Chapter 5: Open Space

A. INTRODUCTION

This chapter assesses the potential for the Proposed Actions to affect open space resources. Open space is defined in the 2020 *City Environmental Quality Review (CEQR) Technical Manual* as publicly accessible, publicly or privately owned land that is available for leisure, play, or sport or serves to protect and enhance the natural environment. An open space assessment should be conducted if a project would have a direct effect on open space, such as eliminating or altering a publicly accessible open space, or an indirect effect, such as when an increase in population could overtax the capacity of an area's existing open spaces to serve the future population. Direct effects could also include a proposed action's effects on open spaces due to increased noise, air pollutant emissions, odor, or shadows.

As described in Chapter 1, "Project Description," the Applicant is seeking a series of land use actions, including zoning map amendments, zoning text amendments, and special permits to facilitate the Applicant's intended development and programming. The area subject to the Proposed Actions is the five city blocks in the Astoria neighborhood of Queens with a series of mixed-use buildings and publicly accessible open spaces. Overall, the Proposed Actions are expected to result in a net increase of approximately 3,643 new homes, of which 914 would be permanently affordable pursuant to Mandatory Inclusionary Housing (MIH), approximately 278,133 gsf of commercial space (retail, eating and drinking establishments, grocery store, Physical Culture Establishments [PCEs], and the relocated cinema and potential automotive showroom), approximately 107,720 gsf of community facility space (e.g., day care, community center, and arts and cultural center), and approximately 1,708 parking spaces. The Proposed Actions could also result in approximately 1.94 acres of publicly accessible open space to be constructed in the Development Site. On the Applicant-controlled Development Site, the Proposed Actions could result in a net increase of 2,837 new residential homes (DUs), including 711 permanently affordable DUs pursuant to MIH. On non-Applicant controlled sites in the Additional Affected Area, the Proposed Actions could result in an additional 806 new homes, including 203 permanently affordable DUs pursuant to MIH. The Proposed Development also includes private open space for building residents as well as expanded pedestrian circulation space near the building entrances.

In addition to the Proposed Development with approximately 2.9 million gsf of space, the Proposed Actions would facilitate the redevelopment of several projected development sites in the Additional Affected Area that are not controlled by the Applicant. These additional developments would include approximately 800,000 gsf of residential and commercial space, similar to the Proposed Development. Overall, the Proposed Actions would facilitate the development of a total of approximately 3.7 million gsf in the Project Area.

The Proposed Actions would result in an incremental increase of up to approximately 1,133 workers and approximately 8,124 residents, as compared to future conditions absent the Proposed Actions—resulting in additional demand for open space in the surrounding area. Therefore, in

accordance with *CEQR Technical Manual* guidance, an open space assessment was conducted to determine whether the Proposed Actions would result in a significant adverse open space impact.

PRINCIPAL CONCLUSIONS

A detailed open space analysis for the residential study area determined that the Proposed Actions would result in a significant adverse impact related to active open space. This impact is due to the added residential demand placed on active open space resources in an area that currently has limited availability. The Project Area has been identified as underserved in terms of open space and recreation per the *CEQR Technical Manual*, which is a condition that is expected to continue in the future both with and without the Proposed Actions (i.e., the "No Action" and "With Action" conditions). Typically, a reduction in the open space ratio exceeding five percent is considered to be a significant adverse impact. However, if an area that has a very low open space ratio, such as the Project Area, a reduction as small as one percent is considered significant. As outlined below, in the With Action condition, the active open space ratio in the residential study area would decrease by approximately 15 percent.

DIRECT EFFECTS

The Proposed Actions would not result in any direct effects related to encroachments on or loss of open space, or changes in open space such that it no longer serves the same user population. There are no anticipated direct effects related to air quality or operational noise on open space resources from the Proposed Actions. However, as described in Chapter 6, "Shadows," the Proposed Development would cast new shadows on Playground Thirty Five XXXV and cause significant adverse impacts to the user experience in all seasons. Furthermore, as described in Chapter 19, "Construction," construction noise associated with the Proposed Actions would result in a temporary significant adverse impact at Playground Thirty Five XXXV. An increase in shadows and construction noise on a public open space, such as Playground Thirty Five XXXV, has the potential to affect its function, usability, and enjoyment, on a permanent basis in the case of shadows, and on a temporary basis in the case of construction noise. The mitigation for the shadows and construction noise impacts to Playground Thirty Five XXXV is discussed further in Chapter 20, "Mitigation."

