A. INTRODUCTION

An open space assessment may be necessary if a proposed action could potentially have a direct or indirect effect on open space resources in the project area. A direct effect would "physically change, diminish, or eliminate an open space or reduce its utilization or aesthetic value." An indirect effect may occur when the population generated by a proposed development would be sufficient to noticeably diminish the ability of an area's open space to serve the existing or future population. According to the guidelines established in the *City Environmental Quality Review* (CEQR) *Technical Manual*, a project that would add fewer than 200 residents or 500 employees, or a similar number of other users to an open area, is typically not considered to have indirect effects on open space.

Although the Proposed Action would not have a direct effect on existing open space resources in the project area, development facilitated by the Proposed Action (the proposed project) is expected to result in an incremental increase of 1,523 dwelling units over the 2023 No-Action condition. Based on an assumption of 2.34 residents per residential unit, this would result in an increase of 3,564 residents, which exceeds the *CEQR Technical Manual* threshold for a detailed open space analysis. The proposed project would also add a total of 83,846 sf (1.92 acres) of publicly accessible open space. A quantitative assessment was conducted to determine whether the Proposed Action would significantly reduce the amount of open space available for the area's residential population. While, the proposed project is also expected to introduce a net increment of 134 employees to the project area, based on standard planning assumptions, this is below the *CEQR Technical Manual* threshold for analysis based on employee numbers. Therefore, the analysis of open space will focus exclusively on the open space needs of the area residential population. In addition to the analysis provided in this chapter, Chapter 6, "Shadows," provides an assessment of the shadow effects of the proposed project on open space resources and Chapter 16, "Noise," provides an assessment of the noise effects of the proposed project on open space resources.

B. PRINCIPAL CONCLUSIONS

According to the *CEQR Technical Manual*, a proposed action may result in a significant impact on open space resources if (a) there would be direct displacement/alteration of existing open space within the study area that has a significant adverse effect on existing users; or (b) it would reduce the open space ratio and consequently result in the overburdening of existing facilities or further exacerbates a deficiency in open space. As the Proposed Action would not directly displace or alter an existing open space, the focus of the open space analysis is on the potential for indirect effects on open space resources. As the Proposed Action would introduce more than 200 residents in the area, a detailed analysis of indirect open space impacts was conducted, pursuant to CEQR. The detailed analysis determined that the Proposed Action would result in a significant adverse impact to active open space in the residential study area as a result of the decrease in the active open space ratio.

The *CEQR Technical Manual* also states that "if the area exhibits a low open space ratio indicating a shortfall of open space, even a small decrease in the ratio as a result of the action may cause an adverse effect." A five percent or greater decrease in the open space ratio is considered to be "substantial" in

areas that are currently below the City's median community district open space ratio of 1.5 acres per 1,000 residents, and a decrease of less than one percent is generally considered to be insignificant unless open space resources are extremely limited.

An open space impact assessment is conducted using both quantitative and qualitative factors, and the determination of significance is based upon the context of a project, including its location, the quality and quantity of the open space in the future With-Action condition, the types of open space provided, and any new open space provided by a project. The open space study area is well-served by open space in existing conditions, with over 75 acres of open space. As the study area has over 1.5 acres of open space per 1,000 residents under existing conditions, the five percent decrease impact threshold does not apply to the analysis of the Proposed Action in and of itself; therefore, the open space analysis also considers the balance of open space resources appropriate to support the affected population.

The Proposed Action would decrease the 2023 No-Action total, active, and passive open space ratios by more than 5 percent. However, as the With-Action total and passive residential open space ratios would remain above the City's optimal planning goals of 2.5 acres and 0.5 acres, respectively, per 1,000 residents, no significant adverse impacts to total or passive open space would result.

The proposed project would include a playground and opportunities for walking and biking, as well as a school play area that would further offset active open space demand from school age children in the area, and would improve access to existing open space resources in the area, including Astoria Park. However, the residential population generated by the Proposed Action would exacerbate an existing deficiency in active open space in the residential study area. Therefore, the Proposed Action would result in a significant adverse impact on active open space in the residential study area. Potential measures to mitigate the open space impacts are described in Chapter 20, "Mitigation."

C. OPEN SPACE STUDY AREA AND METHODOLOGY

The analysis of open space resources has been conducted in accordance with the guidelines established in the *CEQR Technical Manual*. Using CEQR methodology, the adequacy of open space in the study area is assessed quantitatively using a ratio of usable open space acreage to the study area population, referred to as the open space ratio. This quantitative measure is then used to assess the changes in the adequacy of open space resources in the future, both without and with the Proposed Action. In addition, qualitative factors are considered in making an assessment of the Proposed Action's effects on open space resources.

In accordance with the guidelines established in the *CEQR Technical Manual*, the open space study area is generally defined by a reasonable walking distance that users would travel to reach local open space and recreational resources. That distance is typically a half-mile radius for residential projects and a quarter-mile radius for commercial projects with a worker population. Because the worker population generated by the Proposed Action falls well below the threshold of 500 additional employees, a half-mile radius is the appropriate study area boundary.

Open Space Study Area

Pursuant to *CEQR Technical Manual* guidelines, the residential open space study area includes all census tracts that have at least 50 percent of their area located within a half mile of the project site and all open spaces within it that are publicly accessible. As described above, residents typically walk up to a half mile for recreational spaces. While some portions of Wards Island Park are located within the half-mile radius of the project site, Wards Island Park was not included in the study area as it is located

across the East River and none of its census tract areas were located at least 50 percent within the half-mile radius.

The project site encompasses portions of Blocks 906, 907, 908, and 909 in the Astoria neighborhood of Queens Community District (CD) 1. As shown in Figure 5-1, the open space study area includes the following census tracts in their entirety: 79, 81, 83, 87, 91, 95, and 99. The study area extends approximately to Ditmars Boulevard and 24th Avenue on the north, 19th, 28th, 21st, 23rd, and 12th Streets on the east, 31st Avenue and Broadway on the south, and the East River on the west.

Analysis Framework

Direct Effects Analysis

According to the *CEQR Technical Manual*, a proposed action would have a direct effect on an open space if it causes the physical loss of public open space because of encroachment onto the space or displacement of the space; changes the use of an open space so that it no longer serves the same user population; limits public access to an open space; or causes increased noise or air pollutant emissions, odors, or shadows that would affect its usefulness, whether on a permanent or temporary basis.

As there are no publicly accessible open spaces on the project site, the Proposed Action would not have any direct effect and no further analysis is warranted. Chapter 6, "Shadows," provides an assessment of the shadow effects of the proposed project on area open space resources and demonstrates that shadows would not affect the usefulness of any open space resources in the study area.

