to review and approval by NYCDOT. If, prior to implementation, NYCDOT determines that an identified mitigation measure is infeasible, an alternative and equivalent mitigation measure would need to be identified. In the absence of the application of an acceptable mitigation measure at a particular significantly impacted location, the impact would remain unmitigated.

Bus

As presented in **Chapter 12, Transportation**, the Q22 bus is expected to be significantly impacted by the Proposed Actions in the weekday AM and PM peak hours in both the eastbound and westbound directions. To mitigate the projected shortfall in available capacity, an increase in service levels would be needed. **Table 19-7** provides a comparison of the available capacity under With-Action conditions with and without a proposed service

adjustment. As shown in **Table 19-7**, the introduction of one additional bus in each direction in both peak hours would fully accommodate future projected demand. Implementation of these service changes require approval and implementation by the operator (MTA Bus Company) and is subject to fiscal and operational constraints.

Overall, with the proposed service adjustment, the Q22 bus route in the weekday AM peak hour would be able to accommodate 46 additional passengers in the eastbound direction and 50 additional passengers in the westbound direction. In the weekday PM peak hour, the Q22 route would be able to accommodate 42 and 33 additional passengers, in the eastbound and westbound directions, respectively.

Table 19-7 Bus Line-Haul Capacity Comparison – Q22 Bus

				With-Action			With-Action with Proposed Service Adjustment		
Peak Hour	**Direction**	**Maximum Load Point**	**Peak Hour Passengers**	**Peak Hour Buses[1]**	**Average Passengers per Bus**	**Available Capacity[2]**	**Peak Hour Buses[3]**	**Average Passengers per Bus**	**Available Capacity[3]**
AM	EB	Beach Channel Dr & Beach 35th St	386	7	55	-8	8	48	46
	WB	Rockaway Beach Bl & Cross Bay Pkwy	544	10	54	-4	11	49	50
PM	EB	Rockaway Beach Bl & Beach 88th St	444	8	56	-12	9	49	42
	WB	Beach Channel Drive & Beach 47th St	453	8	57	-21	9	50	33

Notes: Methodology based on *2020 CEQR Technical Manual* guidelines
[1] Assumes service levels adjusted to address capacity shortfalls under No-Action conditions.
[2] Available capacity based on MTA loading guidelines of 54 passengers per 40-foot standard bus
[3] Assumes service levels adjusted to address capacity shortfalls under With-Action conditions
Shading denotes a significant impact
EB=Eastbound; WB=Westbound

Pedestrian Safety

As discussed in **Chapter 12, Transportation**, currently there is no marked crossing in the north/south direction on Rockaway Beach Boulevard between Beach ~~39th~~45th Street and Beach 53rd Street. As a result, it is likely that pedestrians en route to and from ~~projected developments sites~~Projected Development Sites 1 and 2 would choose to cross Rockaway Beach Boulevard at a proximate location where a marked crosswalk is not present, such as at the ~~intersections~~intersection of Rockaway Beach Boulevard at Beach ~~40th Street, Beach 41st Street, Beach 42nd Street, Beach 44th Street, Beach 47th Street and Beach~~ 49th Street. This would have the potential for a significant pedestrian safety impact. The installation of new pedestrian crossings ~~at~~as part of the ~~locations listed above would fully mitigate the Proposed Action's potential for a pedestrian safety impact. A new crossing would involve the installation of a new~~proposed traffic ~~signal, a new~~ control conversion at this location (from

two-way stop control to all-way stop control~~, or an Enhanced Pedestrian crossing. Between the DEIS and FEIS, the appropriate traffic control measure to be installed will be finalized in consultation with the lead agency and NYCDOT to~~) would facilitate the safe and efficient movement of pedestrians crossing Rockaway Beach Boulevard. ~~If, however, no control device is found to be warranted or~~Therefore this proposed measure would fully mitigate the Proposed Action's potential for a pedestrian safety impact. However, these improvements are under further review by NYCDOT. In the event these improvements are not feasible, the ~~significant pedestrian safety~~ impact would remain unmitigated.

Air Quality

The air quality analysis presented in **Chapter 13, Air Quality** demonstrated that one intersection would be adversely impacted by the With-Action traffic emissions. Results of the air quality analysis for the intersection of Beach Channel Drive and Beach 37th Street were above the *CEQR de minimis* annual threshold. To mitigate the impact, the signal phasing at this intersection was modified to have a smoother throughput as mentioned in the **Traffic** section above. The mitigated scenario improved traffic speeds. This mitigated scenario was analyzed to determine the air quality impacts. The results of this analysis are summarized in **Table 19-8**.

Table 19-8 Highest Annual $PM_{2.5}$ Concentrations for No-Action and With Mitigation Conditions in 2031 ($\mu g/m^3$)

Intersection	No-Action Impact[1]	No-Action Total[2]	With Mitigation Impact[1]	With Mitigation Total[2]	Increment
Beach Channel at Beach 37th	0.6	6.4	0.7	6.5	0.1
Beach Channel and Beach 62nd	0.4	6.2	0.4	6.2	0.1
Rockaway Beach at Beach 38th	0.2	6.0	0.2	6.0	0.0
$PM_{2.5}$ CEQR ***de minimis***		**12.0**		**12.0**	**0.1**

Source: VHB, Inc. November 2021

Notes:

[1] No-Action and With Mitigation impacts are the highest average levels over the modeled five years of meteorological observations.

[2] No-Action and With Mitigation total results include background concentrations from **Table 13-2** from the **Chapter 13, Air Quality**.

The results indicate that with the mitigation measures in place, annual $PM_{2.5}$ impacts improved and were meeting the annual CEQR de minimis criteria at all intersections. As such, no significant adverse air quality impacts from the Proposed Actions' traffic emissions are anticipated under the mitigation scenario.

Construction

Noise

As presented in **Chapter 18, Construction**, the Proposed Action would result in significant adverse noise impacts at 255 receptors throughout the Project Area. The impacts are mainly due to the low ambient noise levels in the area and due to the close proximity of construction activities to existing noise-sensitive receptors.

Construction activities would adhere to the NYCDEP Noise Code to mitigate construction noise. Noise source and path control measures that would be implemented to the extent feasible, practical, and safe include:

- The contractor would self-certify that all construction tools and equipment have been maintained to not generate excessive or unnecessary noise and that the noise emissions would not exceed the levels specified in the Federal Highway Administration's Roadway Construction Noise Model User's Guide, January 2006.
- All construction equipment would be equipped with necessary noise reduction equipment, including mufflers. All equipment with internal combustion engines would be operated with the doors closed, including noise-insulating materials, and at the lowest engine speed allowable.
- Where feasible, practical, and safe, the use of back-up alarms would be minimized and/or quieter back-up alarms would be installed in accordance with OSHA standards.
- Vehicles would not be allowed to idle more than three minutes in accordance with New York City Administrative Code §24-163.
- The contractor shall utilize a training program to inform workers on methods that can minimize construction noise.
- For impact equipment, such as pile drivers and jackhammers, the quietest equipment shall be selected taking into consideration the structural and geotechnical conditions.
- The DOB regulations require a perimeter barrier or "construction noise barrier" when the site is within 200 feet of a receptor, the barrier shall be constructed in a specific manner (as described in the New York City Noise Code) to provide sufficient sound attenuation. Section 3307.7 of the New York City Building Code requires a solid perimeter noise barrier made of wood or other suitable material be constructed where a new building is being constructed or a building is being demolished to grade.
- Should noise complaints occur during construction, the contractor shall use path noise control measures such as temporary noise barriers and jersey barriers.
- In general, the quietest equipment and methods shall be used for excavators, dump trucks, cranes, auger drills and concrete saws to the extent feasible and practical.

Implementation of these measures would not eliminate significant adverse construction noise impacts at all receptors. As such, further discussion is provided in **Chapter 21, Unavoidable Adverse Impacts**.

To eliminate all significant adverse noise impacts, use of the loudest construction equipment, such as pile drivers, would have to be reduced or eliminated and other construction activities would need to be substantially limited so as to not occur adjacent to existing noise sensitive receptors or to occur for substantially shorter durations. These limitations would severely limit the Proposed Action's goals and objective for the project. Therefore, since it is not feasible to fully avoid or mitigate potential impacts, the significant adverse noise impact would be unavoidable.

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Alternatives

As described in the *2020 CEQR Technical Manual*, alternatives selected for consideration in an environmental impact statement are generally those which are feasible and have the potential to reduce, eliminate, or avoid adverse impacts of a proposed action while meeting some or all of the goals and objectives of this action.

Introduction

As described in **Chapter 1, Project Description**, the Department of Housing Preservation and Development (HPD, or the Applicant) is proposing a series of land use actions (collectively the Proposed Actions) to facilitate the development of 1,222 residential units in approximately 1,313,659 gsf, including up to 465 affordable residential units; approximately 115,849 gsf of local retail uses; and approximately 640 new parking spaces in the Edgemere neighborhood of Queens.

This chapter considers the following two alternatives to the Proposed Actions:

- A No-Action Alternative, which is mandated by City Environmental Quality Review (CEQR) and the State Environmental Quality Review Act (SEQRA). The No-Action Alternative is intended to provide the lead and involved agencies with an assessment of the expected environmental conditions in 2031 (the "build year" for the Proposed Actions) in the absence of the Proposed Actions.
- A No Unmitigated Significant Adverse Impacts Alternative, which would eliminate any unmitigated significant adverse impacts of the Proposed Actions.

Principal Conclusions

A summary of the principal conclusions for the two alternatives is described below.

No-Action Alternative

The No-Action Alternative examines future conditions in 2031 absent the Proposed Actions. In simplest terms, the No-Action Alternative is the No-Action condition identified, described, and assessed in the preceding chapters of this EIS. In the No-Action Alternative, the Project Area is assumed to mostly remain unchanged from existing conditions (2,358 gsf of commercial space and 118 parking spaces on Projected Multi-Family Mixed-Use Development Site 1 and 44 parking spaces on Projected Multi-Family Mixed-Use Development Site 2). As discussed in greater detail below, the significant adverse impacts associated with the Proposed Actions would not occur under the No-Action Alternative. However, the No-Action Alternative would not meet the project goals, and as compared to the Proposed Actions, the intended benefits—the introduction of affordable housing units, economic activity introduced by local retail, and designation of open spaces along the waterfront—would be eliminated or substantially reduced with the No-Action Alternative.

The No-Action Alternative would not result in significant traffic, bus transit, or safety impacts whereas the Proposed Actions would have significant adverse impacts for those areas. Similar to the Proposed Actions, the No-Action Alternative would not result in significant adverse parking, subway station, subway line-haul, or pedestrian element impacts.

No Unmitigated Significant Adverse Impacts Alternative

The No Unmitigated Significant Adverse Impacts Alternative examines a scenario in which the projected density increase and other components of the Proposed Actions are changed specifically to avoid the unmitigated significant adverse impacts associated with the Proposed Actions. The Proposed Actions would result in significant adverse impacts to community facilities—specifically, early childhood programs, active open space, transportation in the areas of traffic and bus transit, and noise from construction.

To avoid the identified significant adverse impact to early childhood programs, the number of affordable dwelling units that could be developed on the Projected Development Sites would have to be reduced from 465 to 342, a reduction of 123 affordable units. A substantial reduction in the number of affordable housing units developed in the Project Area would be less supportive of the goals and objectives of the Proposed Actions. Alternatively, taking into account the proposed mitigation from other developments in the study area, the provision of 15 early childhood slots under this alternative would avoid the unmitigated significant adverse impact to early childhood programs.

To avoid the identified significant adverse impact to active open space ratios, the number of dwelling units that could be developed on the Projected Development Sites would have to be reduced from 1,222 to 801, a reduction of 421 units. A substantial reduction in the number of housing units developed in the Project Area would be less supportive of the goals and objectives of the Proposed Actions. Alternatively, approximately 1.20 acres of active open space would need to be provided in the Project Area to avoid the unmitigated significant adverse impact to active open space.

A sensitivity analysis determined that the RWCDS square footage would have to be reduced by as much as approximately 98 percent in order for the Proposed Actions to not result in any unmitigable transportation impacts. The degree to which the Proposed Actions would need to be modified to avoid unmitigable transportation impacts would compromise HPD's ability to achieve the project goals and objectives of introducing affordable housing units, economic activity introduced by local retail, and designation of open spaces along the waterfront. Therefore, the No Unmitigated Significant Adverse Impact Alternative is not a reasonable alternative, as it would not realize HPD's goals of the Proposed Actions.

Construction activities are regulated by the NYCDEP Noise Control Code; however, in order to eliminate all significant adverse construction noise impacts, construction activities would have to be limited so as to not occur on parcels directly adjacent to existing noise sensitive receptors. This limitation would severely impede the Proposed Actions' goals and objectives.

No-Action Alternative

Description of the No-Action Alternative

The No-Action Alternative examines future conditions absent approval of the Proposed Actions. Conditions under this alternative are described under the "Future without the Proposed Actions" in the preceding EIS chapters and summarized below. In the No-Action Alternative, the Project Area is assumed to mostly remain unchanged from existing conditions (2,358 gsf of commercial space and 118 parking spaces on Projected Multi-Family Mixed-Use Development Site 1 and 44 parking spaces on Projected Multi-Family Mixed-Use Development Site 2).

Conditions under the No-Action Alternative in comparison to the future with the Proposed Actions are described below.

Land Use, Zoning, and Public Policy

In the No-Action Alternative, the Project Area is assumed to remain largely unchanged from existing conditions, which includes 2,358 gsf of commercial space and 118 parking spaces on Projected Development Site 1 and 44 parking spaces on Projected Development Site 2. The remaining Projected Development Sites would remain vacant. There is one proposed development, Beach Green Dunes III, which would introduce 138 affordable apartments, 5,500 gsf of local retail, and 8,000 gsf of residential parking. It would also include a transit plaza to connect to the Beach 36 Street-Edgemere Station on the A subway line. The project is expected to complete full construction buildout by 2022.

Outside of the Project Area, the trend towards additional residential and mixed-use development and resiliency projects would continue. Within 400 feet of the Project Area, Edgemere Commons, a large scale 11-building development that is projected to include 2,050 income-restricted dwelling units, 72,000 gsf of retail space, 77,000 gsf of community facility space, and 24,000 sf of open space would be introduced. Additionally, Arverne East will be an approximately 116-acre mixed-use, mixed-income community that will include approximately 1,650 residential units (of which approximately 1,350 would be affordable units), 252,00 sf of commercial floor area, 10,000 sf of manufacturing floor area (limited to a

microbrewery), and approximately 22,000 sf of community facility floor area. The development would contain approximately 3.3 acres of recreation and open space, an approximately 15-acre beachfront dune preserve, and an approximately 35-acre nature preserve.

The No-Action Alternative would be in keeping with these trends. However, it would not include the infill development of low-density residential space on lots that are currently vacant or enhance development along the *Commercial Corridor* located to the south of the Project Area. In the No-Action Alternative, zoning and public policies affecting the study area are expected to remain unchanged from existing conditions. However, the No-Action Alternative would not make use of the zoning changes to limit density along high-risk flood zones or map Mandatory Inclusionary Housing along the *Commercial Corridor*; therefore, the flood resiliency and public realm improvements that would be implemented as part of the Proposed Actions—which would support several public policies, including the Waterfront Revitalization Program and OneNYC—would not be realized under the No-Action Alternative.

Overall, neither the No-Action Alternative nor the Proposed Actions would result in significant adverse impacts to land use, zoning, or public policy, though the No-Action Alternative would not support the City's land-use policy to the extent that is supported by the Proposed Actions.

Socioeconomic Conditions

In the No-Action Alternative, new development within the half-mile study area would introduce 3,609 new dwelling units, including 3,249 affordable units, which would introduce a new population of 9,662. The study area has already experienced a readily observable trend toward increasing market rents. It is expected that this trend would continue in the No-Action Alternative, with or without the Proposed Actions. The No-Action Alternative includes a substantial amount of new affordable housing and would not be expected to create a significant impact to current socioeconomic conditions. However, the No-Action Alternative would not align with the Resilient Edgemere Community Plan (RECP) because it would not achieve the envisioned long-term investments in housing, retail, and amenities. The Proposed Actions would facilitate the construction of a substantial amount of affordable housing; they are not anticipated to result in significant adverse impacts to socioeconomic conditions and would align with the RECP.

Community Facilities and Services

Public Schools

In the No-Action Alternative, new development in the study area would introduce a total of 1,115 elementary students and 447 intermediate students. Two capacity changes would result in 143 new elementary seats. Overall, elementary schools in CSD 27, Sub-district 1 would operate over capacity, with a 111.6 percent utilization rate and a deficit of 628 seats. Intermediate schools would operate within capacity, with a 77.3 percent utilization rate and a surplus of 653 seats.

Early Childhood Programs

In the No-Action Alternative, planned or proposed No-Action development projects in the early childhood programs study area will introduce approximately 4,672 new affordable housing units by the analysis year, with an estimated 657 publicly funded childcare-eligible children. Therefore, under the No-Action Alternative, early childhood programs in the study area will operate at 213.1 percent utilization with a deficit of 608 seats.

Both the Edgemere Commons and Downtown Far Rockway Rezoning projects identified the potential for those projects to result in significant adverse impacts on childcare services; potential mitigation measures, in the form of additional capacity, were identified for both projects. The provision of 217 and 209 childcare slots was identified as mitigation for Edgemere Commons and the Downtown Far Rockaway Rezoning, respectively, but there are no known development plans or funding commitments for childcare slots in connection with either of these projects.

Libraries

Under the No-Action Alternative, the catchment area population would increase by 20,265 residents due to planned No-Action development, for a total population of 95,410. Assuming no increase in holdings in the No-Action condition, the holdings-per resident ratio for the library would decrease from 0.89 in existing conditions to 0.70 in the No-Action condition.

The existing libraries will continue to serve the study area, and the new Far Rockaway Library will have been constructed and have double the space. No information on an increase in holdings for the No-Action condition was provided by the Queens Library.

Open Space

Neither the No-Action Alternative nor the Proposed Actions would physically alter or displace publicly accessible open space resources.

In the No-Action Alternative, new development in the study area and in the Project Area would result in a population increase of 3,775 residents. Additionally, the supply of publicly accessible passive open space in the study area is expected to increase by 54.35 acres from existing conditions, accounting for three new open spaces resources. Therefore, as shown in **Table 20-1,** the ratio of passive open space in the No-Action Alternative would be 2.220 acres per 1,000 residents, and ratio of active open space would be 1.010 acres of per 1,000 residents.

Table 20-1 No-Action Alternative – Adequacy of Open Space Resources for Half-Mile Residential Study Area

	Population	Open Space Acreage		Ratios[1]	DCP Guidelines
Residents	**45,090**	Active	45.74	1.01	2.00
		Passive	100.13	2.22	0.50
		Total	**145.87**	**3.23**	**2.50**

Notes:
[1] Acres per 1,000 people

The overall residential study area ratio would remain significantly above the City's planning goals, as they are under existing conditions. Thus, in the No-Action Alternative, though the amount of active open space available to serve the residential population would continue to be less than the benchmarks established in the *2020 CEQR Technical Manual,* these ratios would be similar to those under existing conditions.

Compared with the Proposed Actions' residential study area ratios, the ratios under the No-Action Alternative differ by 0.24, a negligible amount. Overall, the No-Action Alternative would not result in a significant adverse open space impact.

Shadows

No shadows would result from implementation of the No-Action Alternative and would not have the potential to reach sunlight-sensitive open space resources. Therefore, the No-Action Alternative would not result in any significant adverse shadows impacts. In the No-Action Alternative, the Project Area is assumed to mostly remain unchanged from existing conditions (2,358 gsf of commercial space and 118 parking spaces on Projected Multi-Family Mixed-Use Development Site 1 and 44 parking spaces on Projected Multi-Family Mixed-Use Development Site 2). As detailed in **Chapter 6, Shadows**, incremental shadows resulting from the Proposed Actions would be limited in extent and duration and would not substantially reduce the quality of direct sunlight or alter the utilization of the sunlight-sensitive resources. As the No-Action Alternative is significantly shorter, the same conclusions would hold true.

Historic and Cultural Resources

The Landmarks Preservation Commission (LPC) has determined that the Project Area does not possess archaeological sensitivity. Therefore, like the Proposed Action, the No-Action Alternative would not affect archaeological resources. LPC has also indicated that there are no buildings or structures on the Projected Development Sites within the Project Area that have architectural significance. Therefore, in the No-Action Alternative and with the Proposed Actions, there will be no impacts to architectural resources on any of the Projected Development Sites. LPC has indicated that no adverse impacts to any of the previously identified historic resources would be anticipated as a result of the Proposed Actions. In summary, similar to the Proposed Actions, the No-Action Alternative would not result in significant adverse impacts to historic and cultural resources.

Urban Design and Visual Resources

Like the Proposed Actions, the No-Action Alternative would not result in significant adverse impacts on urban design or visual resources. Under the No-Action Alternative, the Project Area is assumed to remain largely unchanged from existing conditions, which includes 2,358 gsf of commercial space and 118 parking spaces on Projected Development Site 1 and 44 parking spaces on Projected Development Site 2. The remaining Projected Development Sites would remain vacant. Overall, the No-Action Alternative would not alter the arrangement, appearance, or functionality of the Project Area or study area such that the alteration would negatively affect a pedestrian's experience of the area, and as a result, the No-Action Alternative would not have significant urban design adverse impacts. Additionally,

views to Grass Hassock Channel and Conch Basin would continue to be partially visible from inland. Neither the Proposed Action nor the No-Action Alternative would eliminate any significant publicly accessible view corridors or completely block public views to any visual resources.

Unlike the Proposed Actions, the No-Action Alternative would not provide infill development on vacant lots, provide open space access to the waterfront, or overall improve the urban design of the Project Area. These measures introduced by the Proposed Actions would activate the major roadways in the study area and introduce economy activity in an area that has been historically underdeveloped.

Overall, neither the Proposed Actions nor the No-Action Alternative would have significant adverse impacts of urban design or completely block public views to any visual resources that are not currently impeded by existing structures.

Natural Resources

In the No-Action Alternative, the Project Area is assumed to remain mostly unchanged from existing conditions, and the Projected Development Sites are assumed to remain unaltered. With respect to the Project Area beyond the Projected Development Sites, it is expected that U.S. Army Corps of Engineer's (USACE) Back Bay High Frequency Flood Risk Reduction Features project that is currently in design will be initiated for waterfront areas along the northern portion of the Project Area. Implementation of the project would result in a combination of berms, hybrid berms, rock sill structures, marsh restoration, and floodwalls to be installed along Conch Basin and Norton Basin in an effort to reduce future flood risk. The Proposed Actions would contribute to disturbed upland habitats through the removal of vegetation. However, the overall effect on regional wildlife populations and wildlife species diversity is expected to be minimal and direct effects on rare/protected species and wetlands and surface waters is not anticipated. Similar to the Proposed Actions, the No-Action Alternative would not result in any significant adverse impacts on natural resources.

Hazardous Materials

As with the Project Actions, in the No-Action Alternative, any potential contamination could be subject to remediation, though responsibility for any such work would need to be determined at the time. However, unlike the Proposed Actions, an (E) Designation and other equivalent institutional controls for hazardous materials would not be placed on the Projected Development Sites. Applying an (E) Designation and other equivalent institutional controls to the Projected Development Sites provides a mechanism for regulatory oversight for the subsurface investigation and potential future remedial action as a pre-construction requirement (in this case, post-demolition) that would reduce or eliminate the potential for future risk or exposure as it relates to hazardous materials to the maximum extent practicable. Consequently, potential soil, groundwater, and/or soil vapor contamination identified might not be remediated under the regulatory oversight of the New York City Office of Environmental Remediation. For the No-Action Alternative, similar to the Proposed Actions, regulatory requirements pertaining to building materials containing Asbestos-Containing Materials (ACM) and Lead Based Paint (LBP) would be addressed under prevailing regulations as part of standard redevelopment practices.

Water and Sewer Infrastructure

As under the Proposed Actions, the No-Action Alternative would not have a significant incremental demand for water or a significant incremental increase in sanitary sewage generation, and therefore would not result in a significant adverse impact on the City's water and sewer infrastructure. Incremental increases would be within the capacity of the City's systems, and the impacts would not be considered significant or adverse. The projected No-Action Alternative increase in sanitary sewage would not cause the Rockaway Wastewater Treatment Plant to exceed its operational capacity or SPDES-permitted capacity, and therefore, like the Proposed Actions, the No-Action Alternative would not result in significant adverse impacts to sanitary sewage conveyance and treatment. As under the Proposed Actions, development under the No-Action Alternative would incorporate select best management practices (BMPs) as required by the New York City Department of Environmental Protection (DEP) through the site sewer connection application process for new buildings.

Transportation

As presented in **Chapter 12, Transportation**, under the No-Action Alternative, traffic, transit, and pedestrian volumes would increase due to background growth and development within the Project Area and study area. In terms of intersections analyzed that would operate at overall levels of service (LOS) E or F, there would be 12 such intersections in the weekday AM peak hour, four in the weekday midday peak hour, nine in the weekday PM peak hour, and four in the Saturday peak hour. In terms of individual traffic movements analyzed that would operate at unacceptable LOS D, LOS E, or LOS F, there would be 37 such movements in the weekday AM peak hour, 17 in the weekday midday peak hour, 25 in the weekday PM peak hour, and 16 movements in the Saturday peak hour—see **Table 12-28** in **Chapter 12, Transportation** for the No-Action Alternative levels of service for these movements. It was determined that existing bus trip frequencies would not be sufficient to accommodate the projected No-Action demand and that one standard bus per hour would need to be added to the Q22 route through its maximum load points in both directions during the commuter weekday AM and PM peak hours. The subway analysis showed that all staircases and fare arrays analyzed would operate at LOS A during the commuter weekday AM and PM peak hours. It also showed that the A subway line would operate below capacity through its maximum load point in the commuter weekday AM and PM peak hours. Lastly, the pedestrian analysis showed that all sidewalks, corners and crosswalks analyzed would operate at LOS A during all peak hours analyzed.

Unlike the Proposed Actions, the No-Action Alternative would not result in significant adverse traffic impacts at the 13 intersections during the weekday AM peak hour, 12 intersections during the weekday midday peak hour, 13 intersections during the weekday PM peak hour, and 11 intersections during the Saturday peak hour, where the Proposed Actions would have significant adverse impacts. The significant adverse impacts identified during the commuter weekday AM and PM peak hours for the Q22 route as a result of the Proposed Actions would not occur with the No-Action Alternative. As the No-Action condition would not result in increases to travel demand, the No-Action Alternative would also not result in the potential for significant adverse pedestrian safety impacts at

~~intersections where marked crossings are not currently present~~the intersection of Rockaway Beach Boulevard and Beach 49th Street.

Neither the No-Action Alternative nor the Proposed Actions would result in significant adverse parking, subway station, subway line-haul, or pedestrian element impacts.

Air Quality

No development is expected to occur under the No-Action Alternative. Similar to the Proposed Actions, the No-Action Alternative would not result in emissions from the parking facilities and thus, would not result in a significant adverse air quality impact. Furthermore, no large or major sources were identified within a 1,000-foot radius of the Project Area and therefore emissions from these sources are not anticipated in the No-Action Alternative. Industrial sources within the Project Area confirmed that light industrial sources would not emit any carcinogenic air toxic pollutants and no adverse air quality impacts on the Projected Development Sites are expected from the nearby industrial sources, which would also be expected under the No-Action Alternative.

The No-Action Alternative air quality impacts from traffic emissions were analyzed using AERMOD dispersion modeling at the same intersections as the With-Action impacts. The results are presented in **Chapter 13, Air Quality**. Results presented in **Table 13-5** for CO, **Table 13-6** for PM_{10}, **Table 13-7** for 24-hour $PM_{2.5}$, and **Table 13-8** for annual $PM_{2.5}$ impacts indicate that total concentrations near the analyzed intersections under the No-Action condition will be below the respective National Ambient Air Quality Standards (NAAQS). Therefore, an adverse impact as a result of this type of emission is not anticipated in the No-Action Alternative.

Greenhouse Gas Emissions and Climate Change

No development would occur under the No-Action Alternative than under the Proposed Actions. As such, its construction and operation would be expected to consume less energy and would, therefore, result in lower carbon dioxide equivalent (CO_2e) emissions per year. As with the Proposed Actions, there would be no significant adverse greenhouse gas emission or climate change impacts as a result of the No-Action Alternative.

Noise

Similar to the Proposed Actions, there would be an increase in background traffic under the No-Action condition which would result in an increase in ambient noise conditions. No-Action noise conditions have been determined based on ambient noise measurements and proportional traffic noise modeling. No-Action sound levels would typically be 1 to 2 dBA higher than existing conditions with a maximum increase of up to 3.1 dBA. The No-Action L_{eq} sound levels would range from 55.5 to 76.5 dBA and the L_{10} sound levels would range from 56.7 to 76.4 dBA. Absent the Proposed Actions, new noise-sensitive receptors would not be introduced at the Projected Development Sites. Therefore, there would be no need for a noise e-designation to require a minimum composite window/wall sound attenuation.

Public Health

Under the No-Action Alternative, no significant adverse impacts would occur in any of the technical areas related to public health (hazardous materials, water quality, air quality, or noise). However, as detailed above, unlike the Proposed Actions, the No-Action Alternative would not be required to comply with and set in place various regulatory mechanisms to ensure certain CEQR standards are met. In the No-Action Alternative, an (E) Designation or Land Disposition Agreement (LDA) for hazardous materials would not be placed on the Projected Development Sites. In addition, the No-Action Alternative would not be required to meet *2020 CEQR Technical Manual* interior noise level requirements.

Neighborhood Character

Similar to the Proposed Actions, the No-Action Alternative would not result in significant adverse impacts associated with neighborhood character. As detailed in the relevant sections above, the No-Action Alternative would not result in significant adverse impacts in the contributing technical areas of land use, zoning, and public policy; open space; shadows; historic and cultural resources; urban design and visual resources; or noise. The Proposed significant adverse impacts identified in transportation (traffic and bus transit impacts), would not be realized in the No-Action Alternative. Therefore, the identified impact would not affect the defining features of the neighborhood and would not constitute a significant impact on neighborhood character. Overall, the No-Action Alternative would be consistent with recent development trends.

However, under the No-Action Alternative, the beneficial aspects of the development introduced by the Proposed Actions—introduction of affordable housing units and local retail, changes in zoning to limit development in flood-prone areas of the Project Area, and infill development on vacant lots—would not be realized nor contribute to the neighborhood character of the Project Area.

Construction

Construction activities are not expected to occur under the No-Action Alternative. Similar to the Proposed Actions, the No-Action Alternative would not result in impacts related to the technical areas analyzed in **Chapter 18, Construction**, including: land use, neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, and hazardous materials. Additionally, significant adverse impacts in the No-Action Alternative as it relates to construction traffic, transit, or pedestrians would not be anticipated. Furthermore, significant adverse construction air quality impacts and vibration are not anticipated in the No-Action Alternative.

No Unmitigated Significant Adverse Impact Alternative

According to the *CEQR Technical Manual*, when Proposed Actions would result in unmitigated significant adverse impacts, it may be appropriate to include an assessment of an alternative to the project that would not result in unmitigated impacts.

The No Unmitigated Significant Adverse Impact Alternative identifies those modifications to the Proposed Actions that would be required to eliminate all of the Proposed Actions'

unmitigated significant adverse impacts. In order to eliminate all unmitigated significant adverse impacts, the Proposed Actions would need to be so substantially modified that the project goals and objectives would not be realized or would be materially compromised.

Community Facilities and Services

As discussed in **Chapter 4, Community Facilities and Services**, the Proposed Actions would result in a significant adverse impact on publicly funded child care and Head Start Centers according to the thresholds set forth by the *CEQR Technical Manual*. As discussed in **Chapter 19, Mitigation**, and **Chapter 21, Unavoidable Adverse Impacts** possible mitigation measures for this significant adverse impact will be developed in consultation with DOE and may include provision of suitable space on-site for a child care center, provision of a suitable location off-site and within a reasonable distance (at a rate affordable to DOE providers), or funding or making program or physical improvements to support adding capacity to existing facilities if determined feasible through consultation with DOE's Division of Early Childhood Education, or providing new early childhood programs within or near the project sites.

To avoid the identified significant adverse impact to early childhood programs, the number of affordable dwelling units that could be developed on the Projected Development Sites would have to be reduced from 465 to 342, a reduction of 123 affordable units. A substantial reduction in the number of affordable housing units developed in the Project Area would be less supportive of the goals and objectives of the Proposed Actions. Alternatively, taking into account the proposed mitigation from other developments in the study area, the provision of 15 early childhood slots under this alternative would avoid the unmitigated significant adverse impact to early childhood programs.

Open Space

As discussed in **Chapter 5, Open Space**, the Proposed Actions would result in a significant adverse impact on active open space ratios according to the thresholds set forth by the *CEQR Technical Manual*. As discussed in **Chapter 19, Mitigation**, and **Chapter 21, Unavoidable Adverse Impacts** possible mitigation measures for this significant adverse impact will be developed in consultation with City agencies.

To avoid the identified significant adverse impact to active open space ratios, the number of dwelling units that could be developed on the Projected Development Sites would have to be reduced from 1,222 to 801, a reduction of 421 units. A substantial reduction in the number of housing units developed in the Project Area would be less supportive of the goals and objectives of the Proposed Actions. Alternatively, approximately 1.20 acres of active open space would need to be provided in the Project Area to avoid the unmitigated significant adverse impact to active open space.

Transportation

As presented in **Chapter 12, Transportation**, the Proposed Actions would result in significant adverse impacts related to traffic, bus transit, and safety. Furthermore, as discussed in **Chapter 19, Mitigation**, and **Chapter 21, Unavoidable Adverse Impacts**, adverse impacts at six intersections during the weekday AM peak hour, ~~eight~~seven

intersections during the weekday midday peak hour, seven intersections during the weekday PM peak hour, and five intersections during the Saturday peak hour, could not be fully mitigated with standard traffic capacity improvements measures.

A sensitivity analysis determined that a traffic impact at the intersection of Beach Channel Drive and Arverne Boulevard and Beach 62nd Street during the weekday AM peak hour would be most sensitive to increases in volumes that would result in an unmitigable impact. Specifically, the impact to the eastbound shared left turn-through lane group would occur despite the project's modest increase in vehicle trips because of prevailing background traffic conditions, anticipated increases in traffic associated with No-Action developments, and the infeasibility of implementing geometric or signal timing improvements at this location. Under the Proposed Actions, 54 incremental vehicle trips are projected for the eastbound approach (32 through and 22 right-turns) during the weekday AM peak hour. The impact to the eastbound approach would occur with an increase of just two vehicles. Therefore, in order to avoid unmitigated significant adverse traffic impacts at this intersection, the increase to traffic volume for the eastbound approach cannot exceed one vehicle (a minimum of two or more vehicles would result in an unmitigable impact). The incremental volume for this approach would have to be reduced by 98 percent in order to not exceed this one vehicle threshold. A reduction in action-generated incremental volumes of this degree could be accomplished by a similar reduction in the RWCDS. A reduction in the RWCDS of this magnitude would compromise the Applicant's ability to achieve the project goals and objectives of introducing affordable housing units, economic activity through new local retail, and designation of open spaces along the waterfront. Therefore, the No Unmitigated Significant Adverse Impact Alternative is not a reasonable alternative as it would not realize the HPD's goals of the Proposed Actions.

Construction

Noise

As presented in **Chapter 18, Construction**, the Proposed Actions would result in significant adverse impacts related to noise at receptors throughout the Project Area according to thresholds set by the *CEQR Technical Manual*. Construction activities are regulated by the NYCDEP Noise Control Code; however, in order to eliminate all significant adverse noise impacts, construction activities would have to be limited so as to not occur on parcels directly adjacent to existing noise sensitive receptors. This limitation would severely impede the Proposed Actions' goals and objectives.

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Unavoidable Significant Adverse Impacts

Unavoidable significant adverse impacts are those that would occur if a proposed project or action is implemented regardless of the mitigation employed, or if no feasible mitigation measures are identified.

Introduction

This chapter summarizes unavoidable significant adverse impacts resulting from the With-Action condition. According to the *2020 CEQR Technical Manual*, unavoidable significant adverse impacts are those that would occur if a proposed project or action is implemented regardless of the mitigation employed, or if mitigation is impossible.

As described in **Chapter 19, Mitigation**, the Proposed Actions have the potential to result in significant adverse impacts on publicly funded childcare facilities, active open space resources, traffic, transit, mobile air quality sources, and construction noise. To the extent practicable, mitigation has been proposed for these identified significant adverse impacts. However, in some instances no practicable mitigation has been identified to fully mitigate the significant adverse impacts, and there are no reasonable alternatives to the Proposed Actions that would meet the purpose and need, eliminate potential impacts, and not cause other or similar significant adverse impacts.

Community Facilities

Early Childhood Programs

As discussed in **Chapter 4, Community Facilities and Services**, the Proposed Actions would result in a significant adverse impact on publicly funded child care and Head Start Centers according to the thresholds set forth by the *CEQR Technical Manual*.

As discussed in **Chapter 19, Mitigation**, a suggested mitigation strategy for two developments – the Peninsula Hospital Site Redevelopment and Downtown Far Rockaway Rezoning – would be to introduce 426 childcare slots to the study area for a total capacity of 963. With this mitigation, the study area would operate at a deficit of 2,486 slots and the study area utilization rate would be 125.75 percent. The change in utilization resulting from the Proposed Actions would be 6.96 percent.

Accounting for mitigation by the above developments for their childcare impacts, the Proposed Project could mitigate the childcare impact by providing 15 childcare slots within the Proposed Project or by paying for 15 childcare slots to be provided offsite. Alternatively, the impact could be eliminated by reducing the number of affordable dwelling units provided from 465 to 342 to ensure that the Proposed Actions do not result in impacts to childcare services.

Possible mitigation measures for this significant adverse impact may include provision of suitable space on-site for a childcare center, provision of a suitable location off-site and within a reasonable distance (at a rate affordable to DOE providers), or funding or making program or physical improvements to support adding capacity to existing facilities if determined feasible through consultation with DOE's Division of Early Childhood Education, or providing new early childhood programs within or near the project sites. As a City agency, DOE does not directly provide new childcare facilities, instead it contracts with providers in areas of need. DOE is also working to create public/private partnerships to facilitate the development of new early childhood programs where there is an area of need. As part of that initiative, DOE may be able to contribute capital funding, if it is available, towards such projects to facilitate the provision of new programs.

It is important to note, however, that publicly funded childcare is not only dependent on the number of new residential units that are introduced to an area but also to the number of families that meet the income eligibility requirements for these programs. In other words, new residents, including children, to the Project Area from the Proposed Actions and future developments may not all meet the income thresholds. At this time, it is not feasible to determine precise mitigation measures that would be appropriate for the study area. The childcare analysis is conservatively based on the existing inventory of publicly funded early childhood programs in the area and does not reflect likely shifts in demand or the creation of new childcare capacity. If no other alternative mitigation measures are identified to reduce the exceedance in capacity for existing programs in the Project Area, then this would be an unmitigated impact.

Open Space

Active Open Space

As detailed in **Chapter 5, Open Space** the Proposed Actions would result in a significant adverse impact on active open space ratios according to the thresholds set forth by the *CEQR Technical Manual*.

As discussed in **Chapter 19, Mitigation**, the *CEQR Technical Manual* lists potential mitigation measures for open space impacts. These measures include, but are not limited to, creating new open space within the study area; funding for improvements, renovation, or maintenance at existing local parks; or improving existing open spaces to increase their utility or capacity to meet identified open space needs in the area, such as through the provision of additional open space facilities. In addition to open spaces in the study area considered for the quantitative analysis, there are other planned and potential open space improvements for the area that would increase the amount of open space available to current and future residents. They include open spaces associated with the Army Corps of Engineers Rockaway projects, the Bayside Walking Path (still in its visioning phase), a proposed open space by the Department of Parks and Recreation, and the potential for open space amenities on multi-family development sites. While these planned or potential open spaces do not change the conclusion of that a significant adverse impact to active open space would occur as a result of the Proposed Actions, they demonstrate that there are several plans to deliver more recreational open space in the coming years. Despite these qualitative considerations that could help to ameliorate the active open space impact, no feasible mitigation measures have been identified to eliminate this impact. Therefore, the significant adverse impact on active open space ratio remains unmitigated.

Transportation

Traffic

As detailed in **Chapter 12, Transportation** and **Chapter 19, Mitigation**, a total of 27 intersections were analyzed. The Proposed Actions would result in significant adverse traffic impacts at 13 intersections during the weekday AM peak hour, 12 intersections during the weekday midday peak hour, 13 intersections during the weekday PM peak hour, and 11 intersections during the Saturday peak hour. Some of the impacts could be fully mitigated with implementation of an all-way stop control, signal phasing and timing modifications, and lane configuration changes. These measures would provide full mitigation for seven of the 13 intersections significantly impacted in the weekday AM peak hour, ~~four~~five of the 12 intersections impacted in the weekday midday peak hour, six of the 13 intersections impacted in the weekday PM peak hour, and six of the 11 intersections impacted in the Saturday peak hour. In terms of significantly impacted movements, the measures would fully mitigate 15 out of 27 movements impacted in the weekday AM peak hour, ~~five~~six out of 17 movements impacted during the weekday midday peak hour, 11 out of 22 movements impacted in the weekday PM peak hour, and seven out of 14 movements impacted in the Saturday peak hour.

One or more traffic movements at the following intersections could not be mitigated in at least one peak hour:

- Beach Channel Drive and Beach 37th Street (all four peak hours)
- Beach Channel Drive and Beach 40th Street (weekday midday, weekday PM and Saturday peak hours)
- Beach Channel Drive and Beach 44th Street (weekday midday peak hour)
- Beach Channel Drive and Arverne Boulevard and Beach 62nd Street (all four peak hours)
- Edgemere Avenue and Beach 41st Street (weekday AM and weekday PM peak hours)
- Edgemere Avenue and Beach 54th Street (weekday AM and weekday PM peak hours)
- Rockaway Beach Boulevard and Beach 59th Street (all four peak hours)
- Beach Channel Drive and Beach 49th Street (weekday midday peak)
- Beach Channel Drive and Beach 50th Street (all four peak hours)
- ~~Rockaway Beach Boulevard and Beach 49th Street (weekday midday peak)~~

The proposed mitigation measures are subject to review and approval by the New York City Department of Transportation (NYCDOT). ~~If certain proposed mitigation measures are deemed infeasible by NYCDOT, practical alternative measures, if any, may be analyzed and presented in the Final Environmental Impact Statement (FEIS). If no other alternative mitigation measures can be identified, those additionally impacted locations would be unmitigated.~~

Transit

As detailed in **Chapter 12, Transportation** and **Chapter 19, Mitigation**, the Q22 bus is expected to be significantly impacted by the Proposed Actions in the weekday AM and PM peak hours in both the eastbound and westbound directions. The introduction of one additional bus in each direction in both peak hours would fully accommodate future projected demand. Overall, with the proposed service adjustment, the Q22 bus route in the weekday AM peak hour would be able to accommodate 46 additional passengers in the eastbound direction and 50 additional passengers in the westbound direction. In the weekday PM peak hour, the Q22 route would be able to accommodate 42 and 33 additional passengers, in the eastbound and westbound directions, respectively.

Implementation of these service changes requires approval and implementation by the operator (MTA Bus Company) and is subject to fiscal and operational constraints. If no other alternative mitigation measures can be identified, capacity on the Q22 bus route would be unmitigated.

Pedestrian Safety

As discussed in **Chapter 12, Transportation**, currently there is no marked crossing in the north/south direction on Rockaway Beach Boulevard between Beach ~~39th~~45th Street and Beach 53rd Street. As a result, it is likely that pedestrians en route to and from ~~projected developments sites~~Projected Developments Sites 1 and 2 would choose to cross Rockaway Beach Boulevard at a proximate location where a marked crosswalk is not present, such as at the intersections of Rockaway Beach Boulevard at Beach ~~40th Street, Beach 41st Street,~~

~~Beach 42nd Street, Beach 44th Street, Beach 47th Street and Beach 49th Street.~~49th Street. This would have the potential for a significant pedestrian safety impact. The installation of new pedestrian crossings ~~at~~as part of the ~~locations listed above would fully mitigate the Proposed Action's potential for a pedestrian safety impact. A new crossing would involve the installation of a new~~proposed traffic ~~signal, a new~~ control conversion from a two-way stop control to all-way stop control~~, or an Enhanced Pedestrian crossing. Between the DEIS and FEIS, the appropriate traffic control measure to be installed will be finalized in consultation with the lead agency and NYCDOT to~~ at this location would facilitate the safe and efficient movement of pedestrians crossing Rockaway Beach Boulevard. ~~If, however, no control device is found to be warranted or~~Therefore, this proposed measure would fully mitigate the Proposed Action's potential for a pedestrian safety impact. However, these improvements are under further review by NYCDOT. In the event these improvements are not feasible, the ~~significant pedestrian safety~~ impact would remain unmitigated.

Construction

Noise

As presented in **Chapter 19, Mitigation**, the Proposed Actions would result in significant adverse noise impacts at 255 receptors throughout the Project Area. The impacts are mainly due to the low ambient noise levels in the area, the close proximity of construction activities to existing noise-sensitive receptors, and the duration of construction activities throughout the Project Area.

Construction activities would adhere to the NYCDEP Noise Code in order to mitigate construction noise. Noise source and path control measures that would be implemented to the extent feasible, practical, and safe. Implementation of these measures would not eliminate significant adverse construction noise impacts at all receptors. In order to eliminate all significant adverse noise impacts, use of the loudest construction equipment, such as pile drivers, would have to be reduced or eliminated and other construction activities would need to be substantially limited so as to not occur adjacent to existing noise sensitive receptors or to occur for substantially shorter durations. These limitations would severely limit the Proposed Actions' goals and objective for the project. Therefore, since it is not feasible to fully avoid or mitigate potential impacts, the significant adverse noise impact would be unavoidable.

22

Growth-Inducing Aspects of the Proposed Project

The term "growth-inducing aspects" generally refers to the potential for a proposed project to trigger additional development in areas outside of the project site (i.e., directly affected area) that would not experience such development without the proposed project.

Introduction

The *2020 City Environmental Quality Review Technical Manual* (*CEQR Technical Manual*) indicates that an analysis of the growth-inducing aspects of a proposed project is appropriate when the project:

- Adds substantial new land use, new residents, or new employment that could induce additional development of a similar kind or of support uses, such as retail establishments to serve new residential uses; and/or
- Introduces or greatly expands infrastructure capacity (e.g., sewers, central water supply).

As described in **Chapter 1, Project Description**, the New York City Department of Housing Preservation and Development (HPD) is proposing a series of land use actions (collectively the Proposed Actions) to facilitate the development of 1,222 residential units in approximately 1,313,659 gsf, including up to 465 affordable units; approximately 115,849 gsf of local retail uses; and approximately 640 new parking spaces in the Edgemere neighborhood of Queens.

Principal Conclusions

The Proposed Actions would permit zoning map amendments, zoning text amendments, amendments to the Edgemere URP including acquisition of real property, disposition of City-owned property, Urban Development Action Area (UDAA) designation and Urban Development Action Area Project (UDAAP) approval, a Mayoral Zoning Override, and future construction financing from HPD—including an Article XI tax exemption on certain sites. Approval of these actions would limit development along the waterfront and concentrate density along the upland areas of the Project Area through the development of multi-family mixed-use sites and residential infill sites. It is intended to further the City's development goals for the Edgemere neighborhood, provide economic vitality in an area that has been historically underserved, and address the challenges of flood-related impacts from climate change.

These planning, economic development, and resiliency goals would be realized in connection with the development of 1,222 units, of which 465 would be affordable; 115,849 gsf of local retail space; and 640 parking spaces—all of which would occur on lots that are underutilized or vacant. As described in **Chapter 2, Land Use, Zoning, and Public Policy**, there are several developments that would bring substantial residential and mixed-use growth to the neighborhood surrounding the Project Area, which is occurring independent of the Proposed Project. This would collectively result in over 3,500 residential units and nearly 340,000 square feet of commercial space, growth that will occur in the future without the Proposed Action. Furthermore, as discussed in **Chapter 8, Urban Design and Visual Resources**, there are several transportation projects underway, including the Edgemere Avenue reconstruction, the new streets and street raising as part of both the Arverne East Development and Edgemere Commons projects. These would facilitate enhanced traffic circulation introduced by the new development in the Project Area and improve sidewalks and sidewalk amenities such as street trees. As discussed in **Chapter 11, Water and Sewer Infrastructure**, the infrastructure in the study area is already well developed such that improvements associated with the Proposed Actions would not induce additional growth or overburden the existing system.

Although the Proposed Actions would result in increased development, with denser development focused near the elevated subway A line, it is not anticipated that the Proposed Actions would generate significant secondary impacts resulting in substantial new development in nearby areas. Additionally, the zoning changes introduced by the Proposed Actions are limited to the boundaries of the Project Area and would not extend beyond the Project Area.

Therefore, the Proposed Actions would not induce significant new growth in the surrounding area.

23

Irreversible and Irretrievable Commitments of Resources

Per the *2020 CEQR Technical Manual*, this section should summarize a proposed project's impacts on the loss of environmental resources, both in the immediate future and in the long-term. Resources include both man-made and natural resources. Examples of losses include removal of vegetation without replacement, use of fossil fuels and materials for construction, etc. The extent to which the proposed project forecloses future options or involves trade-offs between short-term environmental gains and long-term losses should also be addressed. In considering the trade-offs of the project, it is also possible to compare short-term losses with long-term benefits.

The Proposed Project constitutes a long-term commitment of land resources, thereby rendering land use for other purposes highly unlikely in the foreseeable future; however, the Projected Multi-Family Mixed-Use Development Sites and Projected Residential Infill Sites do not possess any natural resource of significant value, and the sites have been previously developed. Furthermore, funds committed to the design, construction/renovation, and operation of developments under the Proposed Actions are not available for other projects.

These commitments of resources and materials are weighed against the benefits of the Proposed Project. As described in **Chapter 1, Project Description,** the Proposed Actions

would facilitate the development of 1,222 residential units in approximately 1,313,659 gsf, including up to 465 affordable residential units; approximately 115,849 gsf of local retail uses; and approximately 640 parking spaces.

The Proposed Actions would facilitate the development of market-rate and affordable housing, the latter of which would add to the city's affordable housing stock and support the goals outlined in Mayor Bill de Blasio's affordable housing plan, "Housing New York: A Five-Borough Ten-Year Plan," of producing 200,000 affordable homes two years ahead of schedule, by 2022, and generating an additional 100,000 homes over the following four years. Additionally, the community amenities introduced by the Proposed Actions in the form of local retail and additional parking would benefit the neighborhood in upland, transit-oriented areas and discourage future development in areas at greater risk to coastal hazards. These actions would work in concert to leverage investments in local public infrastructure, housing, and coastal protection while laying the groundwork for long-term coastal resilience and community development.

Importantly, the Proposed Actions would also further the community goals that were identified in the 2017 Resilient Edgemere Community Plan in the following ways:

- In areas exposed to greater flood risk, the Proposed Actions would limit residential development to lower density housing and more adaptable building typologies through rezoning to lower density zoning districts, instituting a Special Coastal Risk District (SCRD), and amending the Urban Renewal plan to re-designate parcels from housing to open space use in the Hazard Mitigation Area.
- In the proposed transit-oriented commercial corridor, the Proposed Actions would rezone and add commercial overlays—permitting commercial uses and greater densities in order to facilitate mixed-use development, including Mandatory Inclusionary Housing (MIH) to maximize and ensure permanent affordable housing.
- On vacant land, the Proposed Actions would designate Urban Development Action Areas (UDAA) as well as seek Urban Development Action Area Project (UDAAP) approval and disposition of City-owned land, and Urban Renewal Area (URA) acquisition and disposition in order to facilitate development of housing, commercial amenities, and open space on select waterfront sites.

With these actions, the City would facilitate the development of new mixed-use, multi-family, affordable housing developments (i.e., the Projected Multi-Family Mixed-Use Development Sites), advance development of scattered vacant City-owned lots into low density housing (i.e., the Projected Residential Infill Sites and Projected Multi-Family Mixed-Use Sites), and reserve land for open space uses throughout the neighborhood.

24

Response to Comments on the DEIS

Introduction

This document summarizes and responds to comments on the Draft Environmental Impact Statement (DEIS) for the Resilient Edgemere Community Initiative, published on December 10, 2021.

City Environmental Quality Review (CEQR) requires a public hearing as part of the environmental review process. Oral and written comments were received during the meeting held by the New York City Planning Commission (CPC) on March 30, 2022. Written comments were accepted from issuance of the DEIS through the close of the public comment period, which ended April 11, 2022. **Appendix E** contains the written comments received on the DEIS.

Section 1 lists the elected officials, community boards, organizations, and individuals that provided relevant comments on the DEIS. **Section 2** contains a summary of these relevant comments and a response to each. These summaries convey the substance of the comments made, but do not necessarily quote the comments verbatim. Comments are organized by subject matter and generally parallel the chapter structure of the DEIS. Where more than one commenter expressed similar views, those comments have been grouped and addressed together.

1. List of Elected Officials, Organizations, and Individuals who Commented on the DEIS

Elected Officials

1. Donovan Richards, Queens Borough President, written statement dated March 17, 2022 (Richards)

Community Board

2. Queens Community Board 14, written statement dated February 17, 2022 (CB14)

2. Comments and Responses on the DEIS

Comments on Specific EIS Impact Categories

Project Description

C.1 The Edgemere Community Civic Association and CB 14 objected to the R6A and C8-1 zoning and increase in density. (CB 14)

Response: Comment noted. From north to south, the planning sub-areas generally transition from most vulnerable to least vulnerable to flood risk, primarily due to lower ground elevations at the bayside waterfront on the northern edge which increase slightly as one travels south and farther inland into the Project Area. The sub-areas comprised of lowest-lying waterfront areas of greatest exposure to flood risk and coastal hazards correspond with actions proposed to limit residential densities and building typologies in order to minimize exposures to flood risks. Sub-areas further inland and at slightly higher elevations and located closer to transit corridors correspond with proposed actions which either maintain current permitted densities or increase density to facilitate development of housing, including affordable housing, and commercial/community facility spaces.

The Commercial Corridor, located along Rockaway Beach Boulevard and Beach 50th Street, nearest to the elevated A subway line, which runs along the southern boundary of the Project Area, today consists of vacant land, surface parking, low-density, one- to four-family residences in semi-detached and attached buildings as well as low-rise commercial buildings, and recently constructed mid-rise, multi-family, mixed-use developments. The Commercial Corridor is located nearest (directly adjacent) to the elevated A subway line, which runs along the southern boundary of the Project Area. The Proposed Actions would permit and facilitate development of vacant City-owned land for affordable housing and commercial and community facilities in mixed-use, mid-rise buildings as well as development of vacant non-City-owned land for housing with Mandatory Inclusionary Housing ("MIH") and/or commercial/community facilities in mid-rise buildings.

C.2 Commitments to local hiring for all construction and non-construction workers on this project must include a 30 percent goal for M/WBE businesses and firms, local area residents, and union labor. (Richards)

Response: Comment noted.

C.3 Continue to work towards and eventually implement an Edgemere Community Land Trust (CLT) as part of the Resilient Edgemere Community Plan and continue to incorporate CLT models on the Peninsula where feasible. (Richards)

Response: As described in the EIS, it is anticipated that some of the Projected Development Sites would be owned and managed in a CLT model. A CLT is a not-for-profit organization which owns and stewards land long term for the public's benefit. CLTs separate the ownership of their land from the ownership of structures on the land, typically entering long-term ground leases with homeowners, mutual housing associations, non-profit landlords or other tenants. Ground leases provide a mechanism for CLTs to enforce affordability and other restrictions for typically 99 years or more.

CLTs seek to acquire and de-commodify land to stabilize neighborhoods; they may balance this goal by also providing measured wealth-building opportunities. HPD is in the process of facilitating a competitive process to select a partner to work with in forming a CLT in Edgemere and preparing a development program and operations plan.

The Resilient Edgemere Community Plan called for exploring this unique ownership model because CLTs have the potential to secure long term housing affordability. In addition, studies have found that the increased resident connection and collaboration fundamental to the CLT model can build social cohesion, a critical component of resilience to extreme weather events. HPD is currently facilitating a competitive process to select a partner in forming a CLT in Edgemere and finalizing a development program and operations plan.

The Scattered Site Cluster is expected to result in the development of low-density housing, the programming of open spaces, and creation of commercial and/or community facilities throughout the Neighborhood Infill Area, Limited Development Area, and Hazard Mitigation Area, across 117 City-owned lots. It is anticipated that the cluster would be owned and managed in a CLT model.

The more precise development program and design of the Scattered Site Cluster sites (including Open Space sites located within the HMA) will be further refined and consistent with the land use designations of the Edgemere URP.

C.4 The Edgemere Community Civic Association and CB 14 requested that the plan be changed to 100 percent home ownership. (Richards)

Response: The proposed residential infill developments under the CLT would be home ownership. The multifamily sites would not be precluded from home ownership. HPD would issue an open RFP for the multifamily sites. Respondents would have the option to pursue opportunities for home ownership.

C.5 Continue to explore affordable homeownership in the Rezoning Area and facilitate a community benefits agreement with any future developer to build in the Mixed-Use Corridor Rezoning Area. (Richards; CB14)

Response: See response to Comment C.4 for the discussion of affordable home ownership.

Community Facilities and Services

C.6 The Applicant should continue to work across City and State agencies, including the Department of Small Business Services (SBS), Department of Youth & Community Development (DYCD), and local Community-Based Organizations, to provide youth and community programming, co-working space and economic development opportunities. (Richards)

Response: Comment noted. The Proposed Actions are intended to facilitate new opportunities for housing and services on underutilized land near mass transit, which may include youth and community programming among other neighborhood services.

C.7 The Applicant should continue to work with local community-based organizations (CBOs) and with NYC Health + Hospitals to develop a new health care and/or hospital facility in the Rockaways. (Richards)

Response: The DEIS did not identify any impacts to healthcare facilities and falls outside of the goals of the Resilient Edgemere Community Initiative (RECI) of providing affordable housing while meeting the area's resiliency goals. As such, the development of a new healthcare and/or hospital facility is beyond the scope of the RECI and this DEIS.

C.8 A school was included in the original Arverne Plan, which is geographically adjacent to the Resilient Edgemere Community Plan. The Applicant should continue to work with the School Construction Authority (SCA) and the Department of Education (DOE) to ensure a school will be built for future and current children, and should explore additional funding streams for existing schools. (Richards; CB14)

Response: Comment noted. The Proposed Project did not have significant adverse impacts on schools, but an impact was identified for early childhood programs. HPD will work with DOE on early childhood programming to offset the deficit of seats that will occur with this project. Additionally, HPD will work with SCA and DOE to continue to monitor the future demand for a school in this area and additional funding streams for existing schools.

Open Space

C.9 The Applicant should continue to work across City and State agencies such as DPR to fast-track improvements to Bayswater Park, walking trails along Jamaica Bay to Bayswater Park, and Rockaway Community Park, and to increase lifeguard staffing along the beach from Beach 32nd to Beach 59th Streets to improve access for all eastern end residents. (Richards)

Response: Comment noted. HPD is in constant coordination with partner agencies to address neighborhood capital needs. Additionally, a mentioned in ***Chapter 5, Open Space*** of the DEIS, there is one planned open space that falls within the Project Area on Block 15961, Lots 102, 103, and 104 (approximately 0.23 acres). This open space is anticipated to be mostly a landscaped passive area that will provide a kayak launch, and an area for fishing. It will also include picnic benches, plantings and be used for fishing. This proposed space and others will increase accessibility for current and future residents.

Water and Sewer Infrastructure

C.10 The Applicant should continue to work across City and State agencies such as NYCDEP to provide a study of potential green and gray infrastructure to mitigate long-term flooding issues in Edgemere and throughout the Rockaways. (Richards; CB14)

Response: Comment noted. HPD is coordinating with City and State agencies to address long-term flooding issues. The City has committed to preserve some vacant properties, potentially for use as open space (e.g., some sites turned into community gardens). However, the exact use would be determined in consultation with the CLT and with community input. The NYCDEP and U.S. Army Corps of Engineers are coordinating to determine if some property along the Atlantic shore, beachfront, and bay could be designated for use as dedicated drainage in order to help provide an additional measure of protection against

future flood events. Additionally, NYCDEP continues to work with developers on implementation of green infrastructure where applicable.

