A. INTRODUCTION

The *City Environmental Quality Review* (CEQR) *Technical Manual* states that the urban design components and visual resources determine the "look" of a neighborhood—its physical appearance, including the street pattern, the size and shape of buildings, their arrangement on blocks, streetscape features, natural resources, and noteworthy views that may give an area a distinctive character. Pursuant to CEQR methodology, actions that would allow a project to 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 may warrant a detailed urban design and visual resources analysis. Since the Proposed Action would facilitate the construction of buildings that would be notably different in bulk, type, and use from the urban design of the project site and the surrounding area, a detailed urban design and visual resources analysis was prepared. However, it should be noted that, while a departure in bulk, type, and use from existing development on the project site, the development facilitated by the Proposed Action would be consistent with future development anticipated in the study area.

This attachment considers the potential for the proposed project to affect the urban design characteristics and visual resources of the project site and the study area. As described in Chapter 1, "Project Description," the project site encompasses portions of Block 906, Lots 1 and 5, Block 907, Lots 1 and 8, Block 908, Lot 12, and Block 909, Lot 35, in the Astoria neighborhood of Queens Community District (CD) 1 (see Figures 8-1 and 8-2). The technical analysis presented below follows the guidelines of the *CEQR Technical Manual* and addresses each of the above-listed characteristics for existing conditions, the future without the Proposed Action (the No-Action condition), and the future with the Proposed Action (the With-Action condition) for a 2023 Build Year.

B. PRINCIPAL CONCLUSIONS

Urban Design

The proposed zoning map changes would replace the existing M1-1 and R6 zoning districts within the proposed rezoning area with R6B, R7-3 with a C2-4 commercial overlay, and R7A with a C2-4 commercial overlay. Development facilitated by the Proposed Action would not result in significant adverse impacts on urban design as defined by the guidelines for determining impact significance set forth in the *CEQR Technical Manual*. While the proposed structures would be a departure from the existing conditions, the design would be consistent with anticipated future development in the surrounding area. By focusing the majority of the bulk on the waterfront, the lower height of the inland structures would be more consistent with the surrounding built context. In addition, the proposed waterfront open space would facilitate connections to adjacent existing and proposed open space resources and improve the streetscape. The Proposed Action would also provide public access to the proposed project and the waterfront by mapping an extension of 4th Street, demapping and building out an unbuilt portion of 8th street for pedestrian use, and providing access to 9th Street by building out a currently inaccessible portion of 26th Avenue.

Figure 8-1
Aerial View

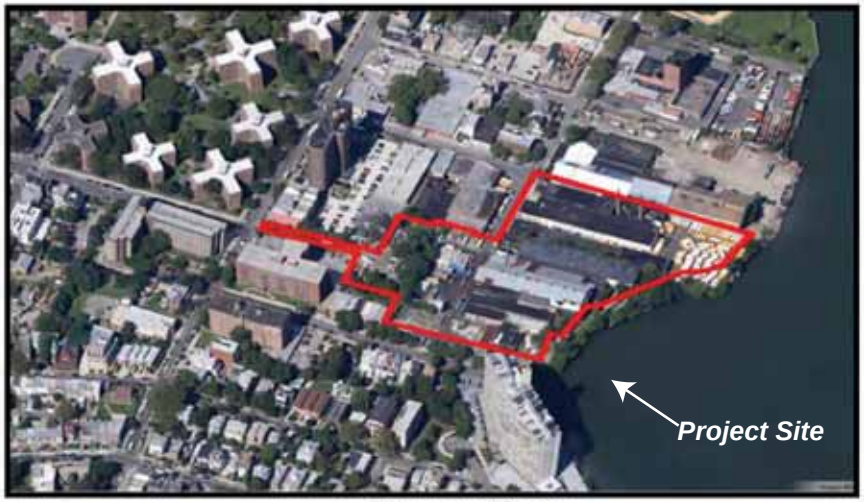
Primary Study Area
(Project Site)

Secondary Study Area
(Approximately 1/4 Mile Radius)

Northern View

Southern View

Eastern View



Western View

Astoria Cove

Figure 8-2
Birds Eye View of Project Area

As the Proposed Action would facilitate the construction of multiple large buildings close to one another along the East River (an area where potentially high wind conditions can occur), a detailed analysis of pedestrian wind conditions was undertaken to determine whether the proposed project might result in accelerated ground-level winds. The assessment of pedestrian-level wind effects was completed based on the current conceptual level of design of the proposed project, and actual effects would vary depending on the final design of the proposed project, as facilitated by the Proposed Action. The results of the computational fluid dynamics-based (CFD-based) wind analysis prepared for the Draft Environmental Impact Statement (DEIS) indicated that elevated pedestrian wind conditions would be limited to two locations on the project site: the northwest corner of Building 1 and the northeast corner of Building 3. As the potential high wind conditions at the northwest corner of Building 1 would only occur during the winter months and would occur at a location where a limited number of pedestrians would be affected, no significant adverse urban design impacts due to pedestrian wind would result at this location.

Subsequent to issuance of the DEIS, the CFD-based analysis included in the DEIS was supplemented by a wind tunnel study, focusing on the worst-case location at the northeast corner of Building 3. The wind tunnel model incorporated a wind canopy at the northeast corner of Building 3, as outlined in the Uniform Land Use Review Procedure (ULURP) application for the proposed project. The supplemental analysis indicated that no locations, including the northeast corner of Building 3, are expected to exceed the wind safety criteria applicable to the general population under the Proposed Action. Consequently, with the incorporation of a wind canopy at the northeast corner of Building 3, no significant adverse pedestrian wind impacts would result.

Visual Resources

The Proposed Action would not result in significant adverse impacts to visual resources. Development facilitated by the Proposed Action would open up new view corridors to significant visual resources that are currently obstructed by fencing and inaccessible to the public. In addition, the Proposed Action would result in the creation of new visual resources in the form of waterfront open space.

C. METHODOLOGY

In accordance with the *CEQR Technical Manual,* this analysis considers the effects of the proposed project on the following elements that collectively form an area's urban design:

- *Street Pattern and Streetscape*—the arrangement and orientation of streets define location, flow of activity, and street views and create blocks on which buildings and open spaces are arranged. Other elements including sidewalks, plantings, street lights, curb cuts, and street furniture also contribute to an area's streetscape.
- *Buildings*—building size, shape, pedestrian and vehicular entrances, lot coverage and orientation to the street are important urban design components that define the appearance of the built environment.
- *Open Space*—open space includes public and private areas that do not include structures, including parks and other landscaped areas, cemeteries, and parking lots.
- *Natural features*—natural features include vegetation and geologic and aquatic features that are natural to the area.
- *View Corridors and Visual Resources*—visual resources include significant natural or built features, including important view corridors, public parks, landmark structures or districts, or otherwise distinct buildings.

- *Wind* – Channelized wind pressure from between tall buildings and downwashed wind pressure from parallel tall buildings may cause winds that may jeopardize pedestrian safety.

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 the pedestrian experience, described above. As the Proposed Action and subsequent development on the project site could result in physical changes to the project site beyond the bulk and form currently permitted as-of-right, it has the potential to result in development that could alter the arrangement, appearance, and functionality of the built environment and, therefore, change the experience of a pedestrian in the project area. The following urban design analysis follows the guidelines of the *CEQR Technical Manual.*

Per Section 230 of the *CEQR Technical Manual*, a study of wind conditions and their effects on pedestrian level safety may be warranted under certain circumstances for projects involving the construction of multiple tall buildings at locations that experience high wind conditions. As such, a computational fluid dynamics-based (CFD-based) wind analysis was conducted using a three-dimensional model of the proposed project and the surrounding buildings within approximately 1,500 feet of the project site. The CFD assessment conservatively does not account for the presence of mature trees, which could result in improved wind comfort conditions. The simulations were performed using "UrbaWind" software, a commercially engineered CFD package by Metodyn, Inc. to calculate wind speed throughout the study area. The analysis of wind conditions was undertaken for the seasonal extremes of summer (June through August) and winter (December through February).

The entire modeled area is filled with a three-dimensional grid, and the CFD virtual wind tunnel calculates wind speed at each one of the three-dimensional grid points. The upstream "roughness" for each test direction is adjusted to reflect the various upwind conditions (e.g., water, urban buildings, city core, etc.) and wind characteristics encountered around the actual site. The CFD-predicted wind speeds for all test directions and grid points were then combined with historical wind climate data from the LaGuardia International Airport to predict the occurrence of wind speeds in the pedestrian realm and to compare against wind criteria for comfort and safety.

Study Area

The urban design study area consists of both a primary study area, which is coterminous with the boundaries of the project site, where the urban design effects of the Proposed Action are direct, and a secondary study area (refer to Figure 8-3, "Primary and Secondary Study Areas"). For the purpose of this assessment, the primary study area consists of portions of an irregularly-shaped approximately four-block area generally bounded by the East River on the north, 27th Avenue on the south, 9th Street to the east, and 4th Street to the west. The secondary study area extends an approximate quarter- (¼-) mile from the boundary of the project site and encompasses areas that have the potential to experience indirect impacts as a result of the Proposed Action. It is generally bounded at its outer limits by the East River on the north and west, 18th Street on the east, and 30th Road and 30th Avenue on the south. Both the primary and secondary study areas have been established in accordance with *CEQR Technical Manual* guidelines.

The analysis of urban design and visual resources is based on field visits, photography, and computer imaging of the project site and surrounding study area.

D. PRELIMINARY ASSESSMENT

Under CEQR, a preliminary assessment of urban design 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,

Primary and Secondary Study Areas

Primary Study Area (Project Site)

Secondary Study Area (Approximately 1/4-Mile Radius)

909 Block Number

including the following: (1) projects that permit the modification of yard, height, and setback requirements; and (2) projects that result in an increase in built floor area beyond what would be allowed as-of-right or in the future without the Proposed Action. CEQR stipulates a detailed analysis for projects that would result in substantial alterations to the streetscape of the neighborhood by noticeably changing the scale of buildings. According to the *CEQR Technical Manual*, detailed analyses are generally appropriate for large-scale general developments. As the Proposed Action falls within this category, a detailed analysis of urban design has been conducted and is provided below.