Indirect Effects Analysis

Indirect effects occur to an area's open spaces when a proposed action would add enough population, either workers or residents, to noticeably diminish the ability of an area's open space to serve the existing or future population. The *CEQR Technical Manual* methodology suggests conducting an initial quantitative assessment to determine whether more detailed analyses are appropriate, but also recognizes that for projects that introduce a large population in an area that is underserved by open space, it may be clear that a full detailed analysis should be conducted. The study area is not located within an underserved or well-served area as determined by the *CEQR* guidelines.

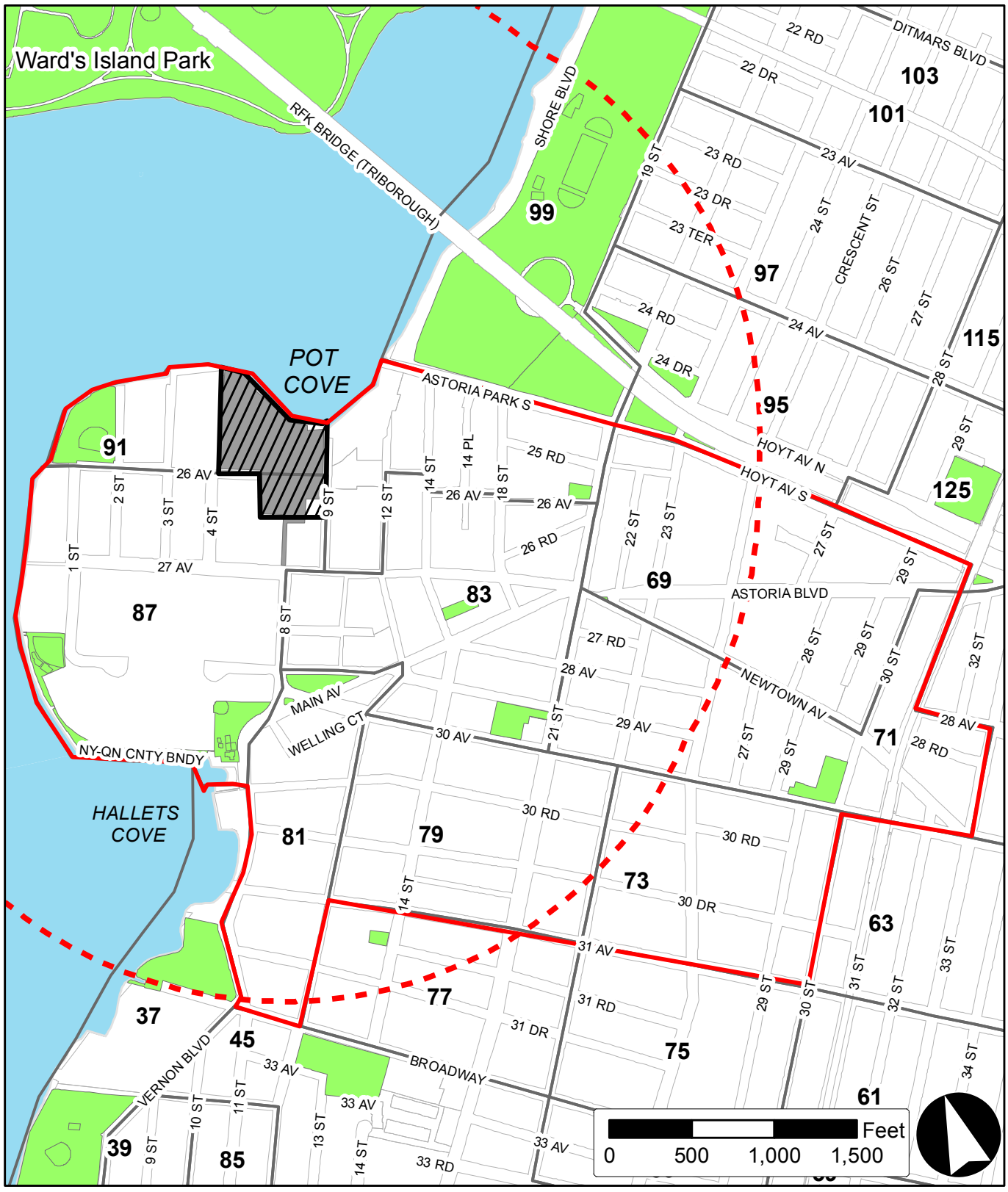
With an inventory of available open space resources and potential users, the adequacy of open space in the study area can be assessed both quantitatively and qualitatively. The quantitative approach computes the ratio of open space acreage to the population in the study area and compares this ratio with certain guidelines. The qualitative assessment examines other factors that can affect conclusions about adequacy, including proximity to additional resources beyond the study area, the availability of private recreational facilities, and the demographic characteristics of the area's population. Specifically, the analysis in this chapter includes:

- Characteristics of the user group: residents. To determine the number of residents in the study area, 2010 Census data have been compiled for census tracts comprising the open space study area.
- An inventory of all publicly accessible passive and active recreational facilities in the open space study area.
- An assessment of the quantitative ratio of open space in the study area by computing the ratio of open space acreage to the population in the study area and comparing this open space ratio with certain guidelines.

Astoria Cove

Figure 5-1

Open Space Study Area (Census Tracts Within the 1/2-Mile Radius)



  - As a planning goal, a ratio of 2.5 acres per 1,000 residents represents an area well-served by open spaces, and is consequently used by the City as an optimal benchmark for residential populations in large-scale plans and proposals. Ideally, this would be comprised of a balance of 80 percent active open space (2.0 acres per 1,000 residents) and 20 percent passive open space (0.50 acres per 1,000 residents).
  - Local open space ratios vary widely, and the median ratio at the citywide community district level is 1.5 acres of open space per 1,000 residents.
  - The New York Department of City Planning (DCP) generally recommends a comparison to the median ratio for community districts in New York City (i.e., 1.5 acres of open space per 1,000 residents) and the City's planning goal of 2.5 acres per 1,000 residents.
- An evaluation of qualitative factors affecting open space use.
- A final determination of the adequacy of open space in the residential open space study area.

Impact Assessment

As described in the *CEQR Technical Manual*, the significance of a project's effects on an area's open spaces is determined using both qualitative and quantitative factors, as compared to the No-Action condition. The determination of significance is based upon the context of a project, including its location, the quality and quantity of the open space in the future With-Action condition, the types of open space provided, and any new open space provided by the project.

The quantitative assessment considers how a project would change the open space ratios in the study area. The *CEQR Technical Manual* indicates that a significant adverse impact may result if a project would reduce the open space ratio by more than five percent in areas that are currently below the City's median community district open space ratio of 1.5 acres per 1,000 residents, or where there would be a direct displacement/alteration of existing open space within the study area that has a significant adverse effect on existing users. In areas that are extremely lacking in open space, a reduction as small as one percent may be considered significant, depending on the area of the City. Furthermore, in areas that are well-served by open space, a greater change in the open space ratio may be tolerated.