C.11 DPR and the Department of Sanitation (DSNY) should create and release a Request for Expressions of Interest (RFEI) to reactivate the former Edgemere Landfill located in Rockaway Community Park. Possible uses of the site could be green infrastructure such as a solar farm or other beneficial uses to surrounding constituents. (Richards)

Response: Comment noted. Please see response to Comment C.9 regarding coordination with partner agencies.

C.12 The Community Board and the Civic Association shared concerns regarding the area's existing infrastructure and flood mitigation measures. (CB 14)

Response: Comment noted. See response to Comment C.10.

Transportation

C.13 The Applicant should continue to work across City and State agencies such as NYC Department of Transportation (DOT), NYC Economic Development Corporation (EDC) and the Metropolitan Transportation Authority (MTA) to identify transportation infrastructure improvements and opportunities in Edgemere, such as bike lanes, and to extend ferry routes and the Q52 bus lines further east across the Peninsula. (Richards; CB14)

Response: Comment noted. Please see response to Comment C.9 regarding coordination with partner agencies.

C.14 The Applicant should continue to work with DOT to widen Edgemere Avenue from Beach 32nd Street to Beach 56th Street to accommodate existing traffic and any vehicular traffic that will be added by the several development projects planned for the neighborhood. (Richards)

Response: Comment noted. Please see response to Comment C.9 regarding coordination with partner agencies. Additionally, as described in ***Chapter 12, Transportation*** of the FEIS, the EIS analyzed traffic volumes along Edgemere Avenue at five analysis locations: Beach 32nd (and Seagirt Boulevard), Beach 38th, Beach 41st, Beach 44th, and Beach 54th Streets. Traffic volumes were analyzed for potential for significant adverse impacts during the weekday AM, midday, and PM, and Saturday midday peak hours in the Existing, No-Action, and With-Action conditions. The EIS concluded that no significant adverse impacts from the proposed actions would occur at the intersection of Edgemere Avenue and Beach 32nd (and Seagirt Boulevard) and that signal timing changes would fully mitigate the potential for significant adverse impacts at two intersections (Beach 38th and Beach 44th Streets). Impacts at the other two intersections (Beach 41st Street and Beach 54th Street) would remain unmitigated in one or more peak hours.

Construction

C.15 All construction should use the most energy efficient, state-of-the-art sustainable materials and techniques, which might include solar voltaic panels, geothermal heating and cooling, and charging stations for vehicles. (Richards)

Response: Comment noted.

Appendix A: WRP Consistency Assessment

FOR INTERNAL USE ONLY	WRP No. _____
Date Received: _____	DOS No. _____

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM
Consistency Assessment Form

Proposed actions that are subject to CEQR, ULURP or other local, state or federal discretionary review procedures, and that are within New York City's Coastal Zone, must be reviewed and assessed for their consistency with the *New York City Waterfront Revitalization Program (WRP)* which has been approved as part of the State's Coastal Management Program.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, the New York City Department of City Planning, or other city or state agencies in their review of the applicant's certification of consistency.

A. APPLICANT INFORMATION

Name of Applicant: New York City Department of Housing Preservation and Development (HPD)

Name of Applicant Representative: Kevin Parris

Address: 100 Gold Street, New York, NY 10038

Telephone: 212-863-5105 Email: parrisk@hpd.nyc.gov

Project site owner (if different than above): _____

B. PROPOSED ACTIVITY

If more space is needed, include as an attachment.

1. Brief description of activity

The New York City Department of Housing Preservation and Development ("HPD") proposes Zoning Map Amendments, Zoning Text Amendments, amendments to the Edgemere Urban Renewal Plan ("URP") including acquisition of real property, an Urban Development Action Area ("UDAA") designation, Urban Development Action Area Project ("UDAAP") approval, disposition of City-owned property, a mayoral zoning override, and future construction financing from HPD—including an Article XI tax exemption on certain sites. The Project Area is located in Queens, New York, on the eastern end of Rockaway Peninsula. Encompassing the neighborhood of Edgemere, the Project Area is located in Queens Community District 14, between the Far Rockaway and Bayswater neighborhoods to the east, the proposed Arverne East development and Nature Preserve site to the south (and further to the south, the Rockaway Beach and Atlantic shorefront), the Arverne neighborhood to the west, and Jamaica Bay to the north. The Project Area is generally bounded by Beach 35th Street to the east, Rockaway Freeway and Rockaway Beach Boulevard to the south, Beach 50th Street and Beach 51st Street to the west, and Jamaica Bay to the north.

2. Purpose of activity

These actions are designed to mitigate long term flood risk, create affordable housing opportunities, and expand neighborhood commercial amenities alongside investments in coastal protection infrastructure and parks.

C. PROJECT LOCATION

Borough: Queens Tax Block/Lot(s): See Project Description

Street Address: _____

Name of water body (if located on the waterfront): Conch Basin and Grass Hassock Channel (Jamaica Bay)

D. REQUIRED ACTIONS OR APPROVALS

Check all that apply.

City Actions/Approvals/Funding

City Planning Commission ☑ Yes ☐ No

☐ City Map Amendment	☐ Zoning Certification	☐ Concession
☑ Zoning Map Amendment	☐ Zoning Authorizations	☑ UDAAP
☑ Zoning Text Amendment	☐ Acquisition – Real Property	☐ Revocable Consent
☐ Site Selection – Public Facility	☑ Disposition – Real Property	☐ Franchise
☑ Housing Plan & Project	☑ Other, explain: Mayoral Zoning Override	
☐ Special Permit		

(if appropriate, specify type: ☐ Modification ☐ Renewal ☐ other) Expiration Date: _____

Board of Standards and Appeals ☐ Yes ☑ No

☐ Variance (use)
☐ Variance (bulk)
☐ Special Permit
(if appropriate, specify type: ☐ Modification ☐ Renewal ☐ other) Expiration Date: _____

Other City Approvals

☐ Legislation	☑ Funding for Construction, specify: Article XI Tax Exemption
☐ Rulemaking	☐ Policy or Plan, specify: _____
☐ Construction of Public Facilities	☐ Funding of Program, specify: _____
☐ 384 (b) (4) Approval	☐ Permits, specify: _____
☐ Other, explain: _____	

State Actions/Approvals/Funding

☐ State permit or license, specify Agency: _____ Permit type and number: _____
☐ Funding for Construction, specify: _____
☐ Funding of a Program, specify: _____
☐ Other, explain: _____

Federal Actions/Approvals/Funding

☐ Federal permit or license, specify Agency: _____ Permit type and number: _____
☐ Funding for Construction, specify: _____
☐ Funding of a Program, specify: _____
☐ Other, explain: _____

Is this being reviewed in conjunction with a Joint Application for Permits? ☐ Yes ☑ No

E. LOCATION QUESTIONS

1. Does the project require a waterfront site? ☑ Yes ☐ No
2. Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land under water or coastal waters? ☑ Yes ☐ No
3. Is the project located on publicly owned land or receiving public assistance? ☑ Yes ☐ No
4. Is the project located within a FEMA 1% annual chance floodplain? *(6.2)* ☑ Yes ☐ No
5. Is the project located within a FEMA 0.2% annual chance floodplain? *(6.2)* ☐ Yes ☑ No
6. Is the project located adjacent to or within a special area designation? *See Maps – Part III of the NYC WRP. If so, check appropriate boxes below and evaluate policies noted in parentheses as part of WRP Policy Assessment (Section F).* ☑ Yes ☐ No

   ☐ Significant Maritime and Industrial Area (SMIA) (*2.1*)
   ☑ Special Natural Waterfront Area (SNWA) (*4.1*)
   ☐ Priority Maritime Activity Zone (PMAZ) (*3.5*)
   ☐ Recognized Ecological Complex (REC) (*4.4*)
   ☐ West Shore Ecologically Sensitive Maritime and Industrial Area (ESMIA) (*2.2, 4.2*)

F. WRP POLICY ASSESSMENT

Review the project or action for consistency with the WRP policies. For each policy, check Promote, Hinder *or* Not Applicable (N/A). *For more information about consistency review process and determination, see* ***Part I*** *of the NYC Waterfront Revitalization Program. When assessing each policy, review the full policy language, including all sub-policies, contained within* ***Part II*** *of the WRP. The relevance of each applicable policy may vary depending upon the project type and where it is located (i.e. if it is located within one of the special area designations).*

For those policies checked Promote *or* Hinder, *provide a written statement on a separate page that assesses the effects of the proposed activity on the relevant policies or standards. If the project or action promotes a policy, explain how the action would be consistent with the goals of the policy. If it hinders a policy, consideration should be given toward any practical means of altering or modifying the project to eliminate the hindrance. Policies that would be advanced by the project should be balanced against those that would be hindered by the project. If reasonable modifications to eliminate the hindrance are not possible, consideration should be given as to whether the hindrance is of such a degree as to be substantial, and if so, those adverse effects should be mitigated to the extent practicable.*

		Promote	Hinder	N/A
1	**Support and facilitate commercial and residential redevelopment in areas well-suited to such development.**	☑	☐	☐
1.1	Encourage commercial and residential redevelopment in appropriate Coastal Zone areas.	☑	☐	☐
1.2	Encourage non-industrial development with uses and design features that enliven the waterfront and attract the public.	☑	☐	☐
1.3	Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.	☑	☐	☐
1.4	In areas adjacent to SMIAs, ensure new residential development maximizes compatibility with existing adjacent maritime and industrial uses.	☐	☐	☑
1.5	Integrate consideration of climate change and sea level rise into the planning and design of waterfront residential and commercial development, pursuant to WRP Policy 6.2.	☑	☐	☐

		Promote	Hinder	N/A
2	**Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.**	☐	☐	☑
2.1	Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas.	☐	☐	☑
2.2	Encourage a compatible relationship between working waterfront uses, upland development and natural resources within the Ecologically Sensitive Maritime and Industrial Area.	☐	☐	☑
2.3	Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas or Ecologically Sensitive Maritime Industrial Area.	☐	☐	☑
2.4	Provide infrastructure improvements necessary to support working waterfront uses.	☐	☐	☑
2.5	Incorporate consideration of climate change and sea level rise into the planning and design of waterfront industrial development and infrastructure, pursuant to WRP Policy 6.2.	☐	☐	☑
3	**Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation.**	☑	☐	☐
3.1.	Support and encourage in-water recreational activities in suitable locations.	☑	☐	☐
3.2	Support and encourage recreational, educational and commercial boating in New York City's maritime centers.	☐	☐	☑
3.3	Minimize conflicts between recreational boating and commercial ship operations.	☐	☐	☑
3.4	Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.	☐	☐	☑
3.5	In Priority Marine Activity Zones, support the ongoing maintenance of maritime infrastructure for water-dependent uses.	☐	☐	☑
4	**Protect and restore the quality and function of ecological systems within the New York City coastal area.**	☑	☐	☐
4.1	Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas.	☑	☐	☐
4.2	Protect and restore the ecological quality and component habitats and resources within the Ecologically Sensitive Maritime and Industrial Area.	☐	☐	☑
4.3	Protect designated Significant Coastal Fish and Wildlife Habitats.	☑	☐	☐
4.4	Identify, remediate and restore ecological functions within Recognized Ecological Complexes.	☐	☐	☑
4.5	Protect and restore tidal and freshwater wetlands.	☐	☐	☑
4.6	In addition to wetlands, seek opportunities to create a mosaic of habitats with high ecological value and function that provide environmental and societal benefits. Restoration should strive to incorporate multiple habitat characteristics to achieve the greatest ecological benefit at a single location.	☐	☐	☑
4.7	Protect vulnerable plant, fish and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.	☐	☐	☑
4.8	Maintain and protect living aquatic resources.	☐	☐	☑

		Promote	Hinder	N/A
5	**Protect and improve water quality in the New York City coastal area.**	☑	☐	☐
5.1	Manage direct or indirect discharges to waterbodies.	☑	☐	☐
5.2	Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.	☑	☐	☐
5.3	Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.	☐	☐	☑
5.4	Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.	☐	☐	☑
5.5	Protect and improve water quality through cost-effective grey-infrastructure and in-water ecological strategies.	☐	☐	☑
6	**Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change.**	☑	☐	☐
6.1	Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.	☑	☐	☐
6.2	Integrate consideration of the latest New York City projections of climate change and sea level rise (as published in *New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms*) into the planning and design of projects in the city's Coastal Zone.	☑	☐	☐
6.3	Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.	☐	☐	☑
6.4	Protect and preserve non-renewable sources of sand for beach nourishment.	☐	☐	☑
7	**Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety.**	☑	☐	☐
7.1	Manage solid waste material, hazardous wastes, toxic pollutants, substances hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution and prevent degradation of coastal ecosystems.	☑	☐	☐
7.2	Prevent and remediate discharge of petroleum products.	☑	☐	☐
7.3	Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.	☑	☐	☐
8	**Provide public access to, from, and along New York City's coastal waters.**	☑	☐	☐
8.1	Preserve, protect, maintain, and enhance physical, visual and recreational access to the waterfront.	☑	☐	☐
8.2	Incorporate public access into new public and private development where compatible with proposed land use and coastal location.	☐	☐	☑
8.3	Provide visual access to the waterfront where physically practical.	☐	☐	☑
8.4	Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.	☑	☐	☐

		Promote	Hinder	N/A
8.5	Preserve the public interest in and use of lands and waters held in public trust by the State and City.	☐	☐	☑
8.6	Design waterfront public spaces to encourage the waterfront's identity and encourage stewardship.	☐	☐	☑
9	**Protect scenic resources that contribute to the visual quality of the New York City coastal area.**	☐	☐	☑
9.1	Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.	☐	☐	☑
9.2	Protect and enhance scenic values associated with natural resources.	☐	☐	☑
10	**Protect, preserve, and enhance resources significant to the historical, archaeological, architectural, and cultural legacy of the New York City coastal area.**	☐	☐	☑
10.1	Retain and preserve historic resources, and enhance resources significant to the coastal culture of New York City.	☐	☐	☑
10.2	Protect and preserve archaeological resources and artifacts.	☐	☐	☑

G. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If this certification can be made, complete this Section.

"The proposed activity complies with New York State's approved Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent's Name: Kevin Parris

Address: 100 Gold Street, New York, NY 10038

Telephone: 212-863-5105 Email: parrisk@hpd.nyc.gov

Applicant/Agent's Signature: _____

Date: 12/10/21

Submission Requirements

For all actions requiring City Planning Commission approval, materials should be submitted to the Department of City Planning.

For local actions not requiring City Planning Commission review, the applicant or agent shall submit materials to the Lead Agency responsible for environmental review. A copy should also be sent to the Department of City Planning.

For State actions or funding, the Lead Agency responsible for environmental review should transmit its WRP consistency assessment to the Department of City Planning.

For Federal direct actions, funding, or permits applications, including Joint Applicants for Permits, the applicant or agent shall also submit a copy of this completed form along with his/her application to the NYS Department of State Office of Planning and Development and other relevant state and federal agencies. A copy of the application should be provided to the NYC Department of City Planning.

The Department of City Planning is also available for consultation and advisement regarding WRP consistency procedural matters.

New York City Department of City Planning
Waterfront and Open Space Division
120 Broadway, 31st Floor
New York, New York 10271
212-720-3696
wrp@planning.nyc.gov
www.nyc.gov/wrp

New York State Department of State
Office of Planning and Development
Suite 1010
One Commerce Place, 99 Washington Avenue
Albany, New York 12231-0001
518-474-6000
www.dos.ny.gov/opd/programs/consistency

Applicant Checklist

- ☐ Copy of original signed NYC Consistency Assessment Form
- ☐ Attachment with consistency assessment statements for all relevant policies
- ☐ For Joint Applications for Permits, one (1) copy of the complete application package
- ☐ Environmental Review documents
- ☐ Drawings (plans, sections, elevations), surveys, photographs, maps, or other information or materials which would support the certification of consistency and are not included in other documents submitted. All drawings should be clearly labeled and at a scale that is legible.
- ☐ Policy 6.2 Flood Elevation worksheet, if applicable. For guidance on applicability, refer to the WRP Policy 6.2 Guidance document available at www.nyc.gov/wrp

FOR INTERNAL USE ONLY	WRP No. _____
Date Received: _____	DOS No. _____

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Name of Applicant Representative: Kevin Parris

Address: 100 Gold Street, New York, NY 10038

Telephone: 212-863-5105 Email: parrisk@hpd.nyc.gov

Project site owner (if different than above): _____

B. PROPOSED ACTIVITY

If more space is needed, include as an attachment.

1. Brief description of activity

The New York City Department of Housing Preservation and Development ("HPD") proposes Zoning Map Amendments, Zoning Text Amendments, amendments to the Edgemere Urban Renewal Plan ("URP") including acquisition of real property, an Urban Development Action Area ("UDAA") designation, Urban Development Action Area Project ("UDAAP") approval, disposition of City-owned property, a mayoral zoning override, and future construction financing from HPD—including an Article XI tax exemption on certain sites. The Project Area is located in Queens, New York, on the eastern end of Rockaway Peninsula. Encompassing the neighborhood of Edgemere, the Project Area is located in Queens Community District 14, between the Far Rockaway and Bayswater neighborhoods to the east, the proposed Arverne East development and Nature Preserve site to the south (and further to the south, the Rockaway Beach and Atlantic shorefront), the Arverne neighborhood to the west, and Jamaica Bay to the north. The Project Area is generally bounded by Beach 35th Street to the east, Rockaway Freeway and Rockaway Beach Boulevard to the south, Beach 50th Street and Beach 51st Street to the west, and Jamaica Bay to the north.

2. Purpose of activity

These actions are designed to mitigate long term flood risk, create affordable housing opportunities, and expand neighborhood commercial amenities alongside investments in coastal protection infrastructure and parks.

C. PROJECT LOCATION

Borough: Queens Tax Block/Lot(s): See Project Description

Street Address: _____

Name of water body (if located on the waterfront): Conch Basin and Grass Hassock Channel (Jamaica Bay)

D. REQUIRED ACTIONS OR APPROVALS

Check all that apply.

City Actions/Approvals/Funding

City Planning Commission ☑ Yes ☐ No

- ☐ City Map Amendment
- ☑ Zoning Map Amendment
- ☑ Zoning Text Amendment
- ☐ Site Selection – Public Facility
- ☑ Housing Plan & Project
- ☐ Special Permit
  (if appropriate, specify type: ☐ Modification ☐ Renewal ☐ other) Expiration Date: _____
- ☐ Zoning Certification
- ☐ Zoning Authorizations
- ☐ Acquisition – Real Property
- ☑ Disposition – Real Property
- ☑ Other, explain: Mayoral Zoning Override
- ☐ Concession
- ☑ UDAAP
- ☐ Revocable Consent
- ☐ Franchise

Board of Standards and Appeals ☐ Yes ☑ No

- ☐ Variance (use)
- ☐ Variance (bulk)
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Other City Approvals

- ☐ Legislation
- ☐ Rulemaking
- ☐ Construction of Public Facilities
- ☐ 384 (b) (4) Approval
- ☐ Other, explain: _____
- ☑ Funding for Construction, specify: Article XI Tax Exemption
- ☐ Policy or Plan, specify: _____
- ☐ Funding of Program, specify: _____
- ☐ Permits, specify: _____

State Actions/Approvals/Funding

- ☐ State permit or license, specify Agency: _____ Permit type and number: _____
- ☐ Funding for Construction, specify: _____
- ☐ Funding of a Program, specify: _____
- ☐ Other, explain: _____

Federal Actions/Approvals/Funding

- ☐ Federal permit or license, specify Agency: _____ Permit type and number: _____
- ☐ Funding for Construction, specify: _____
- ☐ Funding of a Program, specify: _____
- ☐ Other, explain: _____

Is this being reviewed in conjunction with a Joint Application for Permits? ☐ Yes ☑ No

E. LOCATION QUESTIONS

1. Does the project require a waterfront site? ☑ Yes ☐ No
2. Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land under water or coastal waters? ☑ Yes ☐ No
3. Is the project located on publicly owned land or receiving public assistance? ☑ Yes ☐ No
4. Is the project located within a FEMA 1% annual chance floodplain? *(6.2)* ☑ Yes ☐ No
5. Is the project located within a FEMA 0.2% annual chance floodplain? *(6.2)* ☐ Yes ☑ No
6. Is the project located adjacent to or within a special area designation? *See Maps – Part III of the NYC WRP. If so, check appropriate boxes below and evaluate policies noted in parentheses as part of WRP Policy Assessment (Section F).* ☑ Yes ☐ No

   ☐ Significant Maritime and Industrial Area (SMIA) (*2.1*)
   ☑ Special Natural Waterfront Area (SNWA) (*4.1*)
   ☐ Priority Maritime Activity Zone (PMAZ) (*3.5*)
   ☐ Recognized Ecological Complex (REC) (*4.4*)
   ☐ West Shore Ecologically Sensitive Maritime and Industrial Area (ESMIA) (*2.2, 4.2*)

F. WRP POLICY ASSESSMENT

Review the project or action for consistency with the WRP policies. For each policy, check Promote, Hinder *or* Not Applicable (N/A). *For more information about consistency review process and determination, see* ***Part I*** *of the NYC Waterfront Revitalization Program. When assessing each policy, review the full policy language, including all sub-policies, contained within* ***Part II*** *of the WRP. The relevance of each applicable policy may vary depending upon the project type and where it is located (i.e. if it is located within one of the special area designations).*

For those policies checked Promote *or* Hinder, *provide a written statement on a separate page that assesses the effects of the proposed activity on the relevant policies or standards. If the project or action promotes a policy, explain how the action would be consistent with the goals of the policy. If it hinders a policy, consideration should be given toward any practical means of altering or modifying the project to eliminate the hindrance. Policies that would be advanced by the project should be balanced against those that would be hindered by the project. If reasonable modifications to eliminate the hindrance are not possible, consideration should be given as to whether the hindrance is of such a degree as to be substantial, and if so, those adverse effects should be mitigated to the extent practicable.*

		Promote	Hinder	N/A
1	**Support and facilitate commercial and residential redevelopment in areas well-suited to such development.**	☑	☐	☐
1.1	Encourage commercial and residential redevelopment in appropriate Coastal Zone areas.	☑	☐	☐
1.2	Encourage non-industrial development with uses and design features that enliven the waterfront and attract the public.	☑	☐	☐
1.3	Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.	☑	☐	☐
1.4	In areas adjacent to SMIAs, ensure new residential development maximizes compatibility with existing adjacent maritime and industrial uses.	☐	☐	☑
1.5	Integrate consideration of climate change and sea level rise into the planning and design of waterfront residential and commercial development, pursuant to WRP Policy 6.2.	☑	☐	☐

		Promote	Hinder	N/A
2	**Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.**	☐	☐	☑
2.1	Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas.	☐	☐	☑
2.2	Encourage a compatible relationship between working waterfront uses, upland development and natural resources within the Ecologically Sensitive Maritime and Industrial Area.	☐	☐	☑
2.3	Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas or Ecologically Sensitive Maritime Industrial Area.	☐	☐	☑
2.4	Provide infrastructure improvements necessary to support working waterfront uses.	☐	☐	☑
2.5	Incorporate consideration of climate change and sea level rise into the planning and design of waterfront industrial development and infrastructure, pursuant to WRP Policy 6.2.	☐	☐	☑
3	**Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation.**	☑	☐	☐
3.1.	Support and encourage in-water recreational activities in suitable locations.	☑	☐	☐
3.2	Support and encourage recreational, educational and commercial boating in New York City's maritime centers.	☐	☐	☑
3.3	Minimize conflicts between recreational boating and commercial ship operations.	☐	☐	☑
3.4	Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.	☐	☐	☑
3.5	In Priority Marine Activity Zones, support the ongoing maintenance of maritime infrastructure for water-dependent uses.	☐	☐	☑
4	**Protect and restore the quality and function of ecological systems within the New York City coastal area.**	☑	☐	☐
4.1	Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas.	☑	☐	☐
4.2	Protect and restore the ecological quality and component habitats and resources within the Ecologically Sensitive Maritime and Industrial Area.	☐	☐	☑
4.3	Protect designated Significant Coastal Fish and Wildlife Habitats.	☑	☐	☐
4.4	Identify, remediate and restore ecological functions within Recognized Ecological Complexes.	☐	☐	☑
4.5	Protect and restore tidal and freshwater wetlands.	☐	☐	☑
4.6	In addition to wetlands, seek opportunities to create a mosaic of habitats with high ecological value and function that provide environmental and societal benefits. Restoration should strive to incorporate multiple habitat characteristics to achieve the greatest ecological benefit at a single location.	☐	☐	☑
4.7	Protect vulnerable plant, fish and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.	☐	☐	☑
4.8	Maintain and protect living aquatic resources.	☐	☐	☑

		Promote	Hinder	N/A
5	**Protect and improve water quality in the New York City coastal area.**	☑	☐	☐
5.1	Manage direct or indirect discharges to waterbodies.	☑	☐	☐
5.2	Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.	☑	☐	☐
5.3	Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.	☐	☐	☑
5.4	Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.	☐	☐	☑
5.5	Protect and improve water quality through cost-effective grey-infrastructure and in-water ecological strategies.	☐	☐	☑
6	**Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change.**	☑	☐	☐
6.1	Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.	☑	☐	☐
6.2	Integrate consideration of the latest New York City projections of climate change and sea level rise (as published in *New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms*) into the planning and design of projects in the city's Coastal Zone.	☑	☐	☐
6.3	Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.	☐	☐	☑
6.4	Protect and preserve non-renewable sources of sand for beach nourishment.	☐	☐	☑
7	**Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety.**	☑	☐	☐
7.1	Manage solid waste material, hazardous wastes, toxic pollutants, substances hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution and prevent degradation of coastal ecosystems.	☑	☐	☐
7.2	Prevent and remediate discharge of petroleum products.	☑	☐	☐
7.3	Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.	☑	☐	☐
8	**Provide public access to, from, and along New York City's coastal waters.**	☑	☐	☐
8.1	Preserve, protect, maintain, and enhance physical, visual and recreational access to the waterfront.	☑	☐	☐
8.2	Incorporate public access into new public and private development where compatible with proposed land use and coastal location.	☐	☐	☑
8.3	Provide visual access to the waterfront where physically practical.	☐	☐	☑
8.4	Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.	☑	☐	☐

		Promote	Hinder	N/A
8.5	Preserve the public interest in and use of lands and waters held in public trust by the State and City.	☐	☐	☑
8.6	Design waterfront public spaces to encourage the waterfront's identity and encourage stewardship.	☐	☐	☑
9	**Protect scenic resources that contribute to the visual quality of the New York City coastal area.**	☐	☐	☑
9.1	Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.	☐	☐	☑
9.2	Protect and enhance scenic values associated with natural resources.	☐	☐	☑
10	**Protect, preserve, and enhance resources significant to the historical, archaeological, architectural, and cultural legacy of the New York City coastal area.**	☐	☐	☑
10.1	Retain and preserve historic resources, and enhance resources significant to the coastal culture of New York City.	☐	☐	☑
10.2	Protect and preserve archaeological resources and artifacts.	☐	☐	☑

G. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If this certification can be made, complete this Section.

"The proposed activity complies with New York State's approved Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent's Name: Kevin Parris

Address: 100 Gold Street, New York, NY 10038

Telephone: 212-863-5105 Email: parrisk@hpd.nyc.gov

Applicant/Agent's Signature: _____

Date: 12/10/21

Submission Requirements

For all actions requiring City Planning Commission approval, materials should be submitted to the Department of City Planning.

For local actions not requiring City Planning Commission review, the applicant or agent shall submit materials to the Lead Agency responsible for environmental review. A copy should also be sent to the Department of City Planning.

For State actions or funding, the Lead Agency responsible for environmental review should transmit its WRP consistency assessment to the Department of City Planning.

For Federal direct actions, funding, or permits applications, including Joint Applicants for Permits, the applicant or agent shall also submit a copy of this completed form along with his/her application to the NYS Department of State Office of Planning and Development and other relevant state and federal agencies. A copy of the application should be provided to the NYC Department of City Planning.

The Department of City Planning is also available for consultation and advisement regarding WRP consistency procedural matters.

New York City Department of City Planning
Waterfront and Open Space Division
120 Broadway, 31st Floor
New York, New York 10271
212-720-3696
wrp@planning.nyc.gov
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New York State Department of State
Office of Planning and Development
Suite 1010
One Commerce Place, 99 Washington Avenue
Albany, New York 12231-0001
518-474-6000
www.dos.ny.gov/opd/programs/consistency

Applicant Checklist

- ☐ Copy of original signed NYC Consistency Assessment Form
- ☐ Attachment with consistency assessment statements for all relevant policies
- ☐ For Joint Applications for Permits, one (1) copy of the complete application package
- ☐ Environmental Review documents
- ☐ Drawings (plans, sections, elevations), surveys, photographs, maps, or other information or materials which would support the certification of consistency and are not included in other documents submitted. All drawings should be clearly labeled and at a scale that is legible.
- ☐ Policy 6.2 Flood Elevation worksheet, if applicable. For guidance on applicability, refer to the WRP Policy 6.2 Guidance document available at www.nyc.gov/wrp

Appendix A: Waterfront Revitalization Program Consistency Assessment

WRP Consistency Assessment

The New York City Waterfront Revitalization Program (WRP) establishes the City's policies and objectives for maximizing benefits derived from economic development, environmental preservation, and public use of the waterfront, while minimizing the conflicts among those objectives. The Project Area is located within the City's Coastal Zone (**Figure A-2**) and the Proposed Actions are consequently subject to the policies of New York City's Waterfront Revitalization Program (WRP).

The WRP Consistency Assessment Form (CAF) is used to identify the relevant WRP policies; the CAF is included in this appendix. For all relevant policies, a written assessment to determine consistency with the applicable WRP policy is provided.

The Proposed Actions are based in and intended to realize the long-term vision and land uses framework that are proposed in the *Resilient Edgemere Community Plan*, a community-based plan that was initiated in 2015 to align and leverage New York City's Hurricane Sandy recovery investments and inventory of vacant land with a long-term and comprehensive community vision. In 2017, the City released the Resilient Edgemere Community Plan (RECP). The RECP proposes a long-term vision for the community which includes peeling development back from the vulnerable edge, opening public spaces and natural areas on the waterfront, and terracing new development inland toward a transit-oriented, mixed-use spine along Rockaway Boulevard and the elevated A subway line.

As described in **Chapter 1, Project Description**, the Proposed Actions include:

- Zoning map amendments to rezone from R4 or R4-1 districts to R3A and C3 districts to C3A in the *Hazard Mitigation Area*; rezone R4 to R4-1 in the *Limited Development Area*; rezone C1-2 commercial overlays to C2-4 and remove C1-2 and C2-2 overlays in the *Neighborhood Infill Area*; and rezone R4, C8-1, and R5/C1-2 districts to R6A/C2-4 in the *Commercial Corridor*
- Zoning text amendments to establish the Edgemere Special Coastal Risk District in the *Hazard Mitigation/Limited Development Areas*, and to establish Mandatory Inclusionary Housing (MIH) area in the *Commercial Corridor*
- Amendments to the Edgemere Urban Renewal Plan: to expand the Edgemere Urban Renewal Area, to change land use designations from 'Residential' and 'Residential/Open Space' to 'Open Space' and to 'Commercial/Residential' land use for sites in the *Hazard Mitigation Area* and in the *Commercial Corridor*, respectively, supplementary height and density controls on redevelopment
- Urban Development Action Area designation and disposition of City-owned property
- A Mayoral Zoning Override to reduce the minimum required parking
- Future construction financing from HPD
- An Article XI tax exemption on certain sites

In addition to the approvals described above, it is anticipated that some of the Projected Development Sites would be owned and managed in a community land trust (CLT) model. A CLT is a not-for-profit organization which owns and stewards land long term for the public's benefit. CLTs separate the ownership of their land from the ownership of structures on the land, typically entering long-term ground leases with homeowners, mutual housing associations, non-profit landlords or other tenants. The RECP called for exploring this unique ownership model because CLTs have the potential to secure long term housing affordability. In addition, studies have found that the increased resident connection and collaboration fundamental to the CLT model can build social cohesion, a critical component of resilience to extreme weather events. HPD is currently facilitating a competitive process to select a partner in forming a CLT in Edgemere and finalizing a development program and operations plan.

Figure A-1 Planned Sub-Areas and Proposed Zoning

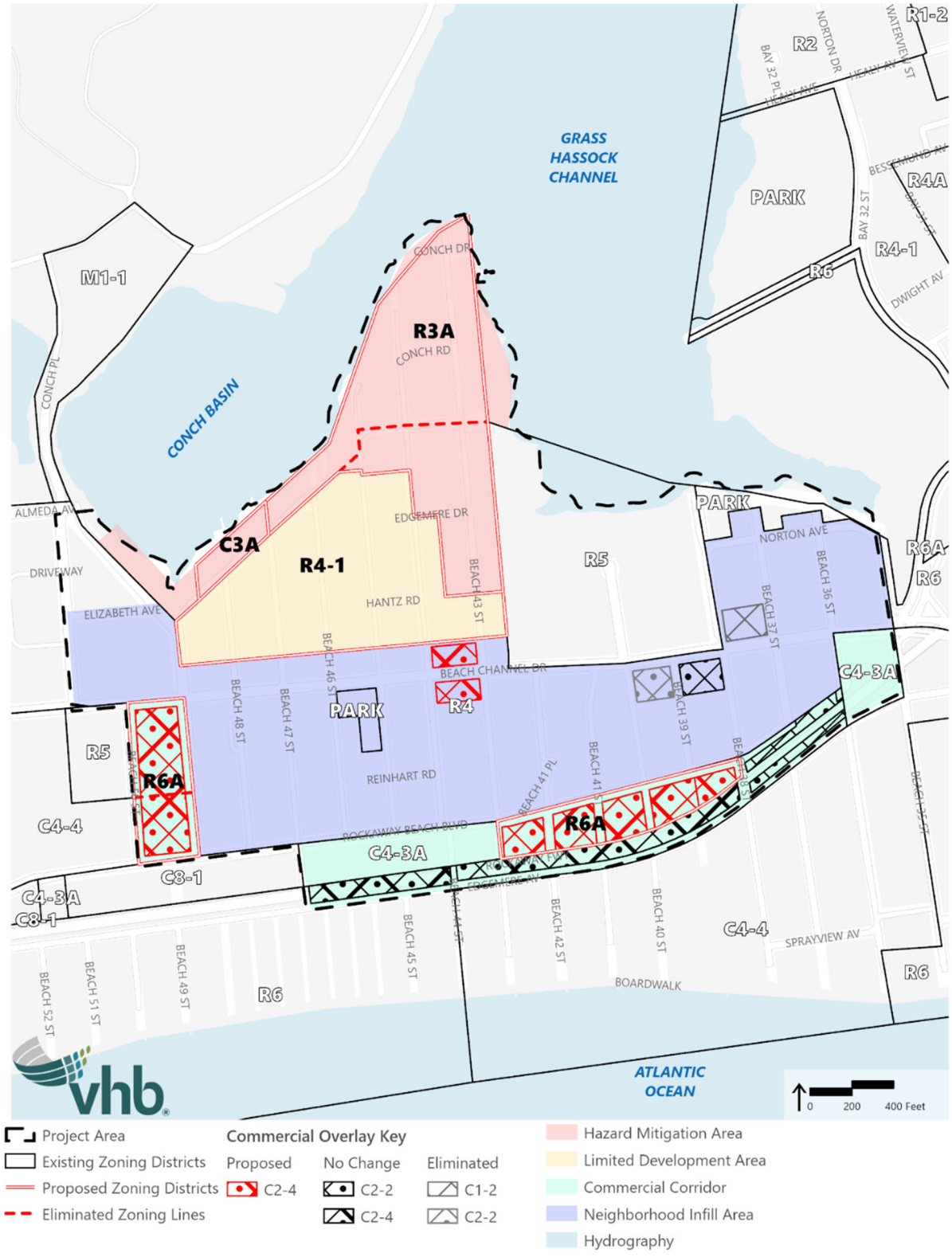
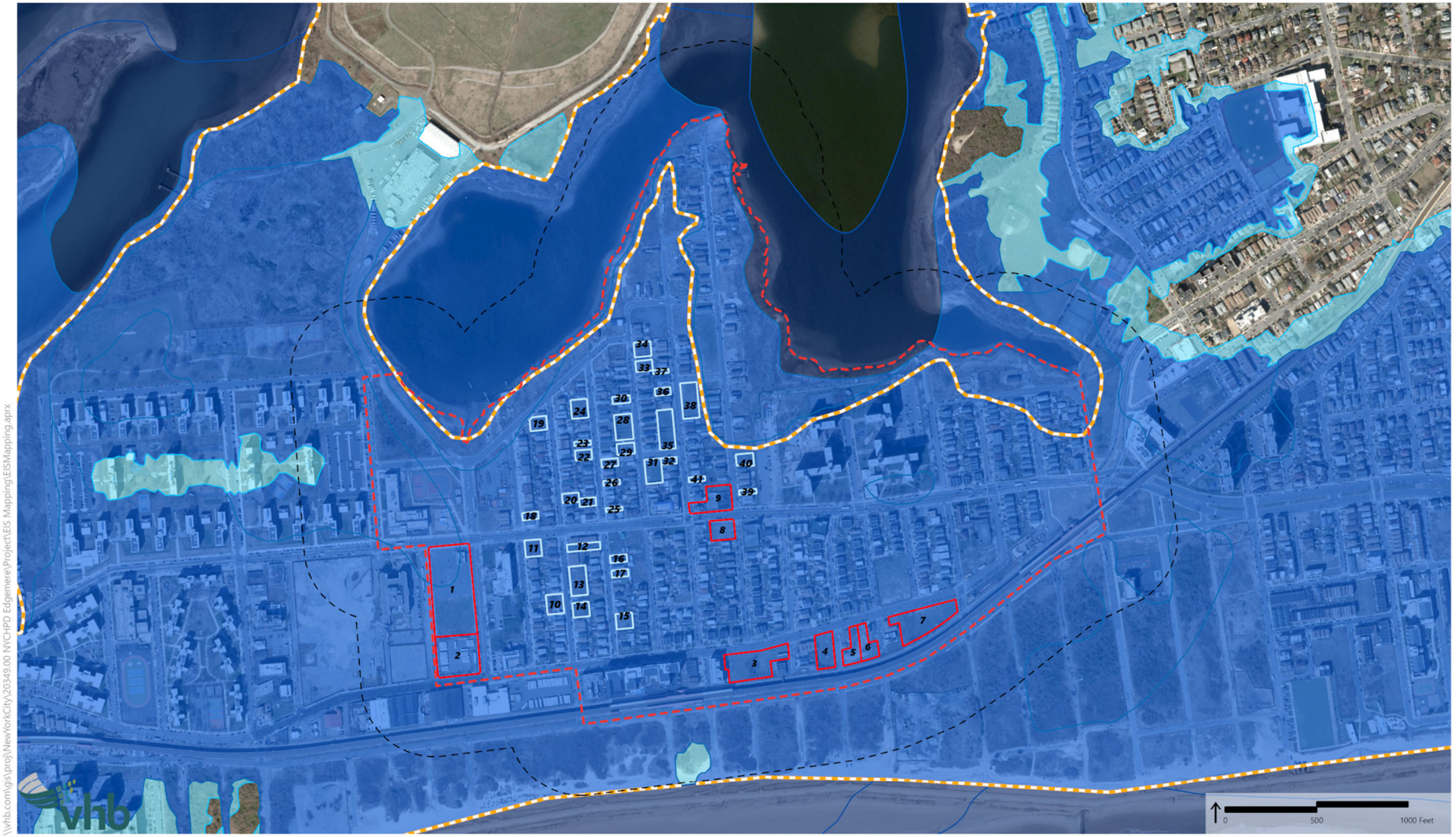


Figure A-2 Flood and Coastal Zone Map



Policy 1: Support and facilitate commercial and residential redevelopment in areas well suited to such development

Policy 1.1: Encourage commercial and residential redevelopment in appropriate Coastal Zone areas.

The Proposed Actions will facilitate a long-term land use, development and community investment strategy which responds to the location's varying degrees of flood risk and coastal hazards, as well as integrate and align with the various infrastructural investments that will mitigate present and future flood risks. This will be achieved by limiting new development in the areas of the neighborhood most vulnerable to coastal flooding, creating new commercial and community facility opportunities in inland locations adjacent to transit, and facilitating the development of housing, including affordable housing, and open space uses on vacant land in appropriate areas.

The overall Project Area comprises a set of planning sub-areas which directly correspond to the Proposed Actions. These four planning sub-areas are identified according to their varied levels of exposure to flood risk and coastal hazard according to the 2015 Preliminary Flood Insurance Rate Maps (PFIRM) and additional drainage analyses, as well as proximity and relationship to critical infrastructure and services, such as transit.

From north to south, the planning sub-areas (see **Figure A-1**) generally transition from most vulnerable to least vulnerable to flood risk, primarily due to lower ground elevations at the bayside waterfront on the northern edge which increase slightly as one travels south and farther inland into the Project Area. The sub-areas comprised of lowest-lying waterfront areas of greatest exposure to flood risk and coastal hazards correspond with actions proposed to limit residential densities and building typologies in order to minimize exposures to flood risks. Sub-areas further inland and at slightly higher elevations and located closer to transit corridors correspond with Proposed Actions which either maintain current permitted densities or increase density to facilitate development of housing, including affordable housing, and commercial/community facility spaces. From north to south, these four sub-areas include the following:

- *Hazard Mitigation Area*. This area consists of the area directly along the Jamaica Bay waterfront, bordered to the north by Jamaica Bay, to the south by Norton Avenue, Edgemere Drive, and parts of Blocks 15966, 15965 and 15960, and to the east by New York City Housing Authority (NYCHA) Beach 41st Street Houses. The *Hazard Mitigation Area* comprises the lowest-lying area of the Project Area and is significantly more vulnerable to flooding and coastal hazards than the other three planning sub-areas. The HMA is roughly defined by the extent of the Federal Emergency Management Agency (FEMA) Coastal A sub-zone of the 100-year floodplain. The FEMA Coastal A sub-zone is at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms. During Superstorm Sandy, Edgemere was inundated with storm surge from this bayside edge. These risks are expected to increase due to climate change. Additionally, the *Hazard Mitigation Area* is vulnerable to twice daily tidal inundation in the future, based on projected sea level rise in the 2050s. The *Hazard Mitigation Area* is currently characterized by low-density, one- to two-family residences in detached

and semi-detached buildings and vacant land. The Proposed Actions would limit future development to single-family detached residences and restrict the redevelopment of current and future City-owned URA sites following disposition to "Open Space."[1]

- *Limited Development Area*. This area is inland of the *Hazard Mitigation Area* and generally bounded by Norton Avenue to the north, Beach 49th Street to the west, Beach Channel Drive to the south, and the NYCHA Beach 41st Street Houses to the east. Though inland from the *Hazard Mitigation Area* and outside of the higher risk FEMA Coastal A sub-zone, the *Limited Development Area* is also low-lying and may experience ponding from tidal flooding and rain events more frequently in the future due to increasing precipitation and sea level rise. The *Limited Development Area* today consists of low-density, one- to four-family residences in detached and semi-detached buildings and vacant land. The Proposed Actions would limit future development to one- to two-family detached buildings and facilitate development of vacant City-owned land.
- *Neighborhood Infill Area*. This area generally comprises the center of the Project Area and is located along and south of Beach Channel Drive and is bounded by Rockaway Beach Boulevard to the south, Beach 49th and 51st Street to the west and Beach 36th and 35th Street to the east. Further inland of the *Limited Development Area*, the *Neighborhood Infill Area* is less exposed to coastal hazards and directly served by two key transportation infrastructure systems: the elevated subway line to the south and the Beach Channel Drive throughway, the route of key bus lines, to the north. This sub-area today consists of low-density, one- to four-family residences in semi-detached and attached buildings, as well as low-rise commercial buildings and vacant land. The Proposed Actions would maintain current densities and land uses in this area and facilitate development of vacant City-owned land.
- *Commercial Corridor*. This area located along Rockaway Beach Boulevard and Beach 50th Street, nearest to the elevated A subway line, which runs along the southern boundary of the Project Area, today consists of vacant land, surface parking, low-density, one- to four-family residences in semi-detached and attached buildings as well as low-rise commercial buildings, and recently constructed mid-rise, multi-family, mixed-use developments. The *Commercial Corridor* is located nearest (directly adjacent) to the elevated A subway line, which runs along the southern boundary of the Project Area. The Proposed Actions would permit and facilitate development of vacant City-owned land for affordable housing and commercial and community facilities in mixed-use, mid-rise buildings as well as development of vacant non-City-owned land for housing with MIH and/or commercial/community facilities in mid-rise buildings.

[1] See Edgemere Urban Renewal Plan.

Policy 1.2: Encourage non-industrial development with uses and design features that enliven the waterfront and attract the public.

The Proposed Actions support the expansion of public open spaces, natural areas, and walking trails along the Jamaica Bay waterfront. The following changes are proposed in the *Hazard Mitigation Area*:

- R3A is proposed for the majority of the *Hazard Mitigation Area*, which encompasses approximately 207 parcels in an area generally bounded by Jamaica Bay to the north; Beach 47th Street to the west; the continuation of Hantz Road, Edgemere Drive, the portion of Norton Avenue that runs northeast/southwest parallel to Conch Basin to the south; and NYCHA Beach 41st Street Houses to the east. R3A districts permit one- and two-family detached residential buildings. The maximum FAR is 0.6, which includes a 0.1 FAR attic allowance. The minimum required lot area is 2,375 square feet and the minimum lot width is 25 feet. One off-street parking space is required for each dwelling unit. Community facilities are permitted at an FAR of 1.0. The proposed zoning change would reduce the allowable density of new development in these areas to reduce future exposure to these risks. The change would also prohibit the development of multi-family homes currently permitted under R4, ensuring that future development occurs in a detached building typology which is more amenable to flood resilient retrofits and interventions that may be necessary in the future. As discussed below, some of these regulations would be modified by the proposed Special Coastal Risk District.
- C3A is proposed for eight parcels within the *Hazard Mitigation Area* and on the Jamaica Bay waterfront, currently zoned C3, including the area bound on the east by the northern extension of Beach 47th Street, on the south by Norton Avenue, on the west by the midpoint between Beach 48th and Beach 49th Streets and on the north by Jamaica Bay. C3A districts permit waterfront recreational activities, primarily boating and fishing. They also include facilities for docking, renting, servicing, and storing fishing and pleasure boats, as well as bicycle shops, ice cream stores, and public and private beaches, as listed in Use Group 14. The maximum commercial FAR is 0.5. One off-street parking space is required for each 150 square feet of commercial space. Residential development is permitted consistent with R3A district regulations. Community facilities are permitted at an FAR of 1.0. The proposed zoning change would restrict the allowable typologies of new residential development to one- and two-family detached and zero lot line, and would not permit semi-detached, attached, and multi-family construction. Restricting the building typologies as such in these areas reduces future exposure to flooding risks and ensures a building typology that is more easily adapted to changing flood risks, including elevations and retrofits. The change would also prohibit the development of multi-family homes currently permitted under C3, ensuring that future development occurs in a detached building typology which is more amenable to flood resilient retrofits and interventions that may be necessary in the future. As discussed below, some of these regulations would be modified by the proposed Special Coastal Risk District.
- The Edgemere Special Coastal Risk District (SCRD) is proposed across the *Hazard Mitigation Area* and *Limited Development Area* and will modify the land use regulations of the proposed underlying zoning districts. Coterminous with the

proposed R3A and C3A underlying zoning districts, the SCRD is proposed to restrict residential development to one-family detached homes, which would limit new development in order to reduce future exposure to flood and coastal risks and ensure that future development occurs in a detached building typology which is more amenable to flood resilient retrofits and interventions that may be necessary in the future. The SCRD is also proposed to prohibit community facilities with overnight sleeping accommodations in order to further limit future exposure to flood and coastal risks for temporary or semi-permanent residential populations. Bulk, density, and FAR are established in the proposed underlying zoning districts: R3A and C3A.

- The designated land use of URA Sites 53, 55, 56B, 59, 60, 61, 62B, 64B, 86, 87 would be changed to 'Open Space' (from 'Residential' and 'Residential/Open Space'). New URA Site 54 would be designated as 'Open Space.'

This is consistent with the goals to expand waterfront access and improved recreational opportunities and amenities as set forth in the RECP and other community initiatives discussed in **Chapter 2, Land Use, Zoning and Public Policy**. The provision of open space and other storm risk reduction measures is suitable for this location and could help to improve the aesthetic character and appeal of the area.

Therefore, the Proposed Actions would be consistent with Policy 1.2.

Policy 1.3: Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.

In keeping with the land use strategy outlined above, the Proposed Actions will encourage redevelopment only in locations and densities which are both less vulnerable to coastal flood risk and better served by existing infrastructure, such as transit infrastructure. The areas of encouraged development within the Project Area (including the *Neighborhood Infill Area* and *Commercial Corridor*) are well served by multiple modes of public transit, including bus and subway. Transit access includes the Q22 bus route and the QM17 express bus route to Manhattan, both of which run along Beach Channel Drive and Seagirt Boulevard to the southeast of the Project Area. The Q52 SBS also has a stop near the southwestern-most end of the Project Area. Elevated tracts of the MTA-New York City Transit (NYCT) Rockaway A-Train Line run along Rockaway Freeway, with subway stops at Beach 36th Street, Beach 44th Street, and Beach 60th Street run along the southern edge of the Project Area, where the Projected Multi-Family Mixed-Use Development Sites would be located.

The Proposed Actions would not result in any significant adverse impacts on public schools or water and sewer facilities. The Proposed Actions would neither result in the physical loss of open space resources nor result in any significant adverse shadow, air quality, noise, or other environmental impacts that would affect the utilization of any publicly accessible open spaces.

Furthermore, major Peninsula-wide infrastructure projects, providing both oceanfront and bayside coastal protection, are also underway. In 2019, the USACE was authorized to move forward with the Rockaway Reformulation Plan, now the East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, New York Coastal Storm Risk Reduction Project. This work is composed of two distinct projects: Atlantic Shorefront and Back Bay High Frequency Flood Risk Reduction Features. These two projects will help protect Rockaway communities from coastal flooding. The Atlantic Shorefront project will run from Beach 149th Street to Beach

19th Street, along DPR beach property, and includes beach restoration with renourishment, five groin extensions and the addition of 13 new groins (similar to jetties), reinforced dunes, a beach berm, and enhanced beach crossovers for pedestrian access. This plan reduces risks of erosion and wave attack while limiting storm surge inundation and cross-peninsula flooding. For this area of Jamaica Bay, in the Back Bay High Frequency Flood Risk Reduction Features project, a combination of hard and green infrastructure is designed to reduce future flood risk and economic costs of storm events (i.e., 5- to 10-year storms) and tidal inundation for buildings, infrastructure, and the coastal ecosystem, including anticipated sea level rise over the next 50 years. Project components in Edgemere will primarily include berms and hybrid berms, rock sill structures, marsh restoration, and floodwalls (see **Figure A-3** to **Figure A-5**).

Additionally, within the *Hazard Mitigation Area*, the Proposed Actions will restrict the City-owned vacant lots and other lots that are within the Urban Renewal Area to open spaces, recreational and drainage infrastructure uses (see **Figure A-6**). This includes a 1.67-acre City-owned lot (Block 15973, Lot 1) that is reserved for future large-scale drainage infrastructure. These open spaces would be designed to aid in the absorption of water, which would reduce flood risk and redirect stormwater from City sewers and sewage treatment facilities. These actions ensure that the land uses in the most vulnerable area of the neighborhood align with and support the greater coastal resiliency strategy.

Therefore, the Proposed Actions would be consistent with Policy 1.3.

Figure A-3 Atlantic Shorefront Component of U.S. Army Corps Plan (Westward Extent)



Figure ES-4c: Atlantic Shorefront Component of Recommended Plan (3 of 4)

Figure A-4 Atlantic Shorefront Component of U.S. Army Corps Plan (Eastward Extent)



Figure ES-4d: Atlantic Shorefront Component of Recommended Plan (4 of 4)

Figure A-5 Mid-Rockaway – Edgemere Area Project Plans

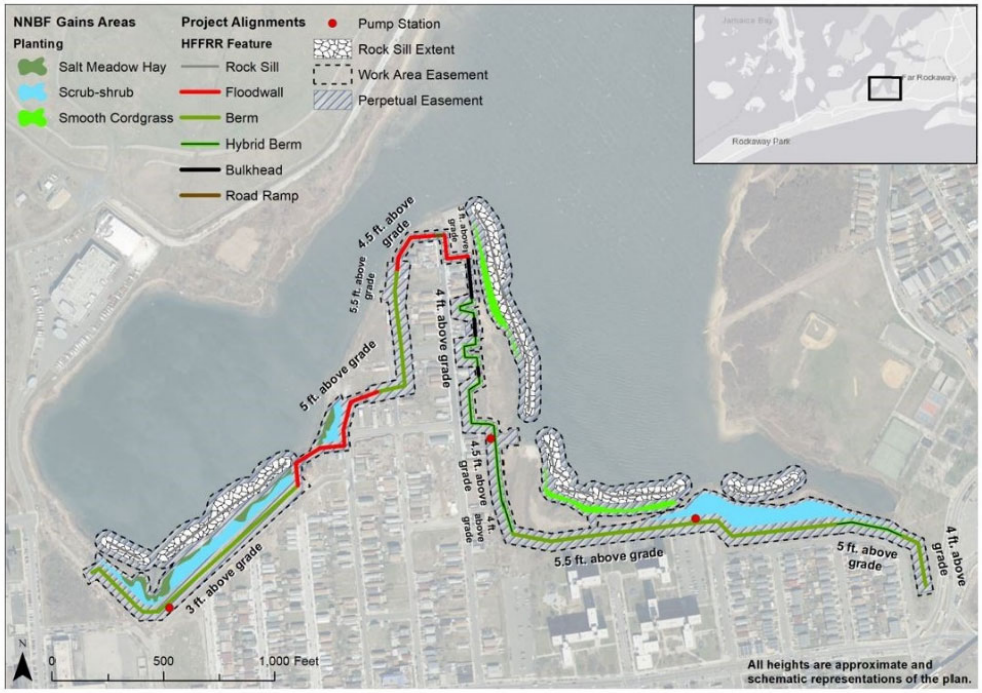
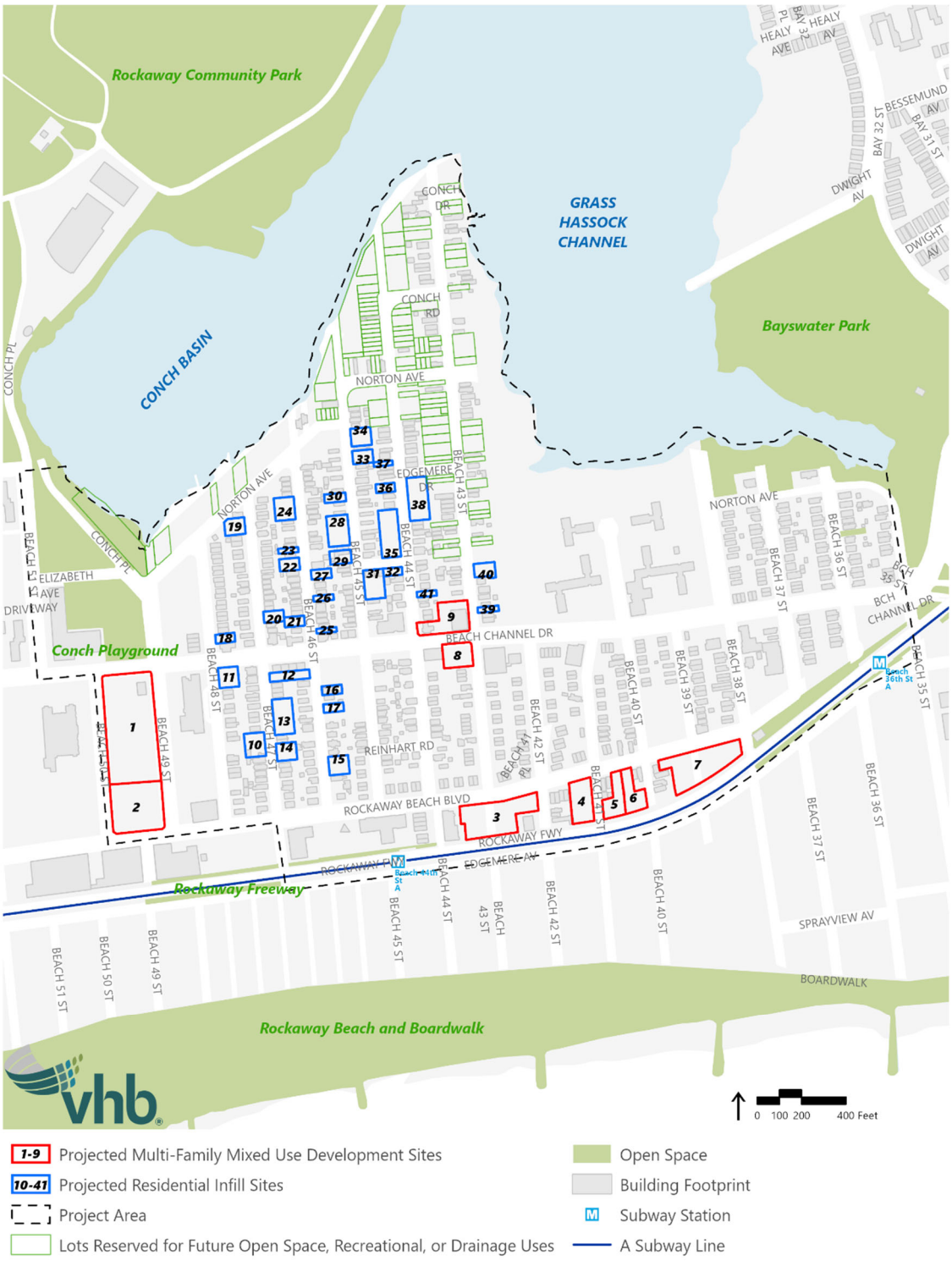


Figure ES-7: Mid-Rockaway - Edgemere Area HFFRRF Project Plan

Retrieved from Intefrated Hurricane Sandy General Revaluation Report and Environmental Impact Statement Atlantic Coast of New York East Rockaway Inlet to Roackaway Inelt and Jamaica Bay, August 2018

Figure A-6 Preserved Open Space Areas



Policy 1.5: Integrate consideration of climate change and sea level rise into the planning and design of waterfront residential and commercial development, pursuant to WRP Policy 6.2.

The Proposed Actions in the *Hazard Mitigation Area* and *Limited Development Area*, including re-zoning to a lower zoning district and mapping a Special Coastal Risk District and changing the land use designation for lots in certain areas of the Urban Renewal Area from 'Residential' to 'Open Space', are intended to facilitate the long-term land use changes necessary to evolve Edgemere's waterfront and low-lying areas to minimize flood and coastal risks anticipated to increase over time with climate change and sea level rise. The Proposed Actions restrict any new development to open spaces and/or low-density detached residential buildings.

Additionally, the future residential and commercial development would comply with Appendix G of the NYC Building Code and applicable policies, including the recently adopted Zoning for Coastal Flood Resiliency regulations. The Proposed Actions have been designed to integrate features that account for potential risks due to the effects of climate change, including the potential for more severe storms and coastal flooding. As much of the future development is anticipated to be financed through the Department of Housing Preservation and Development's affordable housing financing programs, it is anticipated that, per Local Law 41, all new construction or substantial rehabilitation under these programs will be required to comply with the Climate Resiliency Design Guidelines (the CRDG), Under Local Law 41 and in compliance with the CRDG, construction will be required to supplement historic climate data with specific, regional, forward-looking climate change data into their design. The CRDG addresses three key climate risks: increasing heat, increasing precipitation, and sea level rise. Examples of how the anticipated development may comply with future climate risks is designing to a Design Flood Elevation (DFE) which accounts for projected sea level rise during the useful life of the building (for example, designing to 15 feet 4 inches NAVD88 to accommodate 28 inches sea level rise and 24 inches freeboard in a 2080's scenario, where a current minimum DFE is 11 feet NAVD88). See Policy 6.2 below for further description.

Therefore, the Proposed Actions would be consistent with Policy 1.5.

Policy 3: Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation.

Policy 3.1: Support and encourage in-water recreational activities in suitable locations.