E. DETAILED ANALYSIS

Existing Conditions

Primary Study Area (Project Site)

The primary study area includes two waterfront blocks and two portions of upland blocks. The waterfront blocks are situated in the northern section of the project site. The northern blocks are entirely zoned M1-1, and contain predominantly low-density (see Figure 8-4, "Existing Building Density") industrial uses including light industrial/warehousing uses and open space storage (see Figure 2-3, "Land Use Map" in Chapter 2, "Land Use, Zoning, & Public Policy"). The proposed zoning map changes would replace the existing M1-1 zoning district within the project site with an R7-3 zoning district and designate and apply a C2-4 commercial overlay over the entire R7-3 zoning district.

The upland blocks are situated in the southern section of the project site. This portion of the project site is currently zoned R6 and contains two vacant lots (refer to photos 2 and 4 in Figure 8-6a). The proposed zoning map changes would replace the existing R6 zoning district within the project site with R6B and R7A contextual zoning districts and designate and apply a C2-4 zoning district to be mapped along the 26th Avenue frontage of the upland portion of the project site to a depth of 100 feet.

Figure 8-2 shows birds eye views of the project site, Figure 8-4 shows the existing building density in terms of floor area ratios (FAR) for both the primary and secondary study areas, and Figure 8-5 shows the existing building heights. All figures are referenced throughout the following sections. Figures 8-7a and 8-7b provide key maps for the photos of existing conditions in Figures 8-6a through 8-6f, which are discussed in detail below.

Urban Design

Street Pattern and Streetscape

Under existing conditions, pedestrian and vehicular flow to the project site is restricted by the presence of multiple dead-ends as well as unbuilt and/or unimproved street segments. The project site comprises two mapped but unbuilt segments of 8th Street (to the north and south of 26th Avenue), as well as an unimproved portion of 26th Avenue between 4th and 9th Streets, which is inaccessible and blocked off by fences on both sides. Adjacent roadways include 26th Avenue, a two-way street that dead-ends east of 4th Street, and 9th Street, a two-way street that dead-ends at the waterfront. Streetscape elements are minimal and are limited to fencing, standard street signs, cobra head lampposts, utility wires, fire hydrants and fire call boxes, and telephone poles.

Figure 8-4

Existing Building Density

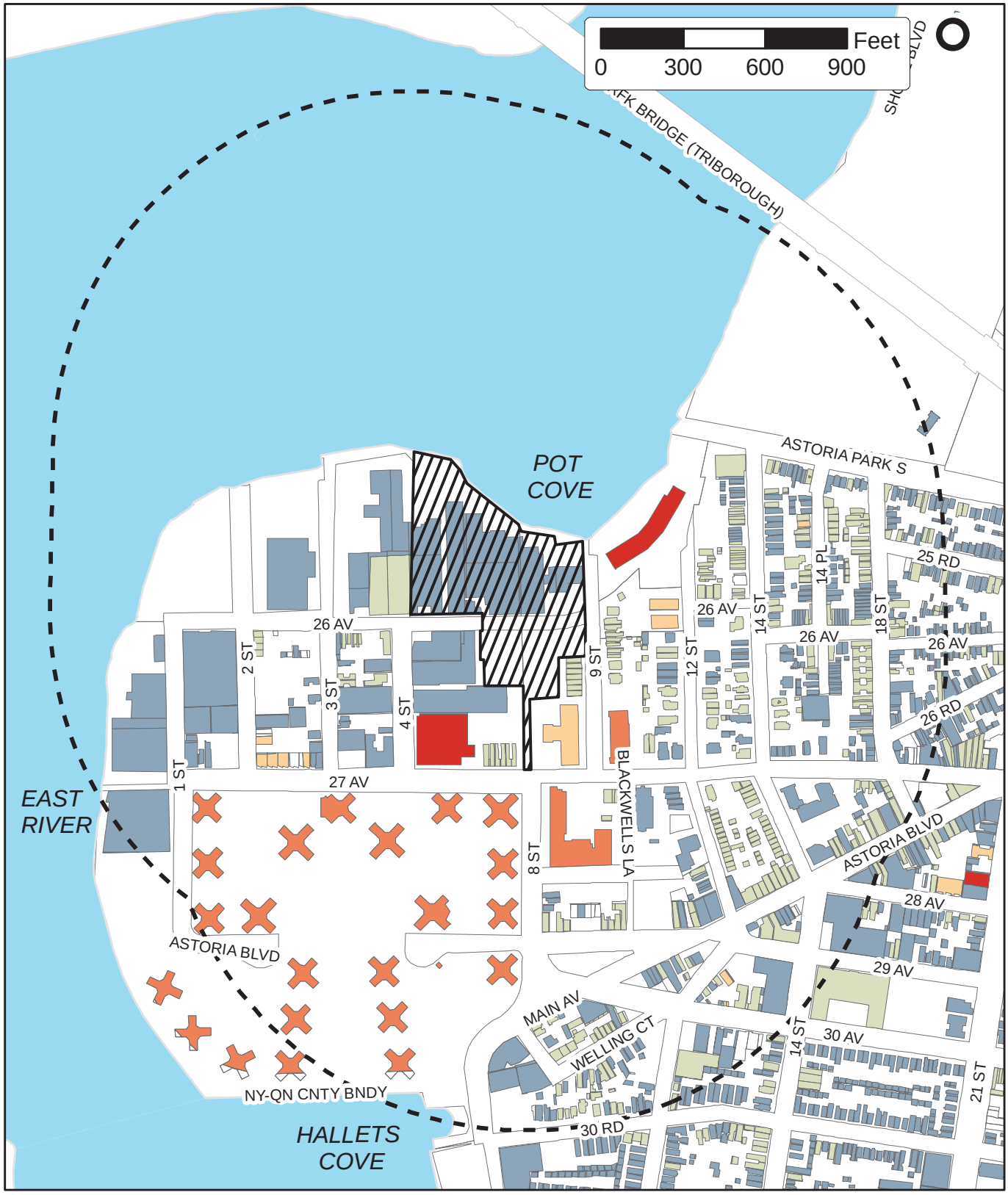
Legend

- Primary Study Area (Project Site)
- Secondary Study Area (Approximatley 1/4 Mile Radius)

Built FAR

- 0.0
- 0.01 - 1.35
- 1.36 - 2.0
- 2.01 - 3.0
- 3.01 - 4.0
- 4.01 and higher

Figure 8-5
Building Heights



Legend

- Primary Study Area (Project Site)
- Secondary Study Area (Approximatley 1/4 Mile Radius)

Building Height (Stories)