The qualitative assessment supplements the quantitative assessment and considers nearby destination resources, the connectivity of open space, the effects of new open space provided by the project, a comparison of projected open space ratios with established City guidelines, and open spaces created by the proposed project not available to the general public. It is recognized that the City's planning goals are not feasible for many areas of the City, and they are not considered impact thresholds on their own. Rather, these are benchmarks indicating how well an area is served by open space.

D. PRELIMINARY ASSESSMENT

According to the *CEQR Technical Manual*, an initial quantitative open space assessment may be useful to determine if a detailed open space analysis is necessary, or whether the open space assessment can be targeted to a particular user group. This initial assessment calculates an open space ratio by relating the existing residential and nonresidential populations to the total open space in the study area. It then compares that ratio with the open space ratio in the future with the Proposed Action. If there is a decrease in the open space ratio that would approach or exceed five percent, or if the study area exhibits a low open space ratio from the onset (indicating a shortfall of open spaces), a detailed analysis is warranted. The detailed analysis examines passive and active open space resources available to both residents and nonresidents (e.g., daily workers and visitors) within study areas delineated in accordance with the *CEQR Technical Manual*.

Pursuant to the guidelines of the *CEQR Technical Manual*, a preliminary open space assessment was conducted. The residential study area exhibits a high open space ratio (i.e., above the City's optimal planning goal of 2.5 acres per 1,000 residents) under existing conditions. However, the RWCDS would add over 3,000 new residents to the area and substantially decrease the open space ratio. As such, a detailed open space analysis is warranted and is provided below.

E. DETAILED ANALYSIS

Existing Conditions

Demographic Characteristics of the Study Area

To determine the residential population served by existing open space resources, 2010 Census data were compiled for the census tracts comprising the study area. With an inventory of available open space resources and the number of potential users, open space ratios were calculated and compared with the existing citywide median ratio and the City's planning goals. As mentioned above and shown in Figure 5-1, the open space study area is comprised of seven census tracts. As shown in Table 5-1 below, the 2010 Census data indicate that the study area has a total residential population of approximately 17,301 people.

Table 5-1: 2010 Population in the Half-Mile Study Area

Census Tract	Residential Population
79	3,493
81	1,188
83	2,950
87	4,582
91	2,796
95	2,289
99	3
Total	**17,301**

Source: U.S. Census Bureau, *Census 2010*

Within a given area, the age distribution of a population affects the way open spaces are used and the need for various types of recreational facilities. Typically, children four years old or younger use traditional playgrounds that have play equipment for toddlers and preschool children. Children ages five through nine typically use traditional playgrounds, as well as grassy and hard-surfaced open spaces, which are important for activities such as ball playing, running, and skipping rope. Children ages 10 through 14 use playground equipment, court spaces, little league fields, and ball fields. Teenagers' and young adults' needs tend toward court game facilities such as basketball and field sports. Adults between the ages of 20 and 64 continue to use court game facilities and fields for sports, as well as more individualized recreation such as rollerblading, biking, and jogging, requiring bike paths, promenades, and vehicle-free roadways. Adults also gather with families for picnicking, ad hoc active sports such as Frisbee®, and recreational activities in which all ages can participate. Senior citizens engage in active recreation such as tennis, gardening, and swimming, as well as recreational activities that require passive facilities.

Therefore the residential population of the study area was also broken down by age groups (Table 5-2). As shown in the table, people between the ages of 20 and 64 make up the majority (approximately 65 percent) of the residential population. Children and teenagers (0 to 19 years old) account for approximately 25 percent of the entire residential population, and persons 65 years and over account for approximately 9 percent of the residential study area population. The median population age for individual census tracts within the residential study area ranges from a high of 40.5 years (census tract 99) to a low of 28.41 years (census tract 87). The open space study area's median age of 33.5 is younger than the median age for Queens as a whole, which is 37.2 years.

Based on this data, the peak hours of open space demand would be expected to be concentrated during weekends, and the early morning and late afternoon to evening hours during the week, as it could be assumed that most residents aged 20 to 64 would work or attend school on weekdays.

Table 5-2: Percent Distribution of Age Groups in Study Area (2010)

Area	Under 5 Years	5 to 9 Years	10 to 14 Years	15 to 19 Years	20 to 64 Years	65+ Years
Study Area	6.0	5.8	6.3	7.1	65.7	9.1
Queens	5.9	5.5	5.5	6.2	63.9	12.8
NYC	6.3	5.8	5.7	6.6	63.4	12.1

Source: U.S. Census Bureau, *Census 2010.*

Inventory of Publicly Accessible Open Space

According to the *CEQR Technical Manual*, open space may be public or private and may be used for active or passive recreational purposes. Pursuant to the *CEQR Technical Manual*, public open space is defined as facilities open to the public at designated hours on a regular basis and is assessed for impacts under CEQR guidelines, whereas private open space is not accessible to the general public on a regular basis, and is therefore only considered qualitatively. Field surveys and secondary sources were used to determine the number, availability and condition of publicly accessible open space resources in the study area. The study area open space inventory was reviewed by DPR.

An open space is determined to be active or passive by the uses that the design of the space allows. Active open space is the part of a facility used for active play such as sports or exercise and may include playground equipment, playing fields and courts, swimming pools, skating rinks, golf courses, and multi-purpose play areas (open lawns and paved areas for active recreation such as running games, informal ball-playing, skipping rope, etc.). Passive open space is used for sitting, strolling, and relaxation, and typically contains benches, walkways and picnicking areas.

Within the defined study area, all publicly accessible open spaces were inventoried and identified by their location, size, owner, type, utilization, equipment, hours, and condition of available open space. The information used for this analysis was gathered through field inventories conducted from January through May 2013; from the New York City Department of Parks and Recreation's (DPR's) website; and from the New York City Open Accessible Space Information System (OASIS) database and other secondary sources of information.

The condition of each open space facility was categorized as "Excellent," "Good," "Fair," or "Poor." A facility was considered in excellent condition if the area was clean and attractive and if all equipment was present and in good repair. A good facility had minor problems such as litter or older but operative equipment. A fair or poor facility was one that was poorly maintained, had broken or missing equipment or lack of security, or other factors that would diminish the facility's attractiveness. Determinations

were made subjectively, based on a visual assessment of the facilities.

Likewise, judgments as to the intensity of use of the facilities were qualitative, based on an observed degree of activity or utilization on a weekday from 11AM until 3PM, which is considered the weekday peak utilization period according to the *CEQR Technical Manual*. If a facility seemed to be at or near capacity (i.e. the majority of benches or equipment was in use), then utilization was considered heavy. If the facility or equipment was in use but could accommodate additional users, utilization was considered moderate. If a playground or sitting area had few people, usage was considered light. Table 5-3, "Inventory of Existing Open Space and Recreational Facilities in Study Area," identifies the address, ownership, hours, and acreage of active and passive open spaces in the study area, as well as their condition and utilization. Figure 5-2 maps their location in the study area.