C3A zoning is proposed for eight parcels within the *Hazard Mitigation Area* and on the Jamaica Bay waterfront, which are currently zoned C3. This zone includes areas along the Jamaica Bay waterfront that are at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms. The proposed zoning change would reduce the allowable density of new development in these areas and mitigate future exposure to these risks. The proposed C3A district would permit waterfront recreational activities, primarily boating and fishing. These districts also typically include facilities for docking, renting, servicing, and storing fishing and pleasure boats, as well as bicycle shops,

ice cream stores, and public and private beaches, as listed in Use Group 14. This is consistent with community input for waterfront access and improved recreational opportunities and amenities as set forth in the Resilient Edgemere Community Plan and other community initiatives discussed in **Chapter 2, Land Use, Zoning and Public Policy**.

Therefore, the Proposed Actions would be consistent with Policy 3.1.

Policy 4: Protect and restore the quality and function of ecological systems within the New York City coastal area.

Policy 4.1: Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas.

Jamaica Bay, including Conch Basin and Grass Hassock Channel, is located along the northern boundary of the Project Area, and is designated as a Special Natural Waterfront Areas. As described previously, the Proposed Actions would limit future development in areas of greater risk to coastal hazards (in the *Hazard Mitigation Area* and *Limited Development Area*). These areas are located either directly adjacent to or within close proximity of the Jamaica Bay waterfront. Within the waterfront *Hazard Mitigation Area*, many of the currently vacant lots will be restricted to open space improvements as a result of the Proposed Actions. This restriction is applicable to all City-owned land within the defined *Hazard Mitigation Area* and would be achieved through amendments to the Edgemere Urban Renewal Plan.

By retreating development from the waterfront, the Proposed Actions seek to limit overall density which would place less pressure on storm runoff, noise pollution, and other environmental factors on the ecological system. Furthermore, the Proposed Actions seek to facilitate the improvement and expansion of open spaces in waterfront areas, which could support the health of the ecological systems of Jamaica Bay.

Therefore, the Proposed Actions would be consistent with Policy 4.1.

Policy 4.3: Protect designated Significant Coastal Fish and Wildlife Habitats.

As discussed in **Chapter 9, Natural Resources**, Conch Basin and Grass Hassock Channel are part of the Significant Coastal Fish and Wildlife Habitat. The New York State Department of Environmental Conservation identifies multiple threats to existing fish and wildlife resources within the bay, including actions such as alteration of tidal patterns, excavations of new channels, elimination of salt marshes and shallows through excavation or filling, construction of shoreline structures in previously undisturbed areas and unregulated dredge soil disposal. No such actions would be implemented as part of the Proposed Actions, under which physical disturbance of existing habitats would be limited to the upland areas of the 41 Projected Development Sites. It is important to note that, absent the Proposed Actions, the United States Army Corps of Engineer (USACE)'s Back Bay High Frequency Flood Risk Reduction Features project that is currently in design may result in construction of shoreline structures in previously undisturbed areas through installation of flood controls along Conch Basin and Grass Hassock Basin.

These waterbodies are listed by the National Oceanic and Atmospheric Administration as an Essential Fish Habitat for one or more life stages of 18 fish species. As all the 41 Projected

Development Sites are inland sites that are not located on or adjacent to Conch Basin or Norton Basin, no direct effects to Essential Fish Habitat within either surface water would occur as a result of the Proposed Actions.

Therefore, the Proposed Actions would be consistent with Policy 4.3.

Policy 5: Protect and improve water quality in the New York City coastal area.

Policy 5.1: Manage direct or indirect discharges to waterbodies.

During project work, the Proposed Actions would include various measures to protect waterbodies from direct or indirect discharges of stormwater, pollutants, and/or sediments. All project work will be performed under the New York State Department of Environmental Conservation (NYSDEC)-approved Stormwater Pollution Prevention Plan (SWPPP) to be prepared in accordance with the terms and conditions of the State Pollutant Discharge Elimination System (SPDES) permit program. Given that the Proposed Actions would add development in currently vacant areas, existing sewer lines may need to be replaced. As such, the Projected Development Sites would be subject to a New York City Department of Environmental Protection (NYCDEP)-approved Amended Drainage Plan.

Furthermore, no project work or equipment and materials storage would occur within or adjacent to wetlands, and various project erosion and silt controls would be installed and maintained pursuant to the guidelines set forth in the *New York State Standards and Specifications for Erosion and Sediment Control* (2016). In addition, several of the lots within the study area that have been designated as open space or marsh restoration would overlap with the Edgemere drainage protection plan and would aid in the absorption of water, which would reduce flood risk and redirect stormwater from City sewers and sewage treatment facilities.

Therefore, the Proposed Actions would be consistent with Policy 5.1.

Policy 5.2: Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.

As stormwater flow is recognized to be the primary source of nonpoint source pollution to surface waters, stormwater runoff to roadways would be collected by catch basins and discharge to the New York City stormwater drainage system, subject to review and approval by the NYCDEP's Site Connection Approval process. Furthermore, some lots within the study area that have been designated as open space or marsh restoration would overlap with the Edgemere drainage protection plan and would aid in the absorption of water, which would reduce flood risk and redirect stormwater from City sewers and sewage treatment facilities.

Therefore, the Proposed Actions would be consistent with Policy 5.2.

Policy 6: Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future condition created by climate change.

Policy 6.1: Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.

See response to WRP Policy 6.2, below.

Policy 6.2: Integrate consideration of the latest New York City projections of climate change and sea level rise (as published in New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms) into the planning and design of projects in the city's Coastal Zone.

As discussed above, the Proposed Actions would limit future development in areas of greater risk to coastal hazards and encourage the development of affordable housing and community amenities to benefit the neighborhood in inland areas. Regardless of the Proposed Actions, the Projected Developments would comply with all applicable policies and regulations current at the time of design and construction, including Appendix G of the NYC Building Code, the recently adopted Zoning for Coastal Flooding Resiliency regulations, and the CRDG, as applicable. The Appendix G of the NYC Building Code and CRDG both include additional requirements and/or guidance for projects which incorporates sea level rise and other projected climate impacts.

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 NYCDEP, would reduce the overall volume of sanitary sewer discharge and stormwater runoff as well as the peak stormwater runoff rate from the Projected Development Sites.

Further, open spaces proposed within the *Hazard Mitigation Area* and natural shorelines, among other green infrastructures, proposed in the USACE's High Frequency Flood Risk Reduction Features project could provide vegetative cover to absorb stormwater runoff and mitigate flood risk.

Guidance provided by DCP includes a detailed methodology to determine the consistency of a project with Policy 6.2. This guidance identifies three basic steps to determine the consistency of a project with this policy: (1) identify vulnerabilities and consequences; (2) identify adaptive strategies; and (3) assess policy consistency.

1. Identify vulnerabilities and consequences

1(a). Complete the Flood Elevation Worksheet to identify current and future flood elevations in relation to the elevations of the site and project features.

See attached Flood Evaluation Worksheet below.

1(b). Identify any project feature that may be located below the elevation of the 1-Percent Floodplain over the lifespan of the project under any sea level rise scenario.

For this assessment, building features are defined in one of four categories:

- (1) vulnerable: project features that have the potential to incur significant damage if flooded;
- (2) critical: project features that if damaged would have severe impacts on the project and its ability to function as designed;
- (3) potentially hazardous: project features that if damaged or made unsecure by flooding could potentially adversely affect the health and safety of the public and the environment; and
- (4) other: project features that are entirely open and unenclosed spaces, except the open storage of potentially hazardous materials, which may be damaged by flooding, but are not likely to present significant consequences and are more easily repaired.

The Flood Elevation Worksheet was prepared for the Proposed Actions and is provided in this Appendix below. This tool identifies current and future flood elevations in relation to the elevations of the site and project features, presents a range of future flood elevations in relation to the elevations of the site and project features, and presents a range of future flood elevations as affected by sea level rise, from high (90th percentile) to low (10th percentile), where the "high estimate" represents a high-end projected increase in flood elevation.

According to the NYC Panel on Climate Change (NPCC), sea level rise projections in the middle range (25th to 75th percentile) in NYC are likely to have an increase of 4 to 8 inches by the 2020s, 11 to 21 inches by the 2050s, 18 to 39 inches by the 2080s, and 22 to 50 inches by 2100. Under the "high estimate" scenario (90th percentile), sea level rise projections reach 10 inches by the 2020s, 30 inches by the 2050s, 58 inches by the 2080s, and 75 inches by 2100. Sea level rise projections are relative to a 2000-2004 base period (the most recent projections from the NPCC were issued in 2015). According to 2015 Preliminary Flood Insurance Rate Maps (FIRMs), the Project Area is located within the 1 percent annual chance flood hazard area, Zone AE (an area of high flood risk subject to inundation by the 1 percent annual chance flood event), with a BFE of +10 feet NAVD88 (see attached worksheet). Based on the NPCC "high estimate" scenario, the 1 percent annual chance flood BFE for the Project Area could increase up to 10.83 feet in the 2020s, 12.50 feet in the 2050s, 14.83 feet in the 2080s, and up to 16.25 feet by 2100 (NAVD88) as compounded by sea level rise projections (see **Table A-1**). It is important to note that these estimates do not take into account the future conditions with the large-scale High Frequency Flood Risk Reduction Features proposed and currently in design by the USACE, which is intended to provide flood protection from a 10-year storm, incorporating projected sea level rise at year 2068.

Table A-1 100-Year Floodplain Elevations with Sea Level Rise

Decade	Low Estimate – 10th percentile (ft)	Mid-Range – 25th to 75th percentile (ft)		High Estimate – 90th percentile (ft)
2020	10.17	10.50	10.67	10.83
2050	10.67	11.33	11.75	12.50
2080	11.08	12.42	13.25	14.83
2100	11.25	13.00	14.17	16.25

The Proposed Actions' buildings are anticipated to have a lifespan of about 50 years, or until 2081, when adaptive reuse in the form of major rehabilitation or reconstruction is assumed. The Proposed Actions' buildings are evaluated for projected flood levels through 2100 (the farthest data projection currently available). As discussed above, the Proposed Actions would result in Projected Development Sites, categorized as Projected Residential Infill Sites and Projected Multifamily Mixed-Use Development Sites. These Projected Development Sites are in the *Neighborhood Infill Area*, *Limited Development Area*, and the *Commercial Corridor*. In the *Hazard Mitigation Area*, new residential improvements on private land will be limited to low density, single-family structures, and improvements to public land will be restricted to open space, recreational or drainage uses. There are no projected development sites in this zone. The project features that are subject to this Consistency Assessment include the low-rise residential buildings in the *Limited Development Area* and *Neighborhood Infill Area* and midrise buildings along Rockaway Beach Boulevard in the *Commercial Corridor*.

As discussed above, the majority of future development is anticipated to be at least partly financed with City subsidy through the Department of Housing Preservation and Development's affordable housing financing programs, and thus would be required to comply with the CRDG, per Local Law 41. Under the CRDG (updated Resiliency Scoring Metric anticipated by 2026), construction of the Projected Development Sites which receive public subsidy will be required to design to a DFE which accounts for projected sea level rise during the useful life of the building (for example, designing to 15 feet 4 inches NAVD88 to accommodate 28 inches sea level rise and 24 inches freeboard in a 2080's scenario, where a current minimum DFE is 11 feet NAVD88).

The Projected Residential Infill Development Sites would be in the *Limited Development Area* and *Neighborhood Infill Area* which has a BFE of 10 feet NAVD88. As shown in the attached worksheet and **Table A-1**, per DFE requirements for critical facilities to accommodate 6 inches of sea level rise and 24 inches of freeboard (as per Appendix G requirements of one- and two-family dwellings in A zones) the 2020s set forth in the CRDG, these sites would be constructed at a minimum elevation of 12 feet 6 inches NAVD88. Therefore, the Projected Residential Infill Sites would be located above the 1 percent annual chance flood hazard area up until the 2050s under high sea level rise estimates but would be below the 1 percent flood hazard area height in the 2080s and 2100s under mid-range estimates.

The Projected Multi-Family Mixed-Use Development Sites in the *Commercial Corridor* of the Project Area also have a BFE of 10 feet NAVD88. These sites would also be constructed at a minimum elevation of 12 feet 6 inches NAVD88 per DFE requirements for critical facilities to accommodate 6 inches of sea level rise and 24 inches of freeboard the 2020s set forth in the CRDG. Therefore, these sites would be located above the 1 percent annual chance flood

hazard area up until the 2050s under high sea level rise estimates but would be below the 1 percent flood hazard area in the in the 2080s and 2100s under mid-range estimates.

With a flood event in these scenarios, the elevated ground floors of the Projected Development Sites could be damaged after the 2050s given the current sea level rise scenario of 6 inches, however, adaptive measures are outlined below.

1(c). Identify any vulnerable, critical, or potentially hazardous features that may be located below the elevation of Mean Higher High Water over the lifespan of the project under any sea level rise scenario.

Based on the range of sea level rise predictions described above, Mean Higher High Water (MHHW) at the National Oceanic and Atmospheric Administration (NOAA) Station nearest the Project Area (Beach Channel Station #8517137) could range up to 8.68 feet NAVD88 by 2100 under the "high estimate" (90th percentile) scenario. Current tidal and flood heights of the Beach Channel NOAA Station is 2.43 feet NAVD88, as adjusted for changes in sea level since the 1983-2001 tidal epoch. The BFE at the Project Area is 10 feet NAVD88 with the lowest ground elevation of the Project Area at 4 feet.

As discussed above, the majority of future development is anticipated to be at least partly financed with City subsidy through the Department of Housing Preservation and Development's affordable housing financing programs, and thus would be required to comply with the CRDG, per Local Law 41. Under the CRDG (updated CRDG and Resiliency Scoring Metric anticipated by 2026), construction of the Projected Development Sites which receive public subsidy will be required to design to a Design Flood Elevation (DFE) which accounts for projected sea level rise during the useful life of the building (for example, designing to a 15 feet 4 inches NAVD88 to accommodate 28 inches sea level rise and 24 inches freeboard in a 2080's scenario, where a current minimum Design Flood Elevation is 11 feet NAVD88). Any features below 10 feet NAVD88 would implement flood-proofing and dry-proofing measures as per the CRDG in Appendix G of the Building Code and the CRDG, as applicable.

1(d). Describe how any additional coastal hazards are likely to affect the project, both currently in the future, such as waves, high winds, or debris.

Since the Project Area is located within Zone AE, portions of the area currently are and would continue to be at risk for inundation from 1 percent annual chance flood events. Where wave action hazards (i.e., Zone VE or Coastal A Zone) are of concern, limitations to any future development intended to minimize flood risk are proposed (per the *Hazard Mitigation Area*). These actions include rezoning to a lower density zoning district, instituting a Special Coastal Risk District, and amending the Urban Renewal Plan to restrict any improvements to City-owned land to open space uses. These long-term land use changes are complemented by the protection that are set forth by the USACE in the East Rockaway Intel to Rockaway Inlet and Jamaica Bay, New York Coastal Storm Risk Reduction Project to minimize wave and inundation impacts that could arise from both the Jamaica Bay waterfront and the Atlantic Shorefront. The USACE plans include infrastructure which is designed to reduce wave and wind impact, such as the enhanced groins and reinforced dunes on the Atlantic Shorefront and combination of berms, bulkheads, and natural shorelines on the Jamaica Bay waterfront.

The land use changes, along with the coastal infrastructure investments, would serve as a buffer to coastal hazards and provide further absorptive capacity to serve the existing households and buildings, as well as the proposed new resilient construction, located on the interior of the neighborhood. When also paired with additional operational strategies, such as advance warning systems and coordinated emergency response and evacuation, the proposed actions are anticipated to help prevent water and other coastal storm hazards from damaging the buildings and neighborhood overall. No hazardous features would be located below the elevation of MHHW over the lifespan of the project under any sea level rise scenario. Therefore, storm impacts due to waves, high winds, or debris would not be expected to affect the project features.

2. Identify adaptive strategies

2(a). For any features identified in Step 1(b), identify adaptive strategies:

As discussed above, all the project development sites are designed to have their ground floor levels out of the current 1 percent annual chance floodplain. The identified vulnerable features are the ground floors of the various Projected Development Sites. As discussed above, the ground floors of the Projected Residential Infill Development Sites would be below the 1 percent annual floodplain height under mid-range estimates in the 2080s and 2100s and ground floors of the Projected Multifamily Mixed-Use Development Sites would be located under the mid-range estimates in the 2050s (see **Figure A-7** to **Figure A-9**).

All the Projected Development Sites would be designed to meet NYC Building Code Appendix G standards for flood resistant construction. If the elevation of the floodplain increases beyond the current DFE by the 2050s or 2080s, additional protection could be provided through temporary barriers, or subsequent retrofits to extend dry floodproofed materials to higher elevations.

Figure A-7 2050s Flood and Coastal Zone Map

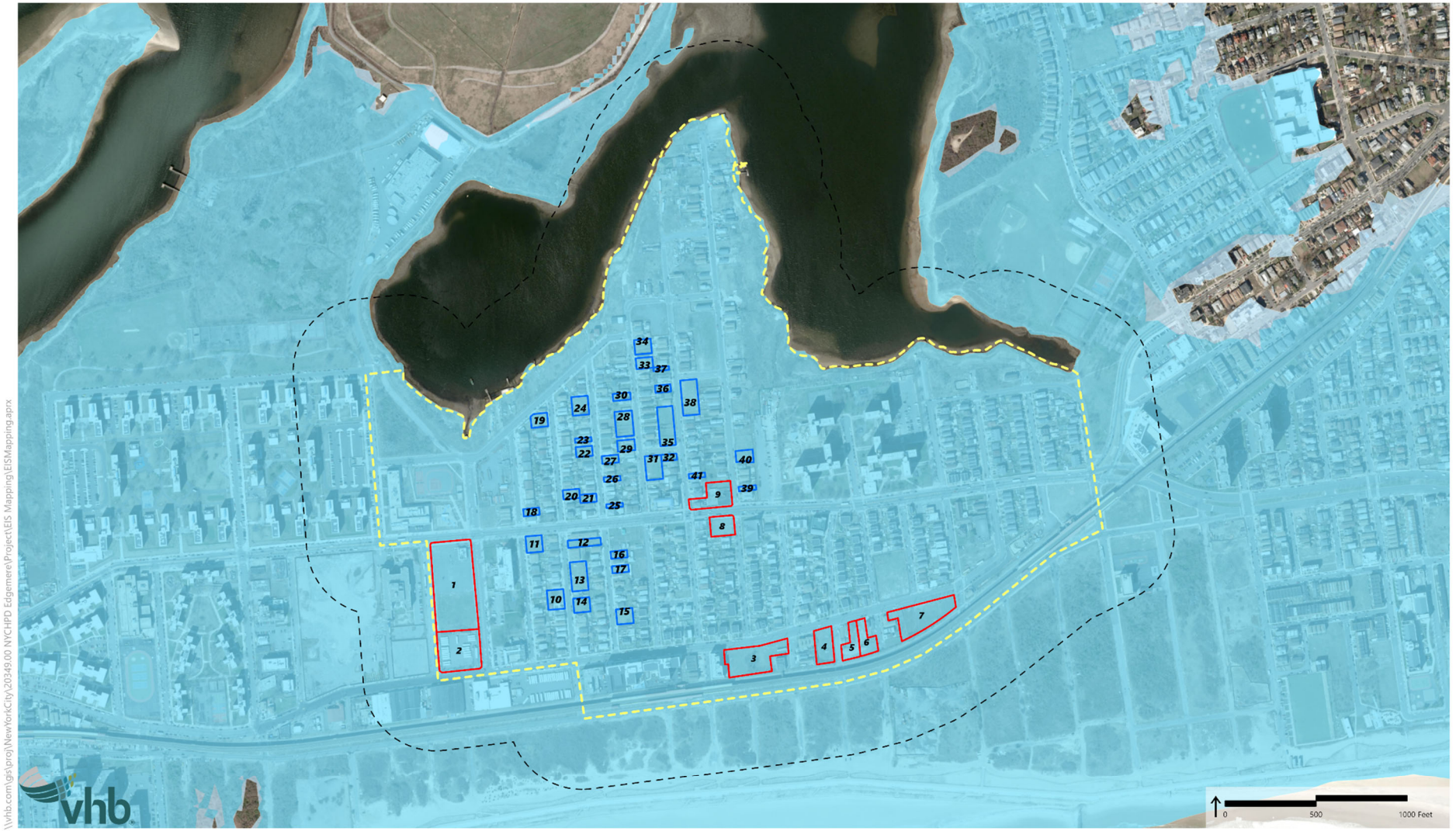


Figure A-8 2080s Flood and Coastal Zone Map

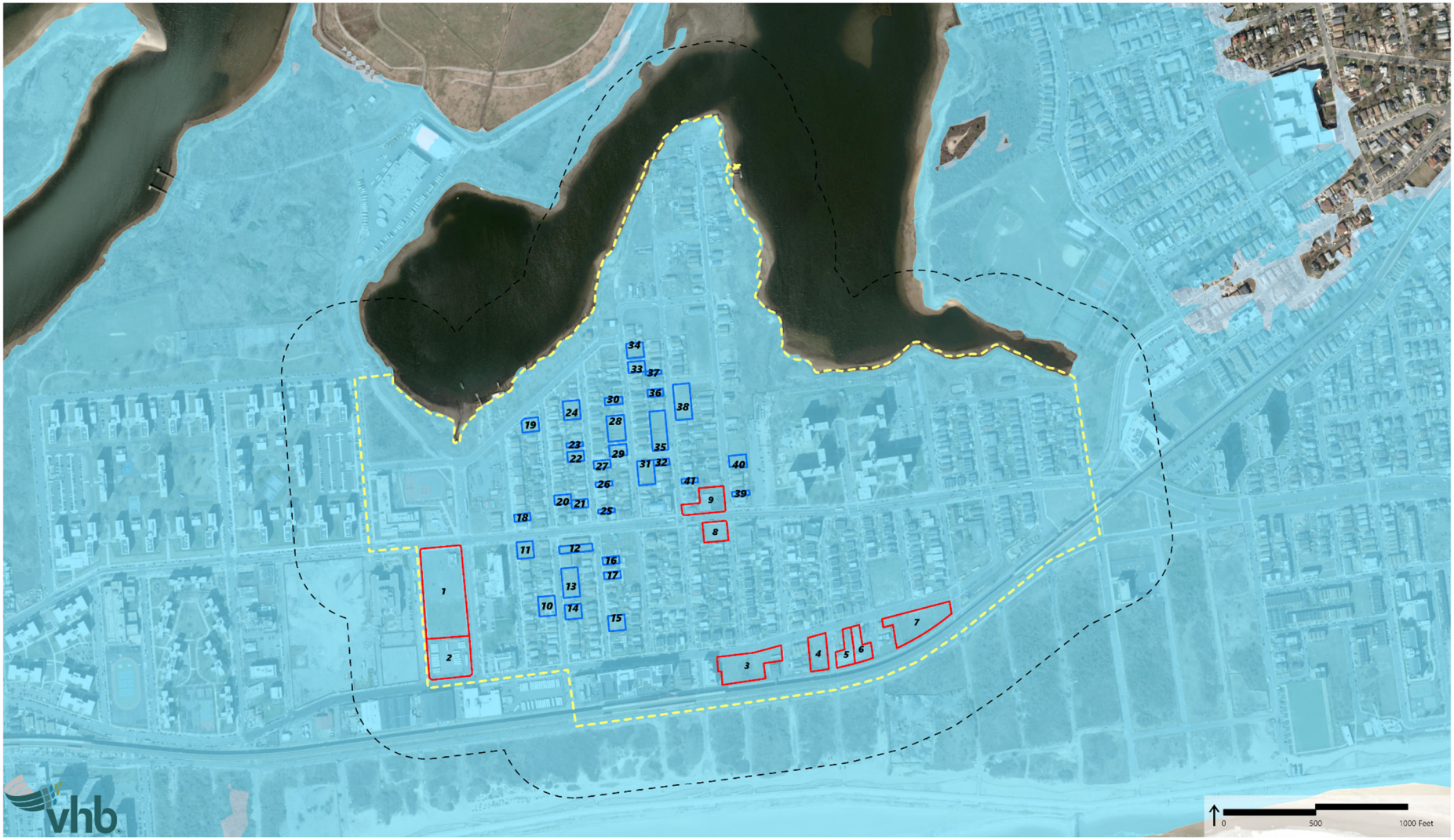
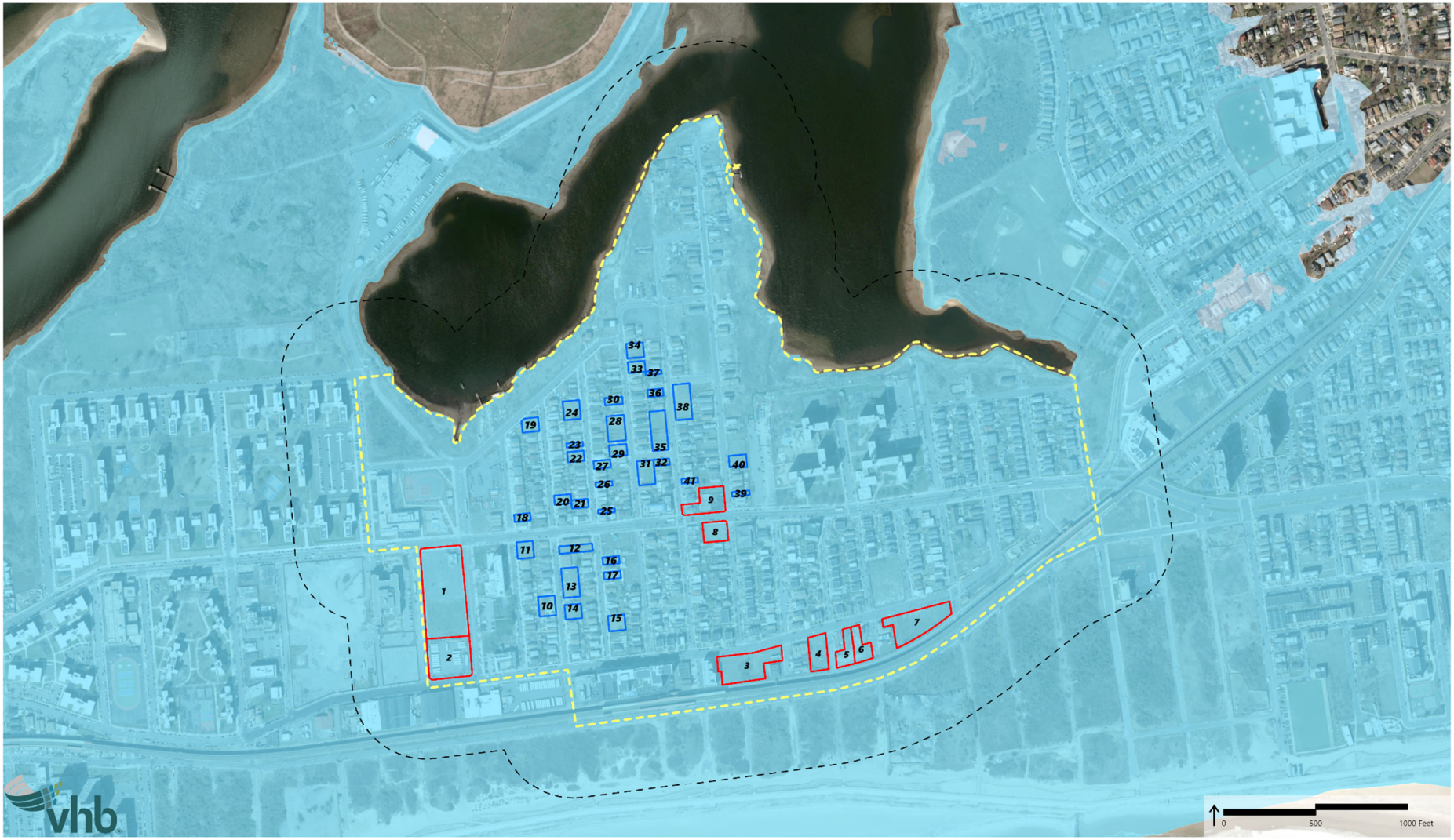


Figure A-9 2100s Flood and Coastal Zone Map



The Projected Residential Infill Sites and Projected Multi-family Mixed Use Development Sites would include flood resistant materials in areas vulnerable to flooding. All ground-floor features would meet wet floodproofing requirements, including flood vents, where appropriate, to provide relief of any flood water and positive drainage to adjacent grade; and emergency egress would discharge to flood resistant elevations wherever possible. The ground floors of Projected Residential Infill Sites would also be elevated out of the floodplain and any space below the BFE could be utilized as parking.

Furthermore, the Project Area occurs within the area of the East Rockaway Intel to Rockaway Inlet and Jamaica Bay, New York Coastal Storm Risk Reduction Project, published in 2019 by the USACE, proposes a network of flood resiliency infrastructure to improve coastal resiliency and reduce economic impacts from storm and flood events. High frequency flooding risk reduction measures are recommended for Jamaica Bay in the Cedarhurst-Lawrence and Mid-Rockaway areas, including Edgemere. A combination of hard and green infrastructure is designed for the Bay to reduce future flood risk and economic costs of storm events (i.e., 5-to-10-year storms) and tidal inundation for buildings, infrastructure, and the coastal ecosystem, including anticipated sea level rise over the next 50 years. Project components in Edgemere will primarily include hybrid berms and floodwalls that would line the peninsula as landward as possible to minimize impact to wetlands and maximize protection to occupied properties. Outlets and pumps are integrated into the design as well. Natural and nature-based features are also incorporated into the proposed measures through a rock sill structure just off the existing shoreline to attenuate wave action and the development of various marsh ecosystems. The USACE's architectural engineering consultants initiated the design process in 2019. The plan also includes a composite seawall, beach restoration, reinforced dunes, a beach berm, enhanced access, and extension and new construction of groins along the Atlantic Ocean shorefront that would rise to 18 feet NAVD88 from Beach 9th Street to Beach 149th Street. This plan reduces risks of erosion and wave attack while limiting storm surge inundation and cross-peninsula flooding.

2(b). For any features identified in Step 1(c), identify adaptive strategies:

The CRDG developed by the Mayor's Office of Climate Resiliency recommend designing adaptive strategies for a proposed project with features below the projected elevation of the "middle range estimate" MHHW (50th percentile) scenario and sea level rise combined, over a project's anticipated useful life.

Under the 2050 "high estimate" MHHW compounded by sea-level rise is projected to be 30 inches or 2.5 feet NAVD88 (see **Figure A-7)**. The MHHW compounded by the effects of sea level rise in the 50th percentile scenario at the Project Area is projected to be 4.52 feet NAVD88 by year 2080 and approximately 6.93 feet NAVD88 under the "high estimate" MHHW with sea-level rise which represents a high range estimate of anticipated daily tidal flooding or nuisance flooding (see **Figure A-8**).

No project features are expected to be below the elevation of the MHHW under any future sea-level rise scenario. Active ground floor spaces would be located at 11 feet NAVD88 for commercial and ground floor space for the residential infill space would be used as parking. Critical maintenance systems and habitable residential space for the buildings would be located at or above the elevation of the "high estimate" MHHW scenario (90th percentile) at a base elevation of 11 feet NAVD88 and 12 feet NAVD88.

The future MHHW scenarios by year 2080s would occur as the development facilitated by Proposed Actions nears the end of their useful life. Any major rehabilitation or redevelopment at that time will conform to NYC Appendix G standards for flood resistant construction, including applicable resiliency measures based on future projections for MHHW such as the Department of City Planning's Zoning for Coastal Flood Resiliency. Additionally, as noted above, the Project Area occurs within the area of the Integrated Hurricane Sandy General Reevaluation Report/Environmental Impact Statement, published in 2019 by the USACE, proposes a network of flood resiliency infrastructure to improve coastal resiliency and reduce economic impacts from storm and flood events which would also mitigate the impacts of tidal flooding in the Project Area.

2(c). Describe any additional measures being taken to protect the project from additional coastal hazards such as waves, high winds, or debris.

As discussed above, the Proposed Actions are intended to provide additional protection and buffer from within the Zone VE or Coastal A Zone, where wave action hazards are anticipated to be most significant. Defined in the planning sub-area of the *Hazard Mitigation Area*, these actions include expanding open space land uses, restricting density and building typologies of residential development on private land, reserving land for future drainage infrastructures. These actions all align with and support the overall performance of the USACE's High Frequency Flood Risk Reduction Features project in mitigating damaging coastal impacts.

2(d). Describe how the project would affect the flood protection of adjacent sites, if relevant. How would the project lead to increased flooding on adjacent sites? How would the project protect upland sites from coastal hazards? Does the project complement or conflict with planned, adjacent flood protection projects?

The Proposed Actions include multiple Projected Development sites throughout the Project Area, balanced by actions, such as expansion of open spaces and drainage infrastructure, that will reduce the overall flood vulnerability of the Project Area. These actions include expanding open space land uses, restricting density and building typologies of residential development on private land, reserving land for future drainage infrastructures, primarily within the *Hazard Mitigation Area* planning sub-area. This includes the reservation of a 1.6-acre City-owned lot (Block 15973, Lot 1) for future larger scale drainage improvement facility which was previously slated for residential development. These actions all align with and support the overall performance of the USACE's High Frequency Flood Risk Reduction Features project in improving drainage and mitigating flooding and damaging coastal impacts.

Figure A-10 2050s Future High Tide with Sea-Level Rise

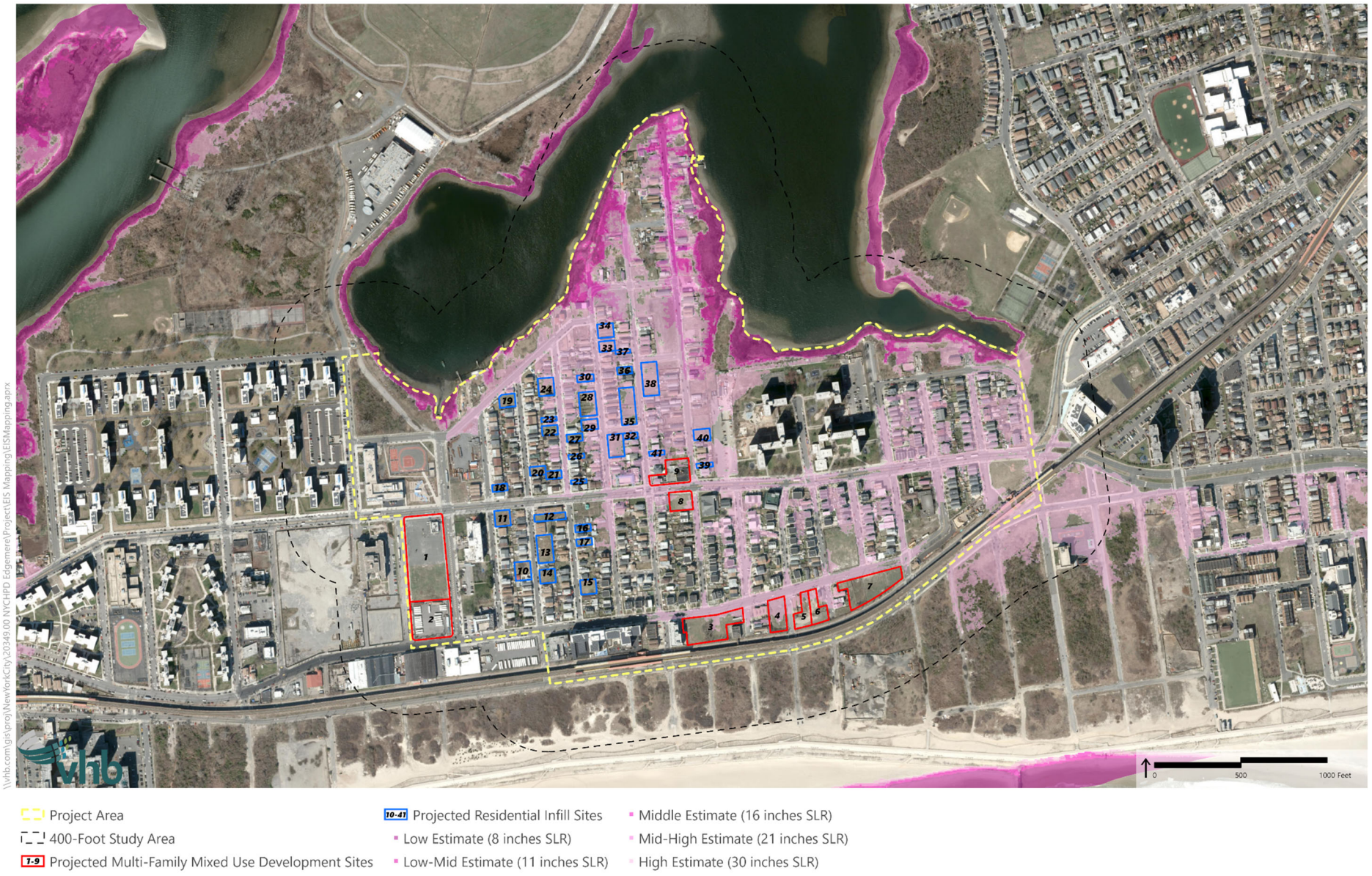
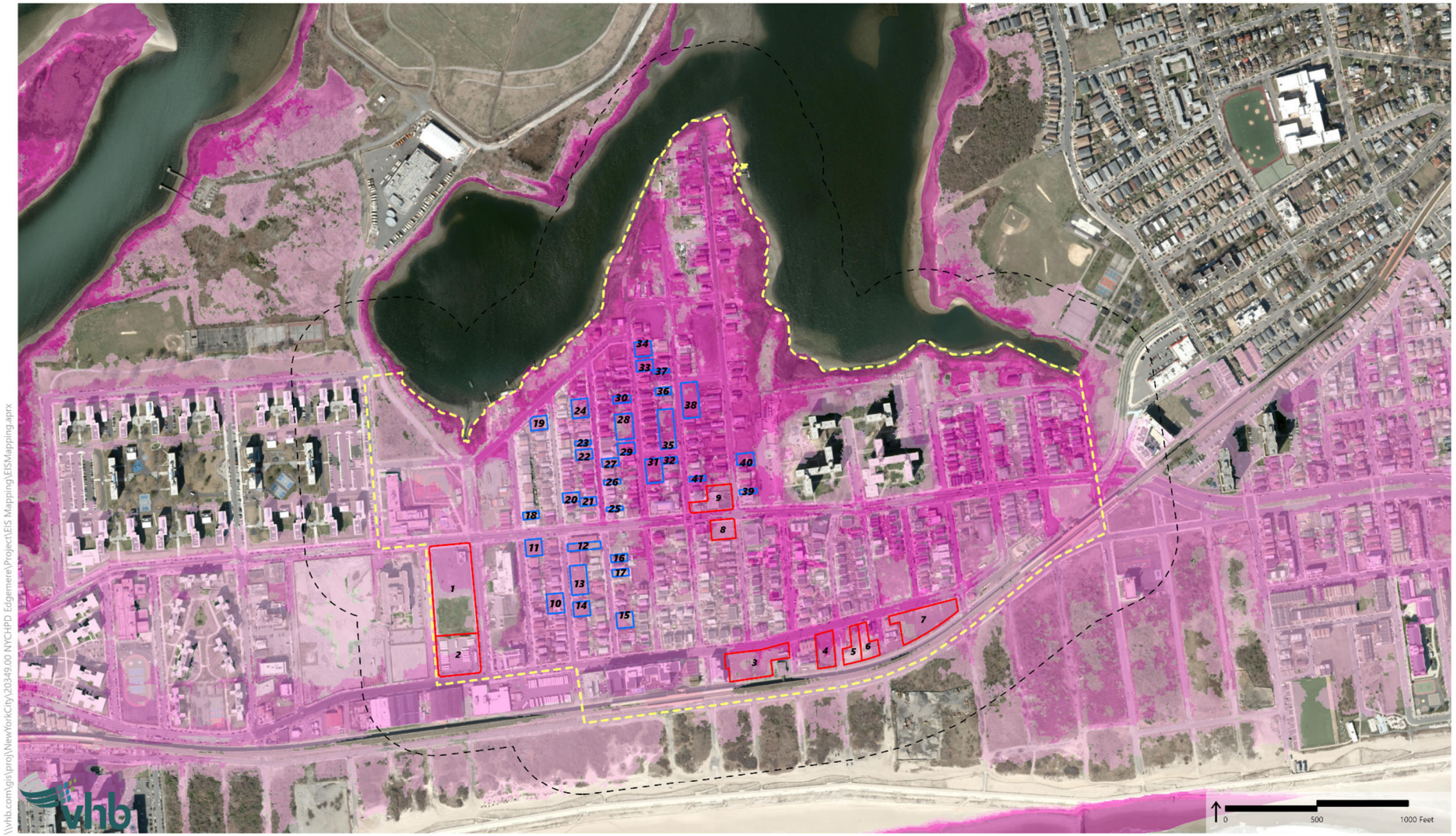


Figure A-11 2080s Future High Tide with Sea-Level Rise



3. Assess policy consistency

Based on this information, the Proposed Actions would promote Policy 6.2. As described above and in keeping with the CRDG, the critical building features of the proposed projects would be elevated above the sea level rise adjusted design flood elevation. Vulnerable project features below the projected elevation of the future high estimate of MHHW or 1 percent chance annual flood and sea level rise would be made resilient through the implementation of site-specific adaptive strategies such as those described above, as well as benefit from the area wide flood mitigation of the large-scale flood protection plan proposed for the neighborhood, as described above.

Policy 7: Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety.

Policy 7.1: Manage solid waste material, hazardous wastes, toxic pollutants, substances hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution and prevent degradation of coastal ecosystems.

The construction and operation of the development facilitated by the Proposed Actions are not expected to involve the generation and/or storage of hazardous wastes, toxic pollutants, substances hazardous to the environment, or the unenclosed storage of industrial materials. Elements of the construction in the Projected Development Sites could result in the short-term generation and/or transportation of hazardous materials or solid waste if contaminated soils are encountered during construction. If construction activities result in the discovery of previously unknown hazardous substances, same would be addressed by removing and disposing of contaminated media in accordance with state laws and regulations for hazardous waste management.

All work would be performed under the administration of an NYSDEC-approved SWPPP. Under this plan, the Projected Developments would include various measures to protect public health, control pollution, and prevent the degradation of coastal ecosystems.

Therefore, the Proposed Actions are consistent with policy 7.1.

Policy 7.2: Prevent and remediate discharge of petroleum products.

The construction and operation of the development facilitated by the Proposed Actions would be performed in accordance with the NYSDEC-approved SWPPP. If a spill or leak of petroleum occurs, it would be addressed according to the NYSDEC reporting, containment, and remedial action procedures. Potential risk to human health and the environment attributable to an accidental release would be further reduced by implementing a Spill Prevention, Control, and Countermeasure (SPCC) Plan during construction.

Therefore, the Proposed Actions are consistent with policy 7.2.

Policy 7.3: Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.

The Proposed Actions are not expected to involve the shipment and/or storage of waste and hazardous materials. There are no plans to site solid and hazardous waste facilities within the Project Area. However, if solid waste and/or hazardous materials are encountered, same would be removed and properly disposed in accordance with applicable local, state, and federal regulations.

Therefore, the Proposed Actions are consistent with policy 7.3.

Policy 8: Provide public access to, from, and along New York City's coastal waters

Policy 8.1: Preserve, protect, maintain, and enhance physical, visual and recreational access to the waterfront.

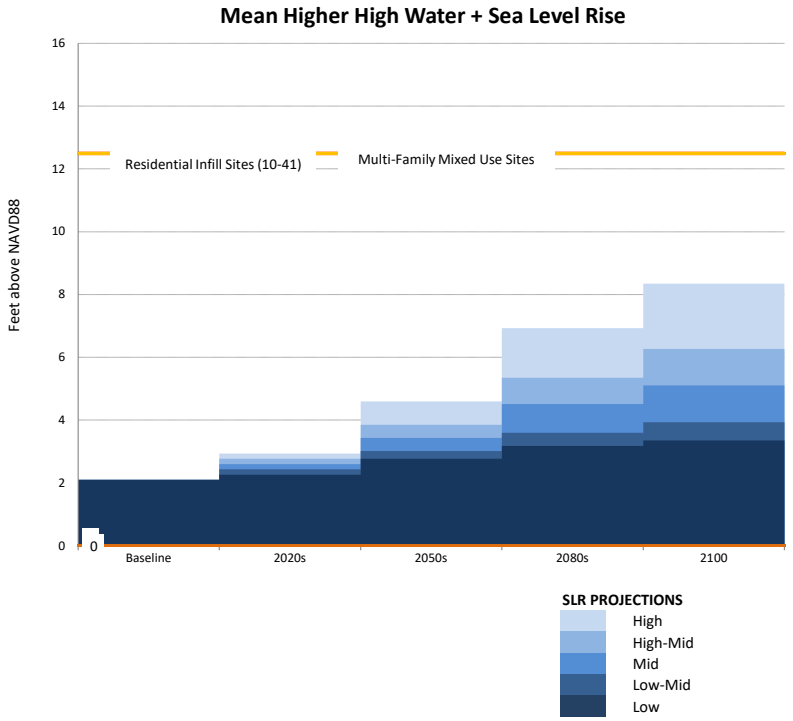
C3A zoning is proposed for eight parcels within the *Hazard Mitigation Area* and on the Jamaica Bay waterfront, which are currently zoned C3. This zone includes areas along the Jamaica Bay waterfront that are at greatest risk of coastal flooding and may experience additional damage from waves during coastal storms. The proposed zoning change would reduce the allowable density of new development in these areas and mitigate future exposure to these risks. The proposed C3A district would permit waterfront recreational activities, primarily boating and fishing. These districts also typically include facilities for docking, renting, servicing, and storing fishing and pleasure boats, as well as bicycle shops, ice cream stores, and public and private beaches, as listed in Use Group 14. This is consistent with community input for waterfront access and improved recreational opportunities and amenities as set forth in the Resilient Edgemere Community Plan and other community initiatives discussed in **Chapter 2, Land Use, Zoning and Public Policy**.

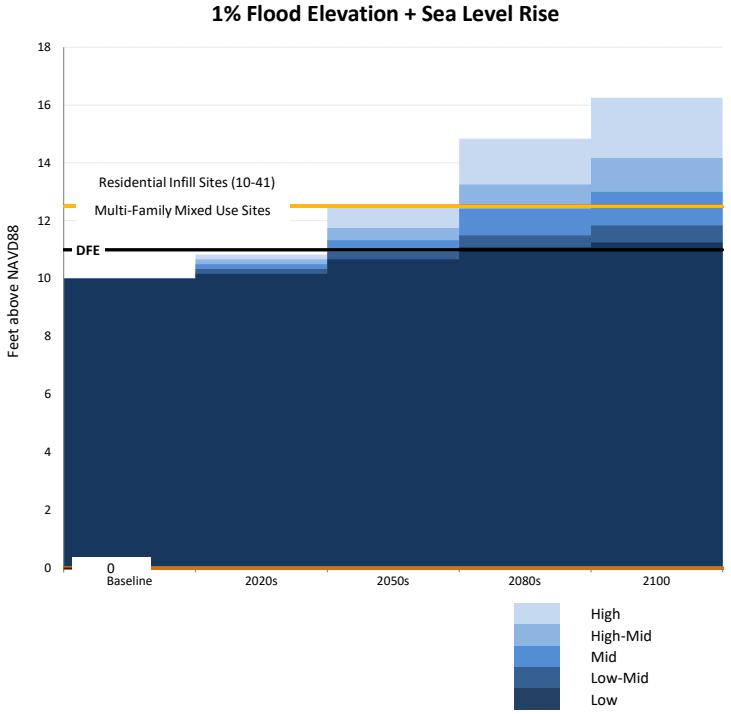
Therefore, the Proposed Actions would be consistent with Policy 8.1.

Policy 8.4: Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.

See response to Policy 8.1 above.

Assess project vulnerability over a range of sea level rise projections.





Appendix B: Historic Resources Photos and Agency Correspondence

Projected Development Site Photographs

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Figure 1 Study Area Photograph Location Map



1 **Projected Development Site Photographs**

Photo 1-1 Projected Multi-Family Development Site 1 (Lot 40)



Photo 1-2 Projected Multi-Family Development Site 1 (Lot 50)



Photo 1-3 Projected Multi-Family Development Site 1 (Lot 19)



Photo 1-4 Projected Multi-Family Development Site 1 (Lot 19)



Photo 1-5 Projected Multi-Family Development Site 2 (Lot 7)



Photo 1-6 Projected Multi-Family Development Site 2 (Lot 3)



Photo 1-7 Projected Residential Infill Site 10



Photo 1-8 Projected Residential Infill Site 11



Photo 1-9 Projected Residential Infill Site 12 (Lot 37)



Photo 1-10 Projected Residential Infill Site 12 (Lot 25)



Photo 1-11 Projected Residential Infill Site 13 (Lot 20)



Photo 1-12 Projected Residential Infill Site 13 (Lot 13)



Photo 1-13 Projected Residential Infill Site 14 (Lot 9)



Photo 1-14 Projected Residential Infill Site 15 (Lot 12)



Photo 1-15 Projected Residential Infill Site 16

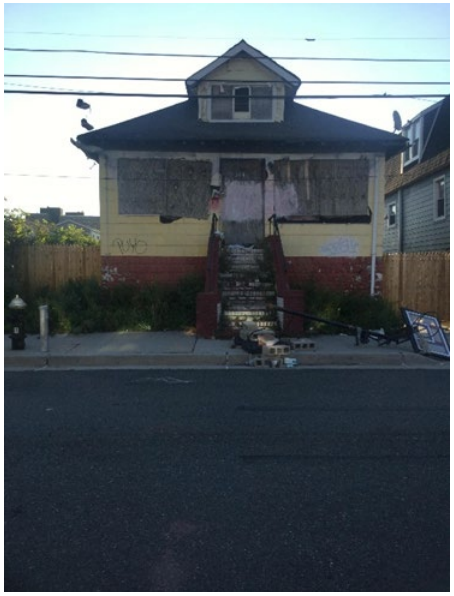

Photo 1-16 Projected Residential Infill Site 17 (Lot 64)



Photo 1-17 Projected Residential Infill Site 18



Figure 2 Study Area Photograph Location Map



Photo 2-18 Projected Multi-Family Development Site 3 (Site 68)



Photo 2-19 Projected Multi-Family Development Site 3 (Lot 42)



Photo 2-20 Projected Multi-Family Development Site 3 (Lot 35)



Photo 2-21 Projected Multi-Family Development Site 4



Photo 2-22 Projected Multi-Family Development Site 5 (Lot 17)



Photo 2-23 Projected Multi-Family Development Site 5 (Lot 9)



Photo 2-24 Projected Multi-Family Development Site 6 (Lot 19)



Photo 2-25 Projected Multi-Family Development Site 6 (Lot 28)



Photo 2-26 Projected Multi-Family Development Site 7 (Lot 79)



Photo 2-27 Projected Multi-Family Development Site 7 (Lot 80)



Photo 2-28 Projected Multi-Family Development Site 7 (Lot 55)



Photo 2-29 Projected Commercial Infill Site 8 (Lot 38)



Figure 3 Study Area Photograph Location Map



Photo 3-30 Projected Residential Infill Site 19



Photo 3-31 Projected Residential Infill Site 20



Photo 3-32 Projected Residential Infill Site 21 (Lot 7)



Photo 3-33 Projected Residential Infill Site 22



Photo 3-34 Projected Residential Infill Site 23



Photo 3-35 Projected Residential Infill Site 24



Photo 3-36 Projected Residential Infill Site 25 (Lot 49)



Photo 3-37 Projected Residential Infill Site 26



Photo 3-38 Projected Residential Infill Site 27



Photo 3-39 Projected Residential Infill Site 28 (Lot 16)



Photo 3-40 Projected Residential Infill Site 28 (Lot 17)



Figure 4 Study Area Photograph Location Map



Photo 4-41 Projected Commercial Development Site 9 (Lot 112)



Photo 4-42 Projected Commercial Development Site 9 (Lot 114)

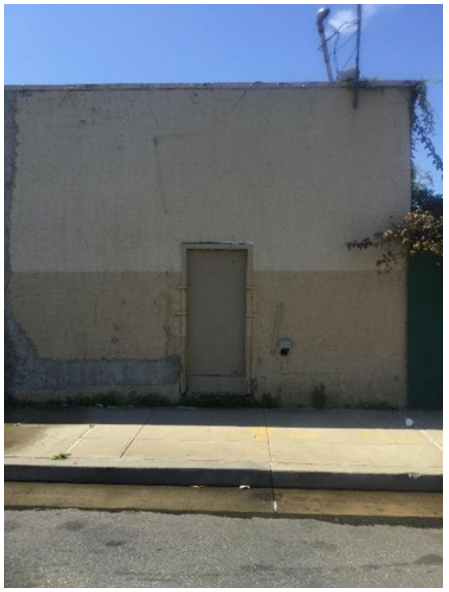

Photo 4-43 Projected Commercial Development Site 9 (Lot 115)



Photo 4-44 Projected Commercial Development Site 9 (Lot 3)



Photo 4-45 Projected Commercial Development Site 9 (Lot 3)



Photo 4-46 Projected Commercial Development Site 9 (Lot 3)



Photo 4-47 Projected Residential Infill Site 29 (Lot 84)



Photo 4-48 Projected Residential Infill Site 29 (Lot 87)



Photo 4-49 Projected Residential Infill 29 (Lot 90)



Photo 4-50 Projected Residential Infill Site 30 (Lot 92)



Photo 4-51 Projected Residential Infill Site 30 (Lot 92)



Photo 4-52 Projected Residential Infill Site 30 (Lot 94)



Photo 4-53 Projected Residential Infill Site 31 (Lot 79)



Photo 4-54 Projected Residential Infill Site 32 (Lot 10)



Photo 4-55 Projected Residential Infill Site 32 (Lot 13)



Photo 4-56 Projected Residential Infill Site 33



Photo 4-57 Projected Residential Infill Site 34



Photo 4-58 Projected Residential Infill Site 35 (Lot 29)



Photo 4-59 Projected Residential Infill Site 36 (Lot 76)



Photo 4-60 Projected Residential Infill Site 36 (Lot 81)



Photo 4-61 Projected Residential Infill Site 37



Photo 4-62 Projected Residential Infill Site 38



Photo 4-63 Projected Residential Infill Site 39 (Lot 38)



Photo 4-64 Projected Residential Infill Site 39 (Lot 31)



Photo 4-65 Projected Residential Infill Site 40



Photo 4-66 Projected Residential Infill Site 41 (Lot 16)



Resilient Edgemere Community Initiative: Projected Development Sites				
Site Number	Block	Lot	Address	Lot Area
1				97,051
49-01 Beach Channel Drive	15841	19	49 BEACH 50 STREET	77,450
	15841	40	BEACH CHANNEL DRIVE	9,601
	15841	50	49-01 BEACH CHANNEL DRIVE	10,000
2				44,261
49 Beach 50 Street	15841	3	ROCKAWAY BEACH BLVD	3,100
	15841	5	ROCKAWAY BEACH BLVD	4,379
	15841	7	ROCKAWAY BEACH BLVD	2,218
	15841	8	ROCKAWAY BEACH BLVD	4,504
	15841	10	ROCKAWAY BEACH BLVD	9,300
	15841	14	BEACH 50 STREET	10,000
	15841	70	BEACH CHANNEL DRIVE	10,760
3				44,706
216 Beach 43 Street	15852	64	ROCKAWAY BEACH BLVD	6,445
	15852	68	BEACH 43 STREET	9,463
	15851	33	ROCKAWAY BEACH BLVD	4,295
	15851	35	ROCKAWAY BEACH BLVD	8,200
	15851	40	ROCKAWAY BEACH BLVD	3,160
	15851	42	ROCKAWAY BEACH BLVD	1,284
	15851	44	BEACH 42 STREET	389
	15851	58	216 BEACH 43 STREET	4,000
	15851	59	BEACH 43 STREET	1,000
	0	0	Lot 0	6,470
4				19,100
Beach 41 Street	15850	6	Beach 41 Street	19,100
5				14,841
Rockaway Beach Blvd	15849	6	Beach 41 Street	3,131
	15849	8	Beach 41 Street	2,031
	15849	9	Beach 41 Street	2,031
	15849	10	Beach 41 Street	2,031
	15849	17	ROCKAWAY BEACH BLVD	2,936
	15849	18	ROCKAWAY BEACH BLVD	2,681
6				14,135
Beach 40 Street	15849	19	ROCKAWAY BEACH BLVD	2,626
	15849	20	ROCKAWAY BEACH BLVD	2,626
	15849	27	BEACH 40 STREET	2,807
	15849	28	BEACH 40 STREET	2,871
	15849	29	BEACH 40 STREET	3,205
7				45,256
	15848	52	ROCKAWAY BEACH BLVD	1,224
	15848	54	ROCKAWAY BEACH BLVD	1,275
	15848	55	ROCKAWAY BEACH BLVD	1,333
	15848	57	ROCKAWAY BEACH BLVD	1,326
	15848	58	ROCKAWAY BEACH BLVD	1,326
	15848	60	ROCKAWAY BEACH BLVD	1,122

216 Beach 40 Street	15848	62	2-19 BEACH 39 STREET	2,459
	15848	63	BEACH 39 STREET	2,459
	15848	65	BEACH 39 STREET	2,386
	15848	67	BEACH 39 STREET	3,722
	15847	79	BEACH 39 STREET	2,974
	15847	80	2-04 BEACH 39 STREET	1,673
	15847	81	BEACH 39 STREET	450
	15847	82	BEACH 39 STREET	1,989
	15847	83	BEACH 39 STREET	1,788
	15847	84	ROCKAWAY BEACH BLVD	830
	15847	85	ROCKAWAY BEACH BLVD	814
	15847	86	ROCKAWAY BEACH BLVD	808
	15847	87	ROCKAWAY BEACH BLVD	810
	15847	88	ROCKAWAY BEACH BLVD	838
	15847	89	ROCKAWAY BEACH BLVD	8,150
	0	0	Lot 100	5,500
8				11,988
363 Beach 43 Street	15834	38	363 BEACH 43 STREET	9414
	15834	42	357 BEACH 43 STREET	2574
9				20,658
402 Beach 44 Street	15965	3	402 BEACH 44 STREET	4303
	15965	112	BEACH 43 STREET	4975
	15965	114	BEACH 43 STREET	2486
	15965	115	43-00 BEACH CHANNEL DRIVE	8894
10				10,461
335 Beach 47 Street	15839	51	335 BEACH 47 STREET	10,461
11				8,559
47-15 Beach Channel Drive	15839	26	47-15 BEACH CHANNEL DRIVE	8,559
12				7,608
Beach 46 Street	15838	37	BEACH 46 STREET	3,804
	15838	25	BEACH 47 STREET	3,804
13				15,216
Beach 47 Street	15838	20	BEACH 47 STREET	1,902
	15838	19	BEACH 47 STREET	1,902
	15838	17	BEACH 47 STREET	3,804
	15838	15	BEACH 47 STREET	3,804
	15838	13	BEACH 47 STREET	3,804
14				7,608
Beach 47 Street	15838	9	BEACH 47 STREET	3,804
	15838	7	BEACH 47 STREET	3,804
15				7,989
Beach 46 Street	15837	12	BEACH 46 STREET	2,663
	15837	10	BEACH 46 STREET	2,663
	15837	9	BEACH 46 STREET	2,663
16				3,804
354 Beach 46 Street	15837	27	354 BEACH 46 STREET	3,804
17				3,804