- 0
- 1 - 2
- 3 - 4
- 5 - 6
- 7 - 8
- 9 and higher

1. View of Super Stud Site from 26th Avenue

2. View of upland lots from 26th Avenue

3. North view from 8th Street and 27th Avenue

4. West view from 9th Street and 26th Avenue

Astoria Cove

Figure 8-6a

Existing Conditions-Project Site

5. North view from 4th Street and 26th Avenue

6. Drive-through view on 26th Avenue between 4th and 9th Streets

7. Waterfront view from 9th Street's dead-end

8. Northeast view from 4th Street and 26th Avenue

Astoria Cove

Figure 8-6b

Existing Conditions-Project Site

9. Northeast view on 9th Street between 26th and 27th Avenues

10. Southwest view on 18th Street and 26th Avenue

11. Northeast view on 18th Street and 26th Avenue

12. East view from 14th Street and 26th Avenue

Astoria Cove **Figure 8-6c**

Existing Conditions-Northeastern Section of Secondary Study Area

13. Northwest view from 14th Street and Astoria Boulevard


14. North view from 12th Street and Astoria Boulevard


15. West view from Main Avenue and Astoria Boulevard


16. Southwest view from 30th Avenue and Welling Court

Astoria Cove **Figure 8-6d**

Existing Conditions-Southeastern Section of Secondary Study Area

17. Vernon Boulevard entrance to Hallets Cove Playground and waterfront eplanade

18. East view from 1st Street and Astoria Boulevard

19. South view from Vernon Boulevard and 30th Road

20. West vire from 1st Street and 27th Avenue

Astoria Cove

Figure 8-6e

Existing Conditions-Southwestern Section of Secondary Study Area

21. East view from 1st Street and 27th Avenue

22. Northeast view from 26th Avenue between 1st and 2nd Streets

23. North view from 3rd Street and 26th Avenue

24. South view from 26th Avenue between 2nd and 3rd Streets

Astoria Cove **Figure 8-6f**

Existing Conditions-Northwestern Section of Secondary Study Area

Figure 8-7a
Photo Key-Primary Study Area

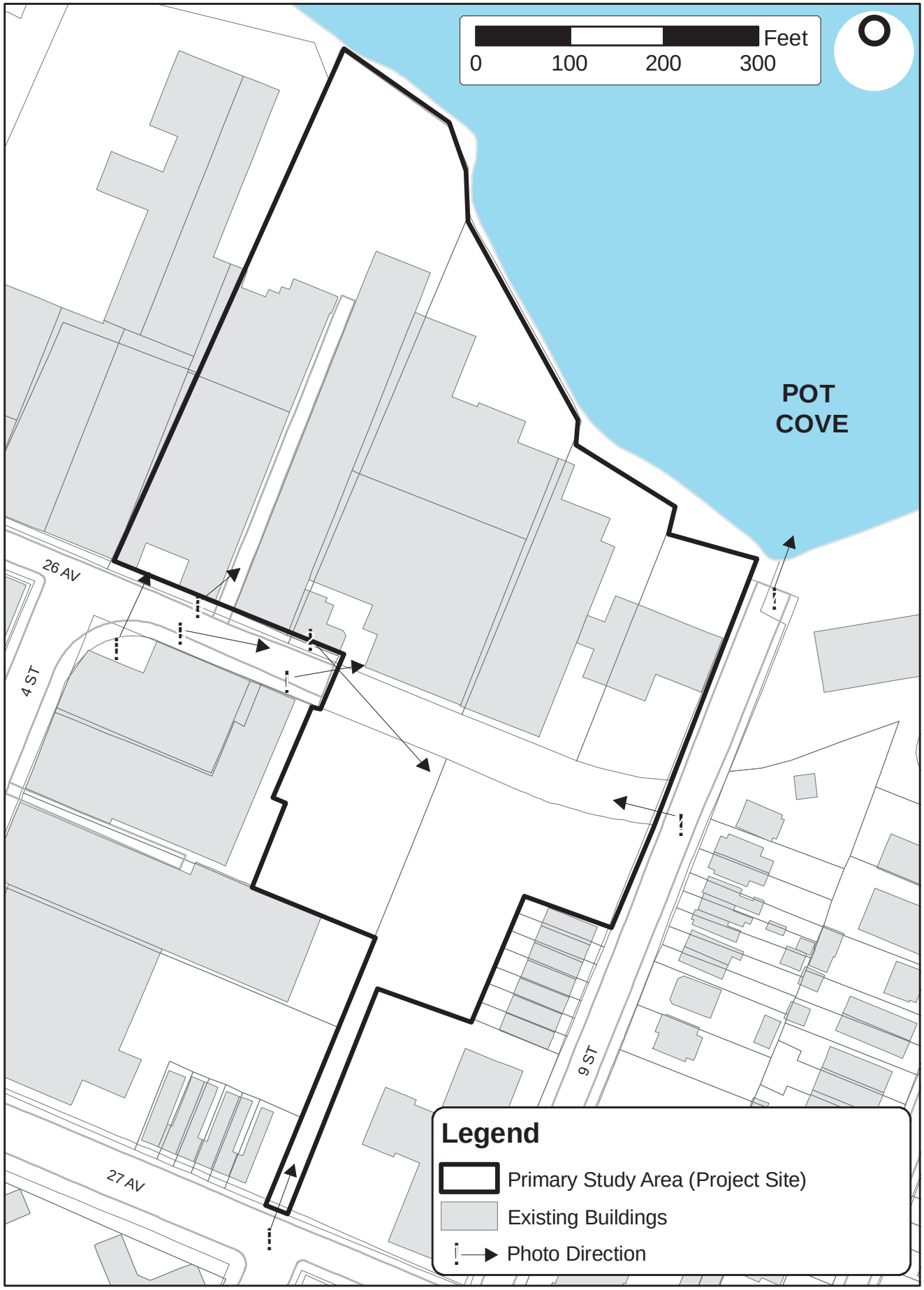
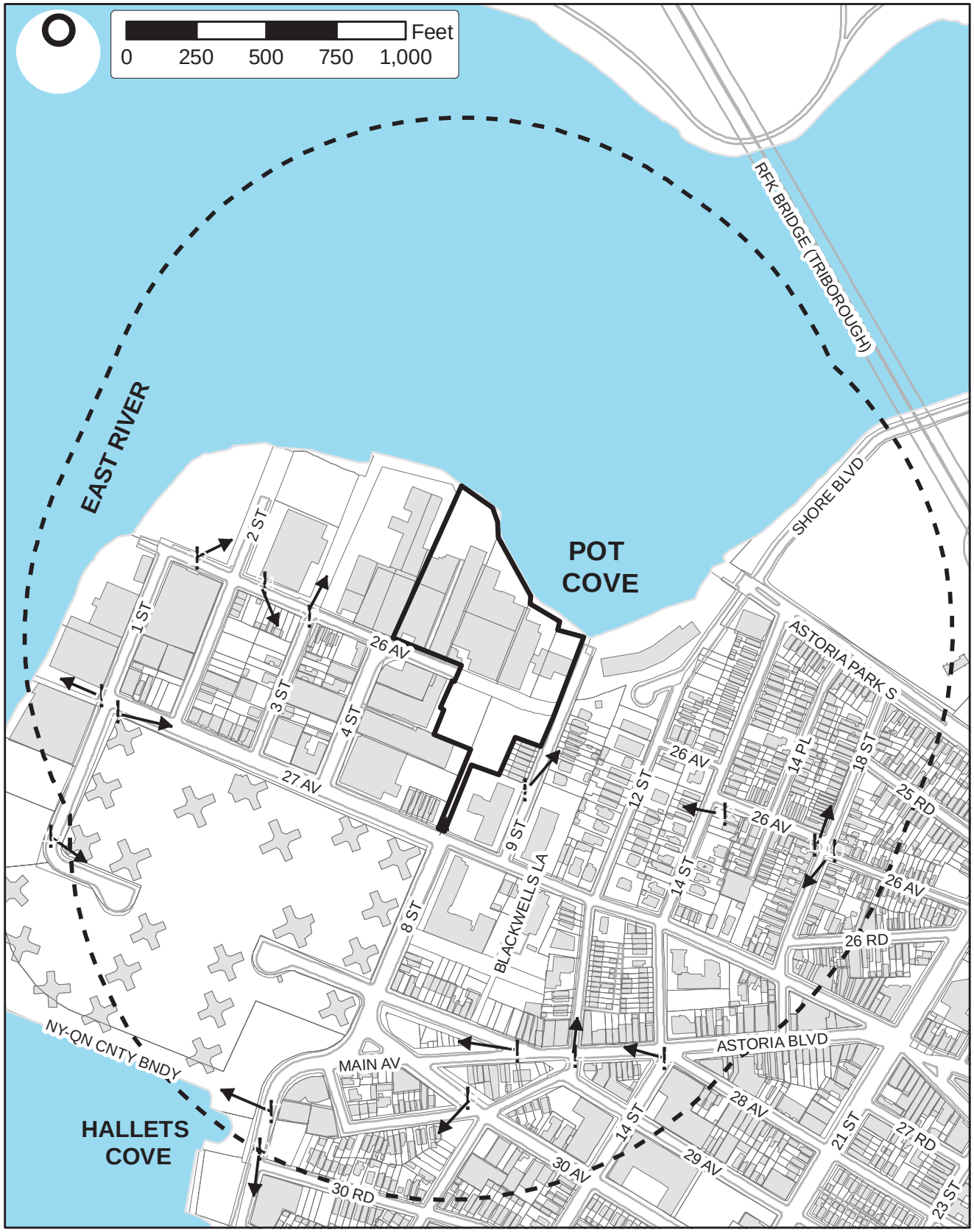


Figure 8-7b

Photo Key (Photos 9-24)-Secondary Study Area



Legend

- Primary Study Area (Project Site)
- Secondary Study Area (Approximatley 1/4 Mile Radius)
- Existing Buildings
- Photo Direction

Buildings

As described in Chapter 2, "Land Use, Zoning, and Public Policy," the waterfront portion of the project site is occupied by seven buildings with a combined 194,700 square feet (sf) of industrial/warehousing floor area and an estimated 100 accessory parking spaces. Block 906, Lots 1 and 5 and Block 907, Lot 1 are comprised of two one-story buildings and one two-story building that make up the Superior Steel Stud company (refer to photo 1 in Figure 8-6a). Block 907, Lot 8 contains three two-story buildings (see Figure 8-5, "Building Height"). On the upland parcel, Block 909, Lot 12 and Block 909, Lot 35 are currently vacant. Table 2-1 in Chapter 2 provides a list of existing uses by lot. The industrial building facades are generally made up of brick and cement with gated windows.

The manufacturing district within this primary study area has a maximum FAR of 1.0. No residential uses are permitted. Building heights are governed by sky exposure planes, and there are currently no mandated building height limits. The residential district within this primary study area has a maximum FAR of 0.78-2.43 (refer to Table 2-3 in Chapter 2, "Land Use, Zoning, and Public Policy").

Natural Features and Open Space

The principal natural resource that can be seen from the project site is the East River.

View Corridors and Visual Resources

The visual resources that can be seen from the primary study area include the Hell Gate span of the Robert F. Kennedy (RFK) Bridge (formerly the Triborough Bridge; National Historic Civil Engineering Landmark) and the Hell Gate (East River Arch) Bridge, as well as the East River and portions of Randall's/Ward's Island. Both of these visual resources, and the natural resources, can only be viewed from the 9th Street's dead-end (refer to photo 7 in Figure 8-6b). The view corridors between 4th and 9th Streets along 26th Avenue are obstructed by the existing fences and industrial buildings on the waterfront parcel.

Secondary Study Area

Urban Design

Street Pattern and Streetscape

The street pattern in the Astoria neighborhood is composed of rectilinear blocks with a street grid system, with wide avenues running east-west and narrow cross streets running north-south. The street pattern in the secondary study area represents a different type of deviation from the rectilinear street grid than found in the rest of Astoria. The study area blocks are predominantly rectangular-shaped. However, because a large portion of the secondary study area is located on a promontory jetting out into the East River, the street pattern forms an irregular grid with blocks of varying sizes and shapes. 27th Avenue is the only continuous east-west street in the study area and functions as a minor arterial (refer to Figure 8-3, "Primary and Secondary Study Area"). The north-south streets north of 27th Avenue and west of 12th Street are dead-end streets terminating at 26th Avenue. Directly southwest of the project site is superblock 490, which extends five blocks west to east from the East River to 8th Street and extends five blocks north to south from 27th Avenue to 30th Road. Both 1st Street and Astoria Boulevard end in cul-de-sacs in the middle of this superblock's largest lot, Lot 101.