The Proposed Development would also result in an increase of open space in the Project Area. The Proposed Development would include seven primarily passive publicly accessible open spaces on the northern and mid-block portions of the Development Site, totaling 1.94 acres. These spaces, which includes a large space adjacent to Playground Thirty Five XXXV, would bifurcate and link the blocks in the Project Area. At the southern end of the Development Site along 36th Avenue, the Proposed Development would include an additional 10,000 sf publicly accessible open space that is planned for active use (including this space, the Proposed Development would include a total of 2.17 acres of publicly accessible open space). The current designs include various forms of public seating (i.e., occupiable public art, raised seating decks, movable tables and chairs); multipurpose lawns; water features; landscaped areas, large planters, and shade trees; a dog park; promenades and pavilions; interactive public art; and temporary recreational features (e.g., communal games, seesaws, adult swings). Other amenities currently being considered include an immersive playscape for children, open markets, kiosks, public art installations, sculptures, and enhanced streetscapes. These spaces have been designed and programmed as publicly accessible open space, pursuant to community input.

INDIRECT EFFECTS

Non-Residential Study Area

The detailed analysis of open space for the non-residential study area concluded that the passive open space ratio would increase to 0.220 acres per 1,000 workers, a 1,317 percent increase, and the combined passive open space ratio would also increase to 0.069 acres per 1,000 combined workers and residents, a 1,011 percent increase, in the With Action condition. In the future with the Proposed Actions, the 1.943 acres of open space that would be introduced by the Proposed Development would substantially increase the worker and combined worker and resident ratios in the non-residential study area, such that the open space ratio would exceed the City's guideline of 0.150 acres of passive open space per 1,000 residents for workers, which is considered adequate. The combined passive open space ratio would remain below the combined goal of 0.390 acres of passive space per 1,000 workers and residents. As the open space ratios would increase, it is concluded that the Proposed Actions would not result in a significant adverse impact to open space in the non-residential study area.

Residential Study Area

The detailed analysis of open space for the residential study area concluded that with the Proposed Actions, the total open space ratio would increase by approximately 30 percent, to 0.105 acres per 1,000 residents; the active open space ratio would decrease by approximately 15 percent, to 0.055 acres per 1,000 residents; and the passive open space ratio would increase by approximately 221 percent, to 0.050 acres per 1,000 residents. The total and passive open space ratios in the study area are currently low and would remain low in the future with the Proposed Actions; however, there is no decrease in the open space ratios for total and passive open space. Therefore, the Proposed Actions would not result in a significant adverse indirect impact to total and passive open space. There is, however, a decrease in the active open space ratio. This decrease is above the *CEQR Technical Manual* threshold of 1 percent in an area lacking in open space. Therefore, based on the quantitative analysis, this decrease is considered a significant adverse indirect impact.

Qualitative Assessment

As discussed in greater detail below, while the determination of the open space impact is based on quantitative analyses per *CEQR Technical Manual* guidelines, a qualitative assessment can provide additional context and consideration. While the study area is not near a regional park that could augment the existing open space in the study area, there are several open spaces located just beyond the open space study area that could be used by residents, which provide an additional 15.30 acres of open space. Additionally, the members-only Sunnyside Gardens Park provides an additional 3.16 acres of open space to the residents of Sunnyside Gardens and is open to the public several times a year for community events, partially serving the open space needs of the area. While the Proposed Development would result in a significant adverse indirect impact to active open space in the residential study area based on the quantitative analysis, the Proposed Development would include private residential amenities as well as one or more Physical Culture Establishments (PCEs), i.e., a gym or fitness center, which would support active recreation for both existing and future residents of the study area. In addition, the Proposed Development's open space is intended to be flexible and provide for a wide variety of activities, including potential active recreation; for example, the largely passive courtyards would provide space for fitness or yoga classes. While these qualitative factors should be considered as part of the overall picture of the area's future open space resources, they do not offset the expected demand from the new resident population.