In addition to the open space resources included in the quantitative analysis pursuant to CEQR methodology, five resources (denoted by the letters A through E in Table 5-3 and Figure 5-2) fall within the study area but are excluded from the quantitative analysis due to limited hours and/or accessibility. Three open space resources that fall outside of the open space study area (Wards Island Park, Socrates Sculpture Park and Astoria Health Center Playground, letters F through H in Table 5-3 and Figure 5-2) are similarly not included in the quantitative analysis, yet are significant open spaces for the general area, and are therefore discussed in the qualitative analysis below.

Open Space Resources

As shown in Table 5-3, 75.26 acres of open space are included in the quantitative analysis, of which approximately 47.63 acres (63 percent) are passive open space and 27.63 acres (37 percent) are active open space. As shown in Figure 5-2 and Table 5-3, the eleven publicly accessible open space and recreational resources located within the study area and included in the quantitative assessment consist of a mix of City playgrounds, privately-owned waterfront open space, and larger City parks with a mix of passive and active recreational facilities. Most of the properties are maintained by DPR.

Astoria Park is the largest open space in the study area. This 59.96-acre community park extends from south of the Robert F. Kennedy (Triborough) Bridge to north of the Hell Gate Bridge, accounting for approximately 80 percent of the total open space acreage in the study area. Astoria Park is widely known for its approximately 330-foot long swimming pool, one of the largest and most popular swimming facilities in the City. Astoria Park also contains tennis and bocce courts, multiple trails for running and biking, a skate park, tennis courts, running tracks, spray showers, fitness equipment, playgrounds, multipurpose open spaces for both active and passive uses,[1] and a designated off-leash area for dogs. The park also has a panoramic view of Manhattan due to its location along the East River.

The majority of the remaining open space resources in the study area are programmed primarily for active uses. Halletts Point Playground, Hallett's Cove Playground, and Hallet's Cove Esplanade (identified as 2, 3, and 4 in Table 5-3) are the next largest open spaces in the study area with a combined 5.7 acres. The combined neighborhood park is bounded by the East River, 1st street, Hallett's Cove, and Vernon Boulevard and contains ball courts, handball courts, 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.

[1] While Astoria Park includes several large multipurpose open spaces that can be used for both passive and active recreation, for conservative analysis purposes, only 50 percent of the Park's largest multipurpose open space (the "Great Meadow" to the south of the Hellgate Bridge) was included in the active open space calculations.

Open Space Resources

Legend

- Open Space Study Area
- Proposed Rezoning Area
- Project Site
- Open Space
- 1 Open Space Resource
- A Qualitative Open Space Refer to Table 5-3

Table 5-3: Inventory of Existing Open Space and Recreational Facilities in Study Area

Map No.[1]	Name	Address/ Location	Owner/ Agency[2]	Features	Total Acres	Active		Passive		Condition	Utilization	DPR Inspection Results
						%	Acres	%	Acres			
Open Space Resources Included in the Quantitative Analysis												
1	Whitey Ford Field	2nd St., 26th Ave., & East River	DPR	Baseball diamond, bleachers, benches, fitness equipment	3.62	90	3.26	10	0.36	Fair	Heavy	Acceptable
2	Halletts Point Playground	1st St. & East River	DPR	Play equipment, ball courts, benches	1.25	90	1.13	10	0.12	Fair	Moderate	Acceptable
3	Hallet's Cove Playground	Vernon Blvd. & Halletts Cove	DPR	Play equipment, handball court, comfort station, benches	2.25	90	2.03	10	0.22	Fair	Moderate	Acceptable
4	Hallet's Cove Esplanade	Halletts Cove	DPR	Esplanade, benches	2.20	50	1.10	50	1.10	Poor	Moderate	Acceptable
5	Astoria Park	Shore Blvd., Astoria Park S., & 21st St.	DPR	Paths, multipurpose lawns, esplanade, running track, tennis courts, swimming pool, playgrounds, skate park	59.96	27	16.37	73	43.59	Fair	Heavy	Acceptable
6	Triborough Bridge Park Sitting Area	Hoyt Ave. btwn. 19th &21st Sts.	DPR	Tree plantings, paved plaza area	1.16	0	0	100	1.16	Fair	Light	Acceptable
7	Triborough Bridge Playground B	Hoyt Ave. btwn. 21st & 23rd Sts.	DPR	Playgrounds, fitness equipment	1.30	90	1.17	10	0.13	Fair	Moderate	Acceptable
8	Triborough Bridge Playground C[3]	Hoyt Ave btwn. 23rd & 24th Sts.	DPR	Playground	0.46	90	0.41	10	0.05	Fair	Light	Acceptable
9	Peter Chappetto Memorial Square	Hoyt Ave btwn. 21st & 23rd Sts.	DPR	Hockey rink, greenery	1.23	100	1.23	0	0	Fair	Moderate	Acceptable
10	Van Alst Playground	29th – 30th Aves., 14th – 21st Sts. (adjoined to PS171)	DPR/DOE	Play equipment, handball & basketball courts, benches with checkers/chess tables	1.03	90	0.93	10	0.10	Poor	Heavy	Acceptable
11	Shore Towers[4]	9th St. & East River	Shore Towers Condo-miniums	Pedestrian and bicycle pathway, trees, lighting, seating	0.80	0	0	100	0.80	Excellent	Light	-
Total Open Space Acreage Included in Quantitative Analysis					***75.26***	***37***	***27.63***	***63***	***47.63***			

Notes:
PHA field surveys were conducted January through May, 2013.
[1] Refer to Figure 5-2.
[2] DPR = New York City Department of Parks and Recreation; DOE = New York City Department of Education; DOT = New York City Department of Transportation
[3] Triborough Bridge Playground C is temporarily closed, however DPR is investigating opportunities to renovate the playground's basketball courts and reopen the playground to the community.
[4] While Shore Towers was built pre-waterfront zoning, it includes a Publicly Accessible Walkway pursuant to a restrictive declaration.
Sources: DPR website; OASIS; 2010 *Astoria Rezoning EAS*; 2013 *Halletts Point Rezoning FEIS*

Table 5-3 (continued): Inventory of Existing Open Space and Recreational Facilities in Study Area