There are bicycle lanes on 27th Avenue between 1st and 8th Streets; 8th Street between 27th and Main Avenues; Astoria Park South from the waterfront to 29th Street; Vernon Boulevard between Welling

Court and 40th Avenue; and a one-way bike lane on a two-way street on 14th Street between 27th Avenue and Astoria Park South. There are protected bicycle paths with access points along the waterfront esplanade between 9th Street and Astoria Park South and along the waterfront esplanade at Halletts Cove Playground. There are shared lanes on 1st Street between 26th Avenue and Astoria Boulevard; 9th and 12th Streets between the waterfront and 27th Avenue, with 12th Street having a one-way bike lane on a two-way street; 27th Avenue between 8th and 14th Streets; and Main Avenue between Welling Court and Vernon Boulevard. There are potential bicycle paths and routes along the Astoria Park waterfront.

The streetscape elements of the study area typically include wide sidewalks lined with street trees that have small tree pits without guards, standard street signs, cobra head lampposts, fire hydrants and fire call boxes, and telephone poles. Most of the study area streets are lined with parallel-parked cars (refer to the photos in Figures 8-6a through 8-6f).

Buildings

Table 2-2 in Chapter 2, "Land Use, Zoning, and Public Policy," summarizes the existing generalized land uses within the land use study area by tax lots and land area. Overall, as reflected in the table and in Figure 2-3, the secondary study area contains primarily low-density development (see Figure 8-4, "Existing Building Density") and a general mix of uses, with the predominant land uses being residential, and light industrial. The eastern portion of the secondary study area is zoned R4, R5, and R6, with C1-3 commercial overlays scattered along 18th Avenue; it is predominantly characterized by residential uses with industrial, commercial, and institutional buildings scattered along 27th Avenue and 18th Street. The residential building types are predominantly one- and two-family residential detached and semi-detached homes, but also include a mix of multi-family walkup and elevator buildings and mixed residential and commercial buildings (refer to photos 9 through 12 in Figure 8-6c). Two- to four-story multi-family walkups form a streetwall along 18th Avenue and Astoria Boulevard with ground floor retail (see Figure 8-5, "Existing Building Heights").

The southeastern portion of the secondary study area is primarily zoned R5B with commercial overlays along Astoria Boulevard, contains low-density development, and is generally characterized by residential, industrial, institutional, open space, and commercial uses. Three-story mixed residential and commercial buildings, as well as industrial buildings, form a streetwall along the portion of Astoria Boulevard within the secondary study area (see Figure 8-5, "Existing Building Heights"). The majority of the industrial buildings in the southeastern portion of the secondary study area are covered with murals (refer to photo 16 in Figure 8-6d). Institutional uses in this area include the Good Church of Deliverance and St. George's Church. The Good Church of Deliverance, located at 27-46 12th Street, is a late Victorian terra cotta, brick, and verdigris copper building; and St George's Church, located at the southeast corner of 14th Street and 27th Avenue, is made of timber and stone. The Astoria Branch of the Queens Public Library, located at 14-01 Astoria Boulevard, is made of tan roman brick with a steep hipped roof.[1]

The southwestern portion of the secondary study area is primarily zoned R6 and is predominantly characterized by multi-family elevator buildings, industrial buildings, and open space. Most prominent are the New York City Housing Authority (NYCHA) Astoria Houses. The Astoria Houses consist of 22 six- to seven-story low-density residential buildings on a 32-acre campus (refer to Figure 8-5, "Existing Building Heights" and Figure 8-4, "Existing Building Density"). The western portion of the secondary study area is zoned M1-1 and R6 and is predominantly characterized by industrial and residential uses. West of the project site and north of 26th Avenue are four one-story and one two-story industrial buildings; 2nd and 3rd Streets act as their access roads and are fenced off. The area south of 26th Avenue is characterized by residential, industrial, and commercial uses, as well as vacant land and open space. The

[1] White N., Willensky E., Leadon F. (2010), *AIA Guide to New York City (5th Ed.).* New York: Oxford University Press.

residential building types are predominantly two- to four-story multi-family walk up buildings. Vacant space and parking facilities are scattered throughout the three blocks that extend from 1st to 4th Streets between 26th and 27th Avenues (see photo 24 in Figure 8-6f).

Natural Features and Open Space

The secondary study area includes a substantial number of natural features and open spaces. The natural features include the East River, which extends along the entire west side of the study area. The East River is a 16-mile tidal strait that connects the Upper New York Bay on its southern end to the Long Island Sound on its northern end; it can be viewed from the public waterfront esplanade at Shore Towers between Astoria Park South and 9th Street; the public waterfront esplanade at Halletts Cove; the corner of 26th Avenue and 1st Street; Whitey Ford Field; and along Shore Boulevard. Other natural features that can be seen from within the study area include Randall's/Ward's Island and Roosevelt Island. Randall's/Ward's Island is located directly north of the secondary study area and can be viewed from Whitey Ford Field, the Shore Towers public waterfront esplanade, and Shore Boulevard. Roosevelt Island is located southwest of the study area and can be viewed from the Halletts Cove public waterfront esplanade and Vernon Boulevard (see photos 7 and 17 in Figures 8-6b and 8-6e, respectively).

Astoria Park is a 59.96-acre park that extends from Astoria Park South to Ditmars Boulevard, between Shore Boulevard and 19th and 21st Streets. The park is widely known for its important landmark, the Astoria Park Pool and Play Center, and also offers natural beauty and recreational amenities including tennis and bocce courts, playgrounds, a running track, spray showers, a skate park, fitness equipment, dog-friendly areas, and eateries. The Astoria Park Pool and Play Center is one of the most popular swimming facilities in the country; the swimming pool, at 330 feet in length, is the largest in New York City.

Other open spaces in the secondary study area include Whitey Ford Field, Two Coves Community Garden, and Halletts Cove Park/Playground. The 3.62-acre Whitey Ford Field contains a baseball diamond, bleachers, benches, and fitness equipment. The park is located along the waterfront and contains panoramic views of Manhattan and Randall's/Ward's Island. Bounded by Main Avenue, Astoria Boulevard, and 8th Street, the 0.79-acre Two Coves Community Garden occupies a triangular piece of land containing planting beds, paths, benches, and picnic tables. Halletts Cove Park/Playground is a 5.7-acre open space resource. The neighborhood park is bounded by the East River, 1st Street, Halletts Cove, and Vernon Boulevard. It contains ball courts, handball courts, a comfort station, play equipment and playgrounds, benches, and a kayak/canoe launch site. The esplanade provides views of the East River, Lighthouse Park at Roosevelt Island, and the Manhattan skyline.

View Corridors and Visual Resources

The secondary study area includes a substantial number of visual resources, including natural features, landmark structures, and open spaces. The landmark structures that can be viewed from within the study area include the Hell Gate span of the RFK Bridge (formerly the Triborough Bridge; National Historic Civil Engineering Landmark) and the Hell Gate (East River Arch) Bridge. The suspension and steel arch bridges can be seen from Whitey Ford Field; the 9th Street dead-end; the waterfront esplanade at Shore Towers; Shore Boulevard; Astoria Park South; 14th and 18th Streets; 14th Place at 26th Avenue; and 8th Street at 27th Avenue. In addition, panoramic views of the Manhattan skyline can be viewed from the Halletts Cove waterfront esplanade; 26th and 27th Avenues from 1st Street; Whitey Ford Field; the waterfront esplanade at the Shore Towers; Astoria Park South; Shore Boulevard; and upland at Astoria Boulevard and Main Avenue (refer to photos 6 and 7 in Figure 8-6b, 11 in Figure 8-6c, 15 in Figure 8-6d, 20 in Figure 8-6e, and 22-23 in Figure 8-6f). However, many of the public view corridors to the south of

the project site terminate at 26th Avenue and are obstructed by fences and industrial buildings along the avenue (see photo 23 in Figure 8-6f).

Future without the Proposed Action (No-Action Condition)

Primary Study Area (Project Site)

As discussed in Chapter 1, "Project Description," in the future without the Proposed Action, the project site would not be rezoned. Absent the Proposed Action, it is projected that the waterfront portions of the project site would retain their existing industrial uses and built conditions and the upland portions of the project site would be redeveloped on an as-of-right basis.

In the 2023 No-Action condition, it is expected that two residential buildings would be developed on the upland portion of the project site with a total of approximately 166,452 gsf of building space (166 DUs) and 83 accessory parking spaces per the existing R6 zoning designation. The waterfront portion of the project site will retain 194,700 sf of warehouse and storage space.

Urban Design

Street Pattern and Streetscape

In the No-Action condition, portions of 8th Street to the south of 26th Avenue and/or portions of the unimproved segment of 26th Avenue would be built out to accommodate the No-Action residential development on the upland portion of the project site per New York City Department of Buildings (DOB) street frontage requirements.

Buildings

In the 2023 No-Action condition, the existing buildings on the waterfront parcels would remain. On the upland parcels two four-story residential buildings with a combined 166 dwelling units would be developed.

Natural Features and Open Space

In the 2023 No-Action condition, no new public open spaces will be developed.

View Corridors and Visual Resources

In the 2023 No-Action condition, there will be no new view corridors besides the existing view corridor on 9th street. The existing fencing and buildings on the waterfront portion of the project site would continue to block views north of the East River and the Hell Gate and RFK Bridges, as under existing conditions.

Secondary Study Area

As described in Chapter 2, "Land Use, Zoning, and Public Policy," as a result of the potential implementation of the Halletts Point project, several sites may be redeveloped by 2023 along the western and southwestern blocks of the secondary study area. The Halletts Point Rezoning, which was approved in 2013, rezoned the M1-1 district in the eastern and waterfront parcels to R7-3 with a C1-4 commercial overlay; established a C1-4 commercial overlay within portions of an R6 district in the Astoria Houses campus; established an R6 zoning district on the park parcel; rezoned the existing area bounded by the centerline of 2nd Street and the edge of Whitey Ford Field between 26th Avenue and the East River from

R6 to M1-1; rezoned a former portion of 26th Avenue between 1st Street and the U.S. Pierhead and Bulkhead Line from R6 to R7-3/C1-4; and rezoned a portion of 26th Avenue between 1st and 2nd Streets from R6 to R7-3.