3-19 Beach 49 Street	15840	64	3-19 BEACH 49 STREET	1,902
	15840	65	3-05 BEACH 49 STREET	1,902
18				3,804
Beach 46 Street	15837	23	BEACH 46 STREET	3,804
19				3,804
Beach 48 Street	15972	3	BEACH 48 STREET	3,804
20				6,757
Beach 47 Street	15972	33	BEACH 47 STREET	6,757
21				4,505
414 Beach 47 Street	15969	6	414 BEACH 47 STREET	2,378
	15969	7	416 BEACH 47 STREET	2,127
22				4,280
413 Beach 46 Street	15969	73	413 BEACH 46 STREET	4,280
23				5,230
431 Beach 46 Street	15969	60	431 BEACH 46 STREET	2,852
	15969	59	439 BEACH 46 STREET	2,378
24				2,140
443 Beach 46 Street	15969	57	443 BEACH 46 STREET	2,140
25				9,797
Beach 46 Street	15969	50	BEACH 46 STREET	2,378
	15969	49	BEACH 46 STREET	2,473
	15969	48	BEACH 46 STREET	2,473
	15969	47	BEACH 46 STREET	2,473
26				1,902
406 Beach 46 Street	15968	5	406 BEACH 46 STREET	1,902
27				2,378
Beach 46 Street	15968	11	BEACH 46 STREET	2,378
28				4,280
430 Beach 46 Street	15968	16	430 BEACH 46 STREET	2,140
	15968	17	432 BEACH 46 STREET	2,140
29				13,230
443 Beach 45 Street	15968	90	443 BEACH 45 STREET	1,890
	15968	89	445 BEACH 45 STREET	1,890
	15968	88	447 BEACH 45 STREET	1,890
	15968	87	BEACH 45 STREET	1,890
	15968	86	451 BEACH 45 STREET	1,890
	15968	85	453 BEACH 45 STREET	1,890
	15968	84	453 BEACH 45 STREET	1,890
30				5,671
439 Beach 45 Street	15968	92	439 BEACH 45 STREET	3,781
	15968	94	435 BEACH 45 STREET	1,890
31				3,780
463 Beach 45 Street	15968	80	463 BEACH 45 STREET	1,890
	15968	79	BEACH 45 STREET	1,890
32				12,512
	15967	10	BEACH 45 STREET	2,464
	15967	111	BEACH 45 STREET	2,099

Beach 45 Street	15967	12	BEACH 45 STREET	2,246
	15967	13	BEACH 45 STREET	2,053
	15967	14	428 BEACH 45 STREET	3,650
33				2,985
429 Beach 44 Street	15967	18	429 BEACH 44 STREET	2,985
34				5,476
480 Beach 45 Street	15966	23	480 BEACH 45 STREET	3,331
	15966	25	482 BEACH 45 STREET	2,145
35				7,300
504 Beach 45 Street	15966	27	BEACH 45 STREET	1,825
	15966	28	504 BEACH 45 STREET	1,825
	15966	29	506 BEACH 45 STREET	1,825
	15966	30	BEACH 45 STREET	1,825
36				18,726
437 Beach 44 Street	15966	81	437 BEACH 44 STREET	3,411
	15966	80	439 BEACH 44 STREET	1,706
	15966	79	441 BEACH 44 STREET	1,706
	15966	78	BEACH 44 STREET	1,706
	15966	77	BEACH 44 STREET	1,706
	15966	76	447 BEACH 44 STREET	1,706
	15966	75	BEACH 44 STREET	1,706
	15966	74	BEACH 44 STREET	2,617
	15966	72	BEACH 44 STREET	2,462
37				3,411
465 Beach 44 Street	15966	66	465 BEACH 44 STREET	3,411
38				1,706
477 Beach 44 Street	15966	61	477 BEACH 44 STREET	1,706
39				16,670
468 Beach 44 Street	15965	29	BEACH 44 STREET	3,470
	15965	31	BEACH 44 STREET	5,204
	15965	34	BEACH 44 STREET	1,735
	15965	35	BEACH 44 STREET	1,735
	15965	36	BEACH 44 STREET	1,908
	15965	37	468 BEACH 44 STREET	1,908
	15965	38	BEACH 44 STREET	710
40				2,252
408 Beach 43 Street	15960	7	408 BEACH 43 STREET	2,252
41				5,900
420 Beach 43 Street	15960	15	420 BEACH 43 STREET	2,100
	15960	16	422 BEACH 43 STREET	1,900
	15960	17	424 BEACH 43 STREET	1,900

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ENVIRONMENTAL REVIEW

Project number: HOUSING PRESERVATION AND DEV. / 21HPD009Q
Project: RESILIENT EDGEMERE COMMUNITY INITIATIVE
Date Received: 1/4/2021

Properties with no Architectural or Archaeological significance:

1) 363 BEACH 43 STREET, BBL: 4158340038
2) 357 BEACH 43 STREET, BBL: 4158340042
3) BEACH 46 STREET, BBL: 4158370009
4) BEACH 46 STREET, BBL: 4158370010
5) BEACH 46 STREET, BBL: 4158370012
6) BEACH 46 STREET, BBL: 4158370023
7) 354 BEACH 46 STREET, BBL: 4158370027
8) BEACH 47 STREET, BBL: 4158380007
9) BEACH 47 STREET, BBL: 4158380009
10) BEACH 47 STREET, BBL: 4158380013
11) BEACH 47 STREET, BBL: 4158380015
12) BEACH 47 STREET, BBL: 4158380017
13) BEACH 47 STREET, BBL: 4158380019
14) BEACH 47 STREET, BBL: 4158380020
15) BEACH 47 STREET, BBL: 4158380025
16) BEACH 46 STREET, BBL: 4158380037
17) 47-15 BEACH CHANNEL DRIVE, BBL: 4158390026
18) 335 BEACH 47 STREET, BBL: 4158390051
19) 3-19 BEACH 49 STREET, BBL: 4158400064
20) 3-05 BEACH 49 STREET, BBL: 4158400065
21) ROCKAWAY BEACH BLVD, BBL: 4158410003
22) ROCKAWAY BEACH BLVD, BBL: 4158410005
23) ROCKAWAY BEACH BLVD, BBL: 4158410007
24) ROCKAWAY BEACH BLVD, BBL: 4158410008
25) ROCKAWAY BEACH BLVD, BBL: 4158410010
26) BEACH 50 STREET, BBL: 4158410014
27) 49 BEACH 50 STREET, BBL: 4158410019
28) BEACH CHANNEL DRIVE, BBL: 4158410040
29) 49-01 BEACH CHANNEL DRIVE, BBL: 4158410050
30) BEACH CHANNEL DRIVE, BBL: 4158410070
31) BEACH 39 STREET, BBL: 4158470079
32) 2-04 BEACH 39 STREET, BBL: 4158470080
33) BEACH 39 STREET, BBL: 4158470081
34) BEACH 39 STREET, BBL: 4158470082
35) BEACH 39 STREET, BBL: 4158470083
36) ROCKAWAY BEACH BLVD, BBL: 4158470084
37) ROCKAWAY BEACH BLVD, BBL: 4158470085
38) ROCKAWAY BEACH BLVD, BBL: 4158470086
39) ROCKAWAY BEACH BLVD, BBL: 4158470087
40) ROCKAWAY BEACH BLVD, BBL: 4158470088
41) ROCKAWAY BEACH BLVD, BBL: 4158470089

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42) ROCKAWAY BEACH BLVD, BBL: 4158480052
43) ROCKAWAY BEACH BLVD, BBL: 4158480054
44) ROCKAWAY BEACH BLVD, BBL: 4158480055
45) ROCKAWAY BEACH BLVD, BBL: 4158480057
46) ROCKAWAY BEACH BLVD, BBL: 4158480058
47) ROCKAWAY BEACH BLVD, BBL: 4158480060
48) 2-19 BEACH 39 STREET, BBL: 4158480062
49) BEACH 39 STREET, BBL: 4158480063
50) BEACH 39 STREET, BBL: 4158480065
51) BEACH 39 STREET, BBL: 4158480067
52) BEACH 41 STREET, BBL: 4158490006
53) BEACH 41 STREET, BBL: 4158490008
54) BEACH 41 STREET, BBL: 4158490009
55) BEACH 41 STREET, BBL: 4158490010
56) ROCKAWAY BEACH BLVD, BBL: 4158490017
57) ROCKAWAY BEACH BLVD, BBL: 4158490018
58) ROCKAWAY BEACH BLVD, BBL: 4158490019
59) ROCKAWAY BEACH BLVD, BBL: 4158490020
60) BEACH 40 STREET, BBL: 4158490027
61) BEACH 40 STREET, BBL: 4158490028
62) BEACH 40 STREET, BBL: 4158490029
63) BEACH 41 STREET, BBL: 4158500006
64) ROCKAWAY BEACH BLVD, BBL: 4158510033
65) ROCKAWAY BEACH BLVD, BBL: 4158510035
66) ROCKAWAY BEACH BLVD, BBL: 4158510040
67) ROCKAWAY BEACH BLVD, BBL: 4158510042
68) BEACH 42 STREET, BBL: 4158510044
69) 216 BEACH 43 STREET, BBL: 4158510058
70) BEACH 43 STREET, BBL: 4158510059
71) ROCKAWAY BEACH BLVD, BBL: 4158520064
72) BEACH 43 STREET, BBL: 4158520068
73) 408 BEACH 43 STREET, BBL: 4159600007
74) 420 BEACH 43 STREET, BBL: 4159600015
75) 422 BEACH 43 STREET, BBL: 4159600016
76) 424 BEACH 43 STREET, BBL: 4159600017
77) 402 BEACH 44 STREET, BBL: 4159650003
78) BEACH 44 STREET, BBL: 4159650029
79) BEACH 44 STREET, BBL: 4159650031
80) BEACH 44 STREET, BBL: 4159650034
81) BEACH 44 STREET, BBL: 4159650035
82) 466 BEACH 44 STREET, BBL: 4159650036
83) 468 BEACH 44 STREET, BBL: 4159650037
84) BEACH 44 STREET, BBL: 4159650038
85) BEACH 43 STREET, BBL: 4159650112
86) BEACH 43 STREET, BBL: 4159650114
87) 43-00 BEACH CHANNEL DRIVE, BBL: 4159650115
88) 480 BEACH 45 STREET, BBL: 4159660023
89) 482 BEACH 45 STREET, BBL: 4159660025
90) BEACH 45 STREET, BBL: 4159660027
91) 504 BEACH 45 STREET, BBL: 4159660028
92) 506 BEACH 45 STREET, BBL: 4159660029
93) BEACH 45 STREET, BBL: 4159660030
94) 477 BEACH 44 STREET, BBL: 4159660061

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95) 465 BEACH 44 STREET, BBL: 4159660066
96) BEACH 44 STREET, BBL: 4159660072
97) BEACH 44 STREET, BBL: 4159660074
98) BEACH 44 STREET, BBL: 4159660075
99) 447 BEACH 44 STREET, BBL: 4159660076
100) BEACH 44 STREET, BBL: 4159660077
101) BEACH 44 STREET, BBL: 4159660078
102) 441 BEACH 44 STREET, BBL: 4159660079
103) 439 BEACH 44 STREET, BBL: 4159660080
104) 437 BEACH 44 STREET, BBL: 4159660081
105) BEACH 45 STREET, BBL: 4159670010
106) BEACH 45 STREET, BBL: 4159670012
107) BEACH 45 STREET, BBL: 4159670013
108) 428 BEACH 45 STREET, BBL: 4159670014
109) 429 BEACH 44 STREET, BBL: 4159670018
110) BEACH 45 STREET, BBL: 4159670111
111) 406 BEACH 46 STREET, BBL: 4159680005
112) BEACH 46 STREET, BBL: 4159680011
113) 430 BEACH 46 STREET, BBL: 4159680016
114) 432 BEACH 46 STREET, BBL: 4159680017
115) BEACH 45 STREET, BBL: 4159680079
116) 463 BEACH 45 STREET, BBL: 4159680080
117) 455 BEACH 45 STREET, BBL: 4159680084
118) 453 BEACH 45 STREET, BBL: 4159680085
119) 451 BEACH 45 STREET, BBL: 4159680086
120) BEACH 45 STREET, BBL: 4159680087
121) 447 BEACH 45 STREET, BBL: 4159680088
122) 445 BEACH 45 STREET, BBL: 4159680089
123) 443 BEACH 45 STREET, BBL: 4159680090
124) 439 BEACH 45 STREET, BBL: 4159680092
125) 435 BEACH 45 STREET, BBL: 4159680094
126) 414 BEACH 47 STREET, BBL: 4159690006
127) 416 BEACH 47 STREET, BBL: 4159690007
128) BEACH 46 STREET, BBL: 4159690047
129) BEACH 46 STREET, BBL: 4159690048
130) BEACH 46 STREET, BBL: 4159690049
131) BEACH 46 STREET, BBL: 4159690050
132) 443 BEACH 46 STREET, BBL: 4159690057
133) 439 BEACH 46 STREET, BBL: 4159690059
134) 431 BEACH 46 STREET, BBL: 4159690060
135) 413 BEACH 46 STREET, BBL: 4159690073
136) BEACH 48 STREET, BBL: 4159720003
137) BEACH 47 STREET, BBL: 4159720033

Properties with Architectural significance in the radius:

S/NR ELIGIBLE ST GERTRUDE THE GOOD CHURCH COMPLEX, 336 BEACH 38 STREET AND S/NR STATUS UNDETERMINED 38-20 BEACH CHANNEL DRIVE WITHIN THE RADIUS; S/NR ELIGIBLE PS 106 Q, 180 BEACH 35 STREET ON RADIUS. No adverse impacts anticipated as a result of this action.

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1/14/2021

SIGNATURE DATE

Gina Santucci, Environmental Review Coordinator

File Name: 35208_FSO_GS_01142021.docx

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ENVIRONMENTAL REVIEW

Project number: HOUSING PRESERVATION AND DEV. / 21HPD009Q
Project: RESILIENT EDGEMERE COMMUNITY INITIATIVE
Date Received: 8/5/2021

Properties with no Architectural or Archaeological significance:

1) 363 BEACH 43 STREET, BBL: 4158340038
2) 357 BEACH 43 STREET, BBL: 4158340042
3) BEACH 46 STREET, BBL: 4158370009
4) BEACH 46 STREET, BBL: 4158370010
5) BEACH 46 STREET, BBL: 4158370012
6) BEACH 46 STREET, BBL: 4158370023
7) 354 BEACH 46 STREET, BBL: 4158370027
8) BEACH 47 STREET, BBL: 4158380007
9) BEACH 47 STREET, BBL: 4158380009
10) BEACH 47 STREET, BBL: 4158380013
11) BEACH 47 STREET, BBL: 4158380015
12) BEACH 47 STREET, BBL: 4158380017
13) BEACH 47 STREET, BBL: 4158380019
14) BEACH 47 STREET, BBL: 4158380020
15) BEACH 47 STREET, BBL: 4158380025
16) BEACH 46 STREET, BBL: 4158380037
17) 47-15 BEACH CHANNEL DRIVE, BBL: 4158390026
18) 335 BEACH 47 STREET, BBL: 4158390051
19) 3-19 BEACH 49 STREET, BBL: 4158400064
20) 3-05 BEACH 49 STREET, BBL: 4158400065
21) ROCKAWAY BEACH BLVD, BBL: 4158410003
22) ROCKAWAY BEACH BLVD, BBL: 4158410005
23) ROCKAWAY BEACH BLVD, BBL: 4158410007
24) ROCKAWAY BEACH BLVD, BBL: 4158410008
25) ROCKAWAY BEACH BLVD, BBL: 4158410010
26) BEACH 50 STREET, BBL: 4158410014
27) 49 BEACH 50 STREET, BBL: 4158410019
28) BEACH CHANNEL DRIVE, BBL: 4158410040
29) 49-01 BEACH CHANNEL DRIVE, BBL: 4158410050
30) BEACH CHANNEL DRIVE, BBL: 4158410070
31) BEACH 39 STREET, BBL: 4158470079
32) 2-04 BEACH 39 STREET, BBL: 4158470080
33) BEACH 39 STREET, BBL: 4158470081
34) BEACH 39 STREET, BBL: 4158470082
35) BEACH 39 STREET, BBL: 4158470083
36) ROCKAWAY BEACH BLVD, BBL: 4158470084
37) ROCKAWAY BEACH BLVD, BBL: 4158470085
38) ROCKAWAY BEACH BLVD, BBL: 4158470086
39) ROCKAWAY BEACH BLVD, BBL: 4158470087
40) ROCKAWAY BEACH BLVD, BBL: 4158470088
41) ROCKAWAY BEACH BLVD, BBL: 4158470089
42) ROCKAWAY BEACH BLVD, BBL: 4158480052
43) ROCKAWAY BEACH BLVD, BBL: 4158480054
44) ROCKAWAY BEACH BLVD, BBL: 4158480055
45) ROCKAWAY BEACH BLVD, BBL: 4158480057

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46) ROCKAWAY BEACH BLVD, BBL: 4158480058
47) ROCKAWAY BEACH BLVD, BBL: 4158480060
48) 2-19 BEACH 39 STREET, BBL: 4158480062
49) BEACH 39 STREET, BBL: 4158480063
50) BEACH 39 STREET, BBL: 4158480065
51) BEACH 39 STREET, BBL: 4158480067
52) BEACH 41 STREET, BBL: 4158490006
53) BEACH 41 STREET, BBL: 4158490008
54) BEACH 41 STREET, BBL: 4158490009
55) BEACH 41 STREET, BBL: 4158490010
56) ROCKAWAY BEACH BLVD, BBL: 4158490017
57) ROCKAWAY BEACH BLVD, BBL: 4158490018
58) ROCKAWAY BEACH BLVD, BBL: 4158490019
59) ROCKAWAY BEACH BLVD, BBL: 4158490020
60) BEACH 40 STREET, BBL: 4158490027
61) BEACH 40 STREET, BBL: 4158490028
62) BEACH 40 STREET, BBL: 4158490029
63) BEACH 41 STREET, BBL: 4158500006
64) ROCKAWAY BEACH BLVD, BBL: 4158510033
65) ROCKAWAY BEACH BLVD, BBL: 4158510035
66) ROCKAWAY BEACH BLVD, BBL: 4158510040
67) ROCKAWAY BEACH BLVD, BBL: 4158510042
68) BEACH 42 STREET, BBL: 4158510044
69) 216 BEACH 43 STREET, BBL: 4158510058
70) BEACH 43 STREET, BBL: 4158510059
71) ROCKAWAY BEACH BLVD, BBL: 4158520064
72) BEACH 43 STREET, BBL: 4158520068
73) 408 BEACH 43 STREET, BBL: 4159600007
74) 420 BEACH 43 STREET, BBL: 4159600015
75) 422 BEACH 43 STREET, BBL: 4159600016
76) 424 BEACH 43 STREET, BBL: 4159600017
77) 462 BEACH 43 STREET, BBL: 4159600034
78) 466 BEACH 43 STREET, BBL: 4159600037
79) 478 BEACH 43 STREET, BBL: 4159600042
80) 569 BEACH 43 STREET, BBL: 4159620059
81) 402 BEACH 44 STREET, BBL: 4159650003
82) BEACH 44 STREET, BBL: 4159650029
83) BEACH 44 STREET, BBL: 4159650031
84) BEACH 44 STREET, BBL: 4159650034
85) BEACH 44 STREET, BBL: 4159650035
86) 466 BEACH 44 STREET, BBL: 4159650036
87) 468 BEACH 44 STREET, BBL: 4159650037
88) BEACH 44 STREET, BBL: 4159650038
89) BEACH 43 STREET, BBL: 4159650112
90) BEACH 43 STREET, BBL: 4159650114
91) 43-00 BEACH CHANNEL DRIVE, BBL: 4159650115
92) 480 BEACH 45 STREET, BBL: 4159660023
93) 482 BEACH 45 STREET, BBL: 4159660025
94) BEACH 45 STREET, BBL: 4159660027
95) 504 BEACH 45 STREET, BBL: 4159660028
96) 506 BEACH 45 STREET, BBL: 4159660029
97) BEACH 45 STREET, BBL: 4159660030
98) 477 BEACH 44 STREET, BBL: 4159660061

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New York, NY 10007

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Fax (212)-669-7960
http://nyc.gov/landmarks

99) 465 BEACH 44 STREET, BBL: 4159660066
100) BEACH 44 STREET, BBL: 4159660072
101) BEACH 44 STREET, BBL: 4159660074
102) BEACH 44 STREET, BBL: 4159660075
103) 447 BEACH 44 STREET, BBL: 4159660076
104) BEACH 44 STREET, BBL: 4159660077
105) BEACH 44 STREET, BBL: 4159660078
106) 441 BEACH 44 STREET, BBL: 4159660079
107) 439 BEACH 44 STREET, BBL: 4159660080
108) 437 BEACH 44 STREET, BBL: 4159660081
109) BEACH 45 STREET, BBL: 4159670010
110) BEACH 45 STREET, BBL: 4159670012
111) BEACH 45 STREET, BBL: 4159670013
112) 428 BEACH 45 STREET, BBL: 4159670014
113) 429 BEACH 44 STREET, BBL: 4159670018
114) BEACH 45 STREET, BBL: 4159670111
115) 406 BEACH 46 STREET, BBL: 4159680005
116) BEACH 46 STREET, BBL: 4159680011
117) 430 BEACH 46 STREET, BBL: 4159680016
118) 432 BEACH 46 STREET, BBL: 4159680017
119) BEACH 45 STREET, BBL: 4159680079
120) 463 BEACH 45 STREET, BBL: 4159680080
121) 455 BEACH 45 STREET, BBL: 4159680084
122) 453 BEACH 45 STREET, BBL: 4159680085
123) 451 BEACH 45 STREET, BBL: 4159680086
124) BEACH 45 STREET, BBL: 4159680087
125) 447 BEACH 45 STREET, BBL: 4159680088
126) 445 BEACH 45 STREET, BBL: 4159680089
127) 443 BEACH 45 STREET, BBL: 4159680090
128) 439 BEACH 45 STREET, BBL: 4159680092
129) 435 BEACH 45 STREET, BBL: 4159680094
130) 414 BEACH 47 STREET, BBL: 4159690006
131) 416 BEACH 47 STREET, BBL: 4159690007
132) BEACH 46 STREET, BBL: 4159690047
133) BEACH 46 STREET, BBL: 4159690048
134) BEACH 46 STREET, BBL: 4159690049
135) BEACH 46 STREET, BBL: 4159690050
136) 443 BEACH 46 STREET, BBL: 4159690057
137) 439 BEACH 46 STREET, BBL: 4159690059
138) 431 BEACH 46 STREET, BBL: 4159690060
139) 413 BEACH 46 STREET, BBL: 4159690073
140) BEACH 48 STREET, BBL: 4159720003
141) BEACH 47 STREET, BBL: 4159720033

Gina Santucci

8/12/2021

~~SIGNATURE~~ ~~DATE~~

Gina Santucci, Environmental Review Coordinator

File Name: 35208_FSO_DNP_08122021.docx

Appendix C: Supplemental Information for the Natural Resources Analyses

Plant Species List

The following list provides an inventory of vegetation observed during field surveys of the Projected Development Sites conducted on September 17 and 18, 2020. This observed plant species list is not intended to be an all-inclusive inventory of the vegetative species present at the Projected Development Sites.

Trees

Acer negundo	boxelder
Acer plantanoides	Norway maple
Ailanthus altissima	tree-of-heaven
Albizia jublirissin	mimosa
Celtis occidentalis	hackberry
Elaeagnus umbellata	autumn olive
Gleditsia triacanthos	honey locust
Morus alba	white mulberry
Morus rubrum	red mulberry
Plantanus occidentalis	sycamore
Populus deltoides	eastern cottonwood
Prunus serotina	black cherry
Rhus copallinum	shining sumac
Rhus glabra	smooth sumac
Robinia pseudoacacia	black locust
Tilia americana	basswood

Shrubs and Woody Vines

Ampelopsis brevipendiculata	porcelain berry
Berberis thunbergii	Japanese barberry
Celastrus orbiculatus	Asiatic bittersweet
Helix hedera	English ivy
Lonicera canadensis	American fly honeysuckle
Lonicera japonica	Japanese honeysuckle
Lonicera tatarica	Tatarian honeysuckle
Parthenocissus quinquefolia	Virginia creeper
Rosa multiflora	multiflora rose
Rubus phoenicolasius	wineberry
Rubus sp.	brambles
Smilax rotundifolia	roundleaf greenbrier
Toxicodendron radicans	poison ivy
Vitis aestivalis	summer grape

Herbaceous Plants

Achillea millefolium	yarrow
Alliaria petiolata	garlic mustard
Amaranthus retroflexus	redroot pigweed
Apocynum cannabinum	hemp dogbane
Apocynum cannabinum	hemp dogbane

Artemisia vulgaris	common mugwort
Asclepias syriaca	common milkweed
Asparagus officinalis	wild asparagus
Bidens frondosa	devil's beggarticks
Bromus inermis	smooth brome
Bromus racemosus	bald brome
Calystegia sepium	bittersweet nightshade
Chenopodium album	lambsquarters
Chicorium intybus	chicory
Clematis virginiana	virgin's bower
Cyperus strigosus	straw-colored flatsedge
Dactylis glomerata	orchard grass
Daucus carota	camphorweed
Dichanthelium clandestinum	deertongue grass
Digitaria sanguinalis	large crabgrass
Digitaria sp.	crabgrass
Eragrostis curvula	weeping lovegrass
Festuca sp.	fescue
Galinsoga parviflora	quickweed
Heterotheca subaxillaris	camphorweed
Ipomoea purpurea	common morning glory
Linaria vulgaris	butter-and-eggs (toadflax)
Lolium sp.	ryegrass
Malva neglecta	common mallow
Medicago sativa	alfalfa
Melilotus albus	white sweet clover
Mullugo verticillata	carpetweed
Oenothera biennis	common evening primrose
Panicum virgatum	switch grass
Pastinaca sativa	wild parsnip
Phragmites australis	common reed
Plantago lanceolata	narrowleaf plantain
Plantago major	broadleaf plantain
Polygonum cuspidatum	Japanese knotweed
Polygonum persicaria	lady's thumb
Rumex crispus	curly dock
Setaria faberi	giant foxtail
Setaria pumilla	yellow foxtail
Setaria viridis	green foxtail
Silene vulgaris	bladder campion
Solidago altissima	tall goldenrod
Solidago canadensis	Canada goldenrod
Solidago sempervirens	seaside goldenrod
Sonchus arvensis	perennial sowthistle
Symphyotrichum pilosum	heath aster
Taraxacum officinale	common dandelion
Tridens flavus	purpletop grass
Trifolium campestre	low hop clover
Trifolium pratense	red clover
Trifolium repens	white clover
Verbascum thapsus	mullein

Birds

The following list provides an inventory of birds observed (seen and/or heard) during field surveys of the Projected Development Sites conducted on September 17 and 18, 2020. This observed bird species list is not intended to be an all-inclusive inventory of the bird species present at the Projected Development Sites.

Agelaius phoeniceus	red-winged blackbird
Cardinalis cardinalis	northern cardinal
Colaptes auratus	northern flicker
Columba livia	rock dove
Corvus brachyrhynchos	American crow
Cyanocitta cristata	blue jay
Dumetella carolinensis	gray catbird
Geothlypis trichas	common yellowthroat
Larus argentatus	herring gull
Melospiza melodia	song sparrow
Mimus polyglottos	northern mockingbird
Passer domesticus	house sparrow
Spinus tristis	American goldfinch
Sturnus vulgaris	European starling
Thryothorus ludovicianus	Carolina wren
Troglodytes aedon	house wren
Turdus migratorius	American robin
Zenaida macroura	mourning dove

Count Summary Report

Printout Date: 1/8/2021

Count Name:	L.I.: Queens	**Count Code:**	NYQU	**Count Date:**	12/15/2019
# of Party Hours:	116.00	**Species reported on count date:**	118		
Organizations & Sponsors:	Queens County Bird Club				

Weather

Temperature	Minimum:	38.0 Fahrenheit	Maximum:	45.0 Fahrenheit
Wind Direction	Northwest			
Wind Velocity	Minimum:	20.00 Miles/hour	Maximum:	30.00 Miles/hour
Snow Depth	Minimum:	0.00 Inches	Maximum:	0.00 Inches
Still Water	Open			
Moving Water	Open			

AM and PM Conditions				
Cloud Cover	AM:	Cloudy	PM:	Partly Cloudy
AM Rain	None			
AM Snow	None			
PM Rain	None			
PM Snow	None			

Start & End Times

Start time	End time
07:00 AM	05:00 PM
08:00 PM	10:00 PM

Effort

Observers		
In Field	Total Number:	61
	Minimum Number of Parties (daylight):	9
	Maximum Number of Parties (daylight):	15
At Feeders	Total Number:	

Party Hours and Distance (excludes viewing at feeders and nocturnal birding)			
By	Hours	Distance	Units
Foot	105.00	87.00	Miles
Car	11.00	65.25	Miles
Air			

All-Terrain Vehicle			
Bicycle			
Dog Sled			
Golfcart			
Horseback			
Motorized Boat			
Non-Motorized Boat			
Skis/Xc-Skis			
Snowmachine			
Snowshoe			
Wheelchair			

Other Time and Distance			
	Hours	Distance	Units
At Feeders	0.00		
Nocturnal Birding	0.00	0.00	
Total Party	116.00	152.25	Miles

Checklist

Species	Number	Number/Party Hrs.	Flags	Editorial Codes
Snow Goose	1,003	8.6466		
Brant	2,154	18.5690		
Brant (Atlantic)	2,154	18.5690		
Canada Goose	6,869	59.2155	HC,	
Mute Swan	33	0.2845		
Wood Duck	14	0.1207		
Gadwall	125	1.0776		
American Wigeon	67	0.5776		
American Black Duck	337	2.9052		
Mallard	1,069	9.2155		
American Black Duck x Mallard (hybrid)	2	0.0172		
Northern Shoveler	13	0.1121		
Green-winged Teal	27	0.2328		
Green-winged Teal (American)	27	0.2328		
Canvasback	7	0.0603		
Redhead	21	0.1810		
Ring-necked Duck	111	0.9569		

Greater Scaup	367	3.1638		
Lesser Scaup	757	6.5259		
Common Eider	2	0.0172		
Surf Scoter	2	0.0172		
White-winged Scoter	1	0.0086		
Black Scoter	22	0.1897		
scoter sp.	20	0.1724		
Long-tailed Duck	71	0.6121		
Bufflehead	566	4.8793		
Common Goldeneye	6	0.0517		
Hooded Merganser	219	1.8879		
Common Merganser	20	0.1724		
Red-breasted Merganser	150	1.2931		
Ruddy Duck	399	3.4397		
Red-throated Loon	48	0.4138		
Common Loon	19	0.1638		
Horned Grebe	6	0.0517		
Northern Gannet	36	0.3103		
Double-crested Cormorant	115	0.9914		
Great Cormorant	1	0.0086		
Great Blue Heron (Blue form)	44	0.3793		
Black-crowned Night-Heron	5	0.0431		
Northern Harrier	4	0.0345		
Sharp-shinned Hawk	8	0.0690		
Cooper's Hawk	12	0.1034		
Bald Eagle	1	0.0086		
Red-shouldered Hawk	1	0.0086		
Red-tailed Hawk	47	0.4052		
American Coot	55	0.4741		
American Oystercatcher	1	0.0086		
Killdeer	4	0.0345		
Greater Yellowlegs	8	0.0690		
Sanderling	60	0.5172		
Purple Sandpiper	3	0.0259		
Wilson's Snipe	5	0.0431	HC,	
American Woodcock	3	0.0259		
Razorbill	12	0.1034	HC,	
Bonaparte's Gull	1	0.0086	LC	

Laughing Gull	5	0.0431		
Ring-billed Gull	3,690	31.8103		
Herring Gull	1,920	16.5517		
Great Black-backed Gull	266	2.2931		
Rock Pigeon (Feral Pigeon)	1,238	10.6724		
Mourning Dove	549	4.7328		
Eastern Screech-Owl	1	0.0086		
Great Horned Owl	1	0.0086		
Short-eared Owl	1	0.0086		
Belted Kingfisher	7	0.0603		
Red-bellied Woodpecker	87	0.7500		
Yellow-bellied Sapsucker	8	0.0690		
Downy Woodpecker	44	0.3793		
Hairy Woodpecker	12	0.1034		
Northern Flicker	16	0.1379		
Northern Flicker (Yellow-shafted)	16	0.1379		
American Kestrel	5	0.0431		
Merlin	9	0.0776		
Peregrine Falcon	11	0.0948		
Monk Parakeet	25	0.2155		
Eastern Phoebe	1	0.0086		
Blue Jay	138	1.1897		
American Crow	33	0.2845		
Fish Crow	6	0.0517		
Common Raven	9	0.0776		
Horned Lark	57	0.4914		
Tree Swallow	1	0.0086		
Black-capped Chickadee	20	0.1724		
Tufted Titmouse	8	0.0690		
White-breasted Nuthatch	16	0.1379		
Brown Creeper	2	0.0172		
House Wren	1	0.0086		
Winter Wren	7	0.0603		
Marsh Wren	1	0.0086		
Carolina Wren	56	0.4828		
Golden-crowned Kinglet	4	0.0345		
Ruby-crowned Kinglet	3	0.0259		
Hermit Thrush	2	0.0172		

American Robin	418	3.6034		
Gray Catbird	7	0.0603		
Brown Thrasher	1	0.0086		
Northern Mockingbird	55	0.4741		
European Starling	2,646	22.8103		
Cedar Waxwing	29	0.2500		
Lapland Longspur	1	0.0086		
Snow Bunting	3	0.0259		
Orange-crowned Warbler	1	0.0086		
Common Yellowthroat	1	0.0086		
Palm Warbler	2	0.0172		
Yellow-rumped Warbler	90	0.7759		
Yellow-rumped Warbler (Myrtle)	90	0.7759		
American Tree Sparrow	8	0.0690		
Chipping Sparrow	33	0.2845		
Field Sparrow	36	0.3103		
Fox Sparrow	29	0.2500		
Fox Sparrow (Red)	29	0.2500		
Dark-eyed Junco	157	1.3534		
Dark-eyed Junco (Slate-colored)	157	1.3534		
White-throated Sparrow	544	4.6897		
Savannah Sparrow	13	0.1121		
Savannah Sparrow (Savannah)	13	0.1121		
Song Sparrow	254	2.1897		
Swamp Sparrow	15	0.1293		
Eastern Towhee	3	0.0259		
Eastern Towhee (Red-eyed)	3	0.0259		
Northern Cardinal	118	1.0172		
Red-winged Blackbird	118	1.0172		
Eastern Meadowlark	6	0.0517		
Common Grackle	4,557	39.2845		
Boat-tailed Grackle	541	4.6638		
House Finch	82	0.7069		
American Goldfinch	48	0.4138		
House Sparrow	330	2.8448		
Total Individuals	**35848**			
Total Species Reported	**118**			

cw = Reported count week
US = Flagged as an unusual species
HC = Flagged as an unusually high count
LC = Flagged as an unusually low count

Species Requiring Rare Bird Reports to be Submitted to Regional Editor
Species

Compiler(s)

First Name	Last Name	Email	Is Primary Compiler
Corey	Finger	10000birdsblogger@gmail.com	Yes

Participants(s)

First Name	Last Name
Jasmin	Alim
Salvatore	Asaro
Anya	Auerbach
Seth	Ausubel
Chuck	Beilman
Adrian	Burke
Cesar	Castillo
Eleanor	Chavez
George	Dadone
Bob	Dieterich
Lani	Evon
Richard	Evon
Corey	Finger
Laura	Franceour
Justin	Frankel
Jeanna	Fucello
Chihiro	Fukai
Arie	Gilbert
Martha	Harbeson
Tim	Healy
Ryan	Himmelsbach
Trudy	Horowitz
John	Keane
Carrie	Laben

Akilah	Lewis
Jean	Loscalzo
Peggy	Maslow
Eric	Mathern
Danny	Melore
Eric	Miller
Karlo	Mirth
Miwa	Murphy
Scott	Murphy
Mary	Normandia
Katherine	O'Kelly
Aiden	Perkins
Stephane	Perrault
Bob	Phelps
Peter	Reisfield
Ian	Resnick
David	Ringer
Jeff	Ritter
Purbita	Saha
Steven	Schellenger
Lisa	Scheppke
Donna	Schulman
Joe	Smulkstis
David	Spawn
Gary	Straus
Debbie	Swamback
Brian	Threlkeld
Lou	Tognan
Nancy	Tognan
Bob	Veltri
Colleen	Veltri
Steve	Walter
Orena	Wang
Bill	Weisman
Calvin	Yang
Linda	Yuan

Change location | Year-round, All years

Bayswater Park

Queens County (/region/US-NY-081?yr=all&m=), New York (/region/US-NY?yr=all&m=), US (/region/US?yr=all&m=)

Map(/hotspots?hs=L6587274&yr=all&m=)

Directions(https://www.google.com/maps/search/?api=1&query=40.5991024,-73.7691124)

Hotspot navigation

Overview (/hotspot/L6587274?yr=all&m=)

Illustrated Checklist (/hotspot/L6587274/media?yr=all&m=)

VIEW MY...

My eBird (/myebird/L6587274)

Life List (/MyEBird?cmd=lifeList&time=life&listType=L6587274)

Target Species (/targets?r1=L6587274&bmo=1&emo=12)

EXPLORE...

Hotspot Map (/hotspots?hs=L6587274&yr=all&m=)

Bar Charts (/barchart?r=L6587274&yr=all&m=)

Media (https://ebird.org/media/catalog?regionCode=L6587274)

Printable Checklist (/printableList?regionCode=L6587274&yr=all&m=)

103
Species observed
(/hotspot/L6587274?yr=all&m=)

37
Complete checklists
(/hotspot/L6587274/activity?yr=all&m=)

Sightings

Updated 6 sec ago.

Last seen (/hotspot/L6587274?yr=all&m=&rank=mrec) **First seen (/hotspot/L6587274?yr=all&m=&rank=lrec)**

High counts (/hotspot/L6587274?yr=all&m=&rank=hc)

Show all details Sort by

SPECIES NAME (/HOTSPOT/L6587274?YR=ALL&M=&RANK=MREC&HS_SORTBY=TAXON_ORDER&HS_O=ASC)

COUNT (/HOTSPOT/L6587274?YR=ALL&M=&RANK=MREC&HS_SORTBY=COUNT&HS_O=DESC) DATE (/HOTSPOT/L6587274?YR=ALL&M=&RANK=MREC&HS_SORTBY=DATE&HS_O=ASC) OBSERVER

1. **Brant(/species/brant/L6587274)**
   # 45 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
2. **Canada Goose(/species/cangoo/L6587274)**
   # 30 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
3. **Gadwall(/species/gadwal/L6587274)**
   # 2 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
4. **Mallard(/species/mallar3/L6587274)**
   # 4 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
5. **American Black Duck(/species/ambduc/L6587274)**
   # 8 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
6. **Greater Scaup(/species/gresca/L6587274)**
   # 9 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
7. **Bufflehead(/species/buffle/L6587274)**
   # 3 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
8. **Mourning Dove(/species/moudov/L6587274)**
   # 1 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
9. **Ring-billed Gull(/species/ribgul/L6587274)**
   # 5 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
10. **Downy Woodpecker(/species/dowwoo/L6587274)**
    # 1 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
11. **American Crow(/species/amecro/L6587274)**
    # 5 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
12. **Winter Wren(/species/winwre3/L6587274)**
    # 1 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
13. **European Starling(/species/eursta/L6587274)**
    # 20 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
14. **Northern Mockingbird(/species/normoc/L6587274)**
    # 1 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
15. **American Robin(/species/amerob/L6587274)**
    # 2 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
16. **Cedar Waxwing(/species/cedwax/L6587274)**
    # 8 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger
17. **House Sparrow(/species/houspa/L6587274)**
    # 5 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger

18. **American Tree Sparrow(/species/amtspa/L6587274)**
    # 1 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger

19. **Song Sparrow(/species/sonspa/L6587274)**
    # 1 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger

20. **Eastern Towhee(/species/eastow/L6587274)**
    # 1 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger

21. **Northern Cardinal(/species/norcar/L6587274)**
    # 2 | 20 Dec 2020 (/checklist/S77735970) | Corey Finger

22. **Herring Gull(/species/hergul/L6587274)**
    # 6 | 4 Dec 2020 (/checklist/S77042793) | Corey Finger

23. **Great Black-backed Gull(/species/gbbgul/L6587274)**
    # 1 | 4 Dec 2020 (/checklist/S77042793) | Corey Finger

24. **Blue Jay(/species/blujay/L6587274)**
    # 1 | 4 Dec 2020 (/checklist/S77042793) | Corey Finger

25. **Fish Crow(/species/fiscro/L6587274)**
    # 2 | 4 Dec 2020 (/checklist/S77042793) | Corey Finger

26. **Black-capped Chickadee(/species/bkcchi/L6587274)**
    # 3 | 4 Dec 2020 (/checklist/S77042793) | Corey Finger

27. **Carolina Wren(/species/carwre/L6587274)**
    # 2 | 4 Dec 2020 (/checklist/S77042793) | Corey Finger

28. **American Goldfinch(/species/amegfi/L6587274)**
    # 2 | 4 Dec 2020 (/checklist/S77042793) | Corey Finger

29. **Field Sparrow(/species/fiespa/L6587274)**
    # 1 | 4 Dec 2020 (/checklist/S77042793) | Corey Finger

30. **White-throated Sparrow(/species/whtspa/L6587274)**
    # 3 | 4 Dec 2020 (/checklist/S77042793) | Corey Finger

31. **Swamp Sparrow(/species/swaspa/L6587274)**
    # 1 | 4 Dec 2020 (/checklist/S77042793) | Corey Finger

32. **Mute Swan(/species/mutswa/L6587274)**
    # 3 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

33. **American Wigeon(/species/amewig/L6587274)**
    # 2 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

    Greater/Lesser Scaup
    # 6 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

34. **Red-breasted Merganser(/species/rebmer/L6587274)**

5 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

35. **Rock Pigeon(/species/rocpig/L6587274)**
25 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

36. **Double-crested Cormorant(/species/doccor/L6587274)**
1 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

37. **Red-tailed Hawk(/species/rethaw/L6587274)**
1 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

38. **American Kestrel(/species/amekes/L6587274)**
1 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

39. **Ash-throated Flycatcher(/species/astfly/L6587274)**
1 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

40. **Common Raven(/species/comrav/L6587274)**
1 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

41. **Ruby-crowned Kinglet(/species/ruckin/L6587274)**
1 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

42. **American Pipit(/species/amepip/L6587274)**
1 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

43. **Purple Finch(/species/purfin/L6587274)**
1 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

44. **Savannah Sparrow(/species/savspa/L6587274)**
1 | 3 Dec 2020 (/checklist/S77037916) | Lisa Scheppke

45. **Greater Yellowlegs(/species/greyel/L6587274)**
2 | 14 Nov 2020 (/checklist/S76272720) | Lisa Scheppke

46. **Northern Harrier(/species/norhar2/L6587274)**
1 | 14 Nov 2020 (/checklist/S76272720) | Lisa Scheppke

47. **Red-bellied Woodpecker(/species/rebwoo/L6587274)**
1 | 14 Nov 2020 (/checklist/S76272720) | Lisa Scheppke

48. **Northern Flicker(/species/norfli/L6587274)**
1 | 14 Nov 2020 (/checklist/S76272720) | Lisa Scheppke

49. **Gray Catbird(/species/grycat/L6587274)**
1 | 14 Nov 2020 (/checklist/S76272720) | Lisa Scheppke

50. **Eastern Bluebird(/species/easblu/L6587274)**
2 | 14 Nov 2020 (/checklist/S76272720) | Lisa Scheppke

51. **Pine Siskin(/species/pinsis/L6587274)**
1 | 14 Nov 2020 (/checklist/S76272720) | Lisa Scheppke

1 | 14 Nov 2020 (/checklist/S76272720) | Lisa Scheppke

52. **Red-winged Blackbird(/species/rewbla/L6587274)**
10 | 14 Nov 2020 (/checklist/S76272720) | Lisa Scheppke

53. **Yellow-rumped Warbler(/species/yerwar/L6587274)**
3 | 14 Nov 2020 (/checklist/S76272720) | Lisa Scheppke

54. **Sanderling(/species/sander/L6587274)**
12 | 26 Oct 2020 (/checklist/S75509312) | Scott Angus

55. **Dunlin(/species/dunlin/L6587274)**
4 | 26 Oct 2020 (/checklist/S75509312) | Scott Angus

56. **Laughing Gull(/species/laugul/L6587274)**
25 | 26 Oct 2020 (/checklist/S75509312) | Scott Angus

57. **Great Blue Heron(/species/grbher3/L6587274)**
1 | 26 Oct 2020 (/checklist/S75509312) | Scott Angus

58. **Osprey(/species/osprey/L6587274)**
1 | 26 Oct 2020 (/checklist/S75509312) | Scott Angus

59. **Eastern Phoebe(/species/easpho/L6587274)**
3 | 26 Oct 2020 (/checklist/S75509312) | Scott Angus

60. **Red-eyed Vireo(/species/reevir1/L6587274)**
1 | 26 Oct 2020 (/checklist/S75509312) | Scott Angus

61. **Hermit Thrush(/species/herthr/L6587274)**
3 | 26 Oct 2020 (/checklist/S75509312) | Scott Angus

62. **House Finch(/species/houfin/L6587274)**
5 | 26 Oct 2020 (/checklist/S75509312) | Scott Angus

63. **Dark-eyed Junco(/species/daejun/L6587274)**
20 | 26 Oct 2020 (/checklist/S75509312) | Scott Angus

64. **Palm Warbler(/species/palwar/L6587274)**
9 | 26 Oct 2020 (/checklist/S75509312) | Scott Angus

65. **Northern Shoveler(/species/norsho/L6587274)**
3 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

66. **Willet(/species/willet1/L6587274)**
1 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

67. **Great Egret(/species/greegr/L6587274)**
1 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

68. **Sharp-shinned Hawk(/species/shshaw/L6587274)**

1 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

69. **Cooper's Hawk(/species/coohaw/L6587274)**

1 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

70. **Yellow-bellied Sapsucker(/species/yebsap/L6587274)**

1 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

71. **Peregrine Falcon(/species/perfal/L6587274)**

1 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

72. **Tufted Titmouse(/species/tuftit/L6587274)**

1 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

73. **House Wren(/species/houwre/L6587274)**

1 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

74. **Chipping Sparrow(/species/chispa/L6587274)**

1 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

75. **Brown-headed Cowbird(/species/bnhcow/L6587274)**

2 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

76. **Common Yellowthroat(/species/comyel/L6587274)**

1 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

77. **Blackpoll Warbler(/species/bkpwar/L6587274)**

1 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

78. **Scarlet Tanager(/species/scatan/L6587274)**

1 | 26 Oct 2020 (/checklist/S75509894) | Scott Angus

79. **Golden-crowned Kinglet(/species/gockin/L6587274)**

2 | 25 Oct 2020 (/checklist/S75394643) | T Remy

80. **Chimney Swift(/species/chiswi/L6587274)**

2 | 10 Jul 2020 (/checklist/S71328147) | Lisa Scheppke

81. **American Oystercatcher(/species/ameoys/L6587274)**

4 | 10 Jul 2020 (/checklist/S71328147) | Lisa Scheppke

82. **Forster's Tern(/species/forter/L6587274)**

2 | 10 Jul 2020 (/checklist/S71328147) | Lisa Scheppke

83. **Snowy Egret(/species/snoegr/L6587274)**

1 | 10 Jul 2020 (/checklist/S71328147) | Lisa Scheppke

84. **Yellow-crowned Night-Heron(/species/ycnher/L6587274)**

2 | 10 Jul 2020 (/checklist/S71328147) | Lisa Scheppke

85. **Willow Flycatcher(/species/wilfly/L6587274)**

2 | 10 Jul 2020 (/checklist/S71328147) | Lisa Scheppke

86. **Barn Swallow(/species/barswa/L6587274)**
3 | 10 Jul 2020 (/checklist/S71328147) | Lisa Scheppke

87. **Yellow Warbler(/species/yelwar/L6587274)**
2 | 10 Jul 2020 (/checklist/S71328147) | Lisa Scheppke

88. **Semipalmated Plover(/species/semplo/L6587274)**
3 | 17 May 2020 (/checklist/S69211233) | Nathaniel Howard

89. **Common Tern(/species/comter/L6587274)**
1 | 17 May 2020 (/checklist/S69211233) | Nathaniel Howard

90. **Eastern Wood-Pewee(/species/eawpew/L6587274)**
1 | 17 May 2020 (/checklist/S69211233) | Nathaniel Howard

tern sp.
1 | 16 May 2020 (/checklist/S69147575) | Nathaniel Howard

91. **Glossy Ibis(/species/gloibi/L6587274)**
1 | 16 May 2020 (/checklist/S69147575) | Nathaniel Howard

92. **Yellow-throated Vireo(/species/yetvir/L6587274)**
1 | 16 May 2020 (/checklist/S69147575) | Nathaniel Howard

93. **Boat-tailed Grackle(/species/botgra/L6587274)**
4 | 20 Apr 2020 (/checklist/S67553512) | Lisa Scheppke

94. **Belted Kingfisher(/species/belkin1/L6587274)**
1 | 6 Apr 2020 (/checklist/S66761098) | Lisa Scheppke

95. **Monk Parakeet(/species/monpar/L6587274)**
2 | 6 Apr 2020 (/checklist/S66761098) | Lisa Scheppke

96. **Common Goldeneye(/species/comgol/L6587274)**
1 | 10 Mar 2020 (/checklist/S65662299) | Lisa Scheppke

97. **Killdeer(/species/killde/L6587274)**
1 | 8 Feb 2020 (/checklist/S64255813) | Lisa Scheppke

98. **Common Loon(/species/comloo/L6587274)**
1 | 8 Feb 2020 (/checklist/S64255813) | Lisa Scheppke

99. **Horned Grebe(/species/horgre/L6587274)**
1 | 2 Jan 2020 (/checklist/S62987381) | Lisa Scheppke

Sharp-shinned/Cooper's Hawk
1 | 8 Dec 2019 (/checklist/S62157783) | Doug Gochfeld

100. **Orange-crowned Warbler(/species/orcwar/L6587274)**

	# 2	8 Dec 2019 (/checklist/S62157783)	Doug Gochfeld
101.	**Merlin(/species/merlin/L6587274)**		
	# 1	8 Dec 2019 (/checklist/S62148730)	Ryan Mandelbaum
102.	**Fox Sparrow(/species/foxspa/L6587274)**		
	# 2	8 Dec 2019 (/checklist/S62153415)	Lisa Scheppke
	Sterna sp.		
	# X	5 Aug 2019 (/checklist/S58844567)	Lisa Scheppke

Show all sightings

Top media UPLOADED IN LAST 30 DAYS

No media submitted

Latest media (https://ebird.org/media/catalog?regionCode=L6587274)

Recent visits

OBSERVER	DATE	SPECIES
Corey Finger	20 Dec 2020 (/checklist/S77735970)	21
Meryl Sue	20 Dec 2020 (/checklist/S77759316)	21
Corey Finger	4 Dec 2020 (/checklist/S77042793)	21
Scott Angus	26 Oct 2020 (/checklist/S75509312)	46
Scott Angus	26 Oct 2020 (/checklist/S75509894)	54
Nathaniel Howard	17 May 2020 (/checklist/S69211233)	17
Nathaniel Howard	16 May 2020 (/checklist/S69147575)	12
Zach Schwartz-Weinstein	1 Jan 2020 (/checklist/S62853897)	3
Corey Finger	15 Dec 2019 (/checklist/S62353255)	12
Anya Auerbach	15 Dec 2019 (/checklist/S62329607)	12

Checklists submitted within the last hour are not shown.

More recent visits (/hotspot/L6587274/activity?yr=all&m=)

Top eBirders

Updated 6 sec ago.

Species (/hotspot/L6587274?yr=all&m=&sortBy=spp) | Checklists (/hotspot/L6587274?yr=all&m=&sortBy=cl)

1	Lisa Scheppke	82	
2	Scott Angus	63	
3	Corey Finger	31	
4	T Remy	27	
5	Nathaniel Howard	23	
6	Meryl Sue	21	
7	Daisy Paul	19	
7	Patricia Lindsay	19	
7	Peter Paul	19	
10	Gail Benson	14	

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYS Breeding Bird Atlas

Block 5949D

2000-2005

ATLAS 2000

Navigation Tools

- Perform Another Search
- Show All Records
- Sort by Field Card Order
- Sort by Taxonomic Order
- View 1985 Data

Block 5949D Summary

Total Species:	21
Possible:	0
Probable:	3
Confirmed:	18

Click on column heading to sort by that category.

List of Species Breeding in Atlas Block 5949D

Common Name	Scientific Name	Behavior Code	Date	NY Legal Status
Red-winged Blackbird	*Agelaius phoeniceus*	ON	7/15/2000	Protected
Northern Cardinal	*Cardinalis cardinalis*	FL	7/15/2000	Protected
Piping Plover	*Charadrius melodus*	NY	5/30/2000	Endangered
Killdeer	*Charadrius vociferus*	NE	3/30/2000	Protected
Rock Pigeon	*Columba livia*	ON	6/15/2000	Unprotected
American Crow	*Corvus brachyrhynchos*	UN	7/15/2000	Game Species
Yellow Warbler	*Dendroica petechia*	FL	6/22/2000	Protected
Gray Catbird	*Dumetella carolinensis*	FL	7/12/2000	Protected
Willow Flycatcher	*Empidonax traillii*	T2	6/22/2000	Protected
Common Yellowthroat	*Geothlypis trichas*	T2	7/1/2000	Protected
American Oystercatcher	*Haematopus palliatus*	NY	5/12/2000	Protected
Barn Swallow	*Hirundo rustica*	NE	7/15/2000	Protected
Song Sparrow	*Melospiza melodia*	FY	8/11/2002	Protected
Northern Mockingbird	*Mimus polyglottos*	ON	5/13/2000	Protected
Brown-headed Cowbird	*Molothrus ater*	FL	8/11/2002	Protected
House Sparrow	*Passer domesticus*	ON	6/15/2000	Unprotected
Ring-necked Pheasant	*Phasianus colchicus*	FL	8/12/2000	Game Species
Common Tern	*Sterna hirundo*	NY	8/3/2000	Threatened
Least Tern	*Sternula antillarum*	NE	6/16/2000	Threatened
European Starling	*Sturnus vulgaris*	ON	7/4/2000	Unprotected

Mourning Dove	*Zenaida macroura*	N2	6/1/2000	Protected

Current Date: 1/8/2021

List of Species Reported for the Far Rockaway, New York Quadrangle Topographic Map during the New York Amphibian and Reptile Atlas Project Survey (1990-1999)

Ambystoma maculatum	spotted salamander
Bufo fowleri	Fowler's toad
Chelydra serpentina	common snapping turtle
Chrysemys picta	painted turtle
Coluber c. constrictor	northern black racer
Hyla versicolor	gray treefrog
Lampropeltis triangulum	eastern milk snake
Malaclemys terrapin	diamondback terrapin
Notophthalmus viridescens	red-spotted newt
Plethodon cinereus	northern redback salamander
Pseudacris crucifer	northern spring peeper
Rana clamitans	green frog
Scaphiopus holbrookii	eastern spadefoot toad
Storeria d. dekayi	northern brown snake
Terrapene carolina	eastern box turtle
Thamnophis sirtalis	eastern garter snake

EFH Data Notice: Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional Fishery Management Councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

Greater Atlantic Regional Office
Atlantic Highly Migratory Species Management Division

Query Results

Degrees, Minutes, Seconds: Latitude = 40º35'55" N, Longitude = 74º13'18" W
Decimal Degrees: Latitude = 40.60, Longitude = -73.78

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

*** W A R N I N G ***

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

EFH

Show	Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
			Winter Flounder	Eggs Juvenile Larvae/Adult	New England	Amendment 14 to the Northeast Multispecies FMP
			Little Skate	Juvenile Adult	New England	Amendment 2 to the Northeast Skate Complex FMP
			Atlantic Herring	Juvenile Adult Larvae	New England	Amendment 3 to the Atlantic Herring FMP
			Atlantic Cod	Adult	New England	Amendment 14 to the Northeast Multispecies FMP
			Red Hake	Adult Eggs/Larvae/Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP

Show	Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
			Yellowtail Flounder	Adult	New England	Amendment 14 to the Northeast Multispecies FMP
			Monkfish	Adult Eggs/Larvae	New England	Amendment 4 to the Monkfish FMP
			Windowpane Flounder	Adult Larvae Eggs Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
			Winter Skate	Adult Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
			Clearnose Skate	Adult Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
			White Shark	Neonate	Secretarial	Amendment 10 to the 2006 Consolidated HMS FMP: EFH
			Scup	Larvae Eggs Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
			Longfin Inshore Squid	Eggs	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
			Atlantic Mackerel	Juvenile Adult	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11

Show	Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
			Bluefish	Adult Juvenile	Mid-Atlantic	Bluefish
			Atlantic Butterfish	Larvae Adult Juvenile	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
			Summer Flounder	Larvae Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
			Black Sea Bass	Juvenile	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. **For links to all EFH text descriptions see the complete data inventory: open data inventory -->
Mid-Atlantic Council HAPCs, No spatial data for summer flounder SAV HAPC.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

November 17, 2020

David Kennedy
VHB Engineering, Surveying and Landscape Architecture, PC
100 Motor Parkway, Suite 350
Hauppauge, NY 11788

Re: Resilient Edgemere Community Plan
County: Queens Town/City: New York City

Dear Mr. Kennedy:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the vicinity of the project site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 2 Office, Division of Environmental Permits, at dep.r2@dec.ny.gov.

Sincerely,

Heidi Krahling
Environmental Review Specialist
New York Natural Heritage Program

1276

The following state-listed animals have been documented in the vicinity of the project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

For information about any permit considerations for your project, please contact the Permits staff at the NYSDEC Region 2 Office at dep.r2@dec.ny.gov, (718) 482-4997.

The following species have been documented within 100 yards of the project site.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Birds				
Least Tern *Breeding*	*Sternula antillarum*	Threatened		6758
Piping Plover *Breeding*	*Charadrius melodus*	Endangered	Threatened	6945
Common Tern *Breeding*	*Sterna hirundo*	Threatened		1407

This report only includes records from the NY Natural Heritage database.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

The following rare plants, rare animals, and significant natural communities have been documented in the vicinity of the project site.

We recommend that potential impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Field surveys of the project site may be necessary to determine the status of a species at the site, particularly for sites that are currently undeveloped and may still contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The following animal, while not listed by New York State as Endangered or Threatened, is rare in New York and is of conservation concern.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*

Butterflies

Checkered White	*Pontia protodice*	Special Concern	Critically Imperiled in NYS

Documented within 50 yards south of the project site around Beach 44th Street. 1990-09-08: The butterflies were observed on sandy, weedy, open ground that was slated to be developed. The area is very disturbed and contains trash. Several streets pass through the site. 12804

The following natural communities are considered significant from a statewide perspective by the NY Natural Heritage Program. Each community is either an example of a community type that is rare in the state, or a high-quality example of a more common community type. By meeting specific, documented criteria, the NY Natural Heritage Program considers these community occurrences to have high ecological and conservation value.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*

Wetland/Aquatic Communities

Marine Back-barrier Lagoon — Rare Community Type

Documented adjacent to the northern edge of the project site. This is a very large marine back-barrier lagoon that is in fair condition within a poor quality urbanized landscape. 15808

Marine Intertidal Gravel/Sand Beach — High Quality Occurrence of Uncommon Community Type

Documented within 0.2 mile south of the project site. This is a large beach in fair to poor condition (with portions in good condition in protected natural areas) set between a densely developed terrestrial landscape and the Atlantic Ocean. 15994

Low Salt Marsh — Rare Community Type

Documented within 0.25 mile northwest of the project site. This is a very large occurrence consisting of multiple patches with few exotic plant species. The occurrence is unhealthy; it is degrading quickly and is converting to mudflat. The surrounding landscape is heavily developed and contributes numerous detrimental inputs to the bay. 10248

Upland/Terrestrial Communities

Maritime Beach — High Quality Occurrence of Uncommon Community Type

Documented within 200 yards south of the project site. This is a large beach in fair to poor condition (with portions in good condition in protected natural areas) set between a densely developed terrestrial landscape and the Atlantic Ocean. 15991

The following plants are listed as Endangered or Threatened by New York State, and/or are rare in New York State, and so are a vulnerable natural resource of conservation concern. They have been documented within 0.25 mile of the project site.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*

Vascular Plants

Side Oats Grama — *Bouteloua curtipendula var. curtipendula* — Endangered — Imperiled in NYS

Norton Basin Southeast, 2018-07-05: The plants are located on dry sand within a small natural area of beach habitats surrounded by intense residential developments. The beach habitats are highly disturbed and altered, containing a mix of native beach species and non-native species. There is a small tidal influence that exposes a small mudflat at the lower beach edges. The plants are common in open meadow areas on both sides of the path. 2102

Schweinitz's Flat Sedge — *Cyperus schweinitzii* — Rare — Vulnerable in NYS

Norton Basin Southeast, 2018-07-05: The plants are located on dry sand within a small natural area of beach habitats surrounded by intense residential developments. The beach habitats are highly disturbed and altered, containing a mix of native beach species and non-native species. There is a small tidal influence that exposes a small mudflat at the lower beach edges. 16621

Seabeach Knotweed — *Polygonum glaucum* — Rare — Vulnerable in NYS and Globally Uncommon

Arverne-By-The-Sea, 2002-08-27: A wide beach backed by a boardwalk. Most of the plants are on the east side of the site. 1705

Seabeach Amaranth — *Amaranthus pumilus* — Threatened *and Federally Listed as Threatened* — Imperiled in NYS and Globally Rare

Arverne-By-The-Sea, Summer 2019: Arverne is a wide beach backed by a boardwalk. Most of the plants are in front of an artificial foredune in the middle of the beach. 6098

Dune Sandspur — *Cenchrus tribuloides* — Threatened — Imperiled in NYS

Arverne-By-The-Sea, 2018-10-15: Wide beach backed by boardwalk. Most plants are on the east side of site. Most plants are now north of the boardwalk. 5333

Reflexed Flat Sedge — *Cyperus retrorsus* — Endangered — Critically Imperiled in NYS

Rockaway Community Park, 2018-08-28: Coastal mixed hardwood forest with mowed paths throughout. 16618

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/97703.html for Ecological Communities of New York State.