Map No.[1]	Name	Address/ Location	Owner/ Agency[2]	Features	Total Acres	Active		Passive		Condition	Utilization	DPR Inspection Results
						%	Acres	%	Acres			
Open Space Resources Located Within the Study Area Not Included in the Quantitative Analysis												
A	Two Coves Community Garden[3]	Main Ave., Astoria Blvd., & 8th St.	DPR	Planting beds, paths, benches, picnic tables	0.79	0	0	100	0.79	Good	Light	Acceptable
B	Triborough Bridge Playground D[4]	Hoyt Ave., btwn. 24th & Crescent Sts.	DPR	Ball courts, playground	0.46	90	0.41	10	0.05	Fair	Light	Acceptable
C	Triborough Bridge Playground E[4]	Hoyt Ave., Crescent St., 26th St.	DPR	Playgrounds	0.46	90	0.41	10	0.05	Fair	Light	Acceptable
D	Old Mt. Carmel Cemetery[5]	21st St. btwn. 26th Ave. & 25th Rd.	Roman Catholic Diocese of Brooklyn	Tombstones	0.37	0	0	100	0.37	Fair	Light	-
E	Cemetery[5]	14th St. btwn. 27th Ave. & Astoria Blvd.	St. George Pentecostal Episcopal Church	Tombstones	0.27	0	0	100	0.27	Fair	Light	-
Open Space Resources Located Outside of the Study Area Not Included in the Quantitative Analysis												
F	Socrates Sculpture Park	Vernon Blvd., Broadway, & 31st Rd.	DPR	Greenery, benches, playground	4.89	25	1.22	75	3.67	Good	Moderate	Un-acceptable
G	Astoria Health Center Playground	Astoria Health Center Playground	DPR	Playground	0.21	90	0.19	10	0.02	Fair	-	Acceptable
H	Wards Island Park	Wards Island	DPR	Playground, BBQ areas, baseball, football, soccer, and tennis fields, running track	53.2	90	47.88	10	5.32	-	-	Acceptable

Notes:
PHA field surveys were conducted January through May, 2013.
[1] Refer to Figure 5-2.
[2] DPR = New York City Department of Parks and Recreation; DOE = New York City Department of Education; DOT = New York City Department of Transportation
[3] Given Two Coves Community Garden's limited public hours (Saturday-Sunday 9-12 and 3-5) it is excluded from the quantitative analysis.
[3] Triborough Bridge Playgrounds D and E are currently closed for the long term and unusable by the public, and therefore are excluded from the quantitative analysis.
[4] The two cemeteries located within the ½-mile study area do not include seating and are fences and gated, and therefore are excluded from the quantitative analysis.
Sources: DPR website; OASIS; 2010 *Astoria Rezoning EAS*; 2013 *Halletts Point Rezoning FEIS*

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 Island. Triborough Bridge Playgrounds B and C are located along Hoyt Avenue between 21st and 24th Streets and include playgrounds and fitness equipment. The 1.23-acre Peter Chappetto Memorial Square is located across from Triborough Bridge Playground B and includes a hockey rink and greenery. Van Alst Playground is a 1.03-acre playground at P.S. 171; it includes basketball and handball courts, play equipment, and benches with checkers/chess boards.

Predominantly passive open space resources in the study area are limited to Shore Towers and the Triborough Bridge Park Sitting Area (resources 11 and 6, respectively). The Shore Towers Condominiums were built pre-waterfront zoning, but have a Publicly Accessible Walkway pursuant to a restrictive declaration. The 0.80-acre waterfront plaza includes a pedestrian and bicycle pathway with

trees, lighting, and seating, and provides views of the Robert F. Kennedy (Triborough) Bridge, the East River, Wards Island, and the Manhattan skyline. Additional primarily passive open space resources in the study area include the Tribourgh Bridge Park Sitting Area, which includes tree plantings and a paved plaza area.

As shown in Table 5-3, the residential study area open spaces are mostly in fair condition, and use levels are light to moderate. With approximately 64 percent dedicated to passive use, and 36 percent dedicated to active use, the study area contains a good mix of recreational facilities to serve the area's sizeable child and adult populations, given that the age distribution in the study area includes slightly more children and adults than Queens as a whole. As noted above, approximately 65 percent of the study area's residents are between the ages of 20 and 64, and approximately 25 percent are 19 and younger, indicating a need for areas with a variety of active recreation options. The study area includes 27 acres of active open space facilities, with a variety of active open space options including a swimming pool, playgrounds, and ball fields, as well as running and bike paths and multipurpose open space areas for individualized recreation activities.

As previously stated, five additional open spaces resources are located within the ½-mile study area but are excluded from the quantitative analysis due to limited hours and/or accessibility, pursuant to CEQR. 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. This garden has limited hours (Saturdays and Sundays from 9AM to 12PM and from 3PM to 5PM) and is therefore excluded from the quantitative analysis. Triborough Bridge Playgrounds D and E are similarly excluded from the quantitative analysis as they are currently closed for the long term and unusable by the public. Lastly, the two cemeteries located in the open space study area (resources D and E) are excluded from the quantitative analysis as they do not include seating and are fenced and gated.

A number of public parks and open spaces are located within a half mile of the project site, but outside of the open space study area. The 0.21-acre Astoria Health Playground, the 4.5-acre Socrates Sculpture Park, and 53.2 acres of Wards Island Park are located within a half mile of the project site in census tracts 77, 37, and 240, respectively. However, as these census tracts contain less than 50 percent of their area within the ½-mile radius, these nearby open space resources have been excluded from the quantitative analysis. While these facilities are conservatively excluded from the quantitative analysis, it is likely that they would be used by people who live and work in the study area, who would be drawn to the active and passive recreational resources. Socrates Sculpture Park is located along the waterfront between Broadway and 31st Road. This unique passive open space functions as an outdoor art gallery and cultural and performance space.

The southernmost portion of Wards Island Park that falls within a half mile of the project site is accessible from the project site via a pedestrian/bike path along the Robert F. Kennedy (Triborough) Bridge located at Hoyt Avenue North and 27th Street. The southernmost portion of the park includes playgrounds and baseball and soccer fields. While the park is located outside of the area typically considered a reasonable walking distance for a range of users due to the location of the pedestrian bridge entrance to the east of the project site, due to the multiple recreation opportunities provided at Wards Island Park, it is a popular resource for organized events and recreation leagues in the surrounding area. In addition, while only 53.2 acres of Wards Island Park are within a half mile of the project site, the entire park constitutes 176.58 acres of recreational open space. The portion of this park outside the half-mile perimeter includes outdoor tennis courts, a running track, BBQ areas, football fields, and more playgrounds and baseball and soccer fields.

In addition, there are 2.5 acres of primarily active open space not included in the quantitative analysis located on the New York City Housing Authority (NYCHA) Astoria Houses Campus and available to

its residents. While this open space is not considered publicly accessible, it is significant open space for the general area. The open space contains playgrounds, basketball courts with benches, and fenced off landscaping that contributes to the sense of open space.

Quantitative Analysis of Open Space Adequacy

The following analysis of the adequacy of existing open space resources within the study area takes into consideration the ratios of active, passive, and total open space resources per 1,000 residents. As an optimal planning goal, the City tries to achieve an overall residential open space ratio of 2.5 acres per 1,000 residents (80 percent [2 acres] active and 20 percent [0.5 acres] passive) for large-scale plans and proposals. Although a typical population mix may call for such a goal, it is often not feasible for many areas of the City (especially higher density areas). Therefore, the City does not consider these ratios as it open space policy for every neighborhood; rather the ratios serves as benchmarks that represent how well an area is served by open space.