The Halletts Point Rezoning also created new Inclusionary Housing and Food Retail Expansion to Support Health (FRESH) program areas and included City map changes to eliminate, discontinue, and close 26th and 27th Avenues west of 1st Street and to reopen the street segment between the two ends of Astoria Boulevard, which are currently disconnected on the Astoria Houses campus.

The Halletts Point Rezoning will facilitate the development of eight mixed-use buildings that will range from 13 to 31 stories (130 to 310 feet) with low- to mid-rise bases of a minimum of four stories (ranging from 40 to 80 feet in height). In total, the Halletts Point site will be developed with 2,195,159 gsf of residential space with 2,161 market-rate dwelling units and 483 affordable dwelling units; 68,663 sf of retail space; 407,782 sf of surface and garage parking spaces; and 60,820 gsf of mechanical space. In addition, the proposal includes 102,366 sf (2.35 acres) of publicly accessible open space along the waterfront.

Future with the Proposed Action (With-Action Condition)

This section describes the effects of the Proposed Action on the urban design and visual resource conditions in the area by 2023 and evaluates the potential for the Proposed Action to result in significant adverse impacts. The site plan, massing, and illustrative renderings of the proposed project are presented in Figure 8-8 through 8-12, respectively. Figure 8-13 through 8-21 include illustrative views of the project site from the primary and secondary study areas under both No-Action and With-Action conditions.

Primary Study Area (Project Site)

By 2023, it is anticipated that the Proposed Action would be in place, and that, as a result, all of the proposed project's five buildings would be developed. Development on the project site pursuant to the Proposed Action would affect the area's urban design, specifically the streetscape and building bulk, use, and type, as described below.

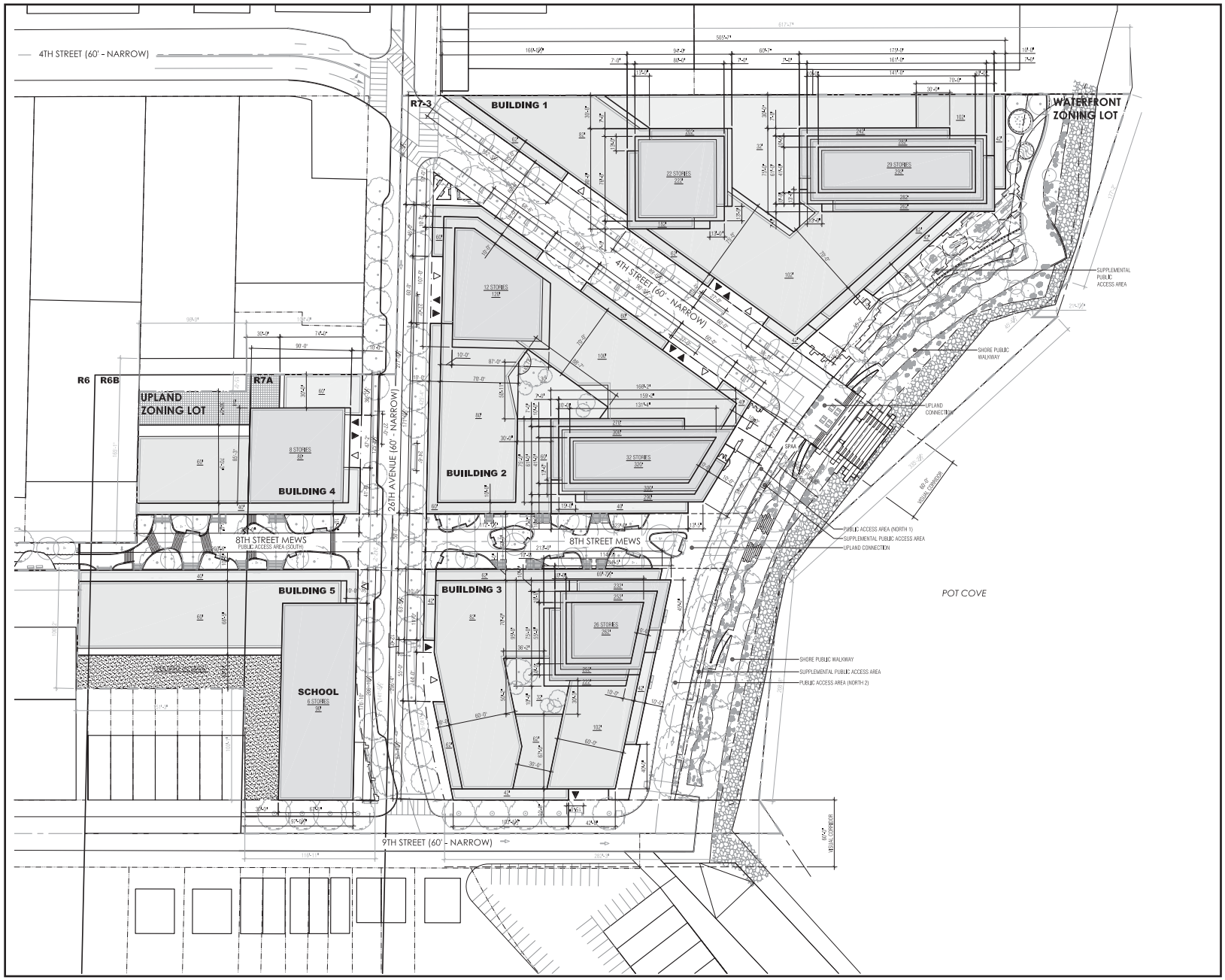
Urban Design

Street Pattern and Streetscape

The primary study area's street pattern and streetscape would improve in the With-Action condition. As shown in Figures 8-8 and 8-9, with the proposed 4th Street extension, 26th Avenue and the proposed vehicular right-of-way within the waterfront public access area would be connected, allowing uninterrupted pedestrian and vehicular traffic flow more in keeping with the surrounding Astoria street grid. As shown in Figure 8-10, with the 8th Street demapping, a pedestrian walkway (the "8th Street Mews") would be created between 27th Avenue and the waterfront, allowing uninterrupted pedestrian access to the waterfront and project site. In addition, the streetscape surrounding the project site would be enhanced through plantings and sidewalk improvements, as well as the reactivation of the pedestrian realm along these corridors through continuous ground floor retail.

Buildings

The Proposed Action would facilitate the construction of a total of five buildings (see Figures 8-8, 8-9, and 8-11). The 2023 With-Action development is discussed below. All of the buildings would be consistent in materials, while differing in bulk and arrangement to add visual interest.



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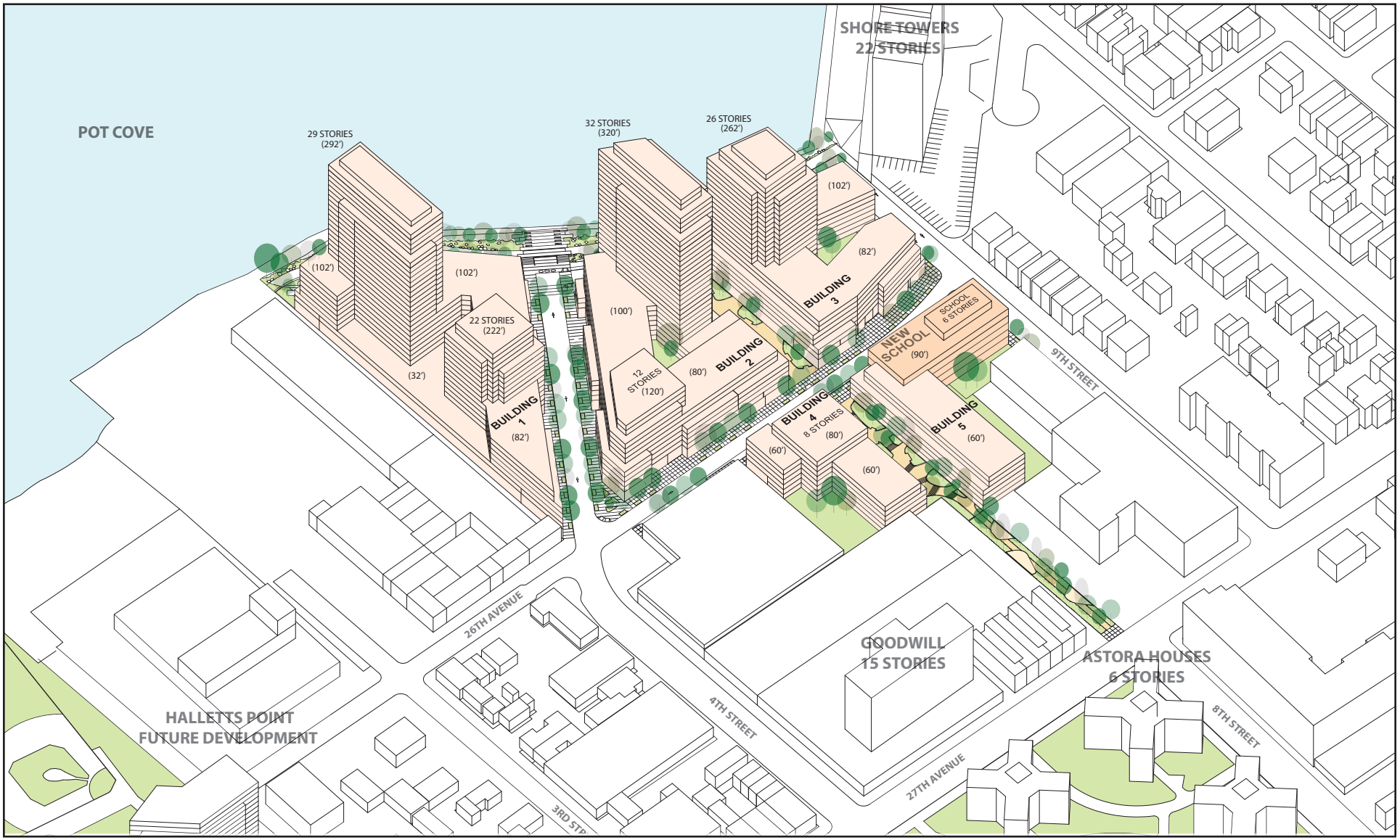

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Astoria Cove

Figure 8-9
Proposed Massing

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Astoria Cove

Figure 8-11
View of Proposed Project from the East River

***Building 1*:** An approximately 798,145 gsf mixed-use residential/commercial building would be constructed on the westernmost portion of the waterfront site. As shown in Figure 8-9, the four- to six-story base of the building would be built to the streetwall with two residential towers (reaching 222 and 292 feet at their maximum heights) set back from the streetwall.