B. METHODOLOGY

DIRECT EFFECTS

According to the *CEQR Technical Manual*, a project would directly affect open space conditions if it causes the loss of publicly accessible open 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 results in increased noise or air pollutant emissions, odor, or shadows that would temporarily or permanently affect the usefulness of publicly accessible open space. Additionally, a project can directly affect an open space by enhancing its design or increasing its accessibility to the public. No open space resources would be physically displaced as a result of the Proposed Actions. This chapter uses information from Chapters 6, "Shadows"; 14, "Air Quality"; 16, "Noise"; and 19, "Construction" to determine whether the Proposed Actions could have the potential to directly affect any open spaces that are in proximity to the Project Area. In particular, the direct effects analysis will consider potential impacts on Playground Thirty Five XXXV, which is located adjacent to Projected Development Site C.

INDIRECT EFFECTS

Following the methodology of the *CEQR Technical Manual*, indirect open space effects may occur when a project would add enough population, either residents or workers, to noticeably diminish the ability of an area's open space to serve the future population. Typically, an assessment of indirect effects is conducted when a project would introduce 200 or more residents or 500 or more workers to an area; however, the thresholds for assessment are slightly different for areas of the City that have been identified as either underserved or well-served by open space. Since the Project Area is partially within an area identified as underserved by open space (generally located west of 38th Street and north of 36th Avenue), the threshold of 50 residents and 125 workers was applied in this analysis.

The Proposed Actions are anticipated to introduce an incremental increase of approximately 1,133 workers and 8,124 residents to the area by the 2032 analysis year. As the Proposed Actions exceeds the threshold of introducing more than 125 workers, a non-residential or worker open space assessment is provided. In addition, as the Proposed Actions exceeds the threshold of introducing more than 50 residents, a residential open space assessment is also provided. The open space study area contains a sizeable residential population, and residents in the study area may utilize passive open spaces near their homes. Therefore, a combined residential and worker assessment is provided to account for this residential population for the non-residential open space assessment.

ANALYSIS FRAMEWORK

The *CEQR Technical Manual* methodology recommends conducting an initial quantitative assessment to determine whether a more detailed analysis is appropriate but also recognizes that for projects that introduce a large population in an area that is neither well-served nor underserved by open space, it may be clear that a full, detailed analysis should be conducted. Because the Proposed Actions would introduce sizeable new residential and worker populations to the study area, a detailed analysis was conducted.

With an inventory of available open space resources and potential users, the adequacy of open space in the study areas can be assessed both quantitatively and qualitatively. The quantitative approach computes the ratio of open space acreage to the population within the study area and

compares this ratio with open space adequacy guidelines. The qualitative assessment examines other factors that may 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 assessment considers:

- Characteristics of the residents and workers likely to utilize study area open spaces. To determine the number of residents and workers in the study areas, 2020 U.S. Census data has been compiled for census tracts composing the residential and non-residential open space study areas.
- An inventory of all publicly accessible passive and active recreational facilities in the open space study areas.
- An assessment of the quantitative ratio of open space in the study area, conducted by computing the ratio of open space acreage to the workers, combined workers and residents, and residential populations in the study areas and comparing this open space ratio with open space adequacy guidelines.
- An assessment of expected changes in future levels of open space supply and demand in the 2032 analysis year both in the No Action and With Action conditions. Open space adequacy in the No Action condition is based on planned development projects within the open space study areas. To estimate the residential population expected in the study areas in the No Action condition, an average household size of 2.23 persons was applied to the number of new housing DUs expected in the residential and non-residential study areas. Additional workers introduced in the No Action condition were calculated based on employment assumptions.[1] Any new open space or recreational facilities that are anticipated to be operational by the analysis year are also taken into account.
- Open space ratios are determined for both the No Action and With Action conditions and compared to determine potential changes to open space adequacy in the 2032 analysis year.
- An evaluation of qualitative factors affecting open space use, including weekend and weekday utilization and the condition of facility equipment. Utilization level is assessed by field observation and is defined in Chapter 7 of the *CEQR Technical Manual:* low utilization is considered 25 percent capacity utilization or less at the peak hour, meaning that much of the space, facility, or equipment is available for use; moderate utilization is considered 25 to 75 percent capacity utilization at peak hour, meaning that some passive spaces and/or active facilities are available for use; and heavy utilization is considered 75 percent or greater capacity utilization at peak hours, meaning that few or none of the open space facilities are available for use.
- A determination of the adequacy of open spaces within the open space study areas in the Existing, No Action, and With Action conditions.