In calculating the open space ratio per 1,000 user population for the study area, all of the resources listed in the "Open Space Resources Included in the Quantitative Analysis" section of Table 5-3 were included; Resources A through H were not included in the calculations pursuant to CEQR as they are either located outside of the open space study area or have limited accessibility and/or hours. Table 5-4 shows that with an existing study area residential population of approximately 17,301 people, the existing total open space ratio in the study area is approximately 4.35 acres of open space per 1,000 residents; the study area has 1.60 acres of active open space per 1,000 residents and 2.75 acres of passive open space per 1,000 residents. As indicated in Table 5-4, the existing total and passive residential open space ratios are well above the City's open space planning goal of 2.5 acres and 0.5 acres per 1,000 residents. Furthermore, the existing total, active, and passive residential open space ratios exceed the median citywide community district level of 1.5 acres of open space per 1,000 residents, including 1.2 acres (80 percent) active and 0.5 acres (20 percent) passive open space per 1,000 residents.

Table 5-4: Adequacy of Open Space Resources in the Study Area – Existing Conditions

Total Residential Population	Open Space Acreage			Open Space Ratios (Acres per 1,000 Residents)			Open Space Planning Goal (Acres per 1,000 Residents)			Citywide Community District Median Open Space Ratio (Acres per 1,000 Resident)		
	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
17,301	75.26	27.63	47.63	4.35	1.60	2.75	2.5	2	0.5	1.5	1.2	0.3

Notes:
[1] Based on planning goal of a balance of 80 percent active open space and 20 percent passive open space.

Future without the Proposed Action (No-Action Condition)

Project Site

In the absence of the Proposed Action in 2023, it is expected that the Applicant would redevelop the upland parcels on its existing property as-of-right with 166 residential units and 83 accessory parking spaces. The planned development would generate an estimated 388 residents within the study area by 2023.

Study Area Population

Several new residential and commercial developments are currently planned and expected to be completed within the study area in the future without the Proposed Action by 2023. These new

developments would increase the residential population within the study area. These include developments expected to be completed in the land use study area identified in Table 2-4 of Chapter 2, "Land Use, Zoning, and Public Policy." It should be noted that there are additional developments expected to be completed in the 2023 No-Action condition that are located outside of the land use study area discussed in Chapter 2 and therefore not included in the land use analysis, but which are located within the open space study area and have been included in this open space analysis.

The residential components of these No-Action developments have been added to the existing conditions residential population. Table 5-5 shows that these No-Action developments are expected to increase the study area population by approximately 8,855 residents by 2023 to a total of 26,156 residents.

Table 5-5: 2023 No-Action Study Area Population

Total Existing Residents in the Study Area	17,301	
Anticipated No-Action Developments in the 2023 Future	**Additional Units**	**Additional Residents[1,2]**
Astoria Cove No-Action	166	388
Other No-Action	3,584	8,467
Total New Residents in the Study Area		8,855
Total Residents in the Study Area, 2023 No-Action Condition		***26,156***

Notes:
[1] Assumes 2.34 residents per household.
[2] No-Action population includes 80 community facility beds resulting in 80 residents.
Sources: PHA research of print and online media and consultation with the DCP Queens Borough Office.

Open Space Resources

Project Site

There are no new open spaces anticipated within the project site in the 2023 No-Action condition.

Study Area

There is one additional open space resource anticipated to be developed within the study area by the 2023 analysis year without the Proposed Action. The 2013 Halletts Point Rezoning, as approved, would facilitate the development of 2.43 acres of publicly accessible open space by 2022, which would be 30 percent (0.7 acres) active and 70 percent (1.73 acres) passive. The approved Halletts Point development would include a waterfront esplanade that would run along the entire length of the project site's waterfront, providing five upland connections to 1st Street. The waterfront esplanade would include landscaping, seating, a public plaza, and a playground.

Therefore, in the future without the Proposed Action, the total amount of open space within the study area would increase by approximately 2.43 acres, to a total of 77.69 acres. Passive open space would increase to 49.36 acres and active open space would increase to 28.33 acres.

Quantitative Analysis of Open Space Adequacy

New developments in the study area are expected to introduce residents to the area in the future without the Proposed Action, along with the new open space resource planned in the future. Although the new developments would also introduce new employees to the area, as previously mentioned, this analysis focuses exclusively on the potential impacts of the Proposed Action on the residential population of the study area. As shown in Table 5-6, in the future without the Proposed Action, the total residential open space ratio for the study area would be 2.97 acres per 1,000 residents, which is significantly above the

citywide community district median of 1.5 acres per 1,000 residents as well as the City's planning goal ratio of 2.5 acres per 1,000 residents.

Table 5-6: Adequacy of Open Space Resources in the Study Area – No-Action Condition

2023 Residential Population	Open Space Acreage			Open Space Ratios (Acres per 1,000 Residents)			Open Space Planning Goal (Acres per 1,000 Resident)			Citywide Community District Median Open Space Ratio (Acres per 1,000 Resident)		
	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
26,156	77.69	28.33	49.36	2.97	1.08	1.89	2.5	2	0.5	1.5	1.2[1]	0.3[1]

Notes:
[1] Based on planning goal of a balance of 80 percent active open space and 20 percent passive open space.

In addition, the active open space ratio would decrease from the existing conditions of 1.60 acres per 1,000 residents to 1.08 acres. This No-Action active open space ratio is below the City's optimal planning goal ratio of 2.0 acres per 1,000 residents; however, as stated in the *CEQR Technical Manual*, this optimal planning goal is only a benchmark indicating how well an area is served by open space and is not considered an impact threshold on its own. The passive open space ratio for the study area's residents would decrease from 2.75 acres per 1,000 residents under existing conditions to 1.89 acres per 1,000 residents under the No-Action condition, which is well above the City's optimal planning goal ratio of 0.5 acres per 1,000 residents. As such, the study area would be well-served by passive open space in the 2023 No-Action condition.

Qualitative Assessment of Open Space Adequacy

The anticipated waterfront esplanade and upland connections facilitated by Halletts Point Rezoning in the future without the Proposed Action would add open space acreage to the study area and would contribute to creating waterfront access for the study area where there is only limited access at present. The esplanade would create a seamless connection to the Hallett's Cove Esplanade, Hallett's Cove Playground, Halletts Point Playground, and Whitey Ford Field. The waterfront esplanade would include landscaping and seating along the waterfront. The upland connections are intended to provide view corridors and public access from 1st Street to the esplanade and East River and would also include a public plaza at 27th Avenue. In addition to the proposed on-site open space improvements, the Halletts Point project would implement two off-site public realm improvements: (1) the replacement of the sea railing along the waterfront from Halletts Point Playground to Hallett's Cove Playground, in response to a community request; and (2) future maintenance costs of the Halletts Point Playground in perpetuity.