Building 2: An approximately 723,718 gsf mixed-use residential/commercial building would be developed on the waterfront parcel. As shown in Figure 8-9, the four- to ten-story retail and townhouse base of the building would be built to the streetwall with two residential towers (reaching 120 and 320 feet at their maximum heights) set back from the streetwall.

Building 3: An approximately 434,481 gsf mixed-use residential/commercial building would be constructed on the easternmost portion of the waterfront site (see Figure 8-9). The building would be built to the streetwall with a four- to six-story retail and townhouse base and would step up to a maximum height of 262 feet.

Building 4: An approximately 106,063 gsf residential building with ground floor retail would be constructed on this currently vacant upland site. The approximately 80-foot tall building would be significantly smaller than the proposed Buildings 1 through 3. However, through the use of materials consistent with adjacent structures, Building 4 would serve as a transition from the existing built environment of the upland parcels. In addition, the structure would be built to the lot line, maintaining the streetwall of the adjacent existing and With-Action buildings (see Figure 8-9). As shown in Figure 8-10, two-story townhomes would be located along the 8th Street Mews.

Building 5: Building 5 would consist of approximately 126,662 gsf of residential and school uses. The building would be comprised of a six-story (60-foot) tall residential portion and a six-story (90-foot) tall school portion and would replace the vacant lot currently utilized for vehicle storage. As shown in Figure 8-8, the school portion of the site would be located along 26th Avenue and 9th Street. The residential portion of the site would be oriented along the 8th Street Mews. As shown in Figure 8-10, two-story townhomes would also be located along the 8th Street Mews.

Natural Features and Open Space

As described in Chapter 5, "Open Space," the Proposed Action includes the development of 83,846 sf of publicly accessible open space in the form of a waterfront esplanade and upland connections to 26th and 27th Avenues (see Figures 8-12). The proposed project would also improve the portion of 8th Street on the project site as a landscaped pedestrian walkway that would provide access from 27th Avenue to the waterfront while also serving as a visual corridor (see Figure 8-10).

Wind

As stated in the *CEQR Technical Manual*, the construction of multiple tall building at locations that experience high wind conditions, such as along west and northwest-facing waterfronts, may result in an exacerbation of wind conditions that may affect pedestrian safety. Large buildings have the potential to intercept the flow of wind at high elevations along the building façade and redirect wind down to ground level. Such "downwash flow" can cause accelerated wind speeds at the pedestrian level, which typically occurs at the corners of tall buildings where the downwashed wind passes around the edge of the building. When two or more buildings are situation side by side, winds tend to accelerate through the gap between the buildings, known as a "channeling effect." If these conditions occur for prevailing winds, and especially for strong winds, there is an increased potential for the creation of accelerated winds at ground level.

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Astoria Cove

Figure 8-12
Waterfront Esplanade

As the Proposed Action would facilitate the construction of multiple large buildings close to one another along the East River, there is the potential for downwash and channeling effects and consequent elevated pedestrian-level wind conditions. Therefore a detailed analysis of pedestrian wind conditions was undertaken by the firm Novus Environmental to determine whether the proposed project might result in accelerated ground-level winds (see Appendix E). For the DEIS, a CFD-based wind analysis was conducted using a three-dimensional model of the proposed project and the surrounding buildings within approximately 1,500 feet of the project site; the proposed landscaping, including mature trees, which could result in improved wind comfort conditions, were conservatively not accounted for in the analysis. The simulations were performed using "UrbaWind" software, a commercially engineered CFD package by Metodyn, Inc. to calculate wind speed throughout the study area. The analysis of wind conditions was undertaken for the seasonal extremes of summer (June through August) and winter (December through February).

The entire modeled area is filled with a three-dimensional grid, and the CFD virtual wind tunnel calculates wind speed at each one of the three-dimensional grid points. The upstream "roughness" for each test direction is adjusted to reflect the various upwind conditions (e.g., water, urban buildings, city core, etc.) and wind characteristics encountered around the actual site. The CFD-predicted wind speeds for all test directions and grid points were then combined with historical wind climate data from the LaGuardia International Airport for the period of 1981 to 2011 to predict the occurrence of wind speeds in the pedestrian realm.

In completing the assessment of potential wind effects, wind conditions on and around the project site were compared against wind comfort and safety criteria used by Novus Environmental. The safety criterion used in the assessment is based on hourly mean wind speeds over 45 miles per hour (mph) that are exceeded 0.1 percent of the time (the equivalent of three times per year), and is applicable for the general population. Locations that exceed this criterion are categorized by wind that makes it difficult to walk straight and wind noise being unpleasant on a pedestrian's ears. The criteria used in the analysis are based on those developed at the Boundary Layer Wind Tunnel Laboratory of the University of Western Ontario, together with building officials in London, England. They are based broadly on the Beaufort Scale and on previous criteria that were originally developed by Davenport; the criteria are used by the Alan G. Davenport Wind Engineering Group Boundary Layer Wind Tunnel Laboratory for pedestrian wind study projects located around the globe.

A review of wind data recorded at LaGuardia International Airport indicated that wind approaching from the northwesterly, northeasterly, and southerly directions are the most prevalent. Winds in the summer months are predominantly from the south (approximately 12 percent of the time) and northeast (approximately ten percent of the time), and are under 19 mph most of the time. Winds in the winter months are generally categorized by greater speeds predominantly from the northwest (approximately 16 percent of the time). On an annual basis, strong winds occur from the northwest sectors. The prevailing winds and wind conditions at the project site are similar to those at comparable locations near the East River, since there are no major intervening terrain features that would change the flow of winds from the dominant wind directions affecting the project site.

The results of the CFD wind analysis indicate that during the summer months (June through August), there is the potential for pedestrian wind conditions to exceed the safety criterion at one location (the northeast corner of Building 3). During the winter months (December through February), which is categorized by higher wind speeds, there is the potential for the pedestrian wind safety criterion to be exceeded at two locations (the northeast corner of Building 3 and the northwest corner of Building 1). No

locations on the remainder of the project site or in the surrounding area were found to exceed the pedestrian wind safety criteria.[2]

No entrances or other amenity spaces are located within or adjacent to the area to the northwest of Building 1 that could potentially exceed the wind safety criteria in the winter months, and therefore a limited number of pedestrians would be affected by the potentially elevated wind conditions at this location. These conditions would be similar to conditions at comparable locations along the waterfront in Queens and elsewhere near the East River. In addition, pedestrian wind conditions at this location could potentially be minimized or avoided through the incorporation of additional landscaping features in the open space plan adjacent to the potential elevated wind condition area. This would include additional deciduous trees that retain their leaves in the winter (e.g., evergreen, semi-evergreen, or marcescent) tree plantings, or the replacements of existing and/or proposed deciduous tree plantings with these planting, to deflect and disperse wind gusts.

As the CFD-based analysis indicated the potential for exceedances of the wind safety criteria in the vicinity of the northeast corner of Building 3, adjacent to building entrances and amenity space, a wind tunnel study was undertaken to determine wind conditions in the area, with and without the proposed project. The wind tunnel model included all relevant surrounding buildings and topography within an approximately 1,600-foot radius of the project site, and also inclorporated a wind canopy at the northeast corner of Building 3, as outlined in the ULURP application for the proposed project. Wind measurement locations were placed both on- and off-site in the vicinity of Building 3's northeast corner (the worst-case location per the CFD-based analysis). The results of the wind tunnel study (included in Appendix E) indicated that generally, conditions surrounding the northeast corner of Building 3 would be similar or improved from existing conditions, with construction of the proposed project. No locations are expected to exceed the wind safety criteria applicable to the general population under the Proposed Action.

Assessment

As shown in Figures 8-13a and 8-13b, the proposed project would significantly change the urban design character of the project site. With maximum heights ranging from 90 to 320 feet tall and ranging from approximately 106,063 to 798,145 gsf in size, the height and bulk of the five proposed buildings would be substantially taller than the vacant sites and existing one- and two-story buildings on the project site. The increased scale, both in terms of bulk and height, especially of Buildings 1 through 3, would be a notable change from the pedestrian's perspective to the appearance and character of the project site compared to the No-Action condition.

Compared to the future without the Proposed Action, in the future with the Proposed Action the visual appearance and thus the pedestrian experience of the project site would change considerably; however, this change would not meet the *CEQR Technical Manual* threshold for a significant adverse urban design impact in that it would not alter the arrangement, appearance, or functionality of the project site such that the alteration would negatively affect a pedestrian's experience of the area. Rather, instead of an underutilized stretch of industrial and manufacturing buildings and vacant sites along 26th Avenue, the pedestrian experience of the area would include new buildings with active ground floor uses, including retail and a supermarket.

The new waterfront esplanade and new publicly accessible open spaces would provide recreational areas that would visually enhance the experience of walking around the project site. These pedestrian areas and pathways would also improve access to the waterfront and circulation on the project site, as well as

[2] The CFD-based assessment of pedestrian-level wind effects was completed based on the current conceptual level of design of the proposed project, and actual effects would vary depending on the final design of the proposed project.