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

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Location

Queens County, New York



Local office

Long Island Ecological Services Field Office

(631) 286-0485
(631) 286-4003

340 Smith Road
Shirley, NY 11967-2258

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS

Piping Plover Charadrius melodus There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot Calidris canutus rufa Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1864	Threatened
Roseate Tern Sterna dougallii dougallii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2083	Endangered

Flowering Plants

NAME	STATUS
Seabeach Amaranth Amaranthus pumilus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8549	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

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Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php

- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

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NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
American Oystercatcher Haematopus palliatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31

Black Scoter Melanitta nigra — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Black Skimmer Rynchops niger — Breeds May 20 to Sep 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5234

Bobolink Dolichonyx oryzivorus — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Bonaparte's Gull Chroicocephalus philadelphia — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Canada Warbler Cardellina canadensis — Breeds May 20 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clapper Rail Rallus crepitans — Breeds Apr 10 to Oct 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Common Eider Somateria mollissima — Breeds Jun 1 to Sep 30
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Common Loon gavia immer — Breeds Apr 15 to Oct 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/4464

Common Tern Sterna hirundo — Breeds May 10 to Sep 10
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/4963

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Double-crested Cormorant phalacrocorax auritus — Breeds Apr 20 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/3478

Dovekie Alle alle — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/6041

Dunlin Calidris alpina arcticola — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Golden Eagle Aquila chrysaetos — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Great Black-backed Gull Larus marinus — Breeds Apr 15 to Aug 20
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Gull-billed Tern Gelochelidon nilotica — Breeds May 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9501

Herring Gull Larus argentatus — Breeds Apr 20 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Least Tern Sterna antillarum — Breeds Apr 20 to Sep 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

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Lesser Yellowlegs Tringa flavipes — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9679

Long-tailed Duck Clangula hyemalis — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/7238

Nelson's Sparrow Ammodramus nelsoni — Breeds May 15 to Sep 5
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Northern Gannet Morus bassanus — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Prairie Warbler Dendroica discolor — Breeds May 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Purple Sandpiper Calidris maritima — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Razorbill Alca torda — Breeds Jun 15 to Sep 10
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Red-breasted Merganser Mergus serrator — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Red-throated Loon Gavia stellata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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Ring-billed Gull Larus delawarensis — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Royal Tern Thalasseus maximus — Breeds Apr 15 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Ruddy Turnstone Arenaria interpres morinella — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Rusty Blackbird Euphagus carolinus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Semipalmated Sandpiper Calidris pusilla — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Snowy Owl Bubo scandiacus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Surf Scoter Melanitta perspicillata — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Whimbrel Numenius phaeopus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9483

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White-winged Scoter Melanitta fusca — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Willet Tringa semipalmata — Breeds Apr 20 to Aug 5

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wood Thrush Hylocichla mustelina — Breeds May 10 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

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Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

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How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting

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point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

ESTUARINE AND MARINE DEEPWATER

E1UBL

ESTUARINE AND MARINE WETLAND

E2EM1P

A full description for each wetland code can be found at the National Wetlands Inventory website

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Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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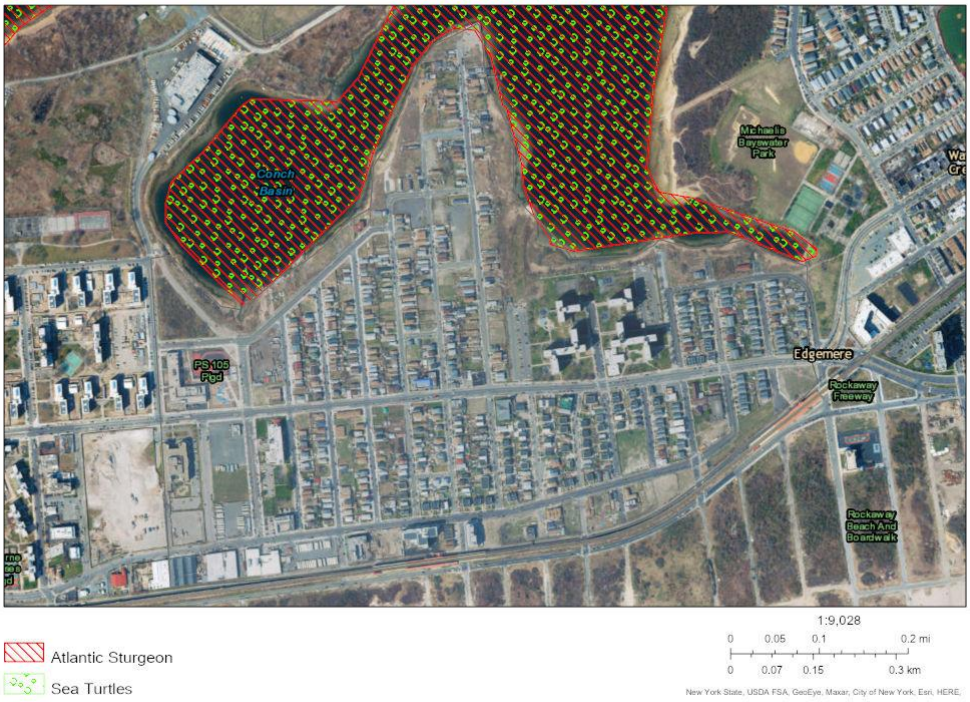
Drawn Action Area & Overlapping S7 Consultation Areas

Area of Interest (AOI) Information

Area : 167.34 acres

Jan 8 2021 9:25:40 Eastern Standard Time



Summary

Name	Count	Area(acres)	Length(mi)
Atlantic Sturgeon	2	0.40	N/A
Shortnose Sturgeon	0	0	N/A
Atlantic Salmon	0	0	N/A
Sea Turtles	4	0.81	N/A
Atlantic Large Whales	0	0	N/A
In or Near Critical Habitat	0	0	N/A

Atlantic Sturgeon

#	Feature ID	Species	Life Stage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres)
1	ANS_C50_ADU_MAF	Atlantic sturgeon	Adult	Migrating & Foraging	N/A	01/01	12/31	N/A	N/A	0.20
2	ANS_C50_SUB_MAF	Atlantic sturgeon	Subadult	Migrating & Foraging	N/A	01/01	12/31	N/A	N/A	0.20

Sea Turtles

#	Feature ID	Species	Life Stage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres)
1	GRN_STS_AJV_MAF	Green sea turtle	Adults and juveniles	Migrating & Foraging	Massachusetts (S of Cape Cod) through Virginia	5/1	11/30	*No Data*	*No Data*	0.20
2	KMP_STS_AJV_MAF	Kemp's ridley sea turtle	Adults and juveniles	Migrating & Foraging	Massachusetts (S of Cape Cod) through Virginia	5/1	11/30	*No Data*	*No Data*	0.20
3	LTR_STS_AJV_MAF	Leatherback sea turtle	Adults and juveniles	Migrating & Foraging	Massachusetts (S of Cape Cod) through Virginia	5/1	11/30	*No Data*	*No Data*	0.20
4	LOG_STS_AJV_MAF	Loggerhead sea turtle	Adults and juveniles	Migrating & Foraging	Massachusetts (S of Cape Cod) through Virginia	5/1	11/30	*No Data*	*No Data*	0.20

DISCLAIMER: Use of this App does NOT replace the Endangered Species Act (ESA) Section 7 consultation process; it is a first step in determining if a proposed Federal action overlaps with listed species or critical habitat presence. Because the data provided through this App are updated regularly, reporting results must include the date they were generated. The report outputs (map/tables) depend on the options picked by the user, including the shape and size of the action area drawn, the layers marked as visible or selectable, and the buffer distance specified when using the "Draw your Action Area" function. Area calculations represent the size of overlap between the user-drawn Area of Interest (with buffer) and the specified S7 Consultation Area. Summary table areas represent the sum of these overlapping areas for each species group.

Appendix D: Construction Noise Receptor Results

The following table presents the address, tax block and tax lot of each receptor included in the construction noise assessment. The table also presents the existing ambient sound level (Leq), the future exterior "ext" noise levels which include existing ambient and construction sources, and the increase over ambient "incr" at each receptor. All sound levels are A-weighted energy-equivalent sound levels (Leq).

Construction Noise Receptor Results

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
204 BEACH 42 ST	15850	28	71.4	71.4	0.0	71.4	0.0	71.4	0.0	71.5	0.1	71.5	0.1	71.5	0.1	72.4	1.0	72.0	0.6	78.6	7.2	78.6	7.2	76.6	5.2	72.1	0.7	71.5	0.1	71.4	0.0
206 BEACH 42 ST	15850	30	71.4	71.4	0.0	71.4	0.0	71.4	0.0	71.5	0.1	71.5	0.1	71.5	0.1	72.4	1.0	72.0	0.6	78.7	7.3	78.7	7.3	76.6	5.2	73.7	2.3	72.7	1.3	71.5	0.1
208 BEACH 42 ST	15850	30	71.4	71.4	0.0	71.4	0.0	71.4	0.0	71.5	0.1	71.4	0	71.4	0	72.4	1.0	71.9	0.5	78.9	7.5	78.9	7.5	76.9	5.5	74.4	3.0	73.1	1.7	71.5	0.1
210 BEACH 47 ST	15853	39	71.4	71.8	0.4	71.7	0.3	71.9	0.5	71.7	0.3	71.5	0.1	71.4	0	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0
211 BEACH 44 ST	15853	103	71.4	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0	71.4	0	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0	71.5	0.1	71.4	0.0	71.4	0.0
215 BEACH 44 ST	15853	102	71.4	71.5	0.1	71.4	0.0	71.5	0.1	71.4	0.0	71.4	0	71.4	0	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0	71.5	0.1	71.4	0.0	71.4	0.0
216 BEACH 40 ST	15848	45	71.4	71.4	0.0	71.4	0.0	71.4	0.0	74.8	3.4	73.4	2	73.4	2	75.8	4.4	74.3	2.9	71.9	0.5	71.9	0.5	71.5	0.1	71.6	0.2	71.5	0.1	71.4	0.0
217 BEACH 44 ST	15853	98	69.0	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.1	0.1	69	0	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.0	0.0
218 BEACH 40 ST	15848	46	71.4	71.4	0.0	71.4	0.0	71.4	0.0	76.9	5.5	74.9	3.5	74.9	3.5	76.3	4.9	74.7	3.3	72.0	0.6	72.0	0.6	71.6	0.2	71.7	0.3	71.6	0.2	71.4	0.0
219 BEACH 44 ST	15853	97	69.0	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.1	0.1	69	0	69.0	0.0	69.0	0.0	69.0	0.0	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.0	0.0
220 BEACH 40 ST	15848	48	69.0	69.0	0.0	69.0	0.0	69.0	0.0	73.9	4.9	72.1	3.1	72.1	3.1	73.9	4.9	72.3	3.3	70.0	1.0	70.0	1.0	69.4	0.4	69.1	0.1	69.1	0.1	69.0	0.0
221 BEACH 44 ST	15853	96	69.0	69.1	0.1	69.0	0.0	69.5	0.5	69.3	0.3	69.1	0.1	69	0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.1	0.1	69.1	0.1	69.0	0.0
222 BEACH 40 ST	15848	50	69.0	69.0	0.0	69.0	0.0	69.0	0.0	73.3	4.3	71.7	2.7	71.7	2.7	73.6	4.6	72.0	3.0	69.9	0.9	69.9	0.9	69.4	0.4	69.2	0.2	69.1	0.1	69.0	0.0
223 BEACH 44 ST	15853	95	69.0	69.1	0.1	69.1	0.1	69.5	0.5	69.3	0.3	69.1	0.1	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.0	0.0
3-02 BEACH 49 ST	15840	1	69.0	72.1	3.1	71.7	2.7	71.7	2.7	69.4	0.4	69.1	0.1	69.1	0.1	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0
3-08 BEACH 39 ST	15828	3	69.0	69.0	0.0	69.0	0.0	69.0	0.0	74.7	5.7	72.9	3.9	72.9	3.9	70.0	1.0	69.1	0.1	69.6	0.6	69.6	0.6	69.3	0.3	69.2	0.2	69.1	0.1	69.0	0.0
3-10 BEACH 39 ST	15828	4	57.3	57.9	0.6	57.7	0.4	57.9	0.6	60.9	3.6	59.7	2.4	59.6	2.3	62.5	5.2	60.7	3.4	63.0	5.7	63.0	5.7	61.1	3.8	60.4	3.1	59.1	1.8	57.4	0.1
3-12 BEACH 39 ST	15828	7	57.3	57.9	0.6	57.8	0.5	57.8	0.5	62.9	5.6	61	3.7	60.9	3.6	62.3	5.0	60.5	3.2	62.8	5.5	62.8	5.5	61.0	3.7	60.3	3.0	59.0	1.7	57.4	0.1
3-12 BEACH 41 ST	15830	11	57.3	57.7	0.4	57.6	0.3	57.7	0.4	65.2	7.9	63.1	5.8	63	5.7	68.3	11.0	65.8	8.5	71.2	13.9	71.2	13.9	68.5	11.2	60.2	2.9	58.2	0.9	57.4	0.1
3-14 BEACH 39 ST	15828	7	57.3	57.9	0.6	57.7	0.4	57.9	0.6	68.4	11.1	61.7	4.4	61.7	4.4	61.6	4.3	59.9	2.6	63.6	6.3	63.6	6.3	61.7	4.4	61.4	4.1	59.7	2.4	57.5	0.2
3-14 BEACH 41 ST	15830	12	57.3	57.5	0.2	57.4	0.1	57.5	0.2	63.1	5.8	61.5	4.2	61.5	4.2	67.7	10.4	65.3	8.0	68.2	10.9	68.2	10.9	65.8	8.5	59.6	2.3	58.4	1.1	57.4	0.1
3-15 BEACH 41 ST	15831	43	57.3	57.6	0.3	57.5	0.2	57.6	0.3	61.1	3.8	59.8	2.5	59.8	2.5	64.8	7.5	62.8	5.5	67.1	9.8	67.2	9.9	64.8	7.5	60.1	2.8	58.7	1.4	57.4	0.1
3-16 BEACH 41 ST	15830	14	57.3	57.7	0.4	57.6	0.3	57.7	0.4	61.9	4.6	60.4	3.1	60.3	3	66.2	8.9	64.0	6.7	67.5	10.2	67.5	10.2	65.2	7.9	60.0	2.7	58.4	1.1	57.4	0.1
3-18 BEACH 39 ST	15828	9	57.3	57.9	0.6	57.7	0.4	57.8	0.5	67.5	10.2	65.1	7.8	65.1	7.8	64.0	6.7	61.7	4.4	62.9	5.6	62.9	5.6	61.0	3.7	60.9	3.6	59.4	2.1	57.5	0.2
3-18 BEACH 41 ST	15830	18	57.3	57.8	0.5	57.6	0.3	57.8	0.5	61.0	3.7	59.7	2.4	59.7	2.4	61.4	4.1	59.9	2.6	68.8	11.5	68.8	11.5	66.4	9.1	59.5	2.2	57.8	0.5	57.3	0.0
3-20 BEACH 39 ST	15828	11	57.3	58.0	0.7	57.7	0.4	57.9	0.6	67.2	9.9	64.9	7.6	64.9	7.6	62.5	5.2	60.0	2.7	62.3	5.0	62.3	5.0	60.6	3.3	59.9	2.6	58.7	1.4	57.4	0.1
3-20 BEACH 41 ST	15830	20	57.3	57.8	0.5	57.7	0.4	58.0	0.7	59.5	2.2	58.5	1.2	58.5	1.2	61.5	4.2	60.0	2.7	68.5	11.2	68.5	11.2	66.1	8.8	59.4	2.1	57.9	0.6	57.3	0.0
3-21 BEACH 41 ST	15831	39	57.3	57.6	0.3	57.5	0.2	57.7	0.4	60.6	3.3	59.4	2.1	59.4	2.1	59.8	2.5	58.7	1.4	59.5	2.2	59.5	2.2	58.6	1.3	59.0	1.7	58.3	1.0	57.4	0.1
3-23 BEACH 39 ST	15829	51	57.3	57.6	0.3	57.5	0.2	57.7	0.4	66.2	8.9	64	6.7	64	6.7	62.5	5.2	60.4	3.1	60.6	3.3	60.6	3.3	59.3	2.0	58.6	1.3	58.0	0.7	57.3	0.0
3-24 BEACH 39 ST	15828	13	57.3	57.7	0.4	57.6	0.3	57.7	0.4	66.3	9.0	64	6.7	64	6.7	63.1	5.8	60.8	3.5	62.5	5.2	62.5	5.2	60.8	3.5	59.0	1.7	58.1	0.8	57.4	0.1
3-24 BEACH 41 ST	15830	21	57.3	57.7	0.4	57.6	0.3	57.7	0.4	59.3	2.0	58.6	1.3	58.6	1.3	62.5	5.2	60.8	3.5	65.9	8.6	65.9	8.6	63.6	6.3	59.5	2.2	58.2	0.9	57.4	0.1
3-25 BEACH 41 ST	15831	39	57.3	57.5	0.2	57.4	0.1	57.8	0.5	58.5	1.2	58.2	0.9	58.1	0.8	59.3	2.0	58.5	1.2	59.1	1.8	59.2	1.9	58.4	1.1	60.5	3.2	59.2	1.9	57.5	0.2

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
3-26 BEACH 39 ST	15828	15	57.3	58.3	1.0	57.9	0.6	57.7	0.4	66.0	8.7	63.8	6.5	63.8	6.5	61.5	4.2	59.4	2.1	61.5	4.2	61.5	4.2	60.0	2.7	58.4	1.1	57.8	0.5	57.3	0.0
3-26 BEACH 41 ST	15830	21	57.3	57.6	0.3	57.5	0.2	57.8	0.5	64.6	7.3	62.6	5.3	62.5	5.2	62.4	5.1	60.7	3.4	65.5	8.2	65.6	8.3	63.3	6.0	59.3	2.0	58.1	0.8	57.4	0.1
3-27 BEACH 39 ST	15829	49	57.3	57.7	0.4	57.5	0.2	57.7	0.4	66.0	8.7	63.6	6.3	63.6	6.3	61.9	4.6	60.3	3.0	60.4	3.1	60.5	3.2	59.2	1.9	58.1	0.8	57.6	0.3	57.3	0.0
3-30 BEACH 39 ST	15828	17	57.3	57.5	0.2	57.5	0.2	57.6	0.3	65.5	8.2	63.4	6.1	63.4	6.1	62.1	4.8	60.5	3.2	61.9	4.6	61.9	4.6	60.3	3.0	58.3	1.0	57.8	0.5	57.3	0.0
3-30 BEACH 41 ST	15830	24	57.3	58.1	0.8	57.8	0.5	57.8	0.5	58.7	1.4	58.1	0.8	58.1	0.8	60.3	3.0	59.1	1.8	64.8	7.5	64.9	7.6	62.8	5.5	58.9	1.6	57.9	0.6	57.3	0.0
3-31 BEACH 39 ST	15829	47	57.3	57.7	0.4	57.6	0.3	57.7	0.4	65.6	8.3	63.5	6.2	63.4	6.1	61.2	3.9	59.8	2.5	59.3	2.0	59.3	2.0	58.5	1.2	57.9	0.6	57.6	0.3	57.3	0.0
3-31 BEACH 41 ST	15831	24	57.3	57.6	0.3	57.5	0.2	57.7	0.4	59.8	2.5	59.3	2	59	1.7	59.5	2.2	58.5	1.2	59.0	1.7	59.1	1.8	58.3	1.0	59.5	2.2	58.6	1.3	57.4	0.1
3-31A BEACH 41 ST	15831	24	57.3	57.9	0.6	57.7	0.4	58.0	0.7	58.8	1.5	58.6	1.3	58.4	1.1	58.5	1.2	58.0	0.7	59.5	2.2	59.7	2.4	58.7	1.4	59.6	2.3	58.6	1.3	57.4	0.1
3-32 BEACH 39 ST	15828	117	57.3	57.6	0.3	57.5	0.2	58.2	0.9	65.4	8.1	63.3	6	63.3	6	61.0	3.7	59.0	1.7	58.2	0.9	58.3	1.0	57.8	0.5	58.1	0.8	57.8	0.5	57.3	0.0
3-32 BEACH 41 ST	15830	25	57.3	57.7	0.4	57.6	0.3	58.0	0.7	61.1	3.8	59.9	2.6	59.9	2.6	60.3	3.0	59.0	1.7	64.6	7.3	64.6	7.3	62.5	5.2	58.6	1.3	57.8	0.5	57.3	0.0
3-35 BEACH 39 ST	15829	38	57.3	57.4	0.1	57.4	0.1	57.5	0.2	59.5	2.2	58.7	1.4	58.6	1.3	60.6	3.3	59.3	2.0	58.0	0.7	58.1	0.8	57.7	0.4	58.4	1.1	57.9	0.6	57.3	0.0
3-35 BEACH 41 ST	15831	38	57.3	57.7	0.4	57.6	0.3	57.9	0.6	58.8	1.5	58.5	1.2	58.3	1	58.6	1.3	58.0	0.7	58.5	1.2	58.5	1.2	58.0	0.7	59.4	2.1	58.5	1.2	57.4	0.1
3-35A BEACH 39 ST	15829	38	57.3	57.5	0.2	57.4	0.1	57.6	0.3	64.4	7.1	62.5	5.2	62.5	5.2	59.6	2.3	58.3	1.0	58.6	1.3	58.7	1.4	58.1	0.8	58.0	0.7	57.7	0.4	57.3	0.0
3-36 BEACH 39 ST	15828	21	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.2	0.2	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
3-36 BEACH 41 ST	15830	27	57.3	58.3	1.0	57.9	0.6	57.9	0.6	58.6	1.3	58.3	1	58.2	0.9	59.9	2.6	58.9	1.6	59.1	1.8	59.2	1.9	58.4	1.1	58.8	1.5	58.2	0.9	57.4	0.1
3-37 BEACH 39 ST	15829	37	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75	0	75	0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
3-37 BEACH 41 ST	15831	38	57.3	57.4	0.1	57.4	0.1	57.5	0.2	58.5	1.2	58.4	1.1	58.2	0.9	59.5	2.2	58.6	1.3	58.9	1.6	59.2	1.9	58.4	1.1	58.9	1.6	58.3	1.0	57.4	0.1
3-38 BEACH 39 ST	15828	21	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.2	0.2	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
3-38 BEACH 41 ST	15830	29	57.3	57.8	0.5	57.6	0.3	58.0	0.7	58.6	1.3	58.2	0.9	58.1	0.8	59.8	2.5	58.8	1.5	58.9	1.6	59.0	1.7	58.3	1.0	58.2	0.9	57.8	0.5	57.3	0.0
3-41 BEACH 39 ST	15829	36	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
3-41 BEACH 41 ST	15831	34	57.3	58.4	1.1	58.0	0.7	57.9	0.6	58.8	1.5	58.8	1.5	58.5	1.2	59.3	2.0	58.5	1.2	58.5	1.2	58.7	1.4	58.1	0.8	60.4	3.1	59.3	2.0	57.5	0.2
3-43 BEACH 39 ST	15829	35	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
3-43 BEACH 41 ST	15831	34	57.3	57.8	0.5	57.6	0.3	57.8	0.5	58.8	1.5	59.8	2.5	59.2	1.9	60.0	2.7	59.0	1.7	58.1	0.8	58.4	1.1	57.9	0.6	60.6	3.3	59.3	2.0	57.5	0.2
3-53 BEACH 49 ST	15840	6	70.7	74.3	3.6	73.2	2.5	72.8	2.1	71.0	0.3	71.2	0.5	71	0.3	70.8	0.1	70.8	0.1	70.7	0.0	70.7	0.0	70.7	0.0	70.7	0.0	70.7	0.0	70.7	0.0
300 BEACH 46 ST	15837	5	53.9	59.9	6.0	58.6	4.7	69.2	15.3	67.1	13.2	59.1	5.2	55.9	2	55.7	1.8	55.0	1.1	54.2	0.3	55.1	1.2	54.6	0.7	58.0	4.1	56.6	2.7	54.1	0.2
301 BEACH 42 ST	15833	70	69.0	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.6	0.6	69.3	0.3	69.2	0.2	69.3	0.3	69.1	0.1	72.7	3.7	71.2	2.2	69.2	0.2
301 BEACH 46 ST	15838	67	69.0	69.5	0.5	69.3	0.3	71.6	2.6	70.8	1.8	69.3	0.3	69.1	0.1	69.2	0.2	69.1	0.1	69.0	0.0	69.1	0.1	69.0	0.0	69.1	0.1	69.0	0.0	69.0	0.0
301 BEACH 47 ST	15839	70	69.0	69.6	0.6	69.4	0.4	70.0	1.0	69.6	0.6	69.1	0.1	69.1	0.1	69.2	0.2	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0
301A BEACH 46 ST	15838	67	69.0	69.5	0.5	69.3	0.3	70.5	1.5	70.0	1.0	69.2	0.2	69.1	0.1	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.1	0.1	69.0	0.0	69.0	0.0
302 BEACH 47 ST	15838	70	69.0	69.7	0.7	69.4	0.4	69.4	0.4	69.2	0.2	69.1	0.1	69.1	0.1	69.2	0.2	69.1	0.1	69.0	0.0	69.1	0.1	69.0	0.0	69.1	0.1	69.0	0.0	69.0	0.0
303 BEACH 38 ST	15828	53	69.0	69.0	0.0	69.0	0.0	69.0	0.0	72.9	3.9	71.6	2.6	71.6	2.6	69.6	0.6	69.1	0.1	69.4	0.4	69.4	0.4	69.2	0.2	69.1	0.1	69.1	0.1	69.0	0.0
303 BEACH 42 ST	15833	69	69.0	69.0	0.0	69.0	0.0	69.0	0.0	69.1	0.1	69.1	0.1	69.1	0.1	69.9	0.9	69.5	0.5	69.2	0.2	69.2	0.2	69.1	0.1	73.1	4.1	71.5	2.5	69.2	0.2
303 BEACH 45 ST	15837	74	57.8	60.3	2.5	59.7	1.9	64.7	6.9	62.8	5.0	60.1	2.3	59	1.2	59.4	1.6	58.7	0.9	58.1	0.3	58.7	0.9	58.3	0.5	58.8	1.0	58.4	0.6	57.8	0.0
304 BEACH 42 ST	15831	6	69.0	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.6	0.6	69.3	0.3	75.6	6.6	75.6	6.6	73.6	4.6	71.4	2.4	70.3	1.3	69.1	0.1
304 BEACH 46 ST	15837	7	53.9	58.9	5.0	57.6	3.7	75.5	21.6	73.4	19.5	63.8	9.9	56.4	2.5	56.3	2.4	55.3	1.4	54.7	0.8	55.4	1.5	54.7	0.8	57.4	3.5	56.2	2.3	54.1	0.2
304 BEACH 48 ST	15839	72	69.0	69.7	0.7	69.5	0.5	69.6	0.6	69.2	0.2	69.1	0.1	69	0	69.1	0.1	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
305 BEACH 38 ST	15828	52	69.0	69.0	0.0	69.0	0.0	69.0	0.0	72.3	3.3	71.2	2.2	71.2	2.2	69.5	0.5	69.1	0.1	69.2	0.2	69.2	0.2	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0
305 BEACH 45 ST	15837	73	57.8	60.6	2.8	59.9	2.1	69.3	11.5	67.2	9.4	61.2	3.4	59.1	1.3	58.7	0.9	58.3	0.5	58.0	0.2	58.5	0.7	58.2	0.4	63.8	6.0	61.8	4.0	58.2	0.4
305 BEACH 47 ST	15839	68	57.1	59.6	2.5	58.9	1.8	64.1	7.0	63.4	6.3	58.9	1.8	57.9	0.8	58.0	0.9	57.6	0.5	57.3	0.2	57.6	0.5	57.4	0.3	57.9	0.8	57.6	0.5	57.1	0.0
306 BEACH 47 ST	15838	72	57.1	62.1	5.0	60.8	3.7	61.3	4.2	59.9	2.8	59	1.9	58.2	1.1	58.6	1.5	58.0	0.9	57.3	0.2	57.6	0.5	57.4	0.3	58.0	0.9	57.6	0.5	57.1	0.0
306 BEACH 48 ST	15839	3	61.4	72.6	11.2	70.6	9.2	66.8	5.4	63.5	2.1	62.2	0.8	61.8	0.4	61.7	0.3	61.6	0.2	61.4	0.0	61.6	0.2	61.5	0.1	61.6	0.2	61.5	0.1	61.4	0.0
307 BEACH 37 ST	15827	31	69.0	69.0	0.0	69.0	0.0	69.0	0.0	69.9	0.9	69.5	0.5	69.5	0.5	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0
307 BEACH 42 ST	15833	68	57.3	58.3	1.0	58.1	0.8	58.4	1.1	58.3	1.0	58.4	1.1	58.2	0.9	62.0	4.7	60.4	3.1	61.1	3.8	61.1	3.8	59.7	2.4	69.5	12.2	66.8	9.5	59.0	1.7
307 BEACH 46 ST	15838	63	53.9	60.7	6.8	59.3	5.4	69.8	15.9	67.7	13.8	59.4	5.5	55.6	1.7	55.9	2.0	55.2	1.3	54.3	0.4	55.1	1.2	54.6	0.7	56.0	2.1	55.3	1.4	54.0	0.1
308 BEACH 39 ST	15828	52	69.0	69.0	0.0	69.0	0.0	69.0	0.0	69.6	0.6	69.3	0.3	69.3	0.3	69.5	0.5	69.3	0.3	69.8	0.8	69.8	0.8	69.4	0.4	69.3	0.3	69.2	0.2	69.0	0.0
308 BEACH 42 ST	15831	11	57.3	57.6	0.3	57.5	0.2	57.8	0.5	58.8	1.5	58.5	1.2	58.3	1	61.7	4.4	60.2	2.9	72.9	15.6	72.9	15.6	70.3	13.0	67.2	9.9	64.7	7.4	58.4	1.1
308 BEACH 48 ST	15839	75	61.4	65.8	4.4	65.2	3.8	65.2	3.8	62.4	1.0	61.8	0.4	61.6	0.2	61.7	0.3	61.5	0.1	61.5	0.1	61.5	0.1	61.5	0.1	61.6	0.2	61.5	0.1	61.4	0.0
309 BEACH 38 ST	15828	50	57.3	57.5	0.2	57.4	0.1	57.5	0.2	68.7	11.4	66.4	9.1	66.4	9.1	61.4	4.1	58.4	1.1	60.0	2.7	60.1	2.8	59.0	1.7	58.1	0.8	57.7	0.4	57.3	0.0
309 BEACH 42 ST	15833	68	57.3	57.6	0.3	57.5	0.2	57.7	0.4	57.8	0.5	58.3	1	57.9	0.6	59.7	2.4	58.7	1.4	68.2	10.9	68.2	10.9	65.8	8.5	62.8	5.5	60.9	3.6	57.6	0.3
309 BEACH 45 ST	15837	73	57.8	60.1	2.3	59.4	1.6	71.5	13.7	69.4	11.6	62	4.2	59.1	1.3	58.6	0.8	58.3	0.5	57.9	0.1	58.4	0.6	58.1	0.3	60.4	2.6	59.4	1.6	57.9	0.1
309 BEACH 47 ST	15839	68	57.1	63.4	6.3	62.7	5.6	63.6	6.5	60.1	3.0	58.3	1.2	57.8	0.7	57.6	0.5	57.4	0.3	57.2	0.1	57.6	0.5	57.4	0.3	57.9	0.8	57.6	0.5	57.1	0.0
309A BEACH 38 ST	15828	7	57.3	57.7	0.4	57.6	0.3	57.8	0.5	61.7	4.4	60.4	3.1	60.3	3	60.5	3.2	59.2	1.9	60.5	3.2	60.5	3.2	59.3	2.0	58.3	1.0	57.8	0.5	57.3	0.0
310 BEACH 42 ST	15831	12	57.3	57.6	0.3	57.5	0.2	57.7	0.4	59.4	2.1	59.1	1.8	58.8	1.5	60.5	3.2	59.3	2.0	72.6	15.3	72.6	15.3	70.0	12.7	66.9	9.6	64.4	7.1	58.3	1.0
310 BEACH 47 ST	15838	74	57.1	66.6	9.5	64.7	7.6	66.2	9.1	64.2	7.1	59.1	2	58.2	1.1	58.6	1.5	58.0	0.9	57.2	0.1	57.6	0.5	57.4	0.3	57.9	0.8	57.6	0.5	57.1	0.0
311 BEACH 38 ST	15828	50	57.3	57.4	0.1	57.4	0.1	57.5	0.2	68.4	11.1	66.2	8.9	66.2	8.9	61.0	3.7	58.1	0.8	59.0	1.7	59.0	1.7	58.3	1.0	57.9	0.6	57.6	0.3	57.3	0.0
311 BEACH 42 ST	15833	66	57.3	57.5	0.2	57.4	0.1	57.5	0.2	58.1	0.8	58.4	1.1	58.2	0.9	60.8	3.5	59.5	2.2	67.5	10.2	67.5	10.2	65.2	7.9	60.9	3.6	59.3	2.0	57.5	0.2
311 BEACH 43 ST	15834	66	57.3	58.2	0.9	57.9	0.6	59.3	2.0	58.6	1.3	58.4	1.1	58	0.7	58.4	1.1	57.9	0.6	58.2	0.9	58.3	1.0	57.9	0.6	70.9	13.6	68.2	10.9	59.6	2.3
311 BEACH 45 ST	15837	71	57.8	60.5	2.7	59.8	2.0	71.9	14.1	69.7	11.9	62.2	4.4	59.3	1.5	59.0	1.2	58.5	0.7	58.2	0.4	58.6	0.8	58.3	0.5	60.4	2.6	59.4	1.6	57.9	0.1
311 BEACH 46 ST	15838	61	53.9	62.2	8.3	60.4	6.5	71.5	17.6	69.3	15.4	60.8	6.9	56.5	2.6	56.3	2.4	55.4	1.5	54.4	0.5	55.1	1.2	54.6	0.7	58.5	4.6	56.9	3.0	54.2	0.3
311 BEACH 47 ST	15839	64	57.1	61.4	4.3	60.3	3.2	65.7	8.6	63.9	6.8	59.3	2.2	58	0.9	58.1	1.0	57.7	0.6	57.3	0.2	57.6	0.5	57.4	0.3	57.8	0.7	57.6	0.5	57.1	0.0
311A BEACH 42 ST	15833	66	57.3	58.2	0.9	57.9	0.6	58.3	1.0	58.4	1.1	58.4	1.1	58.2	0.9	59.2	1.9	58.4	1.1	60.2	2.9	60.4	3.1	59.2	1.9	61.1	3.8	59.6	2.3	57.5	0.2
311A BEACH 47 ST	15839	63	57.1	66.2	9.1	64.3	7.2	62.0	4.9	60.0	2.9	58.4	1.3	57.8	0.7	57.7	0.6	57.4	0.3	57.3	0.2	57.5	0.4	57.3	0.2	57.7	0.6	57.4	0.3	57.1	0.0
312 BEACH 37 ST	15826	1	69.0	69.0	0.0	69.0	0.0	69.0	0.0	70.1	1.1	69.7	0.7	69.7	0.7	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.0	0.0
312 BEACH 42 ST	15831	14	57.3	57.7	0.4	57.6	0.3	57.8	0.5	58.8	1.5	58.6	1.3	58.5	1.2	60.4	3.1	59.1	1.8	71.3	14.0	71.3	14.0	68.7	11.4	60.8	3.5	59.3	2.0	57.5	0.2
312 BEACH 43 ST	15833	5	57.3	57.8	0.5	57.6	0.3	58.0	0.7	58.0	0.7	58.3	1	57.9	0.6	59.0	1.7	58.3	1.0	61.5	4.2	61.5	4.2	60.1	2.8	69.7	12.4	67.0	9.7	59.1	1.8
312 BEACH 44 ST	15834	8	57.3	58.2	0.9	58.0	0.7	59.1	1.8	58.4	1.1	58.5	1.2	58.1	0.8	58.4	1.1	57.9	0.6	57.8	0.5	58.0	0.7	57.7	0.4	68.9	11.6	66.3	9.0	58.8	1.5
312 BEACH 45 ST	15836	8	57.8	60.8	3.0	59.9	2.1	66.6	8.8	64.7	6.9	60.1	2.3	59.1	1.3	58.8	1.0	58.4	0.6	58.0	0.2	58.3	0.5	58.1	0.3	64.2	6.4	62.2	4.4	58.3	0.5
312 BEACH 48 ST	15839	1	61.4	67.4	6.0	66.4	5.0	66.2	4.8	62.6	1.2	61.8	0.4	61.6	0.2	61.6	0.2	61.5	0.1	61.4	0.0	61.6	0.2	61.5	0.1	61.5	0.1	61.5	0.1	61.4	0.0
312A BEACH 48 ST	15839	1	61.4	66.1	4.7	65.5	4.1	65.7	4.3	62.6	1.2	61.8	0.4	61.6	0.2	61.6	0.2	61.5	0.1	61.5	0.1	61.5	0.1	61.5	0.1	61.6	0.2	61.5	0.1	61.4	0.0
313 BEACH 42 ST	15833	66	57.3	57.6	0.3	57.5	0.2	57.8	0.5	57.9	0.6	58.4	1.1	58	0.7	59.5	2.2	58.6	1.3	67.3	10.0	67.3	10.0	64.9	7.6	61.1	3.8	59.7	2.4	57.5	0.2
314 BEACH 37 ST	15826	3	69.0	69.0	0.0	69.0	0.0	69.0	0.0	69.6	0.6	69.4	0.4	69.3	0.3	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0
314 BEACH 42 ST	15831	14	57.3	57.9	0.6	57.7	0.4	58.0	0.7	59.5	2.2	59.2	1.9	58.9	1.6	59.7	2.4	58.7	1.4	71.8	14.5	71.8	14.5	69.2	11.9	60.6	3.3	59.4	2.1	57.5	0.2

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
314 BEACH 45 ST	15836	10	57.8	60.5	2.7	59.8	2.0	65.0	7.2	62.0	4.2	61.5	3.7	59.7	1.9	58.9	1.1	58.4	0.6	58.0	0.2	58.3	0.5	58.1	0.3	64.5	6.7	62.4	4.6	58.3	0.5
314 BEACH 47 ST	15838	74	57.1	64.5	7.4	62.8	5.7	67.0	9.9	65.0	7.9	59.9	2.8	58.3	1.2	58.6	1.5	58.0	0.9	57.2	0.1	57.5	0.4	57.3	0.2	58.1	1.0	57.7	0.6	57.2	0.1
314A BEACH 45 ST	15836	10	57.8	59.2	1.4	58.8	1.0	61.2	3.4	60.1	2.3	59.3	1.5	58.7	0.9	58.5	0.7	58.2	0.4	58.0	0.2	58.3	0.5	58.1	0.3	64.6	6.8	62.6	4.8	58.3	0.5
315 BEACH 38 ST	15828	46	57.3	57.7	0.4	57.6	0.3	57.7	0.4	68.1	10.8	65.8	8.5	65.8	8.5	60.7	3.4	58.0	0.7	59.3	2.0	59.3	2.0	58.5	1.2	58.1	0.8	57.7	0.4	57.3	0.0
315 BEACH 43 ST	15834	66	57.3	57.9	0.6	57.7	0.4	58.6	1.3	58.0	0.7	58.3	1	57.9	0.6	58.5	1.2	58.0	0.7	59.0	1.7	59.1	1.8	58.3	1.0	70.6	13.3	67.9	10.6	59.5	2.2
315 BEACH 44 ST	15836	14	57.3	58.5	1.2	58.1	0.8	61.3	4.0	60.2	2.9	58.8	1.5	58.2	0.9	58.3	1.0	57.8	0.5	58.0	0.7	58.2	0.9	57.8	0.5	59.5	2.2	58.6	1.3	57.4	0.1
315 BEACH 45 ST	15837	71	57.8	61.6	3.8	60.5	2.7	72.3	14.5	70.2	12.4	62.6	4.8	59.5	1.7	59.0	1.2	58.5	0.7	58.0	0.2	58.5	0.7	58.2	0.4	60.4	2.6	59.4	1.6	57.9	0.1
315 BEACH 46 ST	15838	59	53.9	65.6	11.7	63.6	9.7	72.3	18.4	70.1	16.2	61.1	7.2	56.7	2.8	56.6	2.7	55.6	1.7	54.2	0.3	55.5	1.6	54.9	1.0	58.0	4.1	56.5	2.6	54.1	0.2
315 BEACH 47 ST	15839	63	57.1	61.8	4.7	60.7	3.6	69.9	12.8	68.0	10.9	60.6	3.5	58.1	1	58.2	1.1	57.8	0.7	57.2	0.1	57.6	0.5	57.4	0.3	57.8	0.7	57.5	0.4	57.1	0.0
315A BEACH 46 ST	15838	59	53.9	63.2	9.3	61.4	7.5	71.2	17.3	69.6	15.7	59.9	6	55.7	1.8	55.8	1.9	55.1	1.2	54.1	0.2	54.8	0.9	54.4	0.5	57.4	3.5	56.1	2.2	54.1	0.2
315A BEACH 47 ST	15839	64	57.1	64.8	7.7	63.1	6.0	62.7	5.6	60.5	3.4	58.7	1.6	57.9	0.8	57.7	0.6	57.4	0.3	57.2	0.1	57.5	0.4	57.3	0.2	57.7	0.6	57.5	0.4	57.1	0.0
316 BEACH 43 ST	15833	6	57.3	58.0	0.7	57.8	0.5	58.2	0.9	58.3	1.0	58.3	1	58.1	0.8	58.9	1.6	58.2	0.9	59.5	2.2	59.9	2.6	58.9	1.6	69.1	11.8	66.5	9.2	58.9	1.6
316 BEACH 45 ST	15836	12	57.8	59.8	2.0	59.2	1.4	68.6	10.8	65.3	7.5	62.1	4.3	60.8	3	59.1	1.3	58.5	0.7	58.0	0.2	58.6	0.8	58.2	0.4	59.6	1.8	58.9	1.1	57.9	0.1
316 BEACH 47 ST	15838	3	57.1	66.4	9.3	64.5	7.4	70.1	13.0	65.8	8.7	59.8	2.7	58	0.9	58.2	1.1	57.7	0.6	57.2	0.1	57.5	0.4	57.3	0.2	58.0	0.9	57.6	0.5	57.1	0.0
316 BEACH 48 ST	15839	9	61.4	73.2	11.8	71.2	9.8	67.8	6.4	64.8	3.4	62.7	1.3	62	0.6	61.8	0.4	61.6	0.2	61.4	0.0	61.7	0.3	61.6	0.2	61.6	0.2	61.5	0.1	61.4	0.0
317 BEACH 36 ST	15826	18	69.0	69.0	0.0	69.0	0.0	69.0	0.0	69.4	0.4	69.2	0.2	69.2	0.2	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0
317 BEACH 38 ST	15828	45	57.3	57.6	0.3	57.5	0.2	57.7	0.4	63.4	6.1	64.5	7.2	64.5	7.2	59.9	2.6	58.6	1.3	60.4	3.1	60.4	3.1	59.2	1.9	58.0	0.7	57.6	0.3	57.3	0.0
317 BEACH 40 ST	15830	61	57.3	57.6	0.3	57.5	0.2	57.7	0.4	68.6	11.3	66.2	8.9	66.2	8.9	70.2	12.9	67.7	10.4	62.6	5.3	62.6	5.3	60.2	2.9	59.0	1.7	58.2	0.9	57.4	0.1
317 BEACH 43 ST	15834	65	57.3	58.1	0.8	57.8	0.5	58.2	0.9	57.8	0.5	58.1	0.8	57.8	0.5	58.7	1.4	58.1	0.8	59.7	2.4	59.7	2.4	58.8	1.5	70.4	13.1	67.7	10.4	59.4	2.1
317 BEACH 45 ST	15837	68	57.8	60.4	2.6	59.8	2.0	72.8	15.0	70.6	12.8	63.1	5.3	59.9	2.1	59.0	1.2	58.5	0.7	58.0	0.2	58.5	0.7	58.2	0.4	61.0	3.2	59.8	2.0	58.0	0.2
318 BEACH 37 ST	15826	4	69.0	69.0	0.0	69.0	0.0	69.0	0.0	69.6	0.6	69.3	0.3	69.3	0.3	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0
318 BEACH 42 ST	15831	16	57.3	57.8	0.5	57.7	0.4	57.9	0.6	59.5	2.2	58.8	1.5	58.7	1.4	65.2	7.9	63.0	5.7	69.3	12.0	69.3	12.0	66.8	9.5	60.1	2.8	59.0	1.7	57.4	0.1
318 BEACH 44 ST	15834	9	57.3	58.4	1.1	58.0	0.7	60.2	2.9	59.2	1.9	58.7	1.4	58.1	0.8	58.2	0.9	57.8	0.5	57.8	0.5	58.1	0.8	57.7	0.4	63.4	6.1	61.4	4.1	57.7	0.4
318 BEACH 47 ST	15838	5	57.1	66.5	9.4	64.6	7.5	69.5	12.4	68.1	11.0	60.6	3.5	58.2	1.1	58.3	1.2	57.8	0.7	57.2	0.1	57.5	0.4	57.3	0.2	57.8	0.7	57.5	0.4	57.1	0.0
318A BEACH 44 ST	15834	65	57.3	58.7	1.4	58.3	1.0	59.8	2.5	58.7	1.4	59	1.7	58.4	1.1	58.1	0.8	57.7	0.4	57.9	0.6	58.1	0.8	57.8	0.5	68.4	11.1	65.8	8.5	58.7	1.4
319 BEACH 36 ST	15826	17	69.0	69.0	0.0	69.0	0.0	69.0	0.0	69.2	0.2	69.1	0.1	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0
319 BEACH 38 ST	15828	45	57.3	57.4	0.1	57.4	0.1	57.5	0.2	59.5	2.2	58.8	1.5	58.7	1.4	58.9	1.6	58.2	0.9	60.5	3.2	60.6	3.3	59.3	2.0	59.5	2.2	58.5	1.2	57.4	0.1
319 BEACH 40 ST	15830	60	57.3	57.6	0.3	57.5	0.2	57.6	0.3	67.9	10.6	65.5	8.2	65.5	8.2	68.2	10.9	65.8	8.5	61.3	4.0	61.3	4.0	59.8	2.5	59.0	1.7	58.2	0.9	57.4	0.1
319 BEACH 42 ST	15833	54	57.3	57.6	0.3	57.6	0.3	57.9	0.6	58.0	0.7	58.6	1.3	58.2	0.9	60.1	2.8	59.0	1.7	59.3	2.0	59.3	2.0	58.5	1.2	60.7	3.4	59.4	2.1	57.5	0.2
319 BEACH 43 ST	15834	63	57.3	57.9	0.6	57.7	0.4	58.5	1.2	58.1	0.8	58	0.7	57.7	0.4	58.1	0.8	57.7	0.4	59.1	1.8	59.1	1.8	58.4	1.1	70.2	12.9	67.5	10.2	59.3	2.0
319 BEACH 44 ST	15836	13	57.3	58.6	1.3	58.1	0.8	59.8	2.5	58.8	1.5	59.2	1.9	58.5	1.2	58.7	1.4	58.2	0.9	57.7	0.4	58.4	1.1	57.9	0.6	65.4	8.1	63.2	5.9	58.0	0.7
319 BEACH 45 ST	15837	68	57.8	60.7	2.9	59.8	2.0	73.3	15.5	71.2	13.4	64	6.2	60.2	2.4	58.7	0.9	58.3	0.5	57.9	0.1	58.6	0.8	58.2	0.4	63.3	5.5	61.4	3.6	58.1	0.3
319 BEACH 47 ST	15839	61	57.1	63.8	6.7	62.8	5.7	70.7	13.6	68.6	11.5	60.8	3.7	58	0.9	57.7	0.6	57.4	0.3	57.2	0.1	57.5	0.4	57.3	0.2	57.8	0.7	57.5	0.4	57.1	0.0
319A BEACH 44 ST	15836	13	57.3	58.9	1.6	58.4	1.1	60.8	3.5	59.7	2.4	59.3	2	58.5	1.2	58.2	0.9	57.8	0.5	57.7	0.4	57.9	0.6	57.6	0.3	59.1	1.8	58.3	1.0	57.4	0.1
320 BEACH 37 ST	15826	5	69.0	69.0	0.0	69.0	0.0	69.0	0.0	69.1	0.1	69.1	0.1	69	0	69.0	0.0	69.0	0.0	69.1	0.1	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0
320 BEACH 42 ST	15831	15	57.3	57.7	0.4	57.5	0.2	57.9	0.6	57.9	0.6	58.1	0.8	57.8	0.5	63.5	6.2	61.6	4.3	65.4	8.1	65.4	8.1	63.2	5.9	60.8	3.5	59.5	2.2	57.5	0.2

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
320 BEACH 43 ST	15833	8	57.3	57.9	0.6	57.7	0.4	58.0	0.7	57.8	0.5	58.6	1.3	58.1	0.8	59.1	1.8	58.3	1.0	59.3	2.0	59.5	2.2	58.6	1.3	68.2	10.9	65.7	8.4	58.7	1.4
320 BEACH 47 ST	15838	6	57.1	69.2	12.1	67.2	10.1	76.7	19.6	74.4	17.3	64.6	7.5	58.3	1.2	58.3	1.2	57.8	0.7	57.2	0.1	57.7	0.6	57.5	0.4	58.0	0.9	57.6	0.5	57.1	0.0
320 BEACH 48 ST	15839	5	61.4	68.8	7.4	67.9	6.5	67.6	6.2	63.5	2.1	62.2	0.8	61.8	0.4	61.8	0.4	61.6	0.2	61.4	0.0	61.7	0.3	61.6	0.2	61.7	0.3	61.6	0.2	61.4	0.0
321 BEACH 38 ST	15828	43	57.3	57.6	0.3	57.5	0.2	57.6	0.3	58.5	1.2	58.2	0.9	58.1	0.8	58.8	1.5	58.2	0.9	60.1	2.8	60.1	2.8	59.0	1.7	57.8	0.5	57.5	0.2	57.3	0.0
321 BEACH 40 ST	15830	159	57.3	57.5	0.2	57.4	0.1	57.6	0.3	67.4	10.1	65.9	8.6	65.9	8.6	65.4	8.1	63.3	6.0	61.3	4.0	61.4	4.1	59.9	2.6	59.0	1.7	58.2	0.9	57.4	0.1
321 BEACH 42 ST	15833	53	57.3	57.6	0.3	57.5	0.2	57.8	0.5	58.5	1.2	58.8	1.5	58.4	1.1	59.6	2.3	58.7	1.4	60.4	3.1	60.5	3.2	59.3	2.0	60.4	3.1	59.2	1.9	57.5	0.2
321 BEACH 45 ST	15837	62	57.8	60.1	2.3	59.4	1.6	72.4	14.6	70.3	12.5	63.2	5.4	60.3	2.5	59.0	1.2	58.4	0.6	57.9	0.1	58.4	0.6	58.2	0.4	59.1	1.3	58.6	0.8	57.9	0.1
321 BEACH 46 ST	15838	57	53.9	65.3	11.4	63.3	9.4	73.0	19.1	70.6	16.7	61.4	7.5	56.7	2.8	56.6	2.7	55.6	1.7	54.3	0.4	55.6	1.7	54.9	1.0	56.4	2.5	55.4	1.5	54.0	0.1
321 BEACH 47 ST	15839	60	57.1	65.8	8.7	64.1	7.0	74.8	17.7	72.6	15.5	62.9	5.8	58.1	1	58.1	1.0	57.7	0.6	57.2	0.1	57.6	0.5	57.4	0.3	58.2	1.1	57.7	0.6	57.1	0.0
321A BEACH 45 ST	15837	62	57.8	60.2	2.4	59.4	1.6	73.9	16.1	71.7	13.9	62.3	4.5	59.7	1.9	58.8	1.0	58.3	0.5	57.9	0.1	58.3	0.5	58.1	0.3	58.9	1.1	58.4	0.6	57.8	0.0
322 BEACH 43 ST	15833	11	57.3	58.0	0.7	57.8	0.5	58.2	0.9	58.0	0.7	58.5	1.2	58.1	0.8	58.7	1.4	58.1	0.8	60.3	3.0	60.4	3.1	59.2	1.9	67.8	10.5	65.3	8.0	58.5	1.2
322 BEACH 44 ST	15834	12	57.3	58.8	1.5	58.4	1.1	60.8	3.5	59.7	2.4	59.2	1.9	58.4	1.1	58.3	1.0	57.9	0.6	57.8	0.5	58.0	0.7	57.7	0.4	60.3	3.0	59.1	1.8	57.4	0.1
322 BEACH 48 ST	15839	5	61.4	69.7	8.3	67.8	6.4	67.6	6.2	64.2	2.8	62.2	0.8	61.8	0.4	61.8	0.4	61.6	0.2	61.4	0.0	61.7	0.3	61.6	0.2	61.6	0.2	61.5	0.1	61.4	0.0
323 BEACH 36 ST	15826	16	69.0	69.0	0.0	69.0	0.0	69.0	0.0	69.1	0.1	69.1	0.1	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0
323 BEACH 37 ST	15827	29	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75	0	75	0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
323 BEACH 38 ST	15828	43	57.3	57.5	0.2	57.4	0.1	57.4	0.1	58.7	1.4	58.2	0.9	58.2	0.9	59.1	1.8	58.3	1.0	58.6	1.3	58.6	1.3	58.0	0.7	58.9	1.6	58.2	0.9	57.4	0.1
323 BEACH 40 ST	15830	59	57.3	57.6	0.3	57.5	0.2	57.6	0.3	67.1	9.8	64.8	7.5	64.8	7.5	65.2	7.9	63.0	5.7	59.4	2.1	59.5	2.2	58.3	1.0	58.7	1.4	58.1	0.8	57.4	0.1
323 BEACH 43 ST	15834	60	57.3	57.8	0.5	57.6	0.3	58.0	0.7	58.4	1.1	58.6	1.3	58.2	0.9	58.4	1.1	57.9	0.6	58.2	0.9	58.4	1.1	57.9	0.6	67.4	10.1	64.9	7.6	58.4	1.1
323A BEACH 43 ST	15834	60	57.3	58.2	0.9	57.9	0.6	59.1	1.8	58.4	1.1	59.1	1.8	58.5	1.2	58.8	1.5	58.2	0.9	58.0	0.7	58.6	1.3	58.0	0.7	61.0	3.7	59.8	2.5	57.5	0.2
324 BEACH 37 ST	15826	6	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75	0	75	0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
324 BEACH 42 ST	15831	17	57.3	57.6	0.3	57.5	0.2	57.7	0.4	58.2	0.9	58.1	0.8	58	0.7	58.4	1.1	57.9	0.6	59.2	1.9	59.3	2.0	58.5	1.2	60.0	2.7	59.0	1.7	57.4	0.1
324 BEACH 48 ST	15839	8	61.4	69.1	7.7	67.3	5.9	67.1	5.7	63.9	2.5	62.2	0.8	61.8	0.4	61.7	0.3	61.5	0.1	61.4	0.0	61.6	0.2	61.5	0.1	61.6	0.2	61.5	0.1	61.4	0.0
325 BEACH 36 ST	15826	15	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75	0	75	0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
325 BEACH 37 ST	15827	25	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75	0	75	0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
325 BEACH 40 ST	15830	158	57.3	57.6	0.3	57.5	0.2	57.7	0.4	66.4	9.1	64.2	6.9	64.2	6.9	60.8	3.5	59.3	2.0	59.3	2.0	59.5	2.2	58.5	1.2	59.2	1.9	58.3	1.0	57.4	0.1
325 BEACH 42 ST	15833	52	57.3	57.7	0.4	57.6	0.3	58.0	0.7	58.5	1.2	58.7	1.4	58.4	1.1	58.5	1.2	58.0	0.7	60.2	2.9	60.4	3.1	59.2	1.9	60.7	3.4	59.4	2.1	57.5	0.2
325 BEACH 46 ST	15838	55	53.9	64.9	11.0	63.0	9.1	73.6	19.7	71.4	17.5	61.7	7.8	56.3	2.4	56.8	2.9	55.8	1.9	54.4	0.5	55.5	1.6	54.8	0.9	56.1	2.2	55.2	1.3	54.0	0.1
325 BEACH 47 ST	15839	58	57.1	80.6	23.5	78.3	21.2	73.5	16.4	71.5	14.4	62.4	5.3	58.4	1.3	58.1	1.0	57.7	0.6	57.2	0.1	57.8	0.7	57.5	0.4	58.0	0.9	57.6	0.5	57.1	0.0
325A BEACH 47 ST	15839	58	57.1	76.3	19.2	74.0	16.9	66.3	9.2	62.2	5.1	59.3	2.2	58.3	1.2	57.8	0.7	57.5	0.4	57.2	0.1	57.6	0.5	57.4	0.3	57.7	0.6	57.4	0.3	57.1	0.0
326 BEACH 37 ST	15826	8	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75	0	75	0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
326 BEACH 42 ST	15831	18	57.3	58.0	0.7	57.7	0.4	58.1	0.8	60.2	2.9	59.2	1.9	59.1	1.8	62.5	5.2	60.7	3.4	59.8	2.5	60.0	2.7	58.8	1.5	59.4	2.1	58.5	1.2	57.4	0.1
326 BEACH 43 ST	15833	13	57.3	57.7	0.4	57.6	0.3	58.1	0.8	58.3	1.0	58.9	1.6	58.4	1.1	58.8	1.5	58.1	0.8	60.4	3.1	60.6	3.3	59.4	2.1	68.9	11.6	66.4	9.1	58.9	1.6
326 BEACH 46 ST	15837	13	53.9	58.9	5.0	57.7	3.8	76.8	22.9	74.4	20.5	63.6	9.7	55.9	2	56.0	2.1	55.2	1.3	54.3	0.4	54.9	1.0	54.5	0.6	57.0	3.1	55.8	1.9	54.1	0.2
327 BEACH 38 ST	15828	140	57.3	57.5	0.2	57.4	0.1	57.6	0.3	58.6	1.3	58.1	0.8	58	0.7	58.4	1.1	57.9	0.6	59.8	2.5	59.9	2.6	58.9	1.6	57.6	0.3	57.5	0.2	57.3	0.0
327 BEACH 40 ST	15830	58	57.3	57.7	0.4	57.6	0.3	57.8	0.5	66.1	8.8	63.9	6.6	63.9	6.6	60.4	3.1	59.2	1.9	59.5	2.2	59.6	2.3	58.6	1.3	58.7	1.4	58.0	0.7	57.4	0.1
327 BEACH 42 ST	15833	51	57.3	57.9	0.6	57.7	0.4	58.1	0.8	58.0	0.7	58.7	1.4	58.2	0.9	58.5	1.2	58.0	0.7	58.7	1.4	58.8	1.5	58.1	0.8	61.0	3.7	59.7	2.4	57.5	0.2