In addition, as the 2013 *Halletts Point Rezoning Final Environmental Impact Statement* (FEIS) concluded that the Halletts Point Rezoning project will result in a significant adverse open space impact, mitigation measures for this impact were identified. In order to address the significant adverse impact on open space resulting from the Halletts Point project, capital improvements to Halletts Point Playground would be required including resurfacing the existing blacktop, restriping play areas, painting and repairing benches, and replacing basketball backboards and baseball backstops. These improvements would increase the utility of Halletts Point Playground and its capacity to meet the future open space needs, in particular the active open space needs, of the study area.

Future with the Proposed Action (With-Action Condition)

This section describes the open space conditions that would result from the reasonable worst-case development scenario (RWCDS) associated with the Proposed Action by 2023. It evaluates the potential for the Proposed Action to result in significant adverse impacts to open space resources directly and indirectly based on a comparison of the No-Action condition (described above) to the With-Action

condition.

Project Site Population

As described in Chapter 1, "Project Description," in the future with the Proposed Action it is estimated that there would be a total of approximately 1,689 dwelling units (DUs) on the project site, resulting in an incremental increase of 1,523 DUs over the 166 DUs located on the project site under 2023 No-Action conditions. Using the same planning assumptions as the No-Action conditions of 2.34 residents per DU, the Proposed Action is expected to introduce a net increase of approximately 3,564 residents and would therefore increase the study area's population to a total of 29,720 residents under the 2023 With-Action condition.

Direct Effects Analysis

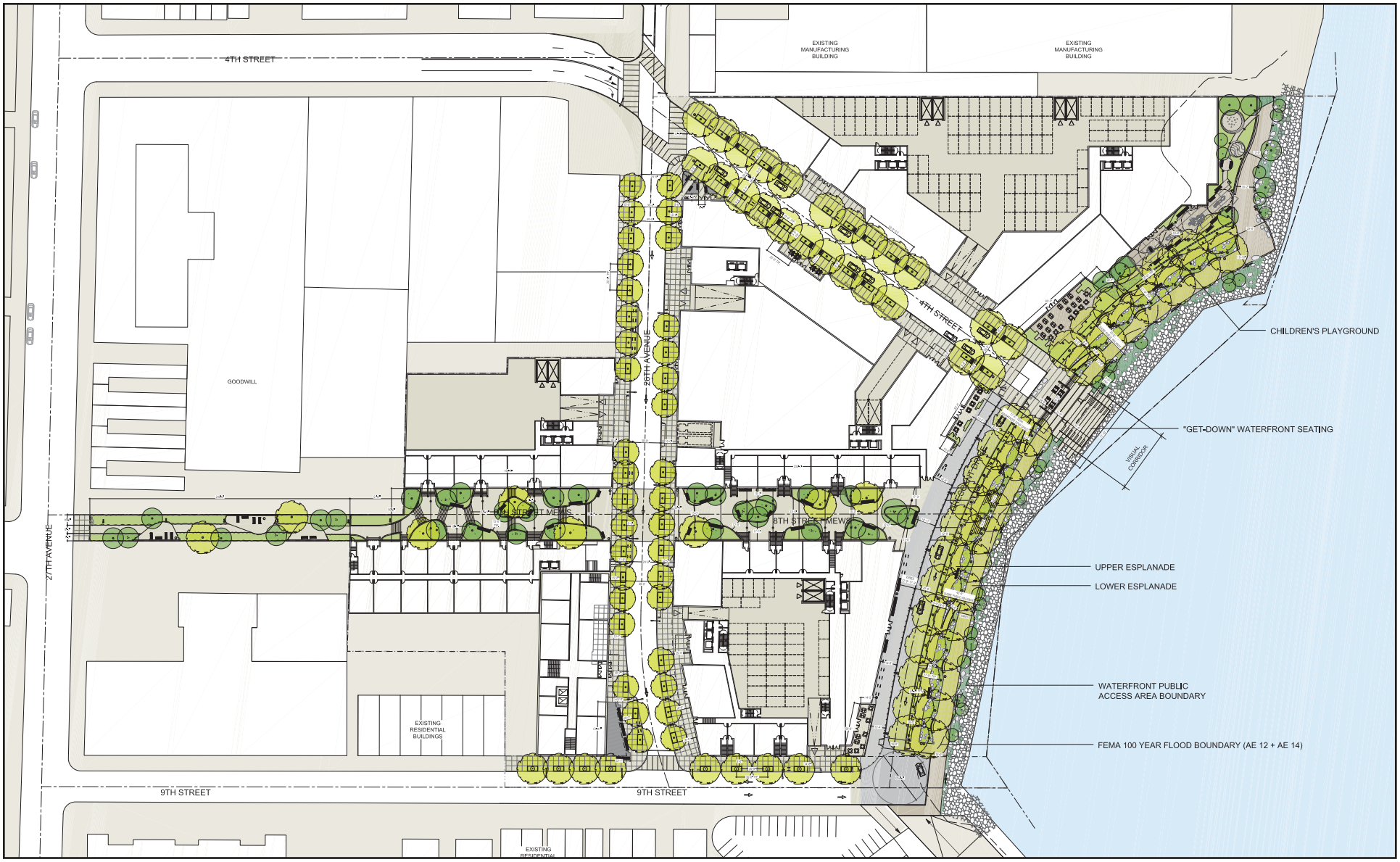
The Proposed Action would not have a direct effect on any study area open spaces. Construction and operation of the proposed project would not cause the physical loss of public open space because of encroachment or displacement of the space; would not change the use of an open space so that it no longer serves the same user population; and would not limit public access to an open space. In addition, as discussed in other chapters of this EIS, the Proposed Action would not significantly affect the usefulness or utilization of any study area open spaces due to increased noise or air pollutant emissions, odors, or shadows.

With respect to construction noise, during construction of the proposed project, construction activities would produce $L_{10(1)}$ noise levels at the Shore Towers open space and the proposed project' sopen space that would exceed the levels recommended by CEQR for passive open spaces (55 dBA L_{10}). While this is not desirable, noise levels in many parks and open space areas throughout the City that are located near heavily trafficked roadways and/or construction site experience comparable and sometimes higher noise levels. In addition, noise levels in these areas exceed CEQR recommended values under both existing and No-Action conditions. However, these open spaces would experience temporary significant adverse noise impacts during construction.