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Astoria Cove **Figure 8-13a**

View of Project Site looking east from 4th Street and 26th Avenue - No-Action Condition

For Illustrative Purposes Only

Astoria Cove **Figure 8-13b**

Proposed View of Project Site looking east from 4th Street and 26th Avenue

providing a cohesive transition and connection between the project site and surrounding open space resources. The greater levels of pedestrian activity generated by the proposed uses on the project site would be self-reinforcing, making the project area more inviting and appealing to visit. Overall, the proposed project would enhance the pedestrian's experience of the project site and improve the urban design of the project site by replacing underutilized buildings and vacant land with new active mixed-use development.

Elevated pedestrian wind conditions would be limited to two locations on the project site: the northwest corner of Building 1 and the northeast corner of Building 3. As the potential high wind conditions at the northwest corner of Building 1 would only occur during the winter months and would occur at a location where a limited number of pedestrians would be affected, no significant adverse urban design impacts due to pedestrian wind conditions would result at this location. In addition, supplemental wind tunnel studies indicated that, generally, conditions surrounding the northeast corner of Building 3 would be similar or improved from existing conditions in the future with the Proposed Action, and no locations are expected to exceed the wind safety criteria applicable to the general population under the Proposed Action. As such, incorporating a wind canopy at the northeast corner of Building 3 (included in the ULURP application for the proposed project), no significant adverse pedestrian wind impacts would result.

Visual Resources and View Corridors

The Proposed Action would result in the construction of large-scale structures on currently vacant or underutilized lots. Development facilitated by the Proposed Action would be constructed so as to establish new view corridors, opening up new views to the northeast along the proposed 4th Street extension, and to the north along 8th Street (refer to Figures 8-14a and 8-14b). These view corridors are currently obstructed by fencing and would remain obstructed in the No-Action condition. As such, the Proposed Action would open up views of visual resources in the surrounding area, including the East River and Randall's/Ward's Island, the Manhattan skyline, Roosevelt Island, and the RFK and Hell Gate Bridges.

As such, the Proposed Action would not result in a significant adverse impact to visual resources and view corridors within the primary study area.

Secondary Study Area

Urban Design

Street Pattern and Streetscape

With-Action development on the project site would be consistent with the street pattern and streetscape found throughout the secondary study area. The proposed 4th Street extension would be a marked improvement over the No-Action condition and would allow enhanced pedestrian and vehicular circulation within the waterfront and upland parcels and would be consistent with the regular grid pattern characteristic of the surrounding secondary study area. In addition, streetscape improvements and ground floor retail along the public corridors would enhance the pedestrian realm, making the surrounding area more active and inviting.

For Illustrative Purposes Only

Astoria Cove

Figure 8-14a

View looking north from 8th Street and 27th Avenue - No-Action Condition

For Illustrative Purposes Only

Astoria Cove **Figure 8-14b**

Proposed View of Project Site looking north from 8th Street and 27th Avenue

Buildings

While differing in bulk and form from many of the buildings found throughout the secondary study area today, the proposed With-Action development would be consistent with planned residential development within the secondary study area. In addition, through the planned tiered development and consistent streetwall, the structures would transition to the East River waterfront.

Natural Features and Open Space

Through the revitalization of currently vacant or underutilized and inaccessible lots, development in the With-Action condition would introduce additional waterfront open space. The proposed open space would represent a key component of the continuous waterfront esplanade in this area of Queens, connecting to the adjacent waterfront properties.

Overall, the Proposed Action would result in an improved street pattern and streetscape more consistent with the surrounding secondary study area, the construction of buildings consistent with the City's goals of development along the waterfront, and the continuation of existing and planned open space in the surrounding area. As such, the Proposed Action would not result in a significant adverse impact to urban design in the secondary study area.

Visual Resources and View Corridors

Pedestrian-level views from within the secondary study area from where the proposed project would be visible would change substantially compared to the future without the Proposed Action (refer to Figures 8-15 through 8-18). In the future with the Proposed Action, these views would include a dense development consisting of buildings significantly taller than the surrounding urban fabric. However, prominent views from within the study area of visual resources including the East River, the Manhattan skyline, Roosevelt Island, Randall's/Ward's Island, and the RFK and Hell Gate Bridges would not be obstructed.

While the Proposed Action would result in the construction of buildings that would obstruct certain views of the East River and the Manhattan skyline, the With-Action development would facilitate the establishment of view corridors along 4th and 8th Streets. As a result, uninterrupted northerly views would be established along 4th and 8th Street of the East River and the RFK and Hells Gate Bridges. In addition, the Proposed Action would create a waterfront esplanade that would provide new, unobstructed, publicly accessible views of the East River, the Manhattan skyline, and the RFK and Hell Gate Bridges. Therefore, the Proposed Action would provide new and expansive views of these resources. As such the Proposed Action would not have a significant adverse impact on these visual resources as visible from the secondary study area.

Pedestrian level views from Astoria Park would change substantially as the proposed buildings along the waterfront would be significantly taller than the low- to mid-rise buildings on the project site in the No-Action condition, but would be in keeping with the existing Shore Towers and future Halletts Point No-Action development (see Figures 8-17 and 8-18). Although the proposed project would obstruct distant views of some of the buildings in the Manhattan skyline from Astoria Park, views of buildings in the Manhattan skyline north of Midtown from Astoria Park would still remain.

As shown in Figures 8-19 through 8-21, the proposed buildings would also be visible from Manhattan and Randall's/Ward's Island. As with other views of the project site outside the study area, pedestrian-level views from these vantage points would change substantially as the proposed buildings along the waterfront would be significantly taller than the low- to mid-rise buildings in the No-Action condition.