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
327 BEACH 43 ST	15834	59	57.3	57.9	0.6	57.7	0.4	58.6	1.3	58.2	0.9	59.4	2.1	58.7	1.4	59.5	2.2	58.6	1.3	58.2	0.9	58.6	1.3	58.0	0.7	60.7	3.4	59.6	2.3	57.5	0.2
327 BEACH 45 ST	15837	59	57.8	61.9	4.1	60.7	2.9	67.9	10.1	65.9	8.1	59.9	2.1	59	1.2	58.5	0.7	58.2	0.4	58.0	0.2	58.3	0.5	58.1	0.3	60.0	2.2	59.2	1.4	57.9	0.1
328 BEACH 43 ST	15833	15	57.3	57.9	0.6	57.8	0.5	58.4	1.1	58.7	1.4	59.1	1.8	58.6	1.3	59.0	1.7	58.3	1.0	59.3	2.0	59.5	2.2	58.6	1.3	67.6	10.3	65.2	7.9	58.5	1.2
328 BEACH 44 ST	15834	13	57.3	59.3	2.0	59.0	1.7	61.7	4.4	59.9	2.6	58.9	1.6	58.3	1	58.3	1.0	57.9	0.6	57.6	0.3	58.3	1.0	57.9	0.6	64.8	7.5	63.1	5.8	58.1	0.8
328 BEACH 45 ST	15835	25	57.8	59.1	1.3	58.6	0.8	61.0	3.2	60.0	2.2	62.7	4.9	61.3	3.5	59.0	1.2	58.4	0.6	58.0	0.2	58.5	0.7	58.2	0.4	59.1	1.3	58.6	0.8	57.9	0.1
328A BEACH 45 ST	15835	25	57.8	59.7	1.9	59.1	1.3	61.7	3.9	60.5	2.7	60.6	2.8	59.6	1.8	58.9	1.1	58.4	0.6	58.2	0.4	58.6	0.8	58.3	0.5	60.2	2.4	59.2	1.4	57.9	0.1
329 BEACH 36 ST	15826	13	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75	0	75	0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
329 BEACH 40 ST	15830	57	57.3	57.6	0.3	57.5	0.2	57.7	0.4	65.5	8.2	63.3	6	63.3	6	60.5	3.2	59.3	2.0	60.7	3.4	60.8	3.5	59.5	2.2	58.6	1.3	58.0	0.7	57.3	0.0
329 BEACH 43 ST	15834	59	57.3	57.8	0.5	57.6	0.3	58.5	1.2	58.1	0.8	59.3	2	58.6	1.3	58.6	1.3	58.1	0.8	58.0	0.7	58.3	1.0	57.9	0.6	60.7	3.4	59.7	2.4	57.5	0.2
329 BEACH 45 ST	15837	60	57.8	61.0	3.2	60.0	2.2	71.2	13.4	69.0	11.2	62.2	4.4	59.6	1.8	58.6	0.8	58.2	0.4	57.9	0.1	58.3	0.5	58.1	0.3	59.7	1.9	59.0	1.2	57.9	0.1
329 BEACH 46 ST	15838	53	53.9	69.5	15.6	67.4	13.5	75.5	21.6	73.1	19.2	63.1	9.2	56.7	2.8	56.4	2.5	55.5	1.6	54.1	0.2	55.2	1.3	54.7	0.8	55.9	2.0	55.2	1.3	54.0	0.1
329A BEACH 46 ST	15838	53	53.9	68.1	14.2	65.9	12.0	72.5	18.6	70.3	16.4	61.4	7.5	56.9	3	56.6	2.7	55.6	1.7	54.3	0.4	55.3	1.4	54.7	0.8	56.1	2.2	55.2	1.3	54.0	0.1
330 BEACH 37 ST	15826	9	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75	0	75	0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
330 BEACH 40 ST	15829	21	57.3	57.5	0.2	57.5	0.2	57.6	0.3	65.7	8.4	63.5	6.2	63.5	6.2	61.3	4.0	59.3	2.0	58.4	1.1	58.5	1.2	57.9	0.6	58.2	0.9	57.8	0.5	57.3	0.0
330 BEACH 42 ST	15831	19	57.3	57.8	0.5	57.6	0.3	57.9	0.6	60.3	3.0	59.8	2.5	59.5	2.2	62.0	4.7	60.4	3.1	60.3	3.0	60.4	3.1	59.1	1.8	59.5	2.2	58.5	1.2	57.4	0.1
330 BEACH 45 ST	15835	27	57.8	59.2	1.4	58.7	0.9	67.5	9.7	65.3	7.5	62.7	4.9	61	3.2	59.2	1.4	58.5	0.7	58.1	0.3	58.6	0.8	58.3	0.5	59.9	2.1	59.0	1.2	57.9	0.1
330 BEACH 46 ST	15837	15	53.9	61.7	7.8	60.0	6.1	69.8	15.9	68.6	14.7	59.7	5.8	57.5	3.6	56.1	2.2	55.2	1.3	54.3	0.4	55.6	1.7	55.0	1.1	56.9	3.0	55.7	1.8	54.0	0.1
331 BEACH 36 ST	15826	12	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75	0	75	0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
331 BEACH 38 ST	15828	40	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75	0	75	0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
331 BEACH 40 ST	15830	56	57.3	57.7	0.4	57.6	0.3	57.9	0.6	65.3	8.0	63.2	5.9	63.2	5.9	60.8	3.5	59.5	2.2	60.8	3.5	60.9	3.6	59.5	2.2	58.2	0.9	57.8	0.5	57.3	0.0
331 BEACH 42 ST	15833	50	57.3	57.8	0.5	57.6	0.3	58.1	0.8	58.3	1.0	58.8	1.5	58.3	1	58.6	1.3	58.0	0.7	58.7	1.4	58.9	1.6	58.2	0.9	59.5	2.2	58.7	1.4	57.4	0.1
331 BEACH 43 ST	15834	57	57.3	57.7	0.4	57.5	0.2	58.3	1.0	58.3	1.0	59.5	2.2	58.8	1.5	58.4	1.1	57.9	0.6	58.2	0.9	58.4	1.1	57.9	0.6	63.6	6.3	61.6	4.3	57.7	0.4
331 BEACH 44 ST	15835	69	57.3	58.9	1.6	58.4	1.1	62.1	4.8	61.0	3.7	59.4	2.1	58.6	1.3	58.5	1.2	58.0	0.7	57.7	0.4	58.2	0.9	57.8	0.5	59.0	1.7	58.4	1.1	57.4	0.1
331 BEACH 45 ST	15837	58	57.8	61.6	3.8	60.4	2.6	70.3	12.5	68.3	10.5	63.3	5.5	60.9	3.1	58.9	1.1	58.3	0.5	58.0	0.2	58.2	0.4	58.0	0.2	60.0	2.2	59.2	1.4	57.9	0.1
331A BEACH 44 ST	15835	69	57.3	58.8	1.5	58.3	1.0	61.2	3.9	60.1	2.8	59.4	2.1	58.6	1.3	58.5	1.2	58.0	0.7	57.6	0.3	58.0	0.7	57.7	0.4	59.2	1.9	58.5	1.2	57.4	0.1
332 BEACH 37 ST	15826	11	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75	0	75	0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
332 BEACH 40 ST	15829	22	57.3	57.7	0.4	57.5	0.2	57.5	0.2	65.3	8.0	63.3	6	63.3	6	60.4	3.1	59.2	1.9	58.3	1.0	58.4	1.1	57.8	0.5	57.8	0.5	57.6	0.3	57.3	0.0
332 BEACH 42 ST	15831	21	57.3	57.5	0.2	57.4	0.1	57.8	0.5	58.3	1.0	58.8	1.5	58.3	1	59.1	1.8	58.3	1.0	59.8	2.5	60.0	2.7	58.9	1.6	59.1	1.8	58.4	1.1	57.4	0.1
332 BEACH 43 ST	15833	17	57.3	58.2	0.9	57.8	0.5	58.6	1.3	58.1	0.8	59.3	2	58.6	1.3	58.8	1.5	58.2	0.9	58.3	1.0	58.5	1.2	58.0	0.7	67.4	10.1	64.9	7.6	58.4	1.1
332 BEACH 44 ST	15834	16	57.3	58.1	0.8	57.9	0.6	59.1	1.8	58.4	1.1	58.9	1.6	58.4	1.1	58.2	0.9	57.8	0.5	57.5	0.2	57.8	0.5	57.6	0.3	66.0	8.7	64.2	6.9	58.4	1.1
332 BEACH 45 ST	15835	29	57.8	59.8	2.0	59.1	1.3	70.0	12.2	67.4	9.6	62.9	5.1	60.9	3.1	59.0	1.2	58.4	0.6	58.1	0.3	58.6	0.8	58.3	0.5	61.2	3.4	60.0	2.2	58.0	0.2
333 BEACH 38 ST	15828	37	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75	0	75	0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
333 BEACH 40 ST	15830	49	57.3	57.5	0.2	57.4	0.1	57.7	0.4	64.8	7.5	62.8	5.5	62.8	5.5	62.4	5.1	60.7	3.4	60.7	3.4	60.7	3.4	59.4	2.1	58.9	1.6	58.2	0.9	57.4	0.1
333 BEACH 43 ST	15834	54	57.3	57.7	0.4	57.6	0.3	58.7	1.4	58.6	1.3	59.4	2.1	58.6	1.3	58.4	1.1	57.9	0.6	58.5	1.2	58.6	1.3	58.1	0.8	63.9	6.6	61.9	4.6	57.8	0.5
333 BEACH 44 ST	15835	67	57.3	58.6	1.3	58.2	0.9	61.6	4.3	60.5	3.2	59.7	2.4	58.8	1.5	58.5	1.2	58.0	0.7	57.7	0.4	58.5	1.2	58.0	0.7	59.8	2.5	58.9	1.6	57.4	0.1
333A BEACH 44 ST	15835	67	57.3	58.4	1.1	58.1	0.8	61.5	4.2	60.4	3.1	60.4	3.1	59.3	2	58.6	1.3	58.0	0.7	57.8	0.5	58.2	0.9	57.8	0.5	59.3	2.0	58.5	1.2	57.4	0.1

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
334 BEACH 43 ST	15833	19	57.3	71.4	0.0	71.4	0.0	71.4	0.0	71.6	0.2	71.6	0.2	71.6	0.2	73.9	2.5	72.9	1.5	84.2	12.8	84.2	12.8	81.7	10.3	73.6	2.2	72.2	0.8	71.5	0.1
334 BEACH 46 ST	15837	17	53.9	71.5	0.1	71.4	0.0	71.5	0.1	71.6	0.2	71.6	0.2	71.6	0.2	73.2	1.8	72.5	1.1	80.2	8.8	80.2	8.8	78.0	6.6	74.8	3.4	73.5	2.1	71.6	0.2
334 BEACH 47 ST	15838	11	57.1	71.5	0.1	71.4	0.0	71.5	0.1	71.8	0.4	71.4	0.0	71.4	0.0	73.3	1.9	72.5	1.1	81.1	9.7	81.1	9.7	78.8	7.4	75.9	4.5	74.2	2.8	71.6	0.2
334A BEACH 46 ST	15837	17	53.9	72.5	1.1	72.2	0.8	73.4	2.0	72.5	1.1	71.6	0.2	71.5	0.1	71.5	0.1	71.5	0.1	71.4	0.0	71.5	0.1	71.4	0.0	71.5	0.1	71.5	0.1	71.4	0.0
335 BEACH 40 ST	15830	48	57.3	71.5	0.1	71.5	0.1	71.5	0.1	71.5	0.1	71.5	0.1	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0	71.4	0.0	71.6	0.2	71.5	0.1	71.4	0.0
335 BEACH 42 ST	15833	49	57.3	71.5	0.1	71.5	0.1	71.6	0.2	71.5	0.1	71.5	0.1	71.5	0.1	71.5	0.1	71.4	0.0	71.4	0.0	71.5	0.1	71.4	0.0	71.5	0.1	71.5	0.1	71.4	0.0
335 BEACH 43 ST	15834	53	57.3	71.4	0.0	71.4	0.0	71.5	0.1	79.1	7.7	76.8	5.4	76.8	5.4	80.5	9.1	78.2	6.8	73.3	1.9	73.3	1.9	72.1	0.7	72.4	1.0	71.9	0.5	71.4	0.0
335 BEACH 44 ST	15835	65	57.3	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.1	0.1	69.2	0.2	69.1	0.1	69.0	0.0
335 BEACH 45 ST	15837	56	57.8	71.5	0.1	71.5	0.1	71.5	0.1	82.2	10.8	79.5	8.1	79.5	8.1	80.5	9.1	78.2	6.8	73.3	1.9	73.3	1.9	72.2	0.8	72.5	1.1	72.0	0.6	71.4	0.0
335 BEACH 46 ST	15838	49	53.9	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.0	0.0	69.1	0.1	69.0	0.0	69.0	0.0	69.1	0.1	69.0	0.0	69.2	0.2	69.1	0.1	69.0	0.0
335A BEACH 44 ST	15835	65	57.3	69.1	0.1	69.0	0.0	69.1	0.1	81.0	12.0	78.2	9.2	78.2	9.2	78.1	9.1	75.8	6.8	72.1	3.1	72.2	3.2	70.6	1.6	70.6	1.6	69.8	0.8	69.1	0.1
336 BEACH 38 ST	15827	12	69.0	69.1	0.1	69.1	0.1	69.7	0.7	69.4	0.4	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.1	0.1	69.0	0.0	69.2	0.2	69.1	0.1	69.0	0.0
336 BEACH 40 ST	15829	123	57.3	69.1	0.1	69.0	0.0	69.1	0.1	78.6	9.6	76.1	7.1	76.1	7.1	75.7	6.7	73.8	4.8	72.0	3.0	72.0	3.0	70.7	1.7	69.9	0.9	69.5	0.5	69.0	0.0
336 BEACH 42 ST	15831	26	57.3	69.2	0.2	69.1	0.1	69.7	0.7	69.4	0.4	69.2	0.2	69.1	0.1	69.1	0.1	69.0	0.0	69.0	0.0	69.1	0.1	69.0	0.0	69.4	0.4	69.2	0.2	69.0	0.0
336 BEACH 44 ST	15834	17	57.3	75.3	6.3	74.7	5.7	74.7	5.7	70.5	1.5	69.4	0.4	69.2	0.2	69.3	0.3	69.2	0.2	69.0	0.0	69.2	0.2	69.1	0.1	69.2	0.2	69.1	0.1	69.0	0.0
336 BEACH 45 ST	15835	30	57.8	69.1	0.1	69.0	0.0	69.0	0.0	75.7	6.7	73.9	4.9	73.9	4.9	70.3	1.3	69.2	0.2	69.8	0.8	69.8	0.8	69.5	0.5	69.9	0.9	69.5	0.5	69.0	0.0
336 BEACH 47 ST	15838	11	57.1	58.4	1.1	58.0	0.7	58.3	1.0	70.4	13.1	63.4	6.1	63.3	6.0	63.7	6.4	61.4	4.1	63.6	6.3	63.6	6.3	61.7	4.4	63.3	6.0	61.4	4.1	57.7	0.4
336A BEACH 38 ST	15827	29	75.0	58.3	1.0	58.0	0.7	58.0	0.7	67.2	9.9	64.6	7.3	64.5	7.2	64.0	6.7	61.6	4.3	63.5	6.2	63.5	6.2	61.6	4.3	61.4	4.1	59.8	2.5	57.5	0.2
336A BEACH 38 ST	15827	29	75.0	58.0	0.7	57.8	0.5	58.0	0.7	69.2	11.9	66.7	9.4	66.7	9.4	71.4	14.1	68.6	11.3	71.4	14.1	71.4	14.1	68.8	11.5	61.7	4.4	59.0	1.7	57.4	0.1
337 BEACH 40 ST	15830	47	57.3	58.6	1.3	58.2	0.9	58.4	1.1	73.8	16.5	70.8	13.5	70.7	13.4	66.5	9.2	62.5	5.2	66.6	9.3	66.6	9.3	64.4	7.1	64.2	6.9	61.9	4.6	57.8	0.5
337 BEACH 42 ST	15833	48	57.3	57.8	0.5	57.7	0.4	57.8	0.5	67.0	9.7	64.8	7.5	64.8	7.5	69.8	12.5	67.2	9.9	68.4	11.1	68.4	11.1	65.9	8.6	60.9	3.6	59.0	1.7	57.4	0.1
337 BEACH 43 ST	15834	51	57.3	57.9	0.6	57.8	0.5	58.0	0.7	65.7	8.4	63.5	6.2	63.5	6.2	65.4	8.1	63.0	5.7	68.6	11.3	68.6	11.3	66.2	8.9	62.3	5.0	60.2	2.9	57.6	0.3
337 BEACH 44 ST	15835	63	57.3	58.2	0.9	57.9	0.6	58.3	1.0	65.9	8.6	63.4	6.1	63.3	6.0	70.5	13.2	67.9	10.6	68.6	11.3	68.6	11.3	66.1	8.8	61.4	4.1	59.5	2.2	57.5	0.2
337 BEACH 44 ST	15835	63	57.3	58.5	1.2	58.1	0.8	58.4	1.1	70.7	13.4	69.8	12.5	69.8	12.5	67.1	9.8	63.6	6.3	66.4	9.1	66.4	9.1	64.0	6.7	62.7	5.4	60.6	3.3	57.6	0.3
337 BEACH 46 ST	15838	48	53.9	58.2	0.9	57.9	0.6	58.1	0.8	65.7	8.4	63.5	6.2	63.5	6.2	67.0	9.7	64.5	7.2	71.2	13.9	71.3	14.0	68.6	11.3	61.1	3.8	58.8	1.5	57.4	0.1
337A BEACH 40 ST	15830	44	57.3	58.8	1.5	58.2	0.9	58.7	1.4	68.7	11.4	66.2	8.9	66.2	8.9	64.7	7.4	62.1	4.8	65.7	8.4	65.7	8.4	63.4	6.1	61.9	4.6	60.1	2.8	57.5	0.2
337A BEACH 44 ST	15835	63	57.3	58.1	0.8	57.9	0.6	58.4	1.1	61.6	4.3	60.0	2.7	59.9	2.6	68.4	11.1	66.0	8.7	68.7	11.4	68.7	11.4	66.3	9.0	60.2	2.9	58.5	1.2	57.4	0.1
337A BEACH 46 ST	15838	47	53.9	57.9	0.6	57.7	0.4	58.0	0.7	64.0	6.7	62.0	4.7	62.0	4.7	62.0	4.7	60.3	3.0	60.7	3.4	60.7	3.4	59.4	2.1	60.2	2.9	59.1	1.8	57.4	0.1
338 BEACH 42 ST	15831	26	57.3	58.7	1.4	58.3	1.0	58.8	1.5	67.7	10.4	65.4	8.1	65.3	8.0	66.0	8.7	63.5	6.2	64.6	7.3	64.7	7.4	62.5	5.2	62.5	5.2	60.5	3.2	57.6	0.3
338 BEACH 43 ST	15833	21	57.3	58.1	0.8	57.9	0.6	58.4	1.1	69.5	12.2	66.8	9.5	66.8	9.5	65.5	8.2	63.0	5.7	66.0	8.7	66.0	8.7	63.7	6.4	61.4	4.1	59.6	2.3	57.5	0.2
338 BEACH 44 ST	15834	18	57.3	58.0	0.7	57.8	0.5	58.0	0.7	61.6	4.3	60.3	3.0	60.3	3.0	67.4	10.1	64.9	7.6	65.9	8.6	66.0	8.7	63.7	6.4	60.6	3.3	59.0	1.7	57.4	0.1
338 BEACH 45 ST	15835	32	57.8	57.8	0.5	57.6	0.3	58.2	0.9	60.6	3.3	59.5	2.2	59.4	2.1	61.8	4.5	60.2	2.9	60.7	3.4	60.8	3.5	59.5	2.2	61.7	4.4	60.1	2.8	57.5	0.2
338 BEACH 46 ST	15837	19	53.9	58.9	1.6	58.4	1.1	58.7	1.4	67.2	9.9	64.7	7.4	64.7	7.4	63.8	6.5	61.4	4.1	64.1	6.8	64.1	6.8	62.1	4.8	60.5	3.2	59.0	1.7	57.4	0.1
338 BEACH 48 ST	15839	13	61.4	57.9	0.6	57.7	0.4	58.2	0.9	65.6	8.3	63.4	6.1	63.4	6.1	67.1	9.8	64.6	7.3	65.6	8.3	65.7	8.4	63.5	6.2	60.4	3.1	58.8	1.5	57.4	0.1
338A BEACH 46 ST	15837	19	53.9	59.0	1.7	58.4	1.1	59.0	1.7	66.5	9.2	64.4	7.1	64.3	7.0	64.8	7.5	62.5	5.2	64.4	7.1	64.4	7.1	62.3	5.0	60.8	3.5	59.3	2.0	57.5	0.2
339 BEACH 40 ST	15830	43	57.3	58.0	0.7	57.8	0.5	58.2	0.9	65.8	8.5	63.8	6.5	63.7	6.4	64.8	7.5	62.6	5.3	64.7	7.4	64.8	7.5	62.5	5.2	59.9	2.6	58.8	1.5	57.4	0.1

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
339 BEACH 43 ST	15834	49	57.3	58.4	1.1	58.0	0.7	58.2	0.9	60.4	3.1	59.2	1.9	59.1	1.8	66.2	8.9	63.9	6.6	64.9	7.6	65.0	7.7	62.9	5.6	59.5	2.2	58.4	1.1	57.4	0.1
339 BEACH 44 ST	15835	61	57.3	58.7	1.4	58.3	1.0	58.8	1.5	66.0	8.7	63.9	6.6	63.8	6.5	65.7	8.4	63.4	6.1	64.0	6.7	64.0	6.7	62.0	4.7	60.7	3.4	59.2	1.9	57.4	0.1
339 BEACH 47 ST	15839	49	57.1	58.0	0.7	57.7	0.4	58.0	0.7	60.7	3.4	59.7	2.4	59.5	2.2	61.7	4.4	60.1	2.8	60.5	3.2	60.6	3.3	59.3	2.0	61.2	3.9	59.8	2.5	57.5	0.2
339A BEACH 43 ST	15834	49	57.3	57.9	0.6	57.7	0.4	58.0	0.7	58.8	1.5	58.6	1.3	58.4	1.1	58.5	1.2	58.0	0.7	59.5	2.2	59.7	2.4	58.7	1.4	59.6	2.3	58.6	1.3	57.4	0.1
340 BEACH 40 ST	15829	25	57.3	58.2	0.9	58.0	0.7	59.6	2.3	65.6	8.3	63.6	6.3	63.6	6.3	62.8	5.5	60.5	3.2	60.8	3.5	60.8	3.5	59.5	2.2	59.8	2.5	58.7	1.4	57.4	0.1
340 BEACH 44 ST	15834	20	57.3	58.1	0.8	57.8	0.5	58.4	1.1	63.6	6.3	61.9	4.6	61.9	4.6	65.3	8.0	63.0	5.7	64.7	7.4	64.7	7.4	62.6	5.3	59.4	2.1	58.3	1.0	57.4	0.1
340 BEACH 45 ST	15835	33	57.8	58.1	0.8	57.9	0.6	58.8	1.5	59.9	2.6	59.6	2.3	58.9	1.6	63.3	6.0	61.4	4.1	60.5	3.2	60.6	3.3	59.3	2.0	59.5	2.2	58.5	1.2	57.4	0.1
341 BEACH 42 ST	15833	47	57.3	58.0	0.7	57.8	0.5	58.4	1.1	60.4	3.1	59.3	2.0	59.2	1.9	59.9	2.6	58.8	1.5	59.8	2.5	59.8	2.5	58.8	1.5	61.5	4.2	60.1	2.8	57.5	0.2
341 BEACH CHANNEL DR	15830	42	75.0	57.5	0.2	57.4	0.1	57.6	0.3	64.4	7.1	62.5	5.2	62.5	5.2	59.6	2.3	58.3	1.0	58.6	1.3	58.7	1.4	58.1	0.8	58.0	0.7	57.7	0.4	57.3	0.0
342 BEACH 40 ST	15829	25	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.9	0.9	75.6	0.6	75.6	0.6	75.3	0.3	75.1	0.1	75.3	0.3	75.3	0.3	75.1	0.1	75.2	0.2	75.1	0.1	75.0	0.0
342 BEACH 42 ST	15831	27	57.3	58.8	1.5	58.3	1.0	58.3	1.0	60.0	2.7	59.4	2.1	59.3	2.0	63.7	6.4	61.7	4.4	61.1	3.8	61.2	3.9	59.7	2.4	59.8	2.5	58.8	1.5	57.4	0.1
342 BEACH 44 ST	15834	22	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.2	0.2	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0
342 BEACH 45 ST	15835	34	57.8	57.5	0.2	57.4	0.1	57.6	0.3	59.8	2.5	59.6	2.3	59.2	1.9	61.0	3.7	59.7	2.4	60.6	3.3	61.0	3.7	59.6	2.3	60.4	3.1	59.2	1.9	57.5	0.2
342 BEACH 48 ST	15839	13	61.4	75.0	0.0	75.0	0.0	75.0	0.0	75.4	0.4	75.2	0.2	75.2	0.2	75.1	0.1	75.0	0.0	75.3	0.3	75.3	0.3	75.2	0.2	75.1	0.1	75.0	0.0	75.0	0.0
342A BEACH 45 ST	15835	34	57.3	58.5	1.2	58.1	0.8	58.5	1.2	60.2	2.9	59.2	1.9	59.1	1.8	63.9	6.6	61.9	4.6	59.3	2.0	59.3	2.0	58.5	1.2	58.6	1.3	58.0	0.7	57.4	0.1
343 BEACH 42 ST	15833	46	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.0	0.0	75.0	0.0
343 BEACH 46 ST	15838	45	53.9	58.7	1.4	58.2	0.9	58.3	1.0	59.7	2.4	59.8	2.5	59.3	2.0	60.0	2.7	58.9	1.6	59.4	2.1	59.8	2.5	58.8	1.5	61.0	3.7	59.8	2.5	57.5	0.2
343 BEACH 47 ST	15839	47	57.1	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.0	0.0	75.0	0.0
344 BEACH 42 ST	15831	27	57.3	58.3	1.0	58.0	0.7	58.4	1.1	59.8	2.5	60.8	3.5	60.0	2.7	61.7	4.4	60.2	2.9	58.4	1.1	59.1	1.8	58.4	1.1	62.1	4.8	60.4	3.1	57.6	0.3
344 BEACH 43 ST	15833	22	57.3	78.2	7.5	76.4	5.7	75.5	4.8	72.0	1.3	73.3	2.6	72.5	1.8	71.4	0.7	71.1	0.4	70.7	0.0	71.1	0.4	70.9	0.2	71.0	0.3	70.9	0.2	70.7	0.0
344 BEACH 44 ST	15834	23	57.3	61.9	8.0	60.3	6.4	73.5	19.6	71.4	17.5	62.5	8.6	57.2	3.3	56.9	3.0	55.7	1.8	54.4	0.5	55.7	1.8	55.0	1.1	62.0	8.1	59.8	5.9	54.6	0.7
346 BEACH 40 ST	15829	32	75.0	69.1	0.1	69.1	0.1	69.2	0.2	69.2	0.2	69.1	0.1	69.1	0.1	69.9	0.9	69.5	0.5	70.5	1.5	70.5	1.5	69.8	0.8	73.2	4.2	71.7	2.7	69.2	0.2
346 BEACH 48 ST	15839	19	61.4	70.9	1.9	70.2	1.2	73.6	4.6	72.2	3.2	69.7	0.7	69.2	0.2	69.3	0.3	69.2	0.2	69.0	0.0	69.1	0.1	69.1	0.1	69.3	0.3	69.2	0.2	69.0	0.0
347 BEACH 43 ST	15834	47	57.3	69.7	0.7	69.6	0.6	70.4	1.4	69.9	0.9	69.2	0.2	69.1	0.1	69.2	0.2	69.1	0.1	69.0	0.0	69.1	0.1	69.0	0.0	69.1	0.1	69.0	0.0	69.0	0.0
347 BEACH 47 ST	15839	47	57.1	69.5	0.5	69.3	0.3	70.5	1.5	70.0	1.0	69.2	0.2	69.1	0.1	69.1	0.1	69.0	0.0	69.0	0.0	69.0	0.0	69.0	0.0	69.1	0.1	69.0	0.0	69.0	0.0
348 BEACH 40 ST	15829	34	75.0	70.1	1.1	69.7	0.7	69.6	0.6	69.4	0.4	69.2	0.2	69.1	0.1	69.2	0.2	69.1	0.1	69.0	0.0	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.0	0.0
348 BEACH 43 ST	15833	24	57.3	69.1	0.1	69.1	0.1	69.1	0.1	76.5	7.5	74.4	5.4	74.4	5.4	70.7	1.7	69.3	0.3	70.2	1.2	70.2	1.2	69.7	0.7	69.6	0.6	69.3	0.3	69.0	0.0
348 BEACH 44 ST	15834	123	57.3	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	70.2	1.2	69.7	0.7	69.9	0.9	69.9	0.9	69.5	0.5	74.0	5.0	72.2	3.2	69.3	0.3
349 BEACH 46 ST	15838	43	53.9	64.1	6.3	62.8	5.0	73.7	15.9	71.5	13.7	64.3	6.5	61.3	3.5	61.0	3.2	59.8	2.0	58.6	0.8	59.8	2.0	59.0	1.2	66.8	9.0	64.5	6.7	58.7	0.9
350 BEACH 40 ST	15829	34	75.0	69.2	0.2	69.1	0.1	69.2	0.2	69.9	0.9	69.7	0.7	69.7	0.7	71.3	2.3	70.4	1.4	80.1	11.1	80.1	11.1	77.7	8.7	74.0	5.0	72.1	3.1	69.3	0.3
350 BEACH 44 ST	15834	123	57.3	60.6	6.7	59.2	5.3	83.8	29.9	81.8	27.9	71.5	17.6	57.6	3.7	57.7	3.8	56.4	2.5	55.0	1.1	56.2	2.3	55.3	1.4	59.4	5.5	57.8	3.9	54.3	0.4
350 BEACH 46 ST	15837	25	53.9	71.2	2.2	70.6	1.6	70.7	1.7	69.7	0.7	69.2	0.2	69.1	0.1	69.2	0.2	69.1	0.1	69.0	0.0	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.0	0.0
350 BEACH 48 ST	15839	19	61.4	69.1	0.1	69.1	0.1	69.1	0.1	75.7	6.7	73.9	4.9	73.8	4.8	70.5	1.5	69.3	0.3	70.8	1.8	70.8	1.8	70.0	1.0	69.7	0.7	69.3	0.3	69.0	0.0
351 BEACH 42 ST	15833	44	75.0	61.6	3.8	60.7	2.9	70.8	13.0	68.8	11.0	62.4	4.6	59.8	2.0	59.3	1.5	58.7	0.9	58.1	0.3	58.8	1.0	58.4	0.6	65.0	7.2	62.8	5.0	58.4	0.6
351 BEACH 43 ST	15834	145	75.0	66.0	8.9	64.8	7.7	69.6	12.5	67.5	10.4	61.1	4.0	59.0	1.9	59.4	2.3	58.5	1.4	57.4	0.3	58.2	1.1	57.7	0.6	58.8	1.7	58.2	1.1	57.2	0.1
351 BEACH 47 ST	15839	44	57.1	64.4	7.3	62.7	5.6	62.8	5.7	60.8	3.7	59.4	2.3	58.5	1.4	59.1	2.0	58.3	1.2	57.3	0.2	57.9	0.8	57.5	0.4	58.4	1.3	57.9	0.8	57.2	0.1

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
352 BEACH 43 ST	15833	26	75.0	73.5	12.1	71.5	10.1	67.3	5.9	65.4	4.0	62.7	1.3	62.1	0.7	61.9	0.5	61.6	0.2	61.4	0.0	61.9	0.5	61.7	0.3	61.8	0.4	61.6	0.2	61.4	0.0
352 BEACH 45 ST	15835	37	57.8	69.0	0.0	69.0	0.0	69.0	0.0	69.9	0.9	69.5	0.5	69.5	0.5	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.0	0.0
352A BEACH 45 ST	15835	37	57.8	58.6	1.3	58.4	1.1	58.9	1.6	58.8	1.5	59.0	1.7	58.6	1.3	63.7	6.4	61.8	4.5	65.3	8.0	65.3	8.0	63.2	5.9	72.6	15.3	69.8	12.5	60.4	3.1
353 BEACH 43 ST	15834	144	75.0	66.4	12.5	64.6	10.7	74.8	20.9	72.8	18.9	63.4	9.5	57.1	3.2	57.8	3.9	56.4	2.5	54.4	0.5	56.4	2.5	55.4	1.5	60.9	7.0	58.9	5.0	54.5	0.6
353 BEACH 46 ST	15838	41	53.9	69.1	0.1	69.0	0.0	69.0	0.0	71.6	2.6	70.6	1.6	70.6	1.6	69.8	0.8	69.4	0.4	70.0	1.0	70.0	1.0	69.5	0.5	69.3	0.3	69.2	0.2	69.0	0.0
353 BEACH 47 ST	15839	43	57.1	58.6	1.3	58.3	1.0	59.4	2.1	60.4	3.1	60.4	3.1	60.0	2.7	67.3	10.0	64.8	7.5	77.1	19.8	77.1	19.8	74.5	17.2	70.7	13.4	67.7	10.4	59.4	2.1
354 BEACH 44 ST	15834	27	57.3	69.0	7.6	68.1	6.7	67.8	6.4	64.4	3.0	62.5	1.1	62.0	0.6	62.4	1.0	61.9	0.5	61.5	0.1	61.8	0.4	61.6	0.2	61.9	0.5	61.7	0.3	61.4	0.0
354 BEACH 47 ST	15838	21	57.1	58.4	1.1	58.1	0.8	58.3	1.0	70.1	12.8	67.6	10.3	67.6	10.3	63.5	6.2	60.3	3.0	66.1	8.8	66.2	8.9	63.9	6.6	62.8	5.5	60.8	3.5	57.6	0.3
354 BEACH 48 ST	15839	21	61.4	57.9	0.6	57.8	0.5	58.1	0.8	58.1	0.8	58.8	1.5	58.6	1.3	61.3	4.0	59.8	2.5	68.4	11.1	68.4	11.1	66.0	8.7	72.1	14.8	69.4	12.1	60.2	2.9
355 BEACH 43 ST	15834	44	75.0	61.6	3.8	60.6	2.8	73.1	15.3	70.9	13.1	63.3	5.5	59.8	2.0	59.0	1.2	58.5	0.7	58.0	0.2	58.8	1.0	58.4	0.6	63.4	5.6	61.6	3.8	58.2	0.4
355 BEACH 44 ST	15835	59	57.3	64.3	7.2	63.5	6.4	64.6	7.5	61.9	4.8	59.2	2.1	58.2	1.1	58.1	1.0	57.7	0.6	57.3	0.2	57.9	0.8	57.5	0.4	58.2	1.1	57.8	0.7	57.2	0.1
355 BEACH 47 ST	15839	42	57.1	57.7	0.4	57.6	0.3	57.8	0.5	61.7	4.4	60.4	3.1	60.3	3.0	60.5	3.2	59.2	1.9	60.5	3.2	60.5	3.2	59.3	2.0	58.3	1.0	57.8	0.5	57.3	0.0
355A BEACH 44 ST	15835	59	57.3	58.6	1.3	58.3	1.0	58.9	1.6	62.9	5.6	62.1	4.8	61.6	4.3	66.3	9.0	64.0	6.7	76.0	18.7	76.0	18.7	73.2	15.9	68.9	11.6	66.3	9.0	58.8	1.5
356 BEACH 44 ST	15834	27	57.3	71.0	13.9	68.9	11.8	69.7	12.6	67.4	10.3	61.2	4.1	58.9	1.8	59.6	2.5	58.7	1.6	57.4	0.3	58.3	1.2	57.8	0.7	59.1	2.0	58.3	1.2	57.2	0.1
356 BEACH 47 ST	15838	22	57.1	58.0	0.7	57.8	0.5	57.9	0.6	70.4	13.1	68.0	10.7	68.0	10.7	63.7	6.4	60.4	3.1	64.4	7.1	64.4	7.1	62.3	5.0	60.2	2.9	58.8	1.5	57.4	0.1
357 BEACH 46 ST	15838	39	53.9	58.2	0.9	58.0	0.7	58.3	1.0	59.0	1.7	59.0	1.7	58.7	1.4	62.3	5.0	60.6	3.3	67.9	10.6	67.9	10.6	65.5	8.2	67.3	10.0	64.8	7.5	58.4	1.1
357 BEACH 47 ST	15839	40	57.1	58.8	1.5	58.3	1.0	60.5	3.2	59.5	2.2	58.9	1.6	58.3	1.0	59.1	1.8	58.4	1.1	58.5	1.2	58.6	1.3	58.0	0.7	73.3	16.0	70.5	13.2	60.8	3.5
358 BEACH 48 ST	15839	21	61.4	61.9	4.1	60.8	3.0	75.2	17.4	73.0	15.2	64.5	6.7	60.1	2.3	59.7	1.9	58.9	1.1	58.3	0.5	59.0	1.2	58.5	0.7	62.2	4.4	60.7	2.9	58.1	0.3
359 BEACH 44 ST	15835	56	57.3	69.3	15.4	67.6	13.7	77.8	23.9	75.5	21.6	65.8	11.9	58.9	5.0	59.9	6.0	58.1	4.2	54.7	0.8	57.0	3.1	55.8	1.9	63.9	10.0	61.4	7.5	55.0	1.1
359A BEACH 44 ST	15835	56	57.3	64.6	7.5	63.3	6.2	68.7	11.6	66.9	9.8	60.5	3.4	58.4	1.3	58.7	1.6	58.1	1.0	57.3	0.2	57.8	0.7	57.5	0.4	58.4	1.3	57.9	0.8	57.2	0.1
360 BEACH 45 ST	15835	39	75.0	58.2	0.9	57.9	0.6	58.3	1.0	58.4	1.1	58.4	1.1	58.2	0.9	59.2	1.9	58.4	1.1	60.2	2.9	60.4	3.1	59.2	1.9	61.1	3.8	59.6	2.3	57.5	0.2
360 BEACH 47 ST	15838	22	57.1	69.6	12.5	67.8	10.7	66.3	9.2	62.9	5.8	59.6	2.5	58.5	1.4	58.3	1.2	57.8	0.7	57.4	0.3	57.8	0.7	57.5	0.4	58.2	1.1	57.7	0.6	57.1	0.0
360A BEACH 45 ST	15835	39	75.0	69.0	0.0	69.0	0.0	69.0	0.0	70.2	1.2	69.7	0.7	69.7	0.7	69.2	0.2	69.0	0.0	69.3	0.3	69.4	0.4	69.2	0.2	69.2	0.2	69.1	0.1	69.0	0.0
361 BEACH 44 ST	15835	54	75.0	58.7	1.4	58.4	1.1	58.8	1.5	64.3	7.0	62.3	5.0	62.2	4.9	66.1	8.8	63.8	6.5	73.2	15.9	73.2	15.9	70.6	13.3	69.4	12.1	66.7	9.4	59.0	1.7
361A BEACH 44 ST	15835	54	75.0	59.5	2.2	58.9	1.6	59.8	2.5	59.3	2.0	59.5	2.2	59.4	2.1	62.0	4.7	60.3	3.0	61.8	4.5	61.9	4.6	60.3	3.0	71.9	14.6	69.1	11.8	60.0	2.7
362 BEACH 45 ST	15835	42	75.0	58.8	1.5	58.4	1.1	60.2	2.9	59.0	1.7	58.8	1.5	58.4	1.1	58.9	1.6	58.2	0.9	57.9	0.6	58.2	0.9	57.8	0.5	70.0	12.7	67.4	10.1	59.2	1.9
362 BEACH CHANNEL DR	15839	24	70.7	62.2	4.4	61.1	3.3	67.9	10.1	65.9	8.1	60.8	3.0	59.5	1.7	59.2	1.4	58.6	0.8	58.0	0.2	58.5	0.7	58.2	0.4	66.6	8.8	64.2	6.4	58.6	0.8
362A BEACH 45 ST	15835	39	75.0	71.6	10.2	70.1	8.7	68.6	7.2	65.1	3.7	62.5	1.1	62.0	0.6	62.1	0.7	61.8	0.4	61.5	0.1	61.9	0.5	61.7	0.3	61.8	0.4	61.7	0.3	61.4	0.0
363 BEACH 47 ST	15839	38	57.1	75.4	14.0	73.5	12.1	70.0	8.6	67.1	5.7	62.8	1.4	62.1	0.7	62.0	0.6	61.7	0.3	61.5	0.1	61.9	0.5	61.7	0.3	62.1	0.7	61.8	0.4	61.4	0.0
365 BEACH 47 ST	15839	36	70.7	58.0	0.7	57.8	0.5	58.3	1.0	58.4	1.1	58.6	1.3	58.1	0.8	61.1	3.8	59.8	2.5	67.5	10.2	67.5	10.2	65.2	7.9	65.4	8.1	63.1	5.8	58.0	0.7
366 BEACH CHANNEL DR	15839	24	70.7	69.0	0.0	69.0	0.0	69.0	0.0	69.6	0.6	69.4	0.4	69.4	0.4	69.1	0.1	69.0	0.0	69.2	0.2	69.2	0.2	69.1	0.1	69.1	0.1	69.1	0.1	69.0	0.0
37-10 BEACH CHANNEL DR	15954	83	75.0	58.7	1.4	58.4	1.1	59.0	1.7	64.7	7.4	63.0	5.7	62.8	5.5	64.0	6.7	61.9	4.6	73.5	16.2	73.5	16.2	70.9	13.6	67.1	9.8	64.7	7.4	58.4	1.1
37-12 BEACH CHANNEL DR	15954	84	75.0	63.0	5.2	61.9	4.1	71.1	13.3	69.0	11.2	64.0	6.2	60.7	2.9	59.7	1.9	58.9	1.1	58.1	0.3	58.7	0.9	58.3	0.5	65.3	7.5	63.1	5.3	58.4	0.6
37-16 BEACH CHANNEL DR	15954	85	75.0	69.5	12.4	67.6	10.5	71.9	14.8	69.6	12.5	62.1	5.0	59.2	2.1	59.7	2.6	58.8	1.7	57.3	0.2	58.2	1.1	57.7	0.6	62.8	5.7	61.0	3.9	57.5	0.4
37-18 BEACH CHANNEL DR	15954	85	75.0	60.1	2.3	59.4	1.6	62.4	4.6	60.9	3.1	60.2	2.4	59.3	1.5	59.0	1.2	58.5	0.7	58.1	0.3	58.6	0.8	58.2	0.4	68.0	10.2	65.5	7.7	58.9	1.1
37-20 BEACH CHANNEL DR	15954	87	75.0	58.2	0.9	57.9	0.6	58.1	0.8	71.0	13.7	68.5	11.2	68.5	11.2	64.4	7.1	60.9	3.6	63.8	6.5	63.9	6.6	61.9	4.6	61.7	4.4	60.0	2.7	57.5	0.2

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
37-21 ROCKAWAY BEACH BLVD	15845	1	71.4	59.6	2.3	58.9	1.6	60.8	3.5	60.0	2.7	60.1	2.8	59.2	1.9	61.4	4.1	59.9	2.6	62.8	5.5	63.1	5.8	61.2	3.9	73.0	15.7	70.3	13.0	60.7	3.4
378 BEACH 46 ST	15968	3	70.7	59.3	2.0	58.7	1.4	62.6	5.3	61.2	3.9	59.6	2.3	58.6	1.3	58.8	1.5	58.1	0.8	58.2	0.9	58.4	1.1	57.9	0.6	64.8	7.5	62.5	5.2	57.9	0.6
378A BEACH 46 ST	15968	3	70.7	63.2	5.4	61.9	4.1	76.2	18.4	73.9	16.1	65.0	7.2	60.3	2.5	59.5	1.7	58.8	1.0	58.0	0.2	59.0	1.2	58.5	0.7	62.2	4.4	60.7	2.9	58.1	0.3
38-01 BEACH CHANNEL DR	15828	30	75.0	72.9	19.0	70.8	16.9	78.3	24.4	76.1	22.2	66.3	12.4	59.6	5.7	61.0	7.1	59.1	5.2	54.9	1.0	57.6	3.7	56.2	2.3	64.5	10.6	62.0	8.1	55.2	1.3
38-10 BEACH CHANNEL DR	15955	3	75.0	64.9	7.8	63.9	6.8	71.5	14.4	69.5	12.4	61.5	4.4	58.4	1.3	58.8	1.7	58.2	1.1	57.3	0.2	57.9	0.8	57.5	0.4	58.3	1.2	57.8	0.7	57.2	0.1
38-19 BEACH CHANNEL DR	15828	26	75.0	63.2	9.3	61.4	7.5	71.2	17.3	69.6	15.7	59.9	6.0	55.7	1.8	55.8	1.9	55.1	1.2	54.1	0.2	54.8	0.9	54.4	0.5	57.4	3.5	56.1	2.2	54.1	0.2
40-01 ROCKAWAY BEACH BLVD	15849	22	69.0	69.3	12.2	67.5	10.4	66.9	9.8	63.4	6.3	59.8	2.7	58.6	1.5	58.2	1.1	57.7	0.6	57.3	0.2	57.8	0.7	57.5	0.4	58.3	1.2	57.8	0.7	57.2	0.1
40-03 ROCKAWAY BEACH BLVD	15849	21	69.0	59.5	2.2	59.0	1.7	59.5	2.2	60.1	2.8	59.8	2.5	59.3	2.0	60.6	3.3	59.3	2.0	62.1	4.8	62.2	4.9	60.5	3.2	70.6	13.3	67.9	10.6	59.5	2.2
40-05 BEACH CHANNEL DR	15830	41	75.0	63.3	5.5	62.1	4.3	71.2	13.4	67.7	9.9	63.7	5.9	62.0	4.2	60.2	2.4	59.1	1.3	58.2	0.4	59.3	1.5	58.7	0.9	62.4	4.6	60.8	3.0	58.1	0.3
40-06 ROCKAWAY BEACH BLVD	15830	2	69.0	72.7	15.6	70.6	13.5	74.2	17.1	70.8	13.7	62.9	5.8	59.6	2.5	60.1	3.0	59.0	1.9	57.4	0.3	58.6	1.5	58.0	0.9	60.4	3.3	59.2	2.1	57.3	0.2
40-07 BEACH CHANNEL DR	15830	35	75.0	80.4	19.0	78.1	16.7	73.9	12.5	70.8	9.4	65.6	4.2	63.6	2.2	63.0	1.6	62.3	0.9	61.5	0.1	62.6	1.2	62.1	0.7	62.9	1.5	62.3	0.9	61.5	0.1
40-09 BEACH CHANNEL DR	15830	32	75.0	69.0	0.0	69.0	0.0	69.0	0.0	70.0	1.0	69.5	0.5	69.5	0.5	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	69.0	0.0	69.0	0.0
40-10 ROCKAWAY BEACH BLVD	15830	61	69.0	57.9	0.6	57.7	0.4	58.0	0.7	71.3	14.0	66.5	9.2	66.5	9.2	63.4	6.1	61.0	3.7	64.3	7.0	64.3	7.0	62.2	4.9	61.1	3.8	59.4	2.1	57.5	0.2
40-13 ROCKAWAY BEACH BLVD	15849	16	66.9	58.2	0.9	57.9	0.6	58.1	0.8	70.7	13.4	68.1	10.8	68.1	10.8	72.9	15.6	70.1	12.8	68.1	10.8	68.1	10.8	65.7	8.4	61.5	4.2	59.7	2.4	57.5	0.2
40-13A ROCKAWAY BEACH BLVD	15849	16	66.9	58.6	1.3	58.1	0.8	59.0	1.7	58.2	0.9	58.5	1.2	58.1	0.8	59.5	2.2	58.6	1.3	60.9	3.6	60.9	3.6	59.6	2.3	70.5	13.2	67.8	10.5	59.4	2.1
40-15 ROCKAWAY BEACH BLVD	15849	15	66.9	61.9	4.1	60.8	3.0	77.2	19.4	75.0	17.2	65.7	7.9	60.4	2.6	59.6	1.8	58.9	1.1	58.0	0.2	58.9	1.1	58.5	0.7	63.0	5.2	61.3	3.5	58.1	0.3
40-15A ROCKAWAY BEACH BLVD	15849	15	66.9	69.0	0.0	69.0	0.0	69.1	0.1	70.5	1.5	69.9	0.9	69.9	0.9	69.2	0.2	69.1	0.1	69.2	0.2	69.2	0.2	69.1	0.1	69.2	0.2	69.1	0.1	69.0	0.0
40-16 ROCKAWAY BEACH BLVD	15830	8	69.0	59.0	1.7	58.6	1.3	59.1	1.8	63.5	6.2	62.3	5.0	61.9	4.6	66.3	9.0	63.9	6.6	72.8	15.5	72.8	15.5	70.2	12.9	63.6	6.3	61.5	4.2	57.8	0.5
40-18 ROCKAWAY BEACH BLVD	15830	8	69.0	60.1	2.8	59.3	2.0	62.8	5.5	61.3	4.0	60.3	3.0	59.2	1.9	60.7	3.4	59.4	2.1	58.3	1.0	58.5	1.2	58.1	0.8	70.1	12.8	67.5	10.2	59.3	2.0
40-20 BEACH CHANNEL DR	15960	60	75.0	74.9	17.8	72.6	15.5	78.5	21.4	75.8	18.7	66.3	9.2	59.4	2.3	59.6	2.5	58.7	1.6	57.3	0.2	58.5	1.4	57.9	0.8	59.2	2.1	58.4	1.3	57.2	0.1
40-22 BEACH CHANNEL DR	15960	60	57.3	58.7	1.4	58.3	1.0	59.8	2.5	58.7	1.4	59.0	1.7	58.4	1.1	58.1	0.8	57.7	0.4	57.9	0.6	58.1	0.8	57.8	0.5	68.4	11.1	65.8	8.5	58.7	1.4
401 BEACH 44 ST	15967	30	75.0	69.0	0.0	69.0	0.0	69.0	0.0	69.7	0.7	69.4	0.4	69.4	0.4	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.0	0.0	69.1	0.1	69.0	0.0	69.0	0.0
401 BEACH 47 ST	15972	62	70.7	57.9	0.6	57.7	0.4	58.1	0.8	65.9	8.6	63.8	6.5	63.8	6.5	62.9	5.6	60.6	3.3	65.4	8.1	65.4	8.1	63.3	6.0	61.5	4.2	59.8	2.5	57.5	0.2
402 BEACH 37 ST	15953	1	75.0	58.2	0.9	57.9	0.6	58.1	0.8	68.4	11.1	65.9	8.6	65.9	8.6	72.0	14.7	69.4	12.1	66.4	9.1	66.4	9.1	64.0	6.7	61.0	3.7	59.3	2.0	57.5	0.2
402 BEACH 47 ST	15969	1	70.7	58.0	0.7	57.8	0.5	58.4	1.1	58.7	1.4	59.2	1.9	58.7	1.4	61.7	4.4	60.2	2.9	60.2	2.9	60.3	3.0	59.1	1.8	63.7	6.4	61.7	4.4	57.8	0.5
402A BEACH 47 ST	15969	1	70.7	58.4	1.1	58.1	0.8	59.2	1.9	58.5	1.2	58.4	1.1	58.0	0.7	58.5	1.2	58.0	0.7	60.0	2.7	60.0	2.7	59.0	1.7	70.3	13.0	67.6	10.3	59.3	2.0
403 BEACH 36 ST	15953	70	75.0	60.4	3.1	59.5	2.2	63.0	5.7	60.8	3.5	61.2	3.9	59.9	2.6	59.9	2.6	58.9	1.6	57.9	0.6	59.0	1.7	58.4	1.1	67.0	9.7	64.6	7.3	58.4	1.1
403 BEACH 37 ST	15954	82	75.0	62.4	4.6	61.2	3.4	78.3	20.5	76.2	18.4	66.6	8.8	60.9	3.1	59.2	1.4	58.6	0.8	58.0	0.2	58.9	1.1	58.4	0.6	63.8	6.0	61.8	4.0	58.2	0.4
403 BEACH 45 ST	15968	108	70.7	65.5	8.4	64.3	7.2	72.6	15.5	70.5	13.4	61.9	4.8	58.3	1.2	58.1	1.0	57.6	0.5	57.2	0.1	57.8	0.7	57.5	0.4	58.3	1.2	57.8	0.7	57.2	0.1
403 BEACH 46 ST	15969	76	70.7	61.6	4.3	60.7	3.4	64.0	6.7	62.3	5.0	61.2	3.9	59.9	2.6	59.6	2.3	58.6	1.3	57.9	0.6	58.4	1.1	58.0	0.7	64.4	7.1	62.2	4.9	57.8	0.5
403 BEACH 48 ST	15973	41	70.7	69.1	0.1	69.0	0.0	69.1	0.1	69.7	0.7	69.4	0.4	69.4	0.4	69.1	0.1	69.0	0.0	69.2	0.2	69.2	0.2	69.1	0.1	69.1	0.1	69.1	0.1	69.0	0.0
404 BEACH 37 ST	15953	1	75.0	58.6	1.3	58.3	1.0	58.9	1.6	63.0	5.7	61.5	4.2	61.4	4.1	65.3	8.0	63.1	5.8	71.7	14.4	71.7	14.4	69.1	11.8	64.1	6.8	62.1	4.8	57.8	0.5
404 BEACH 43 ST	15960	104	75.0	58.3	1.0	58.0	0.7	58.4	1.1	58.4	1.1	59.1	1.8	58.6	1.3	60.1	2.8	59.0	1.7	60.2	2.9	60.5	3.2	59.3	2.0	68.5	11.2	65.9	8.6	58.8	1.5
404 BEACH 48 ST	15972	1	70.7	76.4	19.3	74.2	17.1	83.6	26.5	81.3	24.2	70.5	13.4	59.5	2.4	60.0	2.9	59.0	1.9	57.4	0.3	58.6	1.5	58.0	0.9	59.8	2.7	58.7	1.6	57.2	0.1

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
405 BEACH 37 ST	15954	81	75.0	77.1	15.7	75.0	13.6	69.9	8.5	68.0	6.6	63.3	1.9	62.1	0.7	62.1	0.7	61.8	0.4	61.5	0.1	62.0	0.6	61.8	0.4	62.1	0.7	61.8	0.4	61.4	0.0
405 BEACH 45 ST	15968	107	57.8	58.0	0.7	57.8	0.5	58.0	0.7	63.4	6.1	62.1	4.8	62.0	4.7	62.5	5.2	60.8	3.5	64.0	6.7	64.0	6.7	62.0	4.7	60.4	3.1	59.0	1.7	57.4	0.1
405 BEACH 47 ST	15972	60	70.7	57.8	0.5	57.7	0.4	57.9	0.6	68.6	11.3	66.5	9.2	66.4	9.1	68.0	10.7	65.6	8.3	65.8	8.5	65.8	8.5	63.4	6.1	60.8	3.5	59.3	2.0	57.5	0.2
405 BEACH 48 ST	15973	40	70.7	57.7	0.4	57.6	0.3	58.1	0.8	59.3	2.0	59.6	2.3	59.1	1.8	60.8	3.5	59.4	2.1	61.3	4.0	61.4	4.1	60.0	2.7	63.4	6.1	61.5	4.2	57.7	0.4
406 BEACH 37 ST	15953	4	75.0	63.9	6.1	62.6	4.8	78.3	20.5	76.2	18.4	67.0	9.2	61.8	4.0	59.9	2.1	59.0	1.2	58.0	0.2	58.9	1.1	58.5	0.7	62.4	4.6	60.9	3.1	58.1	0.3
406 BEACH 43 ST	15960	104	75.0	70.6	16.7	68.6	14.7	79.3	25.4	76.9	23.0	66.8	12.9	59.0	5.1	59.3	5.4	57.6	3.7	54.6	0.7	57.2	3.3	56.0	2.1	59.4	5.5	57.7	3.8	54.3	0.4
407 BEACH 36 ST	15953	66	57.3	76.5	19.4	74.3	17.2	80.2	23.1	78.1	21.0	67.8	10.7	59.7	2.6	59.5	2.4	58.6	1.5	57.3	0.2	58.7	1.6	58.1	1.0	60.2	3.1	59.1	2.0	57.3	0.2
407 BEACH 37 ST	15954	79	57.3	60.2	2.4	59.4	1.6	73.9	16.1	71.7	13.9	62.3	4.5	59.7	1.9	58.8	1.0	58.3	0.5	57.9	0.1	58.3	0.5	58.1	0.3	58.9	1.1	58.4	0.6	57.8	0.0
407 BEACH 45 ST	15968	106	57.8	58.4	1.1	58.2	0.9	58.6	1.3	58.6	1.3	59.0	1.7	58.4	1.1	59.6	2.3	58.6	1.3	63.2	5.9	63.3	6.0	61.4	4.1	68.1	10.8	65.6	8.3	58.6	1.3
407 BEACH 46 ST	15969	74	70.7	59.6	2.3	59.0	1.7	62.2	4.9	60.7	3.4	59.9	2.6	58.9	1.6	59.0	1.7	58.3	1.0	58.0	0.7	58.3	1.0	57.9	0.6	69.6	12.3	66.9	9.6	59.1	1.8
407 BEACH 48 ST	15973	39	70.7	77.9	16.5	75.7	14.3	71.1	9.7	68.1	6.7	63.2	1.8	62.1	0.7	62.1	0.7	61.8	0.4	61.5	0.1	62.0	0.6	61.7	0.3	62.9	1.5	62.2	0.8	61.5	0.1
408 BEACH 44 ST	15965	6	75.0	69.0	0.0	69.0	0.0	69.0	0.0	69.7	0.7	69.4	0.4	69.4	0.4	69.1	0.1	69.0	0.0	69.1	0.1	69.1	0.1	69.0	0.0	69.1	0.1	69.0	0.0	69.0	0.0
408 BEACH 45 ST	15967	5	57.8	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
408 BEACH 46 ST	15968	6	53.9	58.1	0.8	57.8	0.5	57.8	0.5	63.3	6.0	61.6	4.3	61.5	4.2	63.2	5.9	61.3	4.0	62.9	5.6	62.9	5.6	61.1	3.8	61.0	3.7	59.5	2.2	57.5	0.2
408 BEACH 47 ST	15969	4	70.7	57.9	0.6	57.7	0.4	57.9	0.6	67.4	10.1	65.1	7.8	65.1	7.8	67.8	10.5	65.4	8.1	61.0	3.7	61.1	3.8	59.2	1.9	60.8	3.5	59.4	2.1	57.5	0.2
409 BEACH 36 ST	15953	66	57.3	61.2	3.9	60.3	3.0	63.0	5.7	61.5	4.2	61.9	4.6	60.6	3.3	62.2	4.9	60.5	3.2	59.1	1.8	60.1	2.8	59.1	1.8	71.8	14.5	69.0	11.7	60.0	2.7
409 BEACH 37 ST	15954	79	57.3	60.0	2.7	59.3	2.0	62.4	5.1	60.7	3.4	61.3	4.0	60.1	2.8	59.7	2.4	58.8	1.5	59.6	2.3	59.8	2.5	58.8	1.5	66.6	9.3	64.2	6.9	58.3	1.0
409 BEACH 47 ST	15972	58	57.1	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
409 BEACH 48 ST	15973	38	70.7	57.8	0.5	57.6	0.3	58.0	0.7	59.5	2.2	59.0	1.7	58.8	1.5	59.8	2.5	58.7	1.4	60.4	3.1	60.5	3.2	59.3	2.0	61.6	4.3	60.1	2.8	57.6	0.3
409 BEACH 51 ST	16001	2	68.5	74.8	13.4	72.6	11.2	68.9	7.5	66.2	4.8	62.7	1.3	62.0	0.6	61.8	0.4	61.6	0.2	61.4	0.0	61.8	0.4	61.7	0.3	61.8	0.4	61.6	0.2	61.4	0.0
41-02 ROCKAWAY BEACH BLVD	15831	46	69.0	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
41-05 BEACH CHANNEL DR	15831	32	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
41-06 ROCKAWAY BEACH BLVD	15831	46	69.0	58.5	1.2	58.1	0.8	58.9	1.6	69.5	12.2	67.3	10.0	67.2	9.9	70.4	13.1	67.8	10.5	65.8	8.5	65.9	8.6	63.3	6.0	62.0	4.7	60.3	3.0	57.6	0.3
41-08 ROCKAWAY BEACH BLVD	15831	49	69.0	59.8	2.5	59.1	1.8	60.0	2.7	63.3	6.0	62.8	5.5	61.9	4.6	63.0	5.7	61.1	3.8	66.5	9.2	66.5	9.2	64.2	6.9	67.4	10.1	64.8	7.5	58.4	1.1
41-11 BEACH 42 ST	15851	45	71.4	70.6	16.7	68.5	14.6	80.2	26.3	77.8	23.9	67.4	13.5	58.5	4.6	59.2	5.3	57.6	3.7	54.6	0.7	57.3	3.4	56.1	2.2	59.0	5.1	57.3	3.4	54.2	0.3
41-11 BEACH CHANNEL DR	15831	131	75.0	87.4	30.3	85.2	28.1	77.8	20.7	73.6	16.5	64.2	7.1	59.1	2.0	58.6	1.5	58.0	0.9	57.3	0.2	58.2	1.1	57.7	0.6	58.6	1.5	58.1	1.0	57.2	0.1
41-11 ROCKAWAY BEACH BLVD	15850	4	69.0	76.3	19.2	74.0	16.9	66.3	9.2	62.2	5.1	59.3	2.2	58.3	1.2	57.8	0.7	57.5	0.4	57.2	0.1	57.6	0.5	57.4	0.3	57.7	0.6	57.4	0.3	57.1	0.0
41-13 ROCKAWAY BEACH BLVD	15850	4	69.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
41-15 BEACH CHANNEL DR	15831	31	75.0	58.3	1.0	57.9	0.6	58.4	1.1	62.2	4.9	60.7	3.4	60.6	3.3	63.0	5.7	61.1	3.8	61.7	4.4	61.7	4.4	60.1	2.8	61.1	3.8	59.7	2.4	57.5	0.2
41-17 BEACH CHANNEL DR	15831	128	75.0	58.8	1.5	58.4	1.1	59.8	2.5	61.5	4.2	60.7	3.4	60.4	3.1	60.5	3.2	59.2	1.9	66.0	8.7	66.1	8.8	63.9	6.6	70.0	12.7	67.4	10.1	59.3	2.0
41-17 ROCKAWAY BEACH BLVD	15850	3	69.0	61.3	7.4	59.7	5.8	84.1	30.2	81.8	27.9	70.2	16.3	57.2	3.3	56.7	2.8	55.6	1.7	54.5	0.6	55.8	1.9	55.1	1.2	58.2	4.3	56.8	2.9	54.2	0.3
41-19 BEACH CHANNEL DR	15831	28	75.0	58.1	0.8	57.9	0.6	58.3	1.0	63.6	6.3	62.3	5.0	62.2	4.9	61.5	4.2	59.8	2.5	62.8	5.5	62.8	5.5	61.1	3.8	59.1	1.8	58.2	0.9	57.4	0.1
41-19 ROCKAWAY BEACH BLVD	15850	1	69.0	58.8	1.5	58.3	1.0	59.0	1.7	67.4	10.1	65.3	8.0	65.2	7.9	68.8	11.5	66.2	8.9	67.3	10.0	67.3	10.0	64.8	7.5	61.9	4.6	60.0	2.7	57.5	0.2
41-21 BEACH CHANNEL DR	15831	28	75.0	60.1	2.8	59.3	2.0	61.1	3.8	62.8	5.5	63.2	5.9	62.0	4.7	62.8	5.5	61.0	3.7	64.3	7.0	64.4	7.1	62.3	5.0	66.1	8.8	63.8	6.5	58.2	0.9
410 BEACH 37 ST	15953	5	57.3	58.4	1.1	58.0	0.7	59.5	2.2	58.9	1.6	60.4	3.1	59.4	2.1	60.2	2.9	59.2	1.9	58.5	1.2	59.2	1.9	58.4	1.1	63.4	6.1	61.8	4.5	57.9	0.6
410 BEACH 38 ST	15954	5	57.3	68.0	10.2	66.2	8.4	77.2	19.4	74.9	17.1	66.0	8.2	62.2	4.4	60.8	3.0	59.6	1.8	58.3	0.5	59.1	1.3	58.6	0.8	64.6	6.8	62.8	5.0	58.4	0.6