Indirect Effects Analysis

Open Space Resources

The proposed project would create 83,846 sf (1.92 acres) of new publicly accessible open space, including a waterfront esplanade and new upland connections. The waterfront esplanade would run the length of the site's waterfront, connecting on the east to the public esplanade at Shore Towers and Astoria Park. The proposed open space would include landscaping and seating along the waterfront, a playground, and a "get-down" area (see Figure 5-3). The upland connections are intended to provide view corridors and physical public access from 26th Avenue to the East River that do not currently exist. As each site along the waterfront is built out, the associated public open space required under the Zoning Resolution would be completed at the same time as the buildings per the ULURP Phasing Plan (see Chapter 19, "Construction Impacts"). The upland areas would include plantings, paths, seating, and lighting. 8th Street Mews, a pedestrian walkway that would connect 27th Avenue to the waterfront, would be landscaped and include rain gardens, seating, stairs, and lighting. The proposed waterfront esplanade would also include outdoor seating for the proposed restaurants and cafes. The portion of the proposed open space considered active includes the children's play area (approximately 12.5 percent) and the remainder (87.5 percent) would be considered passive. For analysis purposes, it is assumed that the proposed open space would consist of approximately 1.68 acres of passive open space and 0.24 acres of active open space. Therefore, the total acreage of open space resources in the open space study



For Illustriative Purposes Only

Astoria Cove

Figure 5-3
Proposed Landscape Plan

area would increase to 79.61 acres in the future With-Action scenario (51.41 acres of passive open space and 41.04 acres of active space).

In addition, the proposed school within Building 5 would include an approximately 4,000 sf (0.09 acres) of private open space to be utilized for school-related activities only. However, as this open space would not be public space, it is not included in the quantitative analysis.

Assessment of Open Space Adequacy

As discussed above, the projected open space study area population by 2023 in the future with the Proposed Action would be approximately 29,720 residents. As a result, the total open space ratio in the future with the Proposed Action would be 2.68 acres per 1,000 residents, a decrease of 0.29 acres (9.8 percent) compared to the future No-Action condition ratio (See Tables 5-7 and 5-8). The active open space ratio with the Proposed Action would be 0.96 acres per 1,000 residents, and the passive open space ratio with the Proposed Action would be 1.72 acres per 1,000 residents, which would represent a decrease of 0.12 acres (11.2 percent) and 0.17 acres (9.0 percent), respectively, compared to the No-Action condition (See to Tables 5-7 and 5-8).

Table 5-7: Adequacy of Open Space Resources in the Study Area – With-Action Condition

2023 Residential Population	Open Space Acreage			Open Space Ratios (Acres per 1,000 Residents)			Open Space Planning Goal (Acres per 1,000 Resident)			Citywide Community District Median Open Space Ratio (Acres per 1,000 Resident)		
	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
29,720	79.61	28.57	51.04	2.68	0.96	1.72	2.5	2	0.5	1.5	1.2[1]	0.3[1]

Notes:
[1] Based on planning goal of a balance of 80 percent active open space and 20 percent passive open space.

Table 5-8: No-Action to With-Action Change in Open Space Ratios

Ratio	No-Action Ratio	With-Action Ratio	Percent Change (%)
Total/Residents	2.97	2.68	-9.8
Passive/Residents	1.89	1.72	-9.0
Active/Residents	1.08	0.96	-11.2

Although the Proposed Action would result in a decrease of over 5 percent in open space ratios, as described in the *CEQR Technical Manual*, this impact threshold only applies to areas that are currently below the City's median community district open space ratio of 1.5 acres per 1,000 residents. As the open space study area currently has 4.35 acres of open space per 1,000 residents, well above the citywide community district median open space ratio, this threshold does not in and of itself apply and other considerations need to be evaluated.

As described in the *CEQR Technical Manual,* when assessing the quantitative impacts of a change in the open space ratio, consideration must be given to the balance of passive and active open space resources appropriate to support the affected population. Pursuant to CEQR¸ a larger percentage of active space is usually preferred, because the physical space requirements for active open space uses are significantly greater. For large-scale projects (and planning purposes), the City sets an optimal benchmark of 2.5 acres of open space per 1,000 residents, of which 80 percent (2.0 acres) is comprised of active open space and 20 percent (0.5 acres) is comprised of passive open space. As outlined in Table 5-8, in the future with the Proposed Action, the study area would include 2.68 acres of open space per 1,000 residents, of which 1.72 acres would be passive and 0.96 acres would be active. Therefore, as the study area would continue to be well-served by total open space and passive open space under With-

Action conditions, the Proposed Action would not result in a significant adverse total open space or passive open space impacts per the CEQR-defined quantitative impact methodology.

While the residential study area includes over 27 acres of quality active open space, including uses such as a swimming pool, tennis courts, a running track, several ball fields and basketball courts, as well as several playgrounds and multi-purpose open spaces, under existing. No-Action, and With-Action conditions, the residential study area active open space ratio would be less than the City's optimal planning goal of 2.0 acres per 1,000 residents. As such, the anticipated 11.2 percent decrease in the active open space ratio under With-Action conditions would exacerbate an existing deficiency in active open space in the residential study area.

However, as previously stated, it is recognized that the City's planning goals are not feasible for many areas of the City, and they are not considered impact thresholds on their own. Rather, these are benchmarks indicating how well an area is served by open space. Therefore, a qualitative active open space assessment is warranted.

As previously stated, the proposed project includes a 1.92-acre waterfront open space that, with the proposed 8th Street Mews and 4th Street upland connection, would connect the project site and surrounding Halletts Point peninsula to the adjacent Shore Towers' pedestrian and bicycle pathway and Astoria Park's bicycle and running paths, esplanade, and large multipurpose open space areas. The proposed project's waterfront open space would be high quality open space, meeting the extensive requirements for shore public walkways, upland connections, and amenities, providing public waterfront access in an area where there is only limited access at present, and creating opportunities for active uses such as running and biking along the Queens waterfront. The proposed 8th Street Mews as well as the proposed extension of 4th Street would provide additional running and biking areas within the study area. The proposed project would also include a play area as part of its proposed 1.92 acres of waterfront open space which would meet a portion of the demand of future Astoria Cove and area residents. Furthermore, while not included in the quantitative analysis, the proposed project's school play area would further offset active open space demand from school age children.

In addition, the quantitative active open space analysis does not include the significant regional parks located within a ½-mile of the project site, but just beyond the open space study area boundaries. These open spaces, such as Wards Island Park, include active open space resources that would likely be utilized by residents of Astoria Cove and the surrounding area. Taking into consideration the active open space on the portion of Wards Island Park that is located within a ½-mile of the project site, the With-Action active open space ratio would increase to 2.57 acres per 1,000 residents, well above the City's optimal planning goal of 2.0 acres of active open space per 1,000 residents.

However, pursuant to CEQR methodology, as the additional residents would exacerbate existing deficiencies in active open space in the study area, a significant adverse active open space impact would result. It should be noted that the significant adverse impact is expected to occur upon completion and occupancy of Building 2, in the third phase of the project's construction. Potential measures to mitigate the active open space impact are described in Chapter 20, "Mitigation."