The following sections describe the specific methodology for the analysis of indirect effects on open space, including establishing the study area, identifying open space user populations, creating an inventory of open space resources, and assessing the adequacy of open space resources.

[1] The following employment multipliers were used to calculate additional workers in the No Action condition: Office-250 sf per employee; Local Retail-333 sf per employee; Parking Spaces-50 parking spaces per employee; Hotel Rooms-3 hotel rooms per employee; Community Facility-1,000 sf per employee; Residential Units-25 residential units per employee; Warehouse/Self-Storage-15,000 sf per employee.

STUDY AREA

The *CEQR Technical Manual* recommends establishing study area boundaries as the first step in an open space analysis. In accordance with the guidance contained 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, which differs by user.

Non-Residential (Worker) ¼-mile Study Area

Workers typically use passive open spaces within a short walking distance of their workplaces. Residents are more likely to travel farther to reach parks and recreational facilities, and they use both passive and active neighborhood open spaces. Workers are assumed to travel up to ¼-mile to use open space resources. Therefore, as recommended in the *CEQR Technical Manual*, a ¼-mile study area is used to analyze the Proposed Actions' indirect effects on open space. Consistent with *CEQR* guidance, the study area was adjusted to include all census tracts with at least 50 percent of their area within a ¼-mile of the Project Area. As shown in **Figure 5-1**, the worker study area includes Census Tracts 55, 57, 157, and 159.

Residential ½-mile Study Area

Residents are assumed to walk approximately 20 minutes, or a half-mile to an open space. Therefore, as recommended in the *CEQR Technical Manual*, a ½-mile residential study area is used to analyze the Proposed Actions' indirect effects on open space. Consistent with *CEQR* guidance, the study area was adjusted to include all census tracts with at least 50 percent of their area within a ½-mile of the Development Site. The residential study area includes the Census Tracts within the worker study area as well as Census Tracts 51, 53, 59, 61, 153, 155, 161, 169, and 171 (see **Figure 5-1**).

OPEN SPACE USER POPULATIONS

Existing Conditions

Data on the existing worker population within the study area was compiled from the 2019 U.S. Census[2] worker data for the census tracts that comprise the non-residential study area. Data on the existing residential population within the study area was compiled from the 2020 U.S. Census for the census tracts that comprise the residential study area.

No Action Condition

The worker population in the non-residential study area in the No Action condition was projected by adding the number of existing workers to the number of workers anticipated to result from developments that are expected to be completed in the study area by the 2032 analysis year, including No Action development in the Project Area. The residential population was projected based on adding the number of existing residents to the number of new housing units in the residential study area in the No Action condition by an average household size of 2.23 people. For the combined worker and residential population, the projected residential population was combined with the projected worker population for the ¼-mile study area.

[2] Longitudinal Employer-Household Dynamics (LEHD) data is obtained from the Census-on-the-Map application.