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
410 BEACH 43 ST	15960	8	75.0	59.0	1.7	58.6	1.3	60.4	3.1	61.0	3.7	60.7	3.4	60.1	2.8	61.0	3.7	59.6	2.3	63.9	6.6	63.9	6.6	61.9	4.6	69.2	11.9	66.7	9.4	59.1	1.8
410 BEACH 44 ST	15965	6	75.0	60.1	2.8	59.5	2.2	62.9	5.6	61.1	3.8	61.0	3.7	59.9	2.6	59.9	2.6	58.9	1.6	58.0	0.7	58.7	1.4	58.1	0.8	65.9	8.6	64.0	6.7	58.4	1.1
410 BEACH 47 ST	15969	5	57.1	60.5	2.7	59.7	1.9	66.0	8.2	64.5	6.7	64.2	6.4	62.6	4.8	60.5	2.7	59.4	1.6	58.3	0.5	59.4	1.6	58.8	1.0	62.2	4.4	60.9	3.1	58.1	0.3
410 BEACH 48 ST	15972	5	70.7	60.7	2.9	59.7	1.9	63.3	5.5	61.9	4.1	62.0	4.2	60.7	2.9	59.6	1.8	58.8	1.0	58.3	0.5	58.9	1.1	58.5	0.7	60.8	3.0	59.7	1.9	58.0	0.2
410A BEACH 37 ST	15953	7	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
411 BEACH 37 ST	15954	75	57.3	57.9	0.6	57.7	0.4	58.0	0.7	65.7	8.4	63.6	6.3	63.5	6.2	67.2	9.9	64.8	7.5	62.3	5.0	62.4	5.1	60.5	3.2	59.8	2.5	58.7	1.4	57.4	0.1
411 BEACH 45 ST	15968	105	57.8	58.2	0.9	57.9	0.6	59.3	2.0	58.6	1.3	60.3	3.0	59.3	2.0	59.4	2.1	58.6	1.3	58.4	1.1	59.0	1.7	58.3	1.0	64.0	6.7	62.2	4.9	57.9	0.6
411 BEACH 47 ST	15972	57	57.1	64.8	7.0	63.3	5.5	77.3	19.5	75.0	17.2	66.0	8.2	61.0	3.2	59.4	1.6	58.7	0.9	58.0	0.2	58.7	0.9	58.3	0.5	62.1	4.3	60.8	3.0	58.1	0.3
411A BEACH 47 ST	15972	57	57.1	73.3	19.4	71.2	17.3	83.4	29.5	81.0	27.1	70.3	16.4	57.8	3.9	57.6	3.7	56.3	2.4	54.3	0.4	56.2	2.3	55.3	1.4	56.8	2.9	55.7	1.8	54.0	0.1
412 BEACH 38 ST	15954	7	57.3	73.4	19.5	71.3	17.4	80.7	26.8	78.2	24.3	67.7	13.8	59.2	5.3	58.3	4.4	56.8	2.9	54.5	0.6	56.4	2.5	55.4	1.5	59.1	5.2	57.4	3.5	54.3	0.4
412 BEACH 43 ST	15960	9	75.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
412 BEACH 44 ST	15965	9	57.3	58.6	1.3	58.2	0.9	58.6	1.3	67.7	10.4	65.6	8.3	65.5	8.2	65.9	8.6	63.3	6.0	62.3	5.0	62.5	5.2	60.7	3.4	61.0	3.7	59.5	2.2	57.5	0.2
412 BEACH 45 ST	15967	6	57.8	59.1	1.8	58.5	1.2	59.1	1.8	63.8	6.5	62.5	5.2	62.5	5.2	63.3	6.0	61.3	4.0	64.9	7.6	64.9	7.6	62.8	5.5	62.9	5.6	61.0	3.7	57.7	0.4
412 BEACH 46 ST	15968	7	53.9	59.9	2.1	59.2	1.4	68.1	10.3	66.3	8.5	63.8	6.0	61.8	4.0	59.8	2.0	58.9	1.1	58.3	0.5	59.0	1.2	58.5	0.7	61.2	3.4	59.9	2.1	58.0	0.2
412A BEACH 43 ST	15960	9	75.0	63.9	10.0	62.0	8.1	75.8	21.9	73.5	19.6	63.6	9.7	58.6	4.7	57.7	3.8	56.4	2.5	54.5	0.6	57.2	3.3	56.1	2.2	58.9	5.0	57.2	3.3	54.2	0.3
413 BEACH 36 ST	15953	62	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
413 BEACH 37 ST	15954	74	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.0	0.0	75.0	0.0
413 BEACH 44 ST	15967	26	57.3	58.1	0.8	57.9	0.6	58.3	1.0	65.4	8.1	63.3	6.0	63.3	6.0	67.7	10.4	65.3	8.0	64.2	6.9	64.3	7.0	62.0	4.7	59.2	1.9	58.3	1.0	57.4	0.1
413 BEACH 45 ST	15968	104	57.8	59.5	2.2	58.8	1.5	60.2	2.9	61.6	4.3	60.8	3.5	60.5	3.2	60.4	3.1	59.1	1.8	60.5	3.2	60.8	3.5	59.5	2.2	64.0	6.7	62.2	4.9	57.9	0.6
413A BEACH 44 ST	15967	26	57.3	57.9	0.6	57.7	0.4	58.9	1.6	59.1	1.8	60.6	3.3	59.7	2.4	59.2	1.9	58.4	1.1	58.7	1.4	58.8	1.5	58.2	0.9	67.1	9.8	64.6	7.3	58.3	1.0
414 BEACH 37 ST	15953	7	57.3	61.8	4.5	60.6	3.3	66.5	9.2	65.3	8.0	61.2	3.9	59.7	2.4	59.8	2.5	58.8	1.5	57.9	0.6	58.7	1.4	58.1	0.8	62.0	4.7	60.6	3.3	57.6	0.3
414 BEACH 44 ST	15965	11	57.3	69.3	11.5	67.3	9.5	76.6	18.8	74.7	16.9	67.3	9.5	63.5	5.7	61.1	3.3	59.7	1.9	58.2	0.4	59.3	1.5	58.7	0.9	63.8	6.0	62.2	4.4	58.3	0.5
414 BEACH 46 ST	15968	8	53.9	58.8	1.5	58.3	1.0	61.2	3.9	60.1	2.8	59.4	2.1	58.6	1.3	58.5	1.2	58.0	0.7	57.6	0.3	58.0	0.7	57.7	0.4	59.2	1.9	58.5	1.2	57.4	0.1
414 BEACH 48 ST	15972	6	70.7	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
414A BEACH 37 ST	15953	7	57.3	58.1	0.8	57.8	0.5	57.8	0.5	65.6	8.3	63.4	6.1	63.4	6.1	62.1	4.8	60.5	3.2	58.9	1.6	59.0	1.7	58.2	0.9	58.4	1.1	57.9	0.6	57.3	0.0
415 BEACH 36 ST	15953	62	57.3	58.1	0.8	57.9	0.6	58.9	1.6	62.5	5.2	61.0	3.7	60.9	3.6	62.5	5.2	60.6	3.3	63.6	6.3	63.6	6.3	61.7	4.4	63.6	6.3	61.8	4.5	57.8	0.5
415 BEACH 46 ST	15969	71	53.9	60.0	2.7	59.2	1.9	61.0	3.7	59.9	2.6	60.8	3.5	59.7	2.4	60.2	2.9	59.1	1.8	61.5	4.2	61.6	4.3	60.1	2.8	69.0	11.7	66.5	9.2	59.0	1.7
415 BEACH 47 ST	15972	55	57.1	59.7	2.4	59.1	1.8	62.1	4.8	60.7	3.4	61.3	4.0	60.4	3.1	59.2	1.9	58.3	1.0	57.9	0.6	58.4	1.1	58.0	0.7	66.7	9.4	64.8	7.5	58.6	1.3
415A BEACH 36 ST	15953	62	57.3	60.7	2.9	59.7	1.9	70.7	12.9	68.2	10.4	64.1	6.3	61.9	4.1	59.8	2.0	59.0	1.2	58.2	0.4	59.1	1.3	58.6	0.8	62.9	5.1	61.2	3.4	58.1	0.3
416 BEACH 38 ST	15954	9	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0
416 BEACH 43 ST	15960	11	75.0	57.8	0.5	57.6	0.3	58.0	0.7	64.9	7.6	63.0	5.7	62.9	5.6	63.1	5.8	61.3	4.0	63.5	6.2	63.6	6.3	61.5	4.2	60.1	2.8	58.9	1.6	57.4	0.1
416 BEACH 45 ST	15967	8	57.8	58.0	0.7	57.8	0.5	59.5	2.2	59.5	2.2	60.5	3.2	59.5	2.2	59.3	2.0	58.5	1.2	59.0	1.7	59.2	1.9	58.4	1.1	68.4	11.1	65.8	8.5	58.7	1.4
416 BEACH 46 ST	15968	9	53.9	61.9	4.6	60.6	3.3	68.1	10.8	66.3	9.0	62.5	5.2	60.6	3.3	59.7	2.4	58.8	1.5	58.4	1.1	59.3	2.0	58.5	1.2	63.7	6.4	61.9	4.6	57.8	0.5
416 BEACH 48 ST	15972	7	70.7	58.4	1.1	58.1	0.8	61.5	4.2	60.4	3.1	60.4	3.1	59.3	2.0	58.6	1.3	58.0	0.7	57.8	0.5	58.2	0.9	57.8	0.5	59.3	2.0	58.5	1.2	57.4	0.1
417 BEACH 43 ST	15965	110	75.0	58.3	1.0	58.0	0.7	59.1	1.8	59.5	2.2	60.7	3.4	59.6	2.3	59.2	1.9	58.4	1.1	59.5	2.2	59.7	2.4	58.7	1.4	67.4	10.1	65.0	7.7	58.5	1.2
417 BEACH 45 ST	15968	103	57.8	65.0	11.1	63.0	9.1	70.8	16.9	68.2	14.3	61.4	7.5	58.1	4.2	58.2	4.3	56.7	2.8	54.5	0.6	56.9	3.0	55.8	1.9	58.2	4.3	56.9	3.0	54.2	0.3

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
417 BEACH 46 ST	15969	71	53.9	75.5	18.4	73.2	16.1	85.5	28.4	83.4	26.3	72.3	15.2	58.8	1.7	58.7	1.6	58.1	1.0	57.2	0.1	57.9	0.8	57.5	0.4	58.4	1.3	57.8	0.7	57.2	0.1
418 BEACH 37 ST	15953	9	57.3	59.5	5.6	58.0	4.1	71.9	18.0	70.2	16.3	61.0	7.1	57.4	3.5	56.4	2.5	55.3	1.4	54.2	0.3	55.4	1.5	54.8	0.9	55.9	2.0	55.1	1.2	54.0	0.1
418 BEACH 43 ST	15960	14	75.0	58.0	0.7	57.8	0.5	58.1	0.8	64.7	7.4	62.6	5.3	62.6	5.3	63.6	6.3	61.7	4.4	61.1	3.8	61.2	3.9	59.7	2.4	59.2	1.9	58.3	1.0	57.4	0.1
418 BEACH 47 ST	15969	9	57.1	60.0	2.7	59.2	1.9	61.2	3.9	61.4	4.1	60.8	3.5	60.4	3.1	60.0	2.7	58.8	1.5	60.5	3.2	60.8	3.5	59.5	2.2	65.0	7.7	63.2	5.9	58.1	0.8
418 BEACH 48 ST	15972	8	70.7	58.5	1.2	58.1	0.8	59.5	2.2	59.4	2.1	60.9	3.6	59.9	2.6	59.7	2.4	58.8	1.5	60.1	2.8	60.3	3.0	59.2	1.9	68.8	11.5	66.2	8.9	58.8	1.5
419 BEACH 36 ST	15953	60	57.3	61.5	4.2	60.4	3.1	68.1	10.8	66.4	9.1	63.3	6.0	61.4	4.1	59.7	2.4	58.7	1.4	57.9	0.6	59.1	1.8	58.4	1.1	67.4	10.1	65.5	8.2	58.8	1.5
419 BEACH 37 ST	15954	72	57.3	65.8	8.0	64.1	6.3	77.2	19.4	75.7	17.9	69.1	11.3	65.4	7.6	61.9	4.1	60.1	2.3	58.5	0.7	59.7	1.9	59.0	1.2	63.7	5.9	62.0	4.2	58.3	0.5
419 BEACH 44 ST	15967	24	57.3	67.6	13.7	65.4	11.5	77.1	23.2	74.7	20.8	64.8	10.9	58.1	4.2	57.1	3.2	55.9	2.0	54.3	0.4	55.9	2.0	55.1	1.2	59.0	5.1	57.4	3.5	54.3	0.4
419 BEACH 45 ST	15968	102	57.8	59.1	1.8	58.5	1.2	63.0	5.7	62.3	5.0	60.4	3.1	59.3	2.0	58.8	1.5	58.2	0.9	57.4	0.1	58.2	0.9	57.8	0.5	58.7	1.4	58.2	0.9	57.4	0.1
419 BEACH 46 ST	15969	69	53.9	69.1	0.1	69.1	0.1	69.1	0.1	70.1	1.1	69.6	0.6	69.6	0.6	69.5	0.5	69.2	0.2	69.8	0.8	69.8	0.8	69.4	0.4	69.5	0.5	69.2	0.2	69.0	0.0
419 BEACH 47 ST	15972	55	57.1	59.0	1.7	58.5	1.2	59.3	2.0	66.1	8.8	63.9	6.6	63.9	6.6	65.3	8.0	63.0	5.7	63.3	6.0	63.3	6.0	61.4	4.1	61.0	3.7	59.5	2.2	57.5	0.2
419A BEACH 44 ST	15967	26	57.3	59.6	2.3	58.8	1.5	60.3	3.0	63.3	6.0	62.9	5.6	62.0	4.7	65.9	8.6	63.6	6.3	66.5	9.2	66.5	9.2	64.2	6.9	64.5	7.2	62.3	5.0	57.9	0.6
419A BEACH 46 ST	15969	69	53.9	60.2	2.9	59.5	2.2	62.5	5.2	61.4	4.1	63.0	5.7	61.7	4.4	59.7	2.4	58.8	1.5	57.8	0.5	58.7	1.4	58.1	0.8	68.1	10.8	66.1	8.8	59.0	1.7
42-12 ROCKAWAY BEACH BLVD	15833	72	69.0	60.5	2.7	59.6	1.8	70.3	12.5	68.5	10.7	63.9	6.1	61.8	4.0	59.4	1.6	58.8	1.0	58.1	0.3	58.9	1.1	58.5	0.7	61.2	3.4	60.1	2.3	58.0	0.2
42-14 ROCKAWAY BEACH BLVD	15833	74	69.0	75.6	18.5	73.3	16.2	81.1	24.0	78.4	21.3	68.2	11.1	58.9	1.8	59.1	2.0	58.3	1.2	57.3	0.2	57.9	0.8	57.6	0.5	58.7	1.6	58.1	1.0	57.2	0.1
42-16 ROCKAWAY BEACH BLVD	15833	75	69.0	75.0	0.0	75.0	0.0	75.0	0.0	75.3	0.3	75.2	0.2	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0
420 BEACH 48 ST	15972	9	70.7	75.0	0.0	75.0	0.0	75.0	0.0	75.3	0.3	75.2	0.2	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0
420 BEACH 51 ST	15974	3	68.5	58.2	0.9	57.9	0.6	58.1	0.8	64.2	6.9	62.3	5.0	62.3	5.0	64.4	7.1	62.4	5.1	61.9	4.6	62.0	4.7	60.3	3.0	58.6	1.3	57.9	0.6	57.3	0.0
421 BEACH 45 ST	15968	101	57.8	60.4	3.1	59.5	2.2	61.9	4.6	62.5	5.2	62.5	5.2	61.6	4.3	61.3	4.0	59.8	2.5	64.8	7.5	65.0	7.7	62.9	5.6	67.6	10.3	65.7	8.4	58.9	1.6
421 BEACH 46 ST	15969	67	53.9	58.4	1.1	58.1	0.8	59.9	2.6	59.5	2.2	61.2	3.9	60.1	2.8	59.5	2.2	58.6	1.3	60.7	3.4	61.1	3.8	59.8	2.5	66.6	9.3	64.2	6.9	58.2	0.9
421A BEACH 46 ST	15969	68	53.9	63.0	5.7	61.4	4.1	68.1	10.8	65.3	8.0	62.7	5.4	61.0	3.7	59.3	2.0	58.5	1.2	57.7	0.4	58.8	1.5	58.2	0.9	66.7	9.4	64.8	7.5	58.6	1.3
422 BEACH 37 ST	15953	12	57.3	63.0	5.7	61.4	4.1	68.1	10.8	65.3	8.0	62.7	5.4	61.0	3.7	59.3	2.0	58.5	1.2	57.7	0.4	58.8	1.5	58.2	0.9	66.7	9.4	64.8	7.5	58.6	1.3
422 BEACH 38 ST	15954	12	57.3	72.8	18.9	70.6	16.7	80.5	26.6	78.5	24.6	67.7	13.8	58.5	4.6	57.4	3.5	56.2	2.3	54.4	0.5	56.2	2.3	55.4	1.5	58.2	4.3	56.8	2.9	54.2	0.3
422 BEACH 44 ST	15965	13	57.3	58.0	0.7	57.8	0.5	58.5	1.2	66.1	8.8	64.0	6.7	63.9	6.6	64.4	7.1	62.3	5.0	62.1	4.8	62.2	4.9	60.4	3.1	58.7	1.4	58.0	0.7	57.3	0.0
423 BEACH 36 ST	15953	60	57.3	59.5	2.2	58.7	1.4	66.3	9.0	64.5	7.2	60.8	3.5	59.3	2.0	58.9	1.6	58.2	0.9	57.5	0.2	58.2	0.9	57.8	0.5	61.5	4.2	60.2	2.9	57.6	0.3
423 BEACH 37 ST	15954	70	57.3	72.4	18.5	70.1	16.2	74.8	20.9	73.2	19.3	63.6	9.7	57.4	3.5	57.0	3.1	55.9	2.0	54.3	0.4	55.6	1.7	54.9	1.0	56.4	2.5	55.5	1.6	54.0	0.1
423 BEACH 43 ST	15965	108	57.3	59.7	2.4	58.9	1.6	60.4	3.1	62.7	5.4	62.3	5.0	61.6	4.3	63.4	6.1	61.4	4.1	65.7	8.4	65.8	8.5	63.6	6.3	63.8	6.5	61.8	4.5	57.8	0.5
423 BEACH 44 ST	15967	22	57.3	59.0	1.7	58.4	1.1	60.2	2.9	59.5	2.2	60.7	3.4	59.6	2.3	59.2	1.9	58.4	1.1	58.4	1.1	58.8	1.5	58.2	0.9	67.5	10.2	65.2	7.9	58.5	1.2
423 BEACH 45 ST	15968	99	57.8	58.2	0.9	57.9	0.6	60.1	2.8	59.5	2.2	60.5	3.2	59.6	2.3	59.2	1.9	58.4	1.1	57.7	0.4	58.6	1.3	58.1	0.8	66.6	9.3	64.8	7.5	58.6	1.3
423 BEACH 46 ST	15969	65	53.9	61.8	4.0	60.7	2.9	71.0	13.2	69.2	11.4	63.9	6.1	61.4	3.6	59.2	1.4	58.6	0.8	58.0	0.2	58.7	0.9	58.3	0.5	60.5	2.7	59.6	1.8	58.0	0.2
423 BEACH 47 ST	15972	52	57.1	65.4	11.5	63.5	9.6	78.1	24.2	76.6	22.7	65.4	11.5	58.3	4.4	57.8	3.9	56.4	2.5	54.3	0.4	56.8	2.9	55.8	1.9	57.4	3.5	56.2	2.3	54.1	0.2
423A BEACH 37 ST	15954	70	57.3	82.6	21.2	80.4	19.0	74.0	12.6	70.3	8.9	65.2	3.8	63.5	2.1	62.7	1.3	62.1	0.7	61.5	0.1	62.3	0.9	61.9	0.5	62.5	1.1	62.0	0.6	61.4	0.0
423A BEACH 45 ST	15968	99	53.9	65.0	11.1	63.0	9.1	73.9	20.0	72.9	19.0	62.9	9.0	58.0	4.1	56.3	2.4	55.3	1.4	54.4	0.5	55.6	1.7	54.9	1.0	56.0	2.1	55.2	1.3	54.0	0.1
423A BEACH 46 ST	15969	65	53.9	58.0	0.7	57.8	0.5	58.7	1.4	64.0	6.7	62.3	5.0	62.2	4.9	63.4	6.1	61.5	4.2	61.5	4.2	61.7	4.4	60.1	2.8	59.3	2.0	58.4	1.1	57.4	0.1
424 BEACH 37 ST	15953	12	57.3	58.8	1.5	58.3	1.0	60.8	3.5	60.3	3.0	61.5	4.2	60.3	3.0	59.8	2.5	58.9	1.6	58.9	1.6	59.9	2.6	58.9	1.6	66.5	9.2	64.1	6.8	58.2	0.9
424 BEACH 38 ST	15954	13	57.3	62.0	4.7	60.6	3.3	67.4	10.1	66.6	9.3	61.1	3.8	59.3	2.0	58.7	1.4	58.1	0.8	57.6	0.3	58.1	0.8	57.8	0.5	62.9	5.6	61.4	4.1	57.8	0.5

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
424 BEACH 46 ST	15968	12	53.9	84.7	27.6	82.4	25.3	75.9	18.8	71.8	14.7	63.8	6.7	59.3	2.2	58.9	1.8	58.2	1.1	57.3	0.2	58.3	1.2	57.8	0.7	58.5	1.4	57.9	0.8	57.2	0.1
424 BEACH 47 ST	15969	12	57.1	58.3	1.0	57.9	0.6	59.7	2.4	58.9	1.6	61.1	3.8	59.9	2.6	59.1	1.8	58.3	1.0	58.1	0.8	58.8	1.5	58.2	0.9	68.0	10.7	66.0	8.7	59.0	1.7
424 BEACH 48 ST	15972	9	70.7	57.6	0.3	57.5	0.2	58.1	0.8	64.4	7.1	62.7	5.4	62.5	5.2	60.1	2.8	59.0	1.7	58.8	1.5	58.9	1.6	58.2	0.9	58.6	1.3	58.0	0.7	57.3	0.0
425 BEACH 36 ST	15953	58	57.3	58.6	1.3	58.2	0.9	59.9	2.6	59.9	2.6	62.5	5.2	61.1	3.8	59.0	1.7	58.3	1.0	57.8	0.5	58.6	1.3	58.0	0.7	66.8	9.5	64.9	7.6	58.6	1.3
425 BEACH 43 ST	15965	107	57.3	63.5	5.7	62.0	4.2	72.4	14.6	70.5	12.7	64.5	6.7	61.7	3.9	59.3	1.5	58.6	0.8	58.0	0.2	58.9	1.1	58.5	0.7	63.3	5.5	61.9	4.1	58.3	0.5
425 BEACH 43 ST	15965	107	57.3	58.3	1.0	58.0	0.7	59.0	1.7	60.4	3.1	59.8	2.5	59.6	2.3	59.5	2.2	58.5	1.2	59.5	2.2	59.8	2.5	58.8	1.5	64.7	7.4	63.0	5.7	58.1	0.8
425 BEACH 44 ST	15967	20	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0
425 BEACH 46 ST	15969	64	53.9	75.0	0.0	75.0	0.0	75.0	0.0	75.3	0.3	75.2	0.2	75.2	0.2	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
425 BEACH 47 ST	15972	50	57.1	59.1	1.8	58.5	1.2	58.9	1.6	60.4	3.1	60.3	3.0	59.4	2.1	59.7	2.4	58.6	1.3	61.1	3.8	61.1	3.8	59.7	2.4	62.0	4.7	60.5	3.2	57.6	0.3
425A BEACH 36 ST	15953	59	57.3	58.8	1.5	58.2	0.9	60.7	3.4	60.3	3.0	62.5	5.2	61.2	3.9	59.4	2.1	58.6	1.3	57.9	0.6	58.3	1.0	57.9	0.6	68.0	10.7	66.0	8.7	59.0	1.7
425A BEACH 44 ST	15967	20	57.3	66.9	9.1	64.9	7.1	73.6	15.8	71.4	13.6	65.8	8.0	63.2	5.4	60.1	2.3	59.0	1.2	58.0	0.2	59.4	1.6	58.8	1.0	62.2	4.4	60.9	3.1	58.1	0.3
425A BEACH 46 ST	15969	65	53.9	80.4	19.0	78.2	16.8	72.5	11.1	69.6	8.2	65.3	3.9	63.5	2.1	63.4	2.0	62.6	1.2	61.5	0.1	62.3	0.9	61.9	0.5	62.6	1.2	62.1	0.7	61.5	0.1
425A BEACH 47 ST	15972	50	57.1	58.9	1.6	58.3	1.0	68.4	11.1	65.6	8.3	61.6	4.3	60.2	2.9	58.8	1.5	58.1	0.8	57.5	0.2	58.2	0.9	57.8	0.5	58.6	1.3	58.1	0.8	57.4	0.1
426 BEACH 37 ST	15953	14	57.3	59.1	1.8	58.5	1.2	58.6	1.3	59.8	2.5	60.0	2.7	59.7	2.4	59.5	2.2	58.5	1.2	59.0	1.7	59.6	2.3	58.7	1.4	65.5	8.2	63.6	6.3	58.3	1.0
426 BEACH 44 ST	15965	15	57.3	75.4	21.5	73.2	19.3	79.5	25.6	77.9	24.0	67.6	13.7	61.3	7.4	59.0	5.1	57.1	3.2	54.5	0.6	57.2	3.3	56.0	2.1	56.9	3.0	55.7	1.8	54.1	0.2
426 BEACH 46 ST	15968	14	53.9	75.9	18.8	73.6	16.5	73.7	16.6	71.0	13.9	62.8	5.7	59.1	2.0	58.7	1.6	58.0	0.9	57.3	0.2	58.2	1.1	57.8	0.7	58.3	1.2	57.8	0.7	57.2	0.1
426 BEACH 47 ST	15969	13	57.1	58.0	0.7	57.8	0.5	59.1	1.8	60.9	3.6	61.5	4.2	60.3	3.0	60.4	3.1	59.0	1.7	60.8	3.5	61.1	3.8	59.7	2.4	62.4	5.1	60.9	3.6	57.7	0.4
426 BEACH 48 ST	15972	11	70.7	59.0	1.7	58.5	1.2	59.5	2.2	58.6	1.3	60.8	3.5	59.8	2.5	59.2	1.9	58.4	1.1	58.8	1.5	59.7	2.4	58.8	1.5	68.4	11.1	66.3	9.0	59.1	1.8
427 BEACH 36 ST	15953	58	57.3	61.6	4.3	60.4	3.1	66.2	8.9	63.6	6.3	62.8	5.5	61.4	4.1	60.1	2.8	59.1	1.8	57.9	0.6	58.6	1.3	58.1	0.8	70.3	13.0	68.2	10.9	60.0	2.7
427 BEACH 37 ST	15954	68	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.2	0.2	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
427 BEACH 46 ST	15969	63	53.9	81.5	20.1	79.3	17.9	73.6	12.2	70.3	8.9	65.3	3.9	63.7	2.3	63.2	1.8	62.5	1.1	61.5	0.1	62.3	0.9	61.9	0.5	63.2	1.8	62.5	1.1	61.5	0.1
427A BEACH 36 ST	15953	58	57.3	60.7	3.4	59.7	2.4	61.7	4.4	60.9	3.6	64.8	7.5	63.0	5.7	60.5	3.2	59.1	1.8	59.2	1.9	60.4	3.1	59.3	2.0	70.1	12.8	68.1	10.8	59.9	2.6
428 BEACH 37 ST	15953	114	57.3	74.2	17.1	71.9	14.8	73.3	16.2	71.0	13.9	62.7	5.6	59.7	2.6	58.6	1.5	58.0	0.9	57.3	0.2	57.9	0.8	57.6	0.5	59.0	1.9	58.2	1.1	57.2	0.1
428 BEACH 38 ST	15954	15	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.4	0.4	75.2	0.2	75.2	0.2	75.2	0.2	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0
428 BEACH 47 ST	15969	14	57.1	59.3	2.0	58.7	1.4	59.3	2.0	58.9	1.6	61.6	4.3	60.5	3.2	59.7	2.4	58.7	1.4	59.8	2.5	60.2	2.9	59.1	1.8	69.1	11.8	67.0	9.7	59.3	2.0
429 BEACH 37 ST	15954	68	57.3	59.5	2.2	58.8	1.5	61.9	4.6	60.7	3.4	61.7	4.4	60.6	3.3	60.6	3.3	59.5	2.2	57.8	0.5	58.4	1.1	58.0	0.7	69.2	11.9	67.2	9.9	59.5	2.2
429 BEACH 43 ST	15965	105	57.3	78.2	24.3	75.9	22.0	78.9	25.0	77.4	23.5	67.0	13.1	62.7	8.8	59.4	5.5	57.3	3.4	54.6	0.7	57.2	3.3	56.1	2.2	56.9	3.0	55.8	1.9	54.1	0.2
429 BEACH 45 ST	15968	97	57.8	75.0	0.0	75.0	0.0	75.0	0.0	75.2	0.2	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
429 BEACH 46 ST	15969	61	53.9	60.1	2.8	59.1	1.8	64.4	7.1	62.2	4.9	62.5	5.2	61.1	3.8	60.6	3.3	59.5	2.2	58.4	1.1	59.3	2.0	58.5	1.2	69.8	12.5	67.7	10.4	59.8	2.5
429 BEACH 47 ST	15972	48	57.1	68.8	14.9	66.8	12.9	87.5	33.6	84.8	30.9	73.6	19.7	61.2	7.3	59.6	5.7	57.8	3.9	54.7	0.8	58.3	4.4	56.9	3.0	60.2	6.3	58.3	4.4	54.4	0.5
429A BEACH 43 ST	15965	105	57.3	75.8	14.4	73.6	12.2	71.1	9.7	68.6	7.2	65.9	4.5	64.5	3.1	63.9	2.5	63.0	1.6	61.6	0.2	62.2	0.8	61.8	0.4	62.8	1.4	62.2	0.8	61.5	0.1
429A BEACH 46 ST	15969	61	53.9	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.4	0.4	75.2	0.2	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.3	0.3	75.2	0.2	75.0	0.0
43-02 ROCKAWAY BEACH BLVD	15834	67	69.0	75.0	0.0	75.0	0.0	75.2	0.2	75.1	0.1	75.2	0.2	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	77.2	2.2	76.4	1.4	75.1	0.1
43-06 ROCKAWAY BEACH BLVD	15834	67	69.0	77.1	20.0	74.9	17.8	77.6	20.5	75.5	18.4	66.3	9.2	61.2	4.1	60.1	3.0	58.9	1.8	57.3	0.2	59.0	1.9	58.3	1.2	59.9	2.8	58.8	1.7	57.2	0.1
43-10 ROCKAWAY BEACH BLVD	15834	69	69.0	75.2	0.2	75.1	0.1	75.2	0.2	75.2	0.2	75.5	0.5	75.3	0.3	75.2	0.2	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	78.5	3.5	77.5	2.5	75.2	0.2
43-12 ROCKAWAY BEACH BLVD	15834	69	69.0	65.6	7.8	63.8	6.0	73.1	15.3	70.8	13.0	66.9	9.1	64.0	6.2	60.8	3.0	59.5	1.7	58.1	0.3	59.5	1.7	58.9	1.1	64.7	6.9	63.0	5.2	58.5	0.7

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
43-15 BEACH 44 ST	15834	30	75.0	59.7	1.9	59.2	1.4	67.1	9.3	65.3	7.5	62.8	5.0	61.3	3.5	59.2	1.4	58.5	0.7	58.1	0.3	58.6	0.8	58.3	0.5	62.0	4.2	60.7	2.9	58.1	0.3
43-16 ROCKAWAY BEACH BLVD	15834	71	69.0	75.0	0.0	75.0	0.0	75.1	0.1	75.0	0.0	75.2	0.2	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	78.3	3.3	77.3	2.3	75.2	0.2
43-17 ROCKAWAY BEACH BLVD	15852	60	71.4	80.3	26.4	78.0	24.1	77.3	23.4	75.0	21.1	65.9	12.0	60.2	6.3	59.3	5.4	57.5	3.6	54.6	0.7	57.2	3.3	56.0	2.1	58.7	4.8	57.3	3.4	54.3	0.4
43-18 ROCKAWAY BEACH BLVD	15834	71	69.0	76.5	19.4	74.2	17.1	72.8	15.7	70.8	13.7	63.1	6.0	60.7	3.6	59.9	2.8	58.8	1.7	57.4	0.3	59.1	2.0	58.4	1.3	59.2	2.1	58.4	1.3	57.2	0.1
430 BEACH 37 ST	15953	15	57.3	61.8	4.5	60.5	3.2	64.3	7.0	62.7	5.4	61.9	4.6	60.6	3.3	60.5	3.2	59.3	2.0	58.4	1.1	59.2	1.9	58.4	1.1	72.0	14.7	69.8	12.5	60.9	3.6
430 BEACH 38 ST	15954	16	57.3	78.6	21.5	76.4	19.3	78.4	21.3	77.5	20.4	66.4	9.3	60.7	3.6	59.8	2.7	58.8	1.7	57.3	0.2	58.3	1.2	57.8	0.7	58.8	1.7	58.1	1.0	57.2	0.1
430 BEACH 44 ST	15965	17	57.3	72.7	11.3	70.7	9.3	67.2	5.8	65.8	4.4	64.5	3.1	63.5	2.1	62.7	1.3	62.1	0.7	61.5	0.1	61.9	0.5	61.7	0.3	62.0	0.6	61.7	0.3	61.4	0.0
430 BEACH 47 ST	15969	15	57.1	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.4	0.4	75.3	0.3	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	82.5	7.5	80.7	5.7	75.8	0.8
430 BEACH 48 ST	15972	11	70.7	64.8	7.5	63.0	5.7	69.6	12.3	66.0	8.7	63.6	6.3	61.7	4.4	60.5	3.2	59.3	2.0	57.8	0.5	59.5	2.2	58.7	1.4	69.8	12.5	67.8	10.5	59.8	2.5
430A BEACH 37 ST	15953	15	57.3	76.4	19.3	74.1	17.0	72.3	15.2	69.1	12.0	62.8	5.7	60.5	3.4	58.8	1.7	58.1	1.0	57.3	0.2	58.3	1.2	57.8	0.7	59.3	2.2	58.4	1.3	57.2	0.1
430A BEACH 38 ST	15954	67	57.3	63.2	5.9	61.7	4.4	68.2	10.9	66.1	8.8	63.4	6.1	61.5	4.2	59.6	2.3	58.6	1.3	57.7	0.4	58.4	1.1	57.9	0.6	66.1	8.8	64.3	7.0	58.4	1.1
431 BEACH 36 ST	15953	56	57.3	61.9	4.6	60.5	3.2	64.8	7.5	63.1	5.8	62.0	4.7	60.6	3.3	60.7	3.4	59.5	2.2	58.3	1.0	58.7	1.4	58.1	0.8	74.1	16.8	72.0	14.7	62.3	5.0
431 BEACH 45 ST	15968	96	57.8	79.5	22.4	77.2	20.1	74.4	17.3	72.3	15.2	64.2	7.1	60.3	3.2	59.6	2.5	58.6	1.5	57.3	0.2	58.3	1.2	57.8	0.7	58.3	1.2	57.8	0.7	57.2	0.1
431 BEACH 47 ST	15972	47	57.1	85.1	31.2	82.8	28.9	76.0	22.1	73.1	19.2	67.3	13.4	65.0	11.1	60.1	6.2	57.8	3.9	54.4	0.5	58.7	4.8	57.2	3.3	58.5	4.6	57.1	3.2	54.2	0.3
432 BEACH 44 ST	15965	19	57.3	81.2	24.1	78.9	21.8	74.6	17.5	72.1	15.0	65.7	8.6	63.4	6.3	61.2	4.1	59.7	2.6	57.4	0.3	59.7	2.6	58.8	1.7	60.6	3.5	59.3	2.2	57.3	0.2
432 BEACH 47 ST	15969	16	57.1	74.2	12.8	72.2	10.8	69.2	7.8	64.3	2.9	64.1	2.7	63.2	1.8	62.7	1.3	62.2	0.8	61.5	0.1	61.9	0.5	61.7	0.3	62.5	1.1	62.0	0.6	61.4	0.0
432 BEACH 48 ST	15972	13	59.0	66.3	9.0	64.4	7.1	69.5	12.2	67.6	10.3	64.4	7.1	62.8	5.5	59.5	2.2	58.5	1.2	57.7	0.4	59.1	1.8	58.4	1.1	70.9	13.6	68.7	11.4	60.3	3.0
433 BEACH 36 ST	15953	54	57.3	63.3	6.0	61.7	4.4	68.1	10.8	66.0	8.7	61.1	3.8	59.1	1.8	58.5	1.2	58.0	0.7	57.5	0.2	57.9	0.6	57.7	0.4	64.4	7.1	62.7	5.4	58.0	0.7
433 BEACH 37 ST	15954	65	57.3	75.7	0.7	75.4	0.4	77.6	2.6	76.7	1.7	75.7	0.7	75.4	0.4	75.1	0.1	75.0	0.0	75.0	0.0	75.1	0.1	75.0	0.0	75.8	0.8	75.5	0.5	75.0	0.0
433 BEACH 43 ST	15965	103	57.3	85.9	28.8	83.6	26.5	73.2	16.1	69.5	12.4	63.4	6.3	60.7	3.6	59.6	2.5	58.6	1.5	57.3	0.2	58.3	1.2	57.8	0.7	58.6	1.5	58.0	0.9	57.2	0.1
433 BEACH 45 ST	15968	95	57.8	75.1	0.1	75.1	0.1	75.7	0.7	75.5	0.5	75.2	0.2	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
434 BEACH 37 ST	15953	16	57.3	75.5	0.5	75.3	0.3	75.7	0.7	75.5	0.5	75.4	0.4	75.2	0.2	75.1	0.1	75.0	0.0	75.0	0.0	75.1	0.1	75.0	0.0	77.6	2.6	76.7	1.7	75.2	0.2
434 BEACH 38 ST	15954	18	57.3	75.1	0.1	75.1	0.1	76.1	1.1	75.7	0.7	75.2	0.2	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.2	0.2	75.1	0.1	75.0	0.0
434 BEACH 46 ST	15968	19	53.9	75.5	0.5	75.3	0.3	76.5	1.5	75.9	0.9	75.6	0.6	75.3	0.3	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.0	0.0	75.3	0.3	75.2	0.2	75.0	0.0
434 BEACH 47 ST	15969	17	57.1	78.8	8.1	77.0	6.3	72.9	2.2	71.8	1.1	71.7	1.0	71.3	0.6	71.0	0.3	70.8	0.1	70.7	0.0	70.8	0.1	70.7	0.0	70.8	0.1	70.8	0.1	70.7	0.0
434 BEACH 48 ST	15972	13	59.0	75.2	0.2	75.1	0.1	75.1	0.1	75.1	0.1	75.2	0.2	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.3	0.3	75.2	0.2	75.0	0.0
434A BEACH 37 ST	15953	16	57.3	80.7	23.6	78.4	21.3	70.1	13.0	67.2	10.1	64.2	7.1	62.1	5.0	60.1	3.0	58.9	1.8	57.4	0.3	59.0	1.9	58.3	1.2	58.8	1.7	58.1	1.0	57.2	0.1
434A BEACH 46 ST	15968	19	53.9	79.1	8.4	77.2	6.5	72.8	2.1	72.3	1.6	71.9	1.2	71.5	0.8	71.0	0.3	70.9	0.2	70.7	0.0	70.8	0.1	70.8	0.1	70.8	0.1	70.7	0.0	70.7	0.0
435 BEACH 37 ST	15954	63	57.3	85.4	14.7	83.2	12.5	74.3	3.6	72.1	1.4	71.6	0.9	71.2	0.5	71.0	0.3	70.8	0.1	70.7	0.0	70.8	0.1	70.8	0.1	70.8	0.1	70.8	0.1	70.7	0.0
435 BEACH 43 ST	15965	100	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
436 BEACH 37 ST	15953	18	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
436 BEACH 38 ST	15954	19	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
437 BEACH 36 ST	15953	53	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
437 BEACH 43 ST	15965	99	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
437 BEACH 47 ST	15972	42	57.1	72.4	1.7	71.8	1.1	72.4	1.7	71.7	1.0	89.7	19.0	87.5	16.8	77.2	6.5	70.9	0.2	70.7	0.0	70.8	0.1	70.7	0.0	71.0	0.3	70.9	0.2	70.7	0.0
437A BEACH 36 ST	15953	53	57.3	71.4	0.7	71.1	0.4	71.9	1.2	71.5	0.8	81.5	10.8	79.5	8.8	72.5	1.8	70.8	0.1	70.7	0.0	70.8	0.1	70.8	0.1	70.8	0.1	70.8	0.1	70.7	0.0

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
438 BEACH 43 ST	15960	24	57.3	75.1	0.1	75.1	0.1	75.1	0.1	75.7	0.7	75.4	0.4	75.4	0.4	75.4	0.4	75.2	0.2	75.4	0.4	75.4	0.4	75.2	0.2	75.3	0.3	75.2	0.2	75.0	0.0
438 BEACH 44 ST	15965	21	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.3	0.3	75.2	0.2	75.2	0.2	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
438 BEACH 45 ST	15966	1	57.8	69.1	0.1	69.0	0.0	69.1	0.1	71.4	2.4	70.1	1.1	70.1	1.1	79.3	10.3	77.0	8.0	71.9	2.9	71.9	2.9	70.4	1.4	69.5	0.5	69.2	0.2	69.0	0.0
438 BEACH 47 ST	15969	19	57.1	69.0	0.0	69.0	0.0	69.1	0.1	69.4	0.4	69.3	0.3	69.3	0.3	81.2	12.2	78.7	9.7	73.3	4.3	73.4	4.4	71.4	2.4	70.0	1.0	69.4	0.4	69.0	0.0
438 BEACH 48 ST	15972	15	59.0	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0
438A BEACH 44 ST	15965	21	57.3	69.1	0.1	69.0	0.0	69.0	0.0	72.2	3.2	71.0	2.0	71.0	2.0	74.9	5.9	73.0	4.0	71.7	2.7	71.7	2.7	70.5	1.5	70.1	1.1	69.5	0.5	69.0	0.0
438A BEACH 45 ST	15966	1	57.8	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.2	0.2	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
439 BEACH 37 ST	15954	62	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.2	0.2	75.1	0.1	75.2	0.2	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.0	0.0	75.0	0.0
439 BEACH 43 ST	15965	98	57.3	69.1	0.1	69.0	0.0	69.1	0.1	72.7	3.7	71.4	2.4	71.4	2.4	75.6	6.6	73.6	4.6	73.5	4.5	73.6	4.6	71.9	2.9	70.2	1.2	69.6	0.6	69.0	0.0
44-02 NORTON AVENUE	15963	46	59.0	67.0	0.1	66.9	0.0	67.0	0.1	67.4	0.5	67.2	0.3	67.2	0.3	82.4	15.5	79.8	12.9	74.7	7.8	74.7	7.8	72.1	5.2	67.9	1.0	67.2	0.3	66.9	0.0
44-02 ROCKAWAY BEACH BLVD	15836	17	69.0	66.9	0.0	66.9	0.0	67.0	0.1	69.4	2.5	68.4	1.5	68.4	1.5	88.1	21.2	85.5	18.6	76.1	9.2	76.1	9.2	71.0	4.1	68.9	2.0	67.9	1.0	67.0	0.1
44-06 ROCKAWAY BEACH BLVD	15836	17	69.0	67.0	0.1	67.0	0.1	67.0	0.1	67.3	0.4	67.2	0.3	67.2	0.3	77.8	10.9	75.4	8.5	81.7	14.8	81.7	14.8	79.1	12.2	71.7	4.8	68.8	1.9	67.0	0.1
44-08 NORTON AVENUE	15963	49	59.0	67.0	0.1	66.9	0.0	67.0	0.1	69.0	2.1	67.3	0.4	67.3	0.4	86.5	19.6	83.9	17.0	81.9	15.0	81.9	15.0	79.0	12.1	72.1	5.2	69.5	2.6	67.1	0.2
44-10 ROCKAWAY BEACH BLVD	15836	19	69.0	69.1	0.1	69.0	0.0	69.1	0.1	72.6	3.6	71.2	2.2	71.2	2.2	74.2	5.2	72.5	3.5	73.8	4.8	73.8	4.8	72.1	3.1	71.0	2.0	70.1	1.1	69.1	0.1
44-12 ROCKAWAY BEACH BLVD	15836	19	69.0	69.1	0.1	69.1	0.1	69.1	0.1	71.7	2.7	70.7	1.7	70.7	1.7	76.5	7.5	74.4	5.4	76.3	7.3	76.3	7.3	74.2	5.2	70.9	1.9	69.9	0.9	69.1	0.1
44-14 NORTON AVENUE	15963	52	59.0	75.2	0.2	75.1	0.1	75.2	0.2	75.5	0.5	76.4	1.4	75.9	0.9	75.4	0.4	75.2	0.2	75.2	0.2	75.5	0.5	75.3	0.3	76.2	1.2	75.7	0.7	75.1	0.1
44-16 ROCKAWAY BEACH BLVD	15836	21	69.0	58.2	0.9	57.9	0.6	58.1	0.8	57.8	0.5	65.7	8.4	63.8	6.5	59.7	2.4	58.4	1.1	57.9	0.6	59.4	2.1	58.6	1.3	61.0	3.7	59.8	2.5	57.5	0.2
44-18 ROCKAWAY BEACH BLVD	15836	21	69.0	75.8	0.8	75.5	0.5	75.8	0.8	75.5	0.5	78.9	3.9	77.7	2.7	76.5	1.5	75.9	0.9	75.1	0.1	75.4	0.4	75.2	0.2	77.2	2.2	76.4	1.4	75.1	0.1
440 BEACH 37 ST	15953	20	57.3	76.7	6.0	75.1	4.4	72.5	1.8	71.5	0.8	77.8	7.1	76.2	5.5	72.1	1.4	71.3	0.6	70.7	0.0	70.9	0.2	70.8	0.1	70.8	0.1	70.8	0.1	70.7	0.0
440 BEACH 38 ST	15954	20	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
440 BEACH 45 ST	15966	3	57.8	73.5	2.8	72.5	1.8	71.8	1.1	71.4	0.7	78.2	7.5	76.5	5.8	71.8	1.1	71.2	0.5	70.7	0.0	70.9	0.2	70.8	0.1	70.9	0.2	70.8	0.1	70.7	0.0
440 BEACH 46 ST	15968	24	53.9	71.4	0.7	71.1	0.4	71.4	0.7	71.2	0.5	78.9	8.2	77.1	6.4	72.0	1.3	71.1	0.4	70.7	0.0	70.9	0.2	70.8	0.1	70.8	0.1	70.8	0.1	70.7	0.0
440 BEACH 47 ST	15969	19	57.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
440 BEACH 48 ST	15972	16	59.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
441 BEACH 43 ST	15965	97	57.3	72.7	2.0	72.0	1.3	72.7	2.0	72.0	1.3	77.3	6.6	75.7	5.0	71.8	1.1	71.2	0.5	70.7	0.0	71.1	0.4	70.9	0.2	71.5	0.8	71.2	0.5	70.7	0.0
441 BEACH 45 ST	15968	91	57.8	72.8	2.1	72.1	1.4	72.5	1.8	71.9	1.2	80.2	9.5	78.3	7.6	72.5	1.8	71.4	0.7	70.8	0.1	71.0	0.3	70.9	0.2	71.0	0.3	70.9	0.2	70.7	0.0
441 BEACH 46 ST	15969	58	53.9	74.4	3.7	73.3	2.6	71.6	0.9	70.9	0.2	73.3	2.6	72.4	1.7	71.0	0.3	70.8	0.1	70.7	0.0	70.8	0.1	70.7	0.0	70.8	0.1	70.7	0.0	70.7	0.0
441 BEACH 47 ST	15972	42	57.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
441 BEACH 51 ST	16001	2	59.0	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	76.1	1.1	75.7	0.7	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.0	0.0	76.7	1.7	76.1	1.1	75.1	0.1
441A BEACH 43 ST	15965	97	57.3	79.6	8.9	77.7	7.0	72.5	1.8	71.6	0.9	87.2	16.5	85.1	14.4	75.5	4.8	71.1	0.4	70.7	0.0	70.9	0.2	70.8	0.1	70.9	0.2	70.8	0.1	70.7	0.0
442 BEACH 37 ST	15953	22	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
442 BEACH 38 ST	15954	23	57.3	67.5	9.7	65.6	7.8	67.0	9.2	64.3	6.5	81.1	23.3	78.9	21.1	68.8	11.0	63.0	5.2	58.6	0.8	63.2	5.4	61.6	3.8	64.8	7.0	63.0	5.2	58.5	0.7
442 BEACH 43 ST	15960	26	57.3	74.9	4.2	73.6	2.9	71.2	0.5	70.9	0.2	78.9	8.2	77.1	6.4	71.8	1.1	71.0	0.3	70.7	0.0	70.9	0.2	70.8	0.1	70.8	0.1	70.7	0.0	70.7	0.0
442 BEACH 44 ST	15965	23	57.3	73.7	3.0	72.7	2.0	71.4	0.7	70.8	0.1	73.5	2.8	72.6	1.9	71.0	0.3	70.8	0.1	70.7	0.0	70.8	0.1	70.7	0.0	70.7	0.0	70.7	0.0	70.7	0.0
442 BEACH 46 ST	15968	26	53.9	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0
442 BEACH 47 ST	15969	22	57.1	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	91.0	16.0	88.9	13.9	79.4	4.4	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	76.6	1.6	76.0	1.0	75.1	0.1

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
442 BEACH 48 ST	15972	17	59.0	57.5	0.2	57.4	0.1	57.5	0.2	58.7	1.4	58.1	0.8	58.1	0.8	58.6	1.3	58.0	0.7	59.5	2.2	59.5	2.2	58.6	1.3	58.3	1.0	57.8	0.5	57.3	0.0
442A BEACH 47 ST	15969	22	57.1	57.6	0.3	57.5	0.2	57.9	0.6	58.4	1.1	57.9	0.6	57.9	0.6	58.4	1.1	57.9	0.6	58.0	0.7	58.1	0.8	57.7	0.4	57.7	0.4	57.5	0.2	57.3	0.0
443 BEACH 36 ST	15953	50	57.3	64.0	6.2	62.4	4.6	62.1	4.3	60.5	2.7	75.6	17.8	73.4	15.6	65.3	7.5	61.1	3.3	58.2	0.4	60.6	2.8	59.6	1.8	62.0	4.2	60.8	3.0	58.1	0.3
443 BEACH 37 ST	15954	60	57.3	71.0	0.3	70.9	0.2	71.4	0.7	71.1	0.4	86.6	15.9	84.5	13.8	75.1	4.4	70.9	0.2	70.7	0.0	70.8	0.1	70.8	0.1	70.8	0.1	70.8	0.1	70.7	0.0
443 BEACH 43 ST	15965	96	57.3	73.3	2.6	72.5	1.8	71.3	0.6	70.8	0.1	73.6	2.9	72.7	2.0	71.0	0.3	70.7	0.0	70.7	0.0	70.8	0.1	70.7	0.0	70.7	0.0	70.7	0.0	70.7	0.0
443 BEACH 47 ST	15972	40	59.0	75.0	0.0	75.0	0.0	75.2	0.2	75.2	0.2	76.0	1.0	75.6	0.6	75.4	0.4	75.2	0.2	75.0	0.0	75.1	0.1	75.1	0.1	83.0	8.0	81.3	6.3	76.0	1.0
443A BEACH 36 ST	15953	50	57.3	64.9	7.1	63.3	5.5	66.7	8.9	65.3	7.5	70.4	12.6	68.4	10.6	67.2	9.4	65.2	7.4	59.5	1.7	64.4	6.6	62.6	4.8	62.4	4.6	61.1	3.3	58.2	0.4
443A BEACH 43 ST	15965	96	57.3	68.0	14.1	65.9	12.0	66.2	12.3	64.4	10.5	91.0	37.1	88.8	34.9	77.5	23.6	65.8	11.9	57.3	3.4	63.4	9.5	61.0	7.1	62.1	8.2	60.2	6.3	54.8	0.9
444 BEACH 44 ST	15965	25	57.3	72.3	1.6	71.7	1.0	71.1	0.4	70.9	0.2	81.1	10.4	79.2	8.5	73.0	2.3	71.7	1.0	70.8	0.1	71.2	0.5	71.0	0.3	70.9	0.2	70.8	0.1	70.7	0.0
444 BEACH 45 ST	15966	5	57.8	57.5	0.2	57.4	0.1	57.9	0.6	58.9	1.6	58.4	1.1	58.3	1.0	59.1	1.8	58.3	1.0	58.8	1.5	58.8	1.5	58.2	0.9	57.7	0.4	57.5	0.2	57.3	0.0
444A BEACH 44 ST	15965	25	57.3	57.6	0.3	57.5	0.2	57.6	0.3	58.5	1.2	58.0	0.7	58.0	0.7	58.3	1.0	57.8	0.5	59.0	1.7	59.0	1.7	58.3	1.0	58.1	0.8	57.7	0.4	57.3	0.0
445 BEACH 46 ST	15969	57	53.9	72.6	15.5	70.4	13.3	64.4	7.3	61.1	4.0	77.9	20.8	75.8	18.7	67.3	10.2	63.0	5.9	58.0	0.9	60.6	3.5	59.1	2.0	59.3	2.2	58.4	1.3	57.2	0.1
445 BEACH 47 ST	15972	40	59.0	73.0	2.3	72.2	1.5	71.3	0.6	70.8	0.1	73.6	2.9	72.6	1.9	71.0	0.3	70.8	0.1	70.7	0.0	70.8	0.1	70.7	0.0	70.7	0.0	70.7	0.0	70.7	0.0
445 BEACH 51 ST	16001	2	59.0	71.7	3.2	71.1	2.6	70.9	2.4	68.9	0.4	68.9	0.4	68.8	0.3	68.7	0.2	68.6	0.1	68.5	0.0	68.7	0.2	68.6	0.1	68.6	0.1	68.6	0.1	68.5	0.0
446 BEACH 45 ST	15966	7	57.8	69.1	0.1	69.1	0.1	69.1	0.1	71.2	2.2	69.7	0.7	69.7	0.7	73.0	4.0	71.5	2.5	78.0	9.0	78.0	9.0	75.7	6.7	72.2	3.2	70.6	1.6	69.1	0.1
446 BEACH 47 ST	15969	22	57.1	75.1	0.1	75.0	0.0	75.1	0.1	75.4	0.4	75.5	0.5	75.3	0.3	75.4	0.4	75.2	0.2	75.2	0.2	75.2	0.2	75.1	0.1	75.3	0.3	75.2	0.2	75.0	0.0
446 BEACH 48 ST	15972	18	59.0	69.1	0.1	69.1	0.1	69.2	0.2	71.0	2.0	70.3	1.3	70.3	1.3	71.5	2.5	70.5	1.5	78.2	9.2	78.2	9.2	76.0	7.0	72.7	3.7	70.9	1.9	69.1	0.1
446A BEACH 47 ST	15969	23	57.1	69.1	0.1	69.1	0.1	69.1	0.1	69.2	0.2	69.2	0.2	69.1	0.1	70.2	1.2	69.7	0.7	75.2	6.2	75.2	6.2	73.3	4.3	70.9	1.9	69.9	0.9	69.1	0.1
447 BEACH 46 ST	15969	55	53.9	71.5	0.1	71.4	0.0	71.5	0.1	71.7	0.3	71.6	0.2	71.6	0.2	72.5	1.1	72.0	0.6	76.4	5.0	76.4	5.0	74.8	3.4	81.1	9.7	78.6	7.2	72.4	1.0
448 BEACH 44 ST	15965	27	57.3	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.3	0.3	75.2	0.2	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	75.0	0.0
448 BEACH 47 ST	15969	124	59.0	69.0	0.0	69.0	0.0	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	72.4	3.4	71.2	2.2	87.5	18.5	87.5	18.5	84.8	15.8	74.9	5.9	71.0	2.0	69.2	0.2
448 BEACH 48 ST	15972	20	59.0	69.1	0.1	69.1	0.1	69.3	0.3	69.2	0.2	69.3	0.3	69.2	0.2	74.2	5.2	72.5	3.5	86.1	17.1	86.1	17.1	83.5	14.5	74.7	5.7	70.9	1.9	69.1	0.1
449 BEACH 47 ST	15972	38	59.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.2	0.2	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	75.0	0.0
45-08 BEACH CHANNEL DR	15968	108	70.7	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.2	0.2	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	75.0	0.0
45-16 NORTON AVENUE	15964	51	59.0	69.1	0.1	69.1	0.1	69.2	0.2	69.2	0.2	69.2	0.2	69.1	0.1	72.6	3.6	71.3	2.3	83.3	14.3	83.3	14.3	80.7	11.7	76.1	7.1	73.2	4.2	69.4	0.4
45-16 ROCKAWAY BEACH BLVD	15837	1	53.9	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.2	0.2	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.0	0.0
45-16A ROCKAWAY BEACH BLVD	15837	1	53.9	69.1	0.1	69.1	0.1	69.2	0.2	69.2	0.2	69.2	0.2	69.1	0.1	71.5	2.5	70.5	1.5	79.5	10.5	79.5	10.5	77.1	8.1	76.4	7.4	74.2	5.2	69.6	0.6
45-18 NORTON AVENUE	15964	50	59.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.2	0.2	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.2	0.2	75.1	0.1	75.0	0.0
450 BEACH 44 ST	15965	27	57.3	57.6	0.3	57.5	0.2	58.1	0.8	58.2	0.9	57.8	0.5	57.8	0.5	58.7	1.4	58.1	0.8	60.8	3.5	60.8	3.5	59.5	2.2	58.9	1.6	58.1	0.8	57.4	0.1
450 BEACH 46 ST	15968	27	53.9	57.7	0.4	57.6	0.3	57.6	0.3	59.5	2.2	58.7	1.4	58.7	1.4	58.7	1.4	58.0	0.7	59.7	2.4	59.8	2.5	58.8	1.5	58.5	1.2	57.9	0.6	57.3	0.0
450 BEACH 48 ST	15972	20	59.0	75.1	0.1	75.1	0.1	75.1	0.1	75.1	0.1	90.3	15.3	88.2	13.2	78.9	3.9	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	76.6	1.6	76.0	1.0	75.1	0.1
4505 ROCKAWAY BEACH BLVD	15853	40	71.4	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	77.7	2.7	76.8	1.8	75.5	0.5	75.2	0.2	75.0	0.0	75.1	0.1	75.0	0.0	82.7	7.7	81.0	6.0	75.9	0.9
450A BEACH 48 ST	15972	20	59.0	61.5	4.4	60.2	3.1	59.2	2.1	58.7	1.6	86.3	29.2	84.1	27.0	73.4	16.3	63.1	6.0	58.1	1.0	61.2	4.1	59.6	2.5	59.4	2.3	58.6	1.5	57.2	0.1
451 BEACH 47 ST	15972	37	59.0	73.1	2.4	72.4	1.7	72.0	1.3	71.1	0.4	87.3	16.6	85.2	14.5	75.5	4.8	71.0	0.3	70.7	0.0	70.9	0.2	70.8	0.1	70.8	0.1	70.8	0.1	70.7	0.0
451A BEACH 47 ST	15972	38	59.0	57.4	0.1	57.4	0.1	57.7	0.4	57.5	0.2	57.4	0.1	57.4	0.1	57.5	0.2	57.4	0.1	58.1	0.8	58.2	0.9	57.8	0.5	57.8	0.5	57.6	0.3	57.3	0.0