For Illustrative Purposes Only

Astoria Cove

Figure 8-15a

View looking north from 9th Street and 27th Avenue - No-Action Condition

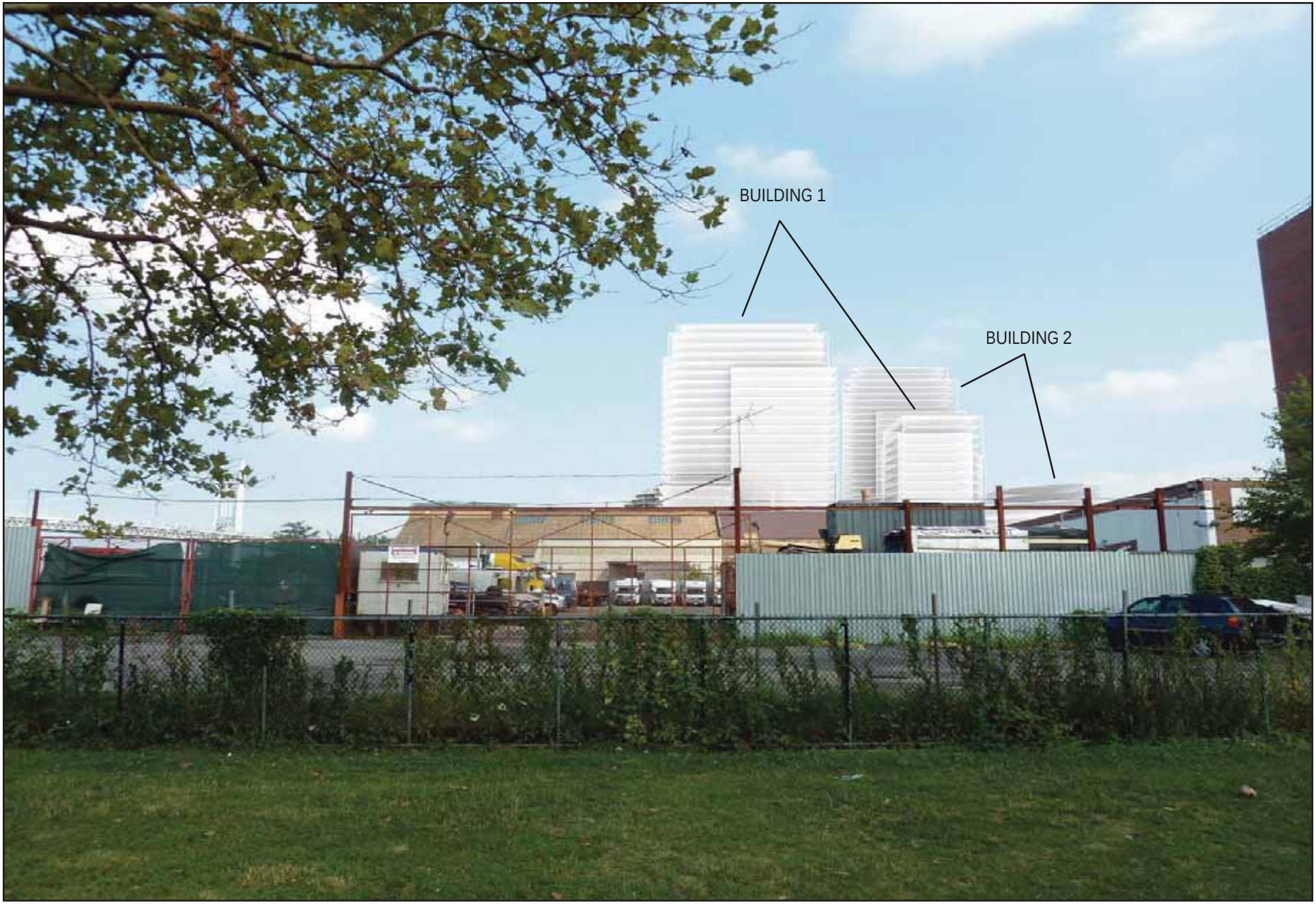
For Illustrative Purposes Only

Astoria Cove **Figure 8-15b**

Proposed View looking north from 9th Street and 27th Avenue

Astoria Cove **Figure 8-16a**

View looking east from Whitey Ford Field - Existing/No-Action Condition



For Illustrative Purposes Only

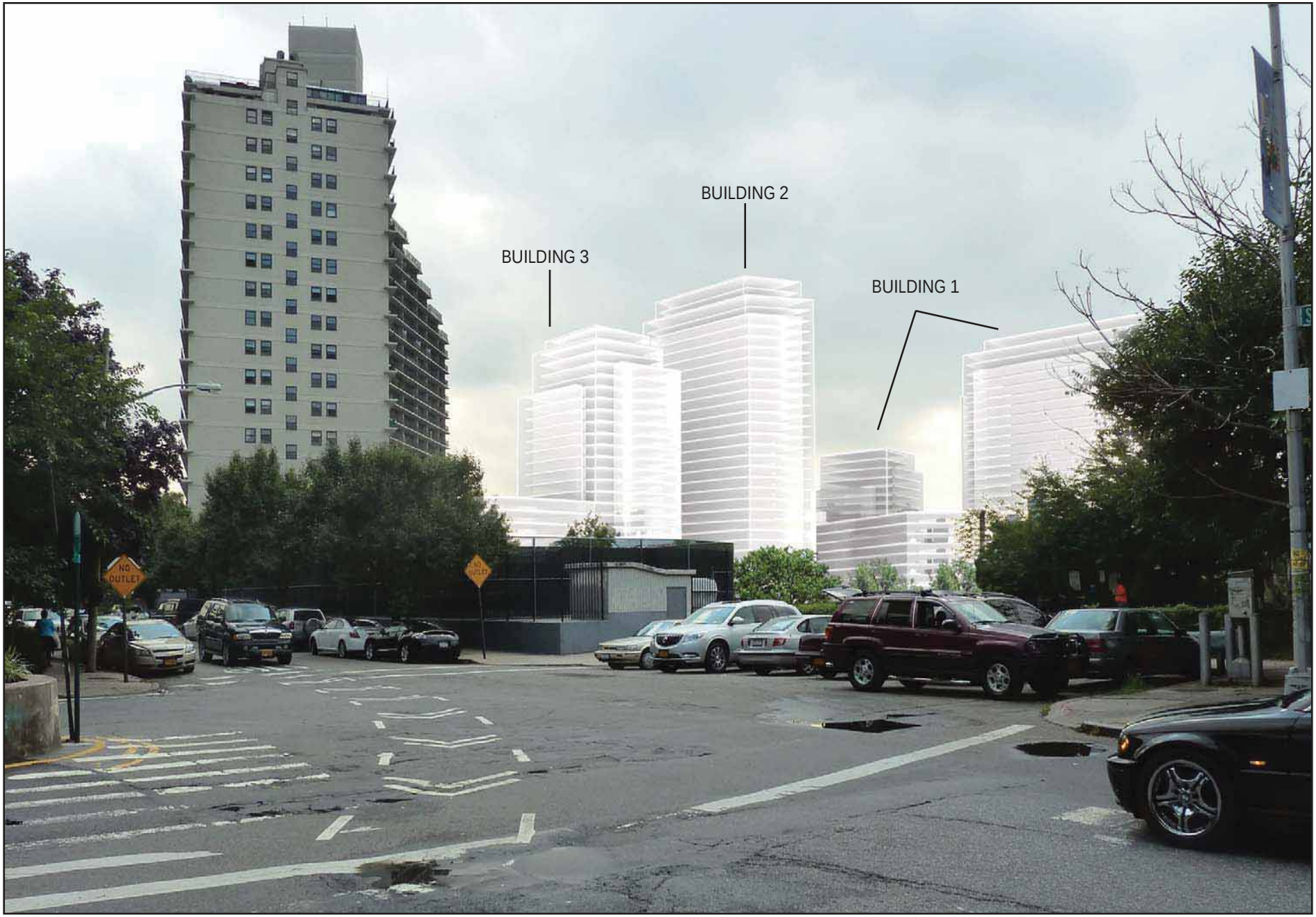
Astoria Cove

Figure 8-16b

Proposed View looking east from Whitey Ford Field

Astoria Cove **Figure 8-17a**

View looking south west from Astoria Park (Shore Blvd & Astoria Park) - No-Action Condition



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Astoria Cove **Figure 8-17b**

Proposed View looking south west from Astoria Park (Shore Blvd & Astoria Park)

Source: 2013 Halletts Point Rezoning FEIS

Astoria Cove

Figure 8-18a

View south from the Astoria Park Esplanade - No-Action Condition

For Illustrative Purposes Only

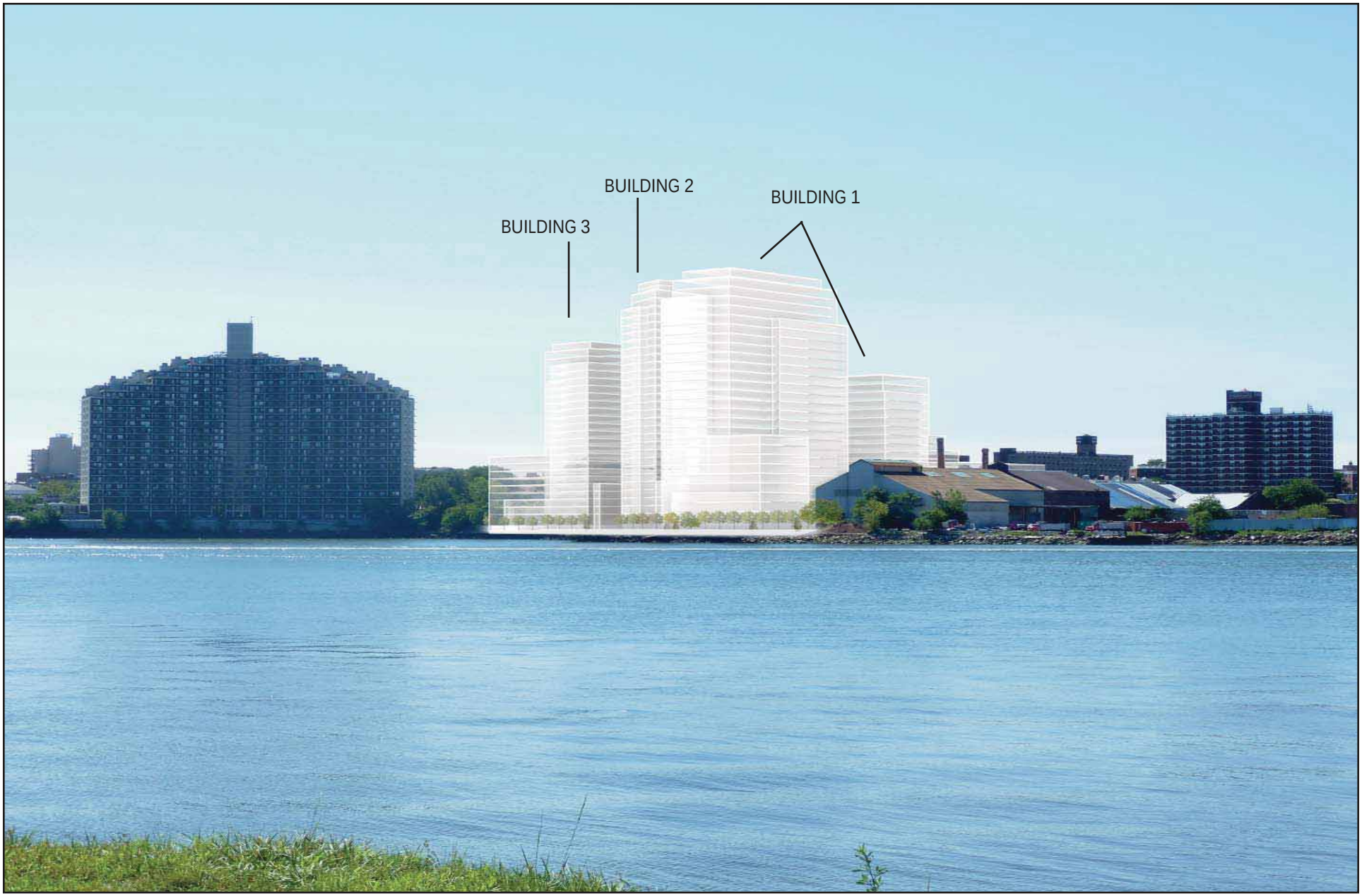
Astoria Cove

Figure 8-18b

Proposed view south from the Astoria Park Esplanade

Astoria Cove **Figure 8-19a**

View looking southeast from East River Esplanade (at East 102nd Street) - Existing/No-Action Condition



For Illustrative Purposes Only

Astoria Cove **Figure 8-19b**

Proposed View looking southeast from East River Esplanade (at East 102nd Street)

Adapted from 2013 Halletts Point Rezoning FEIS

Astoria Cove

Figure 8-20a

View west from Carl Schurz Park - No-Action Condition

For Illustrative Purposes Only

Astoria Cove

Figure 8-20b

Proposed view west from Carl Schurz Park

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Astoria Cove

Figure 8-21a

View southeast from Randall's/Ward's Island - No-Action Condition

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Astoria Cove

Figure 8-21b

Proposed view southeast from Randall's/Ward's Island

However, at this distance, the proposed buildings would be viewed in the context of other tall, modern residential developments to the south in Long Island City, as well as the anticipated Halletts Point project to the south and west of the project site. The Proposed Action would facilitate the replacement of vacant and underutilized lots with a new uniformly-designed development with a varied skyline, which could also become a focal point of interest. In addition, the proposed buildings would not block any significant visual resources from these vantage points. As such, these changes are not anticipated to be significantly adverse as no view of important visual resources would be obstructed. Panoramic views of the East River and the Queens waterfront would still be visible from these vantage points**.**

Overall, the Proposed Action would not have any significant adverse impacts on visual resources in the secondary study area.