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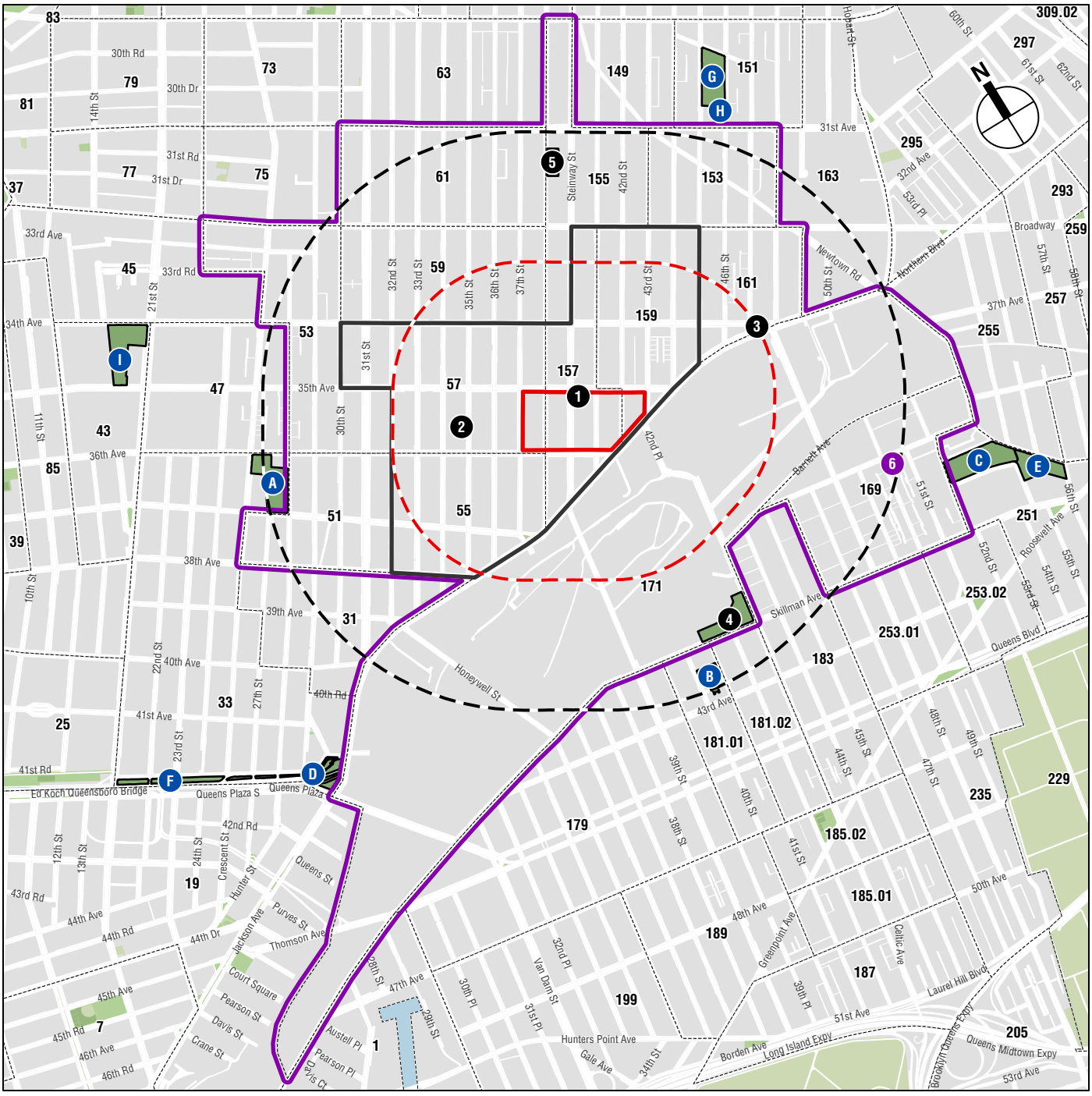


INNOVATION QNS
ASTORIA, QUEENS
COMMUNITY DISTRICT 1

Open Space Study Area and Resources

Figure 5-1

With Action Condition

The future residential and worker populations in the With Action condition were determined by adding the number of residents and workers anticipated from the Proposed Actions to the existing resident and worker populations as well as the residential and worker populations anticipated to result from developments that are expected to be completed in the study areas by the 2032 analysis year.

INVENTORY OF OPEN SPACE RESOURCES

Publicly accessible open spaces and recreational facilities located within the study area were inventoried using information from the New York City Department of Parks and Recreation (NYC Parks). The *CEQR Technical Manual* defines publicly accessible open space as open space that is regularly open to the public during designated daily periods. Open spaces that do