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
452 BEACH 45 ST	15966	9	57.8	57.4	0.1	57.4	0.1	57.5	0.2	58.3	1.0	57.9	0.6	57.9	0.6	58.1	0.8	57.7	0.4	58.3	1.0	58.3	1.0	57.8	0.5	58.5	1.2	57.9	0.6	57.3	0.0
453 BEACH 43 ST	15965	93	57.3	65.8	8.0	64.1	6.3	64.6	6.8	62.4	4.6	78.8	21.0	76.7	18.9	67.8	10.0	62.8	5.0	58.5	0.7	62.0	4.2	60.6	2.8	62.0	4.2	60.7	2.9	58.1	0.3
455 BEACH 36 ST	15953	45	57.3	71.4	14.3	69.4	12.3	64.7	7.6	61.2	4.1	77.0	19.9	74.9	17.8	67.1	10.0	63.5	6.4	58.1	1.0	61.3	4.2	59.7	2.6	59.1	2.0	58.3	1.2	57.2	0.1
455 BEACH 37 ST	15954	54	57.3	62.4	5.3	61.0	3.9	59.1	2.0	58.3	1.2	74.0	16.9	71.8	14.7	62.8	5.7	59.2	2.1	57.4	0.3	58.5	1.4	57.9	0.8	57.9	0.8	57.6	0.5	57.1	0.0
455 BEACH 46 ST	15969	52	53.9	57.3	0.0	57.3	0.0	57.5	0.2	58.8	1.5	58.2	0.9	58.2	0.9	58.2	0.9	57.8	0.5	58.7	1.4	58.7	1.4	58.1	0.8	58.5	1.2	58.0	0.7	57.3	0.0
455 BEACH CHANNEL DR	15960	60	75.0	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	77.0	2.0	76.3	1.3	75.2	0.2	75.1	0.1	75.0	0.0	75.1	0.1	75.1	0.1	76.3	1.3	75.8	0.8	75.1	0.1
456 BEACH 45 ST	15966	11	57.8	59.0	1.7	58.4	1.1	59.5	2.2	59.4	2.1	72.9	15.6	70.8	13.5	64.7	7.4	62.5	5.2	58.9	1.6	60.3	3.0	59.2	1.9	76.8	19.5	74.7	17.4	64.4	7.1
456 BEACH 46 ST	15968	29	53.9	64.3	6.5	62.8	5.0	65.9	8.1	63.8	6.0	73.6	15.8	71.5	13.7	68.4	10.6	66.3	8.5	59.6	1.8	64.9	7.1	63.0	5.2	62.7	4.9	61.2	3.4	58.2	0.4
456 BEACH CHANNEL DR	15955	3	75.0	63.0	9.1	61.0	7.1	59.7	5.8	58.3	4.4	74.8	20.9	72.7	18.8	66.5	12.6	64.0	10.1	56.7	2.8	61.0	7.1	58.7	4.8	58.8	4.9	57.3	3.4	54.3	0.4
457 BEACH 45 ST	15968	83	57.8	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	78.6	3.6	77.5	2.5	75.3	0.3	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	75.2	0.2	75.1	0.1	75.0	0.0
457 BEACH 46 ST	15969	51	53.9	57.5	0.2	57.4	0.1	57.5	0.2	58.3	1.0	57.8	0.5	57.8	0.5	58.3	1.0	57.8	0.5	59.7	2.4	59.7	2.4	58.8	1.5	59.1	1.8	58.3	1.0	57.4	0.1
458 BEACH 46 ST	15968	31	53.9	57.4	0.1	57.3	0.0	57.4	0.1	58.4	1.1	58.0	0.7	58.0	0.7	58.3	1.0	57.8	0.5	58.5	1.2	58.5	1.2	58.0	0.7	58.8	1.5	58.2	0.9	57.4	0.1
459 BEACH 43 ST	15965	92	57.3	63.0	5.7	61.5	4.2	60.0	2.7	59.2	1.9	78.2	20.9	76.1	18.8	70.1	12.8	67.4	10.1	59.7	2.4	65.1	7.8	63.0	5.7	68.7	11.4	66.6	9.3	59.3	2.0
459 BEACH 44 ST	15966	70	57.3	61.6	3.8	60.6	2.8	63.8	6.0	62.1	4.3	75.9	18.1	73.7	15.9	65.6	7.8	61.7	3.9	58.5	0.7	60.8	3.0	59.6	1.8	59.7	1.9	59.0	1.2	57.9	0.1
46-01 ROCKAWAY BEACH BLVD	15853	40	71.4	58.9	1.6	58.4	1.1	59.0	1.7	58.3	1.0	72.1	14.8	70.0	12.7	65.3	8.0	62.6	5.3	58.3	1.0	60.6	3.3	59.2	1.9	60.5	3.2	59.5	2.2	57.5	0.2
46-05 BEACH CHANNEL DR	15838	34	70.7	57.7	0.4	57.6	0.3	57.9	0.6	58.8	1.5	58.2	0.9	58.2	0.9	58.3	1.0	57.8	0.5	59.5	2.2	59.5	2.2	58.6	1.3	59.2	1.9	58.3	1.0	57.4	0.1
46-09 BEACH CHANNEL DR	15838	34	70.7	58.8	1.5	58.3	1.0	58.8	1.5	58.6	1.3	90.1	32.8	87.9	30.6	76.9	19.6	63.8	6.5	59.1	1.8	60.4	3.1	59.1	1.8	75.7	18.4	73.4	16.1	63.3	6.0
46-11 BEACH CHANNEL DR	15838	30	70.7	64.7	10.8	62.7	8.8	62.8	8.9	61.1	7.2	77.4	23.5	75.2	21.3	68.4	14.5	65.4	11.5	57.1	3.2	63.1	9.2	60.8	6.9	62.0	8.1	60.0	6.1	54.8	0.9
46-15 BEACH CHANNEL DR	15838	27	70.7	71.4	0.7	71.2	0.5	71.1	0.4	70.8	0.1	74.5	3.8	73.3	2.6	71.2	0.5	70.9	0.2	70.7	0.0	70.9	0.2	70.8	0.1	70.8	0.1	70.7	0.0	70.7	0.0
460 BEACH 43 ST	15960	32	57.3	57.4	0.1	57.4	0.1	57.4	0.1	57.7	0.4	57.6	0.3	57.5	0.2	57.5	0.2	57.4	0.1	57.6	0.3	57.6	0.3	57.5	0.2	57.6	0.3	57.5	0.2	57.3	0.0
460 BEACH 45 ST	15966	13	57.8	57.4	0.1	57.4	0.1	57.4	0.1	57.8	0.5	57.6	0.3	57.6	0.3	58.3	1.0	57.9	0.6	58.9	1.6	58.9	1.6	58.2	0.9	58.0	0.7	57.6	0.3	57.3	0.0
460 BEACH 46 ST	15968	32	53.9	59.8	5.9	58.2	4.3	64.7	10.8	62.7	8.8	86.7	32.8	84.5	30.6	73.4	19.5	59.7	5.8	55.1	1.2	59.3	5.4	57.6	3.7	59.1	5.2	57.6	3.7	54.3	0.4
460 BEACH 47 ST	15969	26	59.0	61.9	4.8	60.9	3.8	60.5	3.4	59.4	2.3	74.3	17.2	72.1	15.0	63.9	6.8	60.9	3.8	57.6	0.5	59.6	2.5	58.7	1.6	58.4	1.3	57.9	0.8	57.2	0.1
460A BEACH 45 ST	15966	13	57.3	57.4	0.1	57.4	0.1	57.4	0.1	57.5	0.2	57.5	0.2	57.4	0.1	57.6	0.3	57.5	0.2	57.5	0.2	57.6	0.3	57.4	0.1	57.6	0.3	57.4	0.1	57.3	0.0
460A BEACH 47 ST	15969	26	59.0	57.5	0.2	57.5	0.2	57.5	0.2	59.3	2.0	58.5	1.2	58.4	1.1	58.2	0.9	57.7	0.4	58.2	0.9	58.3	1.0	57.8	0.5	58.6	1.3	58.0	0.7	57.3	0.0
460B BEACH 47 ST	15969	26	59.0	75.1	0.1	75.0	0.0	75.1	0.1	75.0	0.0	79.9	4.9	78.5	3.5	75.5	0.5	75.1	0.1	75.0	0.0	75.2	0.2	75.1	0.1	76.2	1.2	75.8	0.8	75.1	0.1
461 BEACH 43 ST	15965	91	57.3	61.9	4.1	60.7	2.9	64.7	6.9	62.8	5.0	81.1	23.3	78.9	21.1	72.5	14.7	68.7	10.9	60.5	2.7	65.2	7.4	62.8	5.0	65.1	7.3	63.3	5.5	58.6	0.8
461 BEACH 44 ST	15966	68	57.3	62.7	8.8	60.8	6.9	62.1	8.2	60.3	6.4	89.0	35.1	86.8	32.9	75.7	21.8	67.0	13.1	58.1	4.2	63.1	9.2	60.6	6.7	61.9	8.0	59.9	6.0	54.8	0.9
461 BEACH 45 ST	15968	81	57.8	72.0	1.3	71.6	0.9	71.4	0.7	71.0	0.3	75.2	4.5	73.9	3.2	71.6	0.9	71.1	0.4	70.7	0.0	70.9	0.2	70.8	0.1	70.8	0.1	70.8	0.1	70.7	0.0
4615 NORTON AVENUE	15969	35	59.0	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	77.0	2.0	76.3	1.3	75.2	0.2	75.1	0.1	75.0	0.0	75.1	0.1	75.0	0.0	79.9	4.9	78.5	3.5	75.4	0.4
462 BEACH 43 ST	15960	34	57.3	60.2	2.4	59.4	1.6	60.7	2.9	59.7	1.9	77.2	19.4	75.0	17.2	67.0	9.2	62.7	4.9	58.5	0.7	61.2	3.4	59.9	2.1	60.6	2.8	59.7	1.9	58.0	0.2
462 BEACH 45 ST	15966	14	57.8	60.6	6.7	58.9	5.0	62.0	8.1	60.5	6.6	79.7	25.8	77.5	23.6	68.5	14.6	65.0	11.1	56.8	2.9	61.2	7.3	58.9	5.0	59.1	5.2	57.6	3.7	54.3	0.4
462 BEACH 46 ST	15968	33	53.9	57.6	0.3	57.5	0.2	57.7	0.4	58.8	1.5	58.2	0.9	58.2	0.9	58.5	1.2	57.9	0.6	59.5	2.2	59.5	2.2	58.6	1.3	58.5	1.2	58.0	0.7	57.3	0.0
462 BEACH 47 ST	15969	28	59.0	75.0	0.0	75.0	0.0	75.1	0.1	75.0	0.0	83.7	8.7	81.9	6.9	76.2	1.2	75.1	0.1	75.0	0.0	75.2	0.2	75.1	0.1	76.1	1.1	75.7	0.7	75.1	0.1
462A BEACH 47 ST	15969	28	59.0	61.1	4.0	59.9	2.8	60.3	3.2	59.2	2.1	87.9	30.8	85.7	28.6	74.6	17.5	65.8	8.7	58.9	1.8	62.1	5.0	60.3	3.2	59.0	1.9	58.2	1.1	57.2	0.1
463 BEACH 43 ST	15965	90	57.3	71.6	0.9	71.3	0.6	71.2	0.5	70.9	0.2	75.0	4.3	73.8	3.1	71.6	0.9	71.1	0.4	70.7	0.0	71.0	0.3	70.9	0.2	70.8	0.1	70.8	0.1	70.7	0.0

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
464 BEACH 46 ST	15968	35	53.9	57.4	0.1	57.4	0.1	57.4	0.1	57.8	0.5	57.6	0.3	57.5	0.2	58.0	0.7	57.7	0.4	58.6	1.3	58.6	1.3	58.1	0.8	57.9	0.6	57.6	0.3	57.3	0.0
464A BEACH 46 ST	15968	35	53.9	57.5	0.2	57.5	0.2	57.6	0.3	59.7	2.4	58.8	1.5	58.8	1.5	59.2	1.9	58.3	1.0	60.1	2.8	60.1	2.8	59.0	1.7	59.1	1.8	58.3	1.0	57.4	0.1
465 BEACH 43 ST	15965	89	57.3	60.2	2.9	59.4	2.1	59.4	2.1	58.5	1.2	75.7	18.4	73.5	16.2	68.4	11.1	65.6	8.3	58.9	1.6	60.9	3.6	59.2	1.9	63.3	6.0	61.7	4.4	57.8	0.5
466 BEACH 43 ST	15960	37	57.3	60.9	3.1	59.9	2.1	63.5	5.7	62.0	4.2	74.2	16.4	72.1	14.3	65.9	8.1	63.1	5.3	58.6	0.8	61.6	3.8	60.1	2.3	60.0	2.2	59.2	1.4	57.9	0.1
466 BEACH 45 ST	15966	15	57.8	59.3	5.4	57.8	3.9	59.6	5.7	58.2	4.3	76.0	22.1	73.8	19.9	67.2	13.3	64.2	10.3	56.5	2.6	61.2	7.3	59.1	5.2	58.9	5.0	57.3	3.4	54.3	0.4
466 BEACH 47 ST	15969	30	59.0	62.5	5.4	61.6	4.5	61.7	4.6	60.5	3.4	73.7	16.6	71.6	14.5	65.0	7.9	61.7	4.6	57.7	0.6	60.1	3.0	58.9	1.8	58.4	1.3	57.9	0.8	57.2	0.1
466A BEACH 43 ST	15960	37	57.3	58.8	1.5	58.3	1.0	59.2	1.9	58.6	1.3	71.8	14.5	69.7	12.4	64.5	7.2	61.9	4.6	57.9	0.6	60.0	2.7	59.0	1.7	61.0	3.7	59.8	2.5	57.5	0.2
466B BEACH 43 ST	15960	37	57.3	59.6	5.7	58.1	4.2	60.5	6.6	58.8	4.9	77.4	23.5	75.2	21.3	67.1	13.2	64.8	10.9	56.6	2.7	59.9	6.0	57.6	3.7	57.3	3.4	56.1	2.2	54.1	0.2
467 BEACH 45 ST	15968	78	57.8	69.1	0.1	69.1	0.1	69.2	0.2	69.2	0.2	69.1	0.1	69.1	0.1	69.6	0.6	69.3	0.3	70.5	1.5	70.5	1.5	69.9	0.9	75.0	6.0	73.1	4.1	69.4	0.4
467 BEACH 47 ST	15972	28	59.0	69.1	0.1	69.1	0.1	69.2	0.2	69.1	0.1	69.1	0.1	69.1	0.1	69.4	0.4	69.2	0.2	69.2	0.2	69.2	0.2	69.1	0.1	75.8	6.8	73.7	4.7	69.5	0.5
468 BEACH 45 ST	15966	17	57.8	69.3	0.3	69.2	0.2	69.5	0.5	69.3	0.3	69.3	0.3	69.2	0.2	69.8	0.8	69.4	0.4	69.3	0.3	69.4	0.4	69.2	0.2	79.0	10.0	76.5	7.5	70.1	1.1
468 BEACH 47 ST	15969	31	59.0	71.5	0.8	71.2	0.5	71.1	0.4	70.9	0.2	72.4	1.7	71.8	1.1	71.5	0.8	71.2	0.5	70.7	0.0	71.0	0.3	70.8	0.1	70.8	0.1	70.8	0.1	70.7	0.0
470 BEACH 46 ST	15968	36	53.9	73.7	5.2	73.1	4.6	72.8	4.3	69.2	0.7	69.1	0.6	68.8	0.3	68.8	0.3	68.7	0.2	68.5	0.0	68.9	0.4	68.7	0.2	68.7	0.2	68.6	0.1	68.5	0.0
470A BEACH 46 ST	15968	36	53.9	63.5	5.7	62.2	4.4	65.1	7.3	62.8	5.0	79.9	22.1	77.7	19.9	73.4	15.6	70.9	13.1	61.7	3.9	65.7	7.9	63.0	5.2	61.0	3.2	59.9	2.1	58.0	0.2
470B BEACH 46 ST	15968	35	53.9	59.7	5.8	58.1	4.2	60.4	6.5	58.9	5.0	76.0	22.1	73.8	19.9	68.2	14.3	65.0	11.1	56.8	2.9	61.9	8.0	59.6	5.7	59.6	5.7	57.8	3.9	54.4	0.5
471 BEACH 44 ST	15966	65	57.3	57.6	3.7	56.4	2.5	56.4	2.5	55.6	1.7	72.1	18.2	69.9	16.0	63.4	9.5	61.3	7.4	55.2	1.3	57.8	3.9	56.1	2.2	55.9	2.0	55.1	1.2	54.0	0.1
471 BEACH 46 ST	15969	46	59.0	57.5	0.2	57.5	0.2	57.5	0.2	59.6	2.3	58.7	1.4	58.7	1.4	59.1	1.8	58.3	1.0	59.7	2.4	59.7	2.4	58.7	1.4	58.8	1.5	58.1	0.8	57.4	0.1
472 BEACH 43 ST	15960	39	57.3	57.3	0.0	57.3	0.0	57.3	0.0	58.7	1.4	58.1	0.8	58.1	0.8	58.5	1.2	57.9	0.6	58.3	1.0	58.3	1.0	57.8	0.5	59.1	1.8	58.3	1.0	57.4	0.1
472 BEACH 45 ST	15966	18	57.8	58.7	1.4	58.2	0.9	58.3	1.0	59.0	1.7	85.7	28.4	83.5	26.2	73.0	15.7	65.6	8.3	59.2	1.9	61.0	3.7	59.1	1.8	71.5	14.2	69.4	12.1	60.6	3.3
472 BEACH 46 ST	15968	38	53.9	57.4	0.1	57.4	0.1	57.4	0.1	57.8	0.5	57.6	0.3	57.6	0.3	57.8	0.5	57.6	0.3	58.5	1.2	58.5	1.2	58.0	0.7	57.8	0.5	57.5	0.2	57.3	0.0
472 BEACH 47 ST	15969	33	59.0	57.3	0.0	57.3	0.0	57.4	0.1	60.0	2.7	59.0	1.7	59.0	1.7	58.8	1.5	58.2	0.9	60.1	2.8	60.1	2.8	59.0	1.7	59.0	1.7	58.2	0.9	57.4	0.1
473 BEACH 44 ST	15966	63	57.3	58.8	1.5	58.3	1.0	59.7	2.4	60.3	3.0	75.3	18.0	73.1	15.8	64.0	6.7	61.1	3.8	57.9	0.6	63.6	6.3	61.9	4.6	75.2	17.9	73.0	15.7	63.0	5.7
473 BEACH 45 ST	15968	75	57.8	60.7	3.4	59.8	2.5	61.4	4.1	60.0	2.7	77.9	20.6	75.8	18.5	69.6	12.3	65.9	8.6	59.2	1.9	63.7	6.4	62.1	4.8	68.8	11.5	66.8	9.5	59.3	2.0
473 BEACH 46 ST	15969	45	59.0	59.6	1.8	58.9	1.1	59.0	1.2	58.5	0.7	78.0	20.2	75.9	18.1	70.6	12.8	68.1	10.3	60.2	2.4	64.3	6.5	62.2	4.4	60.7	2.9	59.5	1.7	58.0	0.2
473A BEACH 45 ST	15968	75	57.8	59.8	5.9	58.3	4.4	61.0	7.1	59.3	5.4	77.5	23.6	75.3	21.4	69.2	15.3	66.4	12.5	57.6	3.7	62.5	8.6	60.1	6.2	59.4	5.5	57.8	3.9	54.3	0.4
473B BEACH 45 ST	15968	75	57.8	65.2	8.1	63.6	6.5	63.5	6.4	61.6	4.5	74.8	17.7	72.6	15.5	67.6	10.5	64.6	7.5	58.8	1.7	62.1	5.0	60.3	3.2	59.9	2.8	58.8	1.7	57.3	0.2
474 BEACH 44 ST	15965	40	57.3	57.3	0.0	57.3	0.0	57.4	0.1	58.7	1.4	58.1	0.8	58.1	0.8	58.3	1.0	57.8	0.5	58.5	1.2	58.5	1.2	58.0	0.7	58.9	1.6	58.2	0.9	57.4	0.1
474 BEACH 45 ST	15966	20	57.8	56.8	2.9	55.8	1.9	58.8	4.9	57.5	3.6	76.1	22.2	73.9	20.0	69.7	15.8	67.1	13.2	57.9	4.0	61.1	7.2	58.2	4.3	58.6	4.7	57.1	3.2	54.2	0.3
475 BEACH 44 ST	15966	62	57.3	56.9	3.0	55.9	2.0	56.6	2.7	55.7	1.8	70.3	16.4	68.2	14.3	66.3	12.4	63.9	10.0	56.2	2.3	58.2	4.3	55.9	2.0	56.4	2.5	55.4	1.5	54.0	0.1
475 BEACH 45 ST	15968	73	57.8	57.4	0.1	57.3	0.0	57.4	0.1	59.6	2.3	58.7	1.4	58.7	1.4	59.0	1.7	58.2	0.9	59.1	1.8	59.2	1.9	58.4	1.1	58.5	1.2	57.9	0.6	57.3	0.0
475 BEACH 46 ST	15969	44	59.0	57.3	0.0	57.3	0.0	57.3	0.0	59.2	1.9	58.6	1.3	58.6	1.3	58.8	1.5	58.1	0.8	58.6	1.3	58.6	1.3	58.0	0.7	58.9	1.6	58.2	0.9	57.4	0.1
476 BEACH 45 ST	15966	22	57.8	60.2	6.3	58.6	4.7	63.3	9.4	61.6	7.7	92.0	38.1	89.8	35.9	78.7	24.8	69.3	15.4	59.6	5.7	63.3	9.4	60.1	6.2	60.8	6.9	58.9	5.0	54.6	0.7
476 BEACH 46 ST	15968	39	59.0	62.1	5.0	60.8	3.7	61.0	3.9	59.5	2.4	77.0	19.9	74.9	17.8	71.5	14.4	69.1	12.0	60.4	3.3	64.1	7.0	61.6	4.5	58.9	1.8	58.0	0.9	57.2	0.1
476A BEACH 45 ST	15966	22	57.8	71.4	0.7	71.2	0.5	71.1	0.4	70.9	0.2	73.3	2.6	72.4	1.7	71.4	0.7	71.0	0.3	70.7	0.0	70.9	0.2	70.8	0.1	70.8	0.1	70.7	0.0	70.7	0.0
477 BEACH 45 ST	15968	73	57.8	57.4	0.1	57.3	0.0	57.4	0.1	57.8	0.5	57.6	0.3	57.6	0.3	58.3	1.0	57.9	0.6	58.4	1.1	58.4	1.1	57.9	0.6	57.8	0.5	57.5	0.2	57.3	0.0
477 BEACH 46 ST	15969	43	59.0	58.9	1.6	58.4	1.1	59.1	1.8	58.9	1.6	73.1	15.8	71.1	13.8	63.3	6.0	60.6	3.3	58.1	0.8	62.3	5.0	61.0	3.7	71.9	14.6	69.8	12.5	60.8	3.5

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
478 BEACH 43 ST	15960	42	57.3	58.9	1.6	58.4	1.1	59.1	1.8	58.9	1.6	73.1	15.8	71.1	13.8	63.3	6.0	60.6	3.3	58.1	0.8	62.3	5.0	61.0	3.7	71.9	14.6	69.8	12.5	60.8	3.5
478 BEACH 44 ST	15965	40	57.3	62.3	5.0	61.1	3.8	62.8	5.5	61.5	4.2	87.4	30.1	85.2	27.9	78.0	20.7	74.6	17.3	64.3	7.0	68.7	11.4	65.3	8.0	71.2	13.9	69.0	11.7	60.4	3.1
478 BEACH 46 ST	15968	41	59.0	59.6	5.7	58.1	4.2	60.5	6.6	58.8	4.9	75.3	21.4	73.2	19.3	70.4	16.5	67.8	13.9	58.6	4.7	62.7	8.8	59.8	5.9	59.0	5.1	57.4	3.5	54.3	0.4
479 BEACH 44 ST	15966	59	57.3	64.2	7.1	63.1	6.0	63.2	6.1	60.4	3.3	71.9	14.8	69.8	12.7	65.7	8.6	63.8	6.7	58.2	1.1	63.8	6.7	61.9	4.8	60.3	3.2	59.1	2.0	57.3	0.2
48-09 ROCKAWAY BEACH BLVD	15855	1	69.0	57.3	0.0	57.3	0.0	57.3	0.0	57.8	0.5	57.6	0.3	57.6	0.3	57.6	0.3	57.5	0.2	57.6	0.3	57.7	0.4	57.5	0.2	57.5	0.2	57.4	0.1	57.3	0.0
481 BEACH 44 ST	15966	58	57.3	59.2	1.9	58.6	1.3	59.4	2.1	58.6	1.3	77.6	20.3	75.5	18.2	66.9	9.6	63.3	6.0	58.2	0.9	62.0	4.7	60.4	3.1	59.6	2.3	58.7	1.4	57.4	0.1
481 BEACH 45 ST	15968	71	57.8	56.7	2.8	55.8	1.9	56.2	2.3	55.4	1.5	67.5	13.6	65.4	11.5	67.2	13.3	65.0	11.1	56.8	2.9	59.4	5.5	56.9	3.0	56.9	3.0	55.8	1.9	54.1	0.2
482 BEACH 44 ST	15965	43	57.3	60.3	3.2	59.4	2.3	58.7	1.6	57.9	0.8	65.7	8.6	63.8	6.7	60.6	3.5	59.4	2.3	57.4	0.3	58.8	1.7	58.1	1.0	57.9	0.8	57.6	0.5	57.1	0.0
484 BEACH 44 ST	15965	143	57.3	57.3	0.0	57.3	0.0	57.3	0.0	60.2	2.9	59.1	1.8	59.1	1.8	59.2	1.9	58.3	1.0	59.1	1.8	59.2	1.9	58.4	1.1	58.4	1.1	57.9	0.6	57.3	0.0
485 BEACH 45 ST	15968	69	57.8	59.6	2.3	59.0	1.7	59.0	1.7	59.1	1.8	76.2	18.9	74.0	16.7	71.0	13.7	68.2	10.9	60.2	2.9	62.8	5.5	60.3	3.0	72.1	14.8	70.0	12.7	61.0	3.7
486 BEACH 44 ST	15965	46	57.3	59.6	5.7	58.1	4.2	60.9	7.0	59.4	5.5	84.4	30.5	82.2	28.3	77.0	23.1	73.9	20.0	63.2	9.3	66.4	12.5	62.2	8.3	60.8	6.9	58.9	5.0	54.6	0.7
487 BEACH 44 ST	15966	56	57.3	61.3	4.2	60.3	3.2	60.3	3.2	59.2	2.1	70.4	13.3	68.3	11.2	74.7	17.6	72.4	15.3	62.6	5.5	65.4	8.3	61.9	4.8	59.0	1.9	58.1	1.0	57.2	0.1
488 BEACH 46 ST	15968	42	59.0	71.5	0.8	71.2	0.5	71.1	0.4	70.9	0.2	72.5	1.8	71.9	1.2	71.5	0.8	71.1	0.4	70.7	0.0	71.0	0.3	70.8	0.1	70.8	0.1	70.8	0.1	70.7	0.0
488A BEACH 46 ST	15968	42	59.0	57.4	0.1	57.3	0.0	57.4	0.1	58.2	0.9	57.8	0.5	57.8	0.5	58.2	0.9	57.8	0.5	58.7	1.4	58.8	1.5	58.1	0.8	58.0	0.7	57.7	0.4	57.3	0.0
49-15 ROCKAWAY BEACH BLVD	15857	42	69.0	57.3	0.0	57.3	0.0	57.3	0.0	58.8	1.5	58.2	0.9	58.2	0.9	58.6	1.3	58.0	0.7	59.9	2.6	59.9	2.6	58.9	1.6	58.0	0.7	57.6	0.3	57.3	0.0
490 BEACH 44 ST	15965	47	57.3	57.8	3.9	56.6	2.7	57.6	3.7	56.4	2.5	75.3	21.4	73.2	19.3	73.3	19.4	71.2	17.3	60.9	7.0	61.5	7.6	57.7	3.8	59.3	5.4	57.7	3.8	54.3	0.4
491 BEACH 44 ST	15966	54	57.3	57.4	0.1	57.3	0.0	57.4	0.1	57.7	0.4	57.6	0.3	57.5	0.2	57.7	0.4	57.5	0.2	57.6	0.3	57.6	0.3	57.5	0.2	57.6	0.3	57.5	0.2	57.3	0.0
492 BEACH 44 ST	15965	48	57.3	57.3	0.0	57.3	0.0	57.4	0.1	60.2	2.9	59.1	1.8	59.1	1.8	58.8	1.5	58.0	0.7	59.1	1.8	59.1	1.8	58.4	1.1	58.4	1.1	57.9	0.6	57.3	0.0
493 BEACH 44 ST	15966	53	57.3	57.3	0.0	57.3	0.0	57.3	0.0	58.6	1.3	58.1	0.8	58.1	0.8	58.6	1.3	58.0	0.7	58.2	0.9	58.3	1.0	57.8	0.5	57.4	0.1	57.4	0.1	57.3	0.0
494 BEACH 44 ST	15965	49	57.3	61.3	4.2	60.3	3.2	60.9	3.8	59.5	2.4	70.9	13.8	68.8	11.7	74.0	16.9	71.8	14.7	62.1	5.0	64.5	7.4	62.6	5.5	59.0	1.9	58.2	1.1	57.2	0.1
494A BEACH 44 ST	15965	49	57.3	57.3	0.0	57.3	0.0	57.3	0.0	58.5	1.2	58.0	0.7	58.0	0.7	58.6	1.3	58.0	0.7	58.8	1.5	58.8	1.5	58.2	0.9	57.9	0.6	57.6	0.3	57.3	0.0
498 BEACH 43 ST	15960	49	57.3	58.8	1.5	58.3	1.0	58.8	1.5	58.3	1.0	74.1	16.8	72.0	14.7	63.2	5.9	61.0	3.7	58.0	0.7	63.3	6.0	61.6	4.3	69.4	12.1	67.4	10.1	59.6	2.3
50-01 ROCKAWAY BEACH BLVD	15857	7	69.0	60.5	2.7	59.6	1.8	59.5	1.7	59.1	1.3	74.8	17.0	72.6	14.8	71.7	13.9	69.5	11.7	60.9	3.1	64.5	6.7	62.0	4.2	61.0	3.2	59.8	2.0	58.0	0.2
50-15 BEACH CHANNEL DR	15842	100	60.1	57.3	3.4	56.3	2.4	56.8	2.9	55.9	2.0	73.9	20.0	71.8	17.9	86.9	33.0	84.7	30.8	73.5	19.6	73.7	19.8	59.6	5.7	58.6	4.7	57.1	3.2	54.2	0.3
500 BEACH 45 ST	15966	26	57.8	61.8	4.7	60.5	3.4	59.2	2.1	58.8	1.7	67.6	10.5	65.7	8.6	63.4	6.3	61.6	4.5	57.7	0.6	61.4	4.3	60.0	2.9	58.6	1.5	57.9	0.8	57.2	0.1
502 BEACH 43 ST	15960	51	57.3	58.8	1.5	58.3	1.0	58.8	1.5	58.9	1.6	69.8	12.5	67.7	10.4	64.4	7.1	62.3	5.0	58.1	0.8	63.3	6.0	61.7	4.4	70.9	13.6	68.8	11.5	60.3	3.0
504 BEACH 43 ST	15960	51	57.3	56.7	2.8	55.8	1.9	57.1	3.2	56.2	2.3	69.5	15.6	67.4	13.5	75.8	21.9	73.6	19.7	63.0	9.1	63.5	9.6	56.2	2.3	56.1	2.2	55.2	1.3	54.0	0.1
504A BEACH 43 ST	15960	53	57.3	69.2	0.2	69.2	0.2	69.5	0.5	69.2	0.2	69.2	0.2	69.1	0.1	69.4	0.4	69.2	0.2	69.2	0.2	69.2	0.2	69.1	0.1	78.5	9.5	76.1	7.1	70.0	1.0
506 BEACH 43 ST	15960	54	57.3	69.2	0.2	69.2	0.2	69.5	0.5	69.3	0.3	69.2	0.2	69.1	0.1	69.3	0.3	69.2	0.2	69.4	0.4	69.5	0.5	69.3	0.3	78.2	9.2	75.7	6.7	69.9	0.9
507 BEACH 43 ST	15962	100	57.3	69.3	0.3	69.2	0.2	69.6	0.6	69.3	0.3	69.2	0.2	69.1	0.1	69.3	0.3	69.1	0.1	69.5	0.5	69.6	0.6	69.3	0.3	77.1	8.1	74.8	5.8	69.7	0.7
508 BEACH 43 ST	15960	56	57.3	69.3	0.3	69.2	0.2	69.7	0.7	69.3	0.3	69.2	0.2	69.1	0.1	69.3	0.3	69.1	0.1	69.4	0.4	69.5	0.5	69.3	0.3	76.7	7.7	74.5	5.5	69.6	0.6
51-15 BEACH CHANNEL DR	16001	2	59.0	75.0	0.0	75.0	0.0	75.1	0.1	75.1	0.1	75.2	0.2	75.1	0.1	75.1	0.1	75.0	0.0	75.0	0.0	75.0	0.0	75.0	0.0	76.5	1.5	76.0	1.0	75.1	0.1
51-24 BEACH CHANNEL DR	16001	2	68.5	69.3	0.3	69.2	0.2	69.7	0.7	69.3	0.3	69.2	0.2	69.1	0.1	69.2	0.2	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	75.7	6.7	73.6	4.6	69.5	0.5

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

				Month 4		Month 13		Month 22		Month 32		Month 41		Month 45		Month 56		Month 65		Month 71		Month 75		Month 85		Month 95		Month 103		Month 115	
Address	**Block**	**Lot**	**Existing**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**	**Ext**	**Incr**
51-32 BEACH CHANNEL DR	16001	2	68.5	71.9	0.5	71.7	0.3	72.0	0.6	71.8	0.4	71.7	0.3	71.6	0.2	72.0	0.6	71.7	0.3	72.6	1.2	72.7	1.3	72.1	0.7	81.1	9.7	78.6	7.2	72.4	1.0
510 BEACH 43 ST	15960	56	57.3	69.3	0.3	69.2	0.2	69.8	0.8	69.5	0.5	69.2	0.2	69.1	0.1	69.2	0.2	69.1	0.1	69.1	0.1	69.1	0.1	69.1	0.1	75.3	6.3	73.2	4.2	69.4	0.4
510 BEACH 45 ST	15966	31	59.0	57.4	0.1	57.3	0.0	57.4	0.1	59.6	2.3	58.7	1.4	58.7	1.4	58.5	1.2	57.9	0.6	58.6	1.3	58.6	1.3	58.1	0.8	57.8	0.5	57.5	0.2	57.3	0.0
510A BEACH 45 ST	15966	31	59.0	57.3	0.0	57.3	0.0	57.3	0.0	58.5	1.2	59.5	2.2	59.0	1.7	58.6	1.3	58.0	0.7	58.1	0.8	58.1	0.8	57.7	0.4	57.5	0.2	57.4	0.1	57.3	0.0
512 BEACH 45 ST	15966	32	59.0	61.2	3.9	60.1	2.8	60.1	2.8	60.3	3.0	76.2	18.9	74.0	16.7	74.1	16.8	71.7	14.4	62.1	4.8	67.4	10.1	64.8	7.5	71.4	14.1	69.2	11.9	60.5	3.2
512A BEACH 45 ST	15966	31	59.0	61.6	4.5	60.5	3.4	60.7	3.6	59.3	2.2	71.3	14.2	69.2	12.1	76.1	19.0	73.8	16.7	63.7	6.6	64.7	7.6	62.7	5.6	58.9	1.8	58.2	1.1	57.2	0.1
514 BEACH 45 ST	15966	33	59.0	71.3	0.6	71.2	0.5	71.1	0.4	70.8	0.1	72.2	1.5	71.7	1.0	71.7	1.0	71.3	0.6	70.8	0.1	71.0	0.3	70.9	0.2	70.8	0.1	70.8	0.1	70.7	0.0
514A BEACH 45 ST	15966	33	59.0	57.4	0.1	57.3	0.0	57.4	0.1	57.6	0.3	57.5	0.2	57.5	0.2	57.6	0.3	57.4	0.1	57.6	0.3	57.6	0.3	57.5	0.2	57.6	0.3	57.5	0.2	57.3	0.0
515 DELMORE CT	15962	87	59.0	57.3	0.0	57.3	0.0	57.3	0.0	58.4	1.1	58.1	0.8	58.0	0.7	57.8	0.5	57.6	0.3	57.7	0.4	57.7	0.4	57.5	0.2	57.7	0.4	57.5	0.2	57.3	0.0
516 BEACH 45 ST	15966	35	59.0	57.4	0.1	57.3	0.0	57.3	0.0	57.8	0.5	57.7	0.4	57.6	0.3	58.1	0.8	57.7	0.4	58.2	0.9	58.2	0.9	57.8	0.5	58.1	0.8	57.7	0.4	57.3	0.0
516A BEACH 45 ST	15966	35	59.0	60.3	2.5	59.4	1.6	62.6	4.8	61.4	3.6	76.6	18.8	74.4	16.6	73.8	16.0	71.3	13.5	62.0	4.2	64.2	6.4	61.7	3.9	61.1	3.3	59.9	2.1	58.0	0.2
519 BEACH 45 ST	15964	59	59.0	62.3	5.2	61.0	3.9	59.8	2.7	59.0	1.9	65.5	8.4	63.7	6.6	67.0	9.9	65.0	7.9	58.6	1.5	62.2	5.1	60.6	3.5	58.8	1.7	58.0	0.9	57.2	0.1
52-05 ROCKAWAY BEACH BLVD	15891	21	69.0	58.1	0.8	57.8	0.5	58.5	1.2	58.4	1.1	74.0	16.7	71.9	14.6	71.5	14.2	69.0	11.7	60.5	3.2	63.0	5.7	60.6	3.3	66.5	9.2	64.6	7.3	58.5	1.2
520 BEACH 43 ST	15961	70	59.0	63.4	6.3	62.1	5.0	62.2	5.1	60.6	3.5	72.6	15.5	70.5	13.4	79.6	22.5	77.4	20.3	66.8	9.7	68.7	11.6	65.0	7.9	60.8	3.7	59.3	2.2	57.3	0.2
520A BEACH 43 ST	15961	68	59.0	64.8	5.8	63.6	4.6	62.9	3.9	60.5	1.5	66.7	7.7	65.0	6.0	64.1	5.1	62.5	3.5	59.4	0.4	62.5	3.5	61.3	2.3	60.6	1.6	59.9	0.9	59.1	0.1
525 BEACH 43 ST	15962	92	59.0	57.4	0.1	57.3	0.0	57.3	0.0	57.8	0.5	57.8	0.5	57.7	0.4	58.2	0.9	57.8	0.5	58.1	0.8	58.1	0.8	57.7	0.4	57.7	0.4	57.5	0.2	57.3	0.0
528 BEACH 44 ST	15962	6	59.0	57.3	0.0	57.3	0.0	57.3	0.0	59.0	1.7	58.8	1.5	58.7	1.4	58.2	0.9	57.7	0.4	58.3	1.0	58.3	1.0	57.9	0.6	57.7	0.4	57.5	0.2	57.3	0.0
531 BEACH 43 ST	15962	80	59.0	58.3	1.0	58.0	0.7	58.3	1.0	58.3	1.0	70.3	13.0	68.3	11.0	64.9	7.6	62.9	5.6	58.3	1.0	63.8	6.5	62.1	4.8	69.5	12.2	67.4	10.1	59.6	2.3
533 BEACH 43 ST	15962	80	59.0	59.0	1.2	58.6	0.8	62.4	4.6	61.1	3.3	76.0	18.2	73.8	16.0	91.2	33.4	89.0	31.2	77.8	20.0	78.0	20.2	63.8	6.0	60.9	3.1	59.6	1.8	58.0	0.2
534 BEACH 43 ST	15961	76	59.0	57.4	0.1	57.4	0.1	57.4	0.1	59.8	2.5	59.3	2.0	59.2	1.9	58.4	1.1	57.9	0.6	59.0	1.7	59.0	1.7	58.3	1.0	58.4	1.1	57.9	0.6	57.3	0.0
535 BEACH 43 ST	15962	75	59.0	57.3	0.0	57.3	0.0	57.3	0.0	59.3	2.0	59.2	1.9	58.9	1.6	59.0	1.7	58.2	0.9	58.4	1.1	58.4	1.1	57.9	0.6	57.4	0.1	57.4	0.1	57.3	0.0
535A BEACH 43 ST	15962	75	59.0	59.6	5.7	58.3	4.4	59.9	6.0	58.9	5.0	75.7	21.8	73.5	19.6	83.5	29.6	81.3	27.4	70.2	16.3	71.4	17.5	66.3	12.4	63.1	9.2	60.9	7.0	55.0	1.1
535B BEACH 43 ST	15962	75	59.0	63.4	6.3	62.0	4.9	61.8	4.7	60.1	3.0	71.3	14.2	69.2	12.1	81.2	24.1	79.0	21.9	68.2	11.1	70.1	13.0	66.9	9.8	61.0	3.9	59.3	2.2	57.3	0.2
543 BEACH 44 ST	15963	37	59.0	65.0	6.0	63.8	4.8	63.1	4.1	60.6	1.6	65.9	6.9	64.2	5.2	65.8	6.8	64.2	5.2	59.7	0.7	67.4	8.4	65.5	6.5	60.7	1.7	59.8	0.8	59.1	0.1

Source VHB, 2021.

[1] Maximum future noise level (existing ambient and construction sources) for all Development Phases.

Appendix E: Written Comments on the DEIS

COMMUNITY/BOROUGH BOARD RECOMMENDATION

Project Name: Resilient Edgemere Community Initiative			
Applicant:	HPD - NYC Dept of Housing Preservation & Development	**Applicant's Primary Contact**:	Kevin Parris
Application #	220232ZMQ	**Borough**:	
CEQR Number:	21HPD009Q	**Validated Community Districts**:	Q14

Docket Description:

Please use the above application number on all correspondence concerning this application

RECOMMENDATION: Unfavorable			
# In Favor: 0	**# Against:** 28	**# Abstaining:** 0	**Total members appointed to the board:** 48
Date of Vote: 2/8/2022 12:00 AM		**Vote Location**: via web ex	

Please attach any further explanation of the recommendation on additional sheets as necessary

Date of Public Hearing: 2/8/2022 7:15 PM	
Was a quorum present? No	*A public hearing requires a quorum of 20% of the appointed members of the board but in no event fewer than seven such members*
Public Hearing Location:	Via Web ex

CONSIDERATION: After a public hearing and a quorum present The Board voted 28-0 to support a motion to disapprove/Not support the RECI action/plan
The board strongly objected to the proposed up zoning to R6A and C8-1 in the plan and had objection to the increase in density from the original EURA plan. The local civic association that represents the Edgemere community strongly objected to this proposed up zoning and increase in density as well. They requested that the City follow the model of the previous plan that allowed for one and two family affordable homes they also requested that all of new unit built be 100% home ownership The board supports the civic and would like 100% home ownership through out the site as well. The Board and the civic have concerns regarding infrastructure, flood mitigation, lack of neighborhood retail and need for more school seats as well as more on and off street parking. Lack of adequate public transportation was stated by civic with request for Q52 bus run in the Edgemere community. The lack of a Community benefits agreement (CBA) is also a concern .
The board requests that these issues be resolved and that HPD come back to the Community board with an amended plan that addresses these issues

Recommendation submitted by	QN CB14	Date: 2/17/2022 10:59 AM

BOROUGH PRESIDENT RECOMMENDATION

Project Name: Resilient Edgemere Community Initiative	
Applicant: HPD - NYC Dept of Housing Preservation & Development	**Applicant's Administrator**: Kevin Parris
Application # 220232ZMQ	**Borough**: Queens
CEQR Number: 21HPD009Q	**Validated Community Districts**: Q14

Docket Description:

Please use the above application number on all correspondence concerning this application

RECOMMENDATION: Conditional Favorable

Please attach any further explanation of the recommendation on additional sheets as necessary

CONSIDERATION:

Recommendation submitted by	QN BP	Date: 3/17/2022 5:26 PM

Queens Borough President Recommendation

APPLICATIONS: ULURP #220232 ZMQ
ULURP #220233 ZRQ
ULURP #220235 PPQ
ULURP #220236 HAQ
ULURP #220237 HUQ

COMMUNITY BOARD: Q14

DOCKET DESCRIPTIONS

IN THE MATTER OF an application submitted by the NYC Department of Housing Preservation and Development pursuant to Sections 197-c and 201 of the New York City Charter for an amendment of the Zoning Map generally bounded by Beach 35th Street to the east, Rockaway Beach Boulevard and Rockaway Freeway and to the south, Beach 50th Street and Beach 51st Street to the west, and Jamaica Bay to the north, Section Nos. 30c and 31a, Borough of Queens, Community District 14, dated December 13, 2021. (Related ULURPs 220233 ZRQ, 220235 PPQ, 220236 HAQ, 220237 HUQ)

IN THE MATTER OF an application submitted by the Department of Housing Preservation & Development (HPD) pursuant to Section 197-c of the New York City Charter for a zoning text amendment to designate the Project Area as a Mandatory Inclusionary Housing ("MIH") area, Borough of Queens, Community District 14, as shown on a diagram (for illustrative purposes only) dated December 13, 2021. (Related ULURP #220232 ZMQ, #220235 PPQ, #220236 HAQ, and #220237 HUQ)

IN THE MATTER OF an application submitted by the Department of Housing Preservation & Development (HPD) pursuant to Section 197-c of the New York City Charter, for the disposition of designated city-owned properties for uses identified in the Edgemere Urban Renewal Plan, Borough of Queens, Community District 14. (Related ULURP #220232 ZMQ, #220233 ZRQ, #220236 HAQ, and #220237 HUQ)

IN THE MATTER OF an application submitted by the Department of Housing Preservation and Development (HPD)

1. pursuant to Article 16 of the General Municipal Law of New York State for:
    a. the designation of property located at Rockaway Beach Boulevard (Block 15852, Lots 64 and 68); (Block 15851, Lots 33, 35, 40, 42, 44, 58, 59); (Block 15850, Lot 6); (Block 15849, Lots 6, 8, 9, 10, 17, 18, 19, 20, 27, 28, 29) ; (Block 15848, Lots 52, 54, 55, 57, 58, 60, 62, 63, 65, 67), (Block 15847, Lots 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89), the demapped roadbed of Beach 43rd Street between Blocks 15852 and 15851 and the demapped roadbed of Beach 39th Street between Blocks 15848 and 15849;
    b. an Urban Development Action Area Project for such area; and
2. pursuant to Section 197-c of the New York City Charter for the disposition of such property to a developer to be selected by HPD;

to facilitate the development of approximately 1,222 residential housing units, and commercial, community facility and open space, Borough of Queens, Community District 14. (Related ULURP #220232 ZMQ, #220233 ZRQ, #220235 PPQ, and #220237 HUQ)

IN THE MATTER OF an application submitted by the Department of Housing Preservation and Development (HPD), pursuant to Section 505 of Article 15 of the General Municipal (Urban Renewal) Law of New York State and Section 197-c of the New York City Charter, for the second amendment to the Edgemere Urban Renewal Plan, Borough of Queens, Community District 14. (Related ULURP #220232 ZMQ, #220233 ZRQ, #220235 PPQ, and #220236 HAQ)

PUBLIC HEARING

A remote Public Hearing was held via Zoom webinar and livestreamed on the Queens Borough President's website on Thursday, February 24th at 9:30 A.M. pursuant to Section 82(5) of the New York City Charter and was duly advertised in the manner specified in Section 197-c (i) of the New York City Charter. The applicant made a presentation. There were no other speakers. The hearing was closed.

CONSIDERATION

Subsequent to a review of the application and consideration of testimony received at the public hearing, the following issues and impacts have been identified:

- The Applicant is proposing the following actions in the following Project Areas:
    - Hazard Mitigation Area: rezone an area generally bounded by Jamaica Bay to the north, Conch Basin to the west, Norton Avenue to the south, Edgemere Drive, parts of Blocks 15966, 1565, and 15960 and NYCHA Beach 41st St Houses to the east from R4-1 and R4 to R3A; C3 to C3A; and propose a text amendment to establish a Special Coastal Risk District ("SCRD") over the Hazard Mitigation Area.
    - Limited Development Area: rezone an area generally bounded by Norton Ave to the north, Beach 49th St to the west, Beach Channel Drive to the south, and NYCHA Beach 41st Street

Houses to the east from R4 to R4-1; and propose a text amendment to establish a Special Coastal Risk District ("SCRD") over the Limited Development Area.
  - Neighborhood Infill Zone: rezone part of Blocks 15965 and 15834 from R4/C1-2 to R4/C2-4; and remove C1-2 and C2-2 overlays from approximately 25 parcels on Blocks 15829 and 15954 along the north and south sides of Beach Channel Drive between Beach 37th St and Beach 40th Street.
  - Mixed-Use Corridor: rezone (1) an area generally bounded by Beach 50th Street to the west, Beach 49th Street to the east, Rockaway Beach Boulevard to the south and Beach Channel Drive to the north from R4, R5/C1-2 to R6A/C2-4 and C8-1 to C2-4 and (2) an area generally bounded by Beach 43rd Street to the west, Beach 38th Street to the east and Rockaway Beach Boulevard to the north and Rockaway Freeway to the south from R4/C2-4 to R6A and an extended C2-4 overlay; and propose a text amendment to Appendix F of the Zoning Resolution and map the Mixed-Use Corridor as a Mandatory Inclusionary Housing (MIH) Area, (all together referred to as "Rezoning Areas");

- Each proposed Rezoning Area would yield different land use rationales. The Hazard Mitigation Area (approximately 207 parcels) and would both reduce the allowable density of new development in the area to reduce future exposure to flooding risks as well as permit waterfront recreational activities. The Limited Development Area (approximately 236 parcels) would also restrict new development to one- or two-family buildings. Both Areas would be subject to a newly Proposed Edgemere Special Coastal Risk District (SCRD), which would restrict residential development to one-family detached buildings; prohibit community facilities with overnight sleeping accommodations; restrict residential development on lots 25 feet or greater to one- and two-family detached buildings; and, on lots less than 25 feet wide, restrict residential development to one-family detached buildings. The Neighborhood Infill Area (approximately 25 parcels) would lower off-street parking requirement to one per 300 square feet vs. one per 1,000 square feet and remove C1-2 and C2-2 commercial overlays to bring the zoning map into consistency with existing conditions. The Mixed-Use Corridor (approximately 64 parcels) would facilitate the future development (via Requests for Proposals, or RFP) of multi-family, mixed-use buildings to permit local retail and community facility space along major corridors Beach Channel Drive and Rockaway Beach Boulevard;

- The proposed Rezoning Areas and Text Amendments would permit approximately 1,222 new residential units in approximately 1,313,659 gross square feet, including up to 465 affordable units; and approximately 115,849 gross square feet of commercial and community facility uses with additional open space and parking. These Actions were born from the framework of the Resilient Edgemere Community Plan (RECP). The RECP was an extensive 18-month, community-based and interagency planning initiative between 2015 and 2017 that included four workshops, a mail-in survey, and door-to-door outreach that engaged over 400 residents. The Plan established the following key goals: protect the neighborhood from flooding; create resilient housing and maintain the neighborhood's low density feel; improve streets and transit; and increase neighborhood amenities;

- Created and adopted in 1997, the Edgemere Urban Renewal Plan (URP) authorizes the City to acquire sites in an Urban Renewal Area (URA) for redevelopment. Actions to facilitate the RECP and Rezoning Areas would include the modification of the URA, including expansion of additional sites for acquisition and removal of other sites not for acquisition; land use changes to align with zoning and land use frameworks; amendments to development controls to match zoning and permit flexibility in meeting flood resiliency standards; amendment to increase overall unit cap; refresh acquisition authority on all URA lots; URA disposition authority for City-owned parcels and acquisition parcels; extension of duration of the URP; and lastly Urban Development Action Area (UDAA) designation and Urban Development Action Area Plan (UDAAP) approval of an area coterminous with the proposed Mixed-Use Corridor Rezoning Area;

- The proposed Rezoning Areas and URA spans across 166 acres within the Edgemere neighborhood of Queens Community District 14. The area is largely populated by 2- to 4-story, detached or semidetached residential buildings, low-rise commercial buildings and, more recently, mid-rise multi-family mixed use development up to eight stories tall. The 600-ft area around the project includes residential, commercial, public facilities, open space uses including the Beach 41st Street NYCHA Housing Complex. There are several planned developments directly adjacent to the proposed Rezoning Areas: Arverne East to the south, the Peninsula Hospital Redevelopment to the southwest, and Beach Green Dunes III to the east of the Rezoning Areas.

- Community Board 14 (CB 14) disapproved this application by a vote of zero (0) in favor, twenty eight (28) against and zero (0) abstentions at the monthly meeting held on February 8, 2022. The Board shared the following concerns:
  - CB 14 shared and seconded the concerns of the local civic association in Edgemere. The Edgemere Community Civic Association objected to the increase in density and felt the community outreach was misleading as well. They requested that the plan be changed to 100% home ownership, as they understood it to be originally.
  - General objection to the R6A and C8-1 zoning (Note: part of Edgemere is currently zoned C8-1 and is proposed to be rezoned as C2-4.)
  - The Board and the Civic Association shared concerns regarding infrastructure, flood mitigation, lack of neighborhood retail and need for more school seats as well as more on and off street parking. Lack of adequate public transportation was stated by civic with request for Q52 bus run in the Edgemere community.
  - The lack of a Community benefits agreement (CBA).

- At the Borough President's Land Use Public Hearing, the Borough President asked about the concurrent U.S. Army Corp of Engineers (USACE) projects along Conch Basin and Grass Hassock Channel to the north, to which HPD responded that they are in coordination with USACE, the Mayor's Office, the NYC Department of Environmental Protection (DEP), and NYC Department of Parks and Recreation (DPR). The Borough President also cited other conditions and concerns related to the proposed Rezoning Areas and URA/URP amendments, which included the need for new parks improvements; new school construction for the newly anticipated density; the lack of healthcare and community facilities in the Rockaways; and improving transit connections and infrastructure; and other opportunities for the Applicant to explore in terms of community partnerships.

RECOMMENDATION

Based on the above consideration I hereby recommend approval with the following conditions:

- Commitments to local hiring for all construction and non-construction workers on this project must include a 30% goal for M/WBE businesses and firms, local area residents, and union labor;
- Continue to work on CB 14's conditions by committing to exploring affordable homeownership in the Rezoning Areas and facilitating a CBA with any future developer to build in the Mixed-Use Corridor Rezoning Area.
- Continue to work towards and eventually implement an Edgemere Community Land Trust (CLT) as part of the Resilient Edgemere Community Plan, and continue to incorporate CLT models on the Peninsula where feasible;
- The Applicant should continue to work across City and State agencies and with local community-based organizations (CBOs) to facilitate and complete the following goals:
    - Department of Small Business Services (SBS), Department of Youth & Community Development (DYCD), and local CBOs to provide youth and community programming, co-working space and economic development opportunities;
    - DEP to provide a study of potential green and gray infrastructure to mitigate long-term flooding issues in Edgemere and throughout the Rockaways;
    - DPR to fast-track improvements to Bayswater Park, walking trails along Jamaica Bay to Bayswater Park, and Rockaway Community Park, and to increase lifeguard staffing along the beach from Beach 32nd to Beach 59th Streets to improve access for all eastern end residents;
    - NYC Department of Transportation (DOT), NYC Economic Development Corporation (EDC) and the Metropolitan Transportation Authority (MTA) to identify transportation infrastructure improvements and opportunities in Edgemere, such as bike lanes, and to extend ferry routes and the Q52 bus lines further east across the Peninsula;
    - DOT to widen Edgemere Avenue from Beach 32nd Street to Beach 56th Street to accommodate existing traffic and any vehicular traffic that will be added by the several development projects planned for the neighborhood; and with
    - H+H to develop a new health care and/or hospital facility in the Rockaways;
- All construction should use the most energy efficient, state-of-the-art sustainable materials and techniques, which might include solar voltaic panels, geothermal heating and cooling, and charging stations for vehicles;
- A school was included in the original Arverne Plan, which is geographically adjacent to the Resilient Edgemere Community Plan. The Applicant should continue to work with the School Construction Authority (SCA) and the Department of Education (DOE) to ensure a school will be built for future and current children, and should explore additional funding streams for existing schools; and
- DPR and the Department of Sanitation (DSNY) should create and release a Request for Expressions of Interest (RFEI) to reactivate the former Edgemere Landfill located in Rockaway Community Park. Possible uses of the site could be green infrastructure such as a solar farm or other beneficial uses to surrounding constituents.



PRESIDENT, BOROUGH OF QUEENS

03/17/2022

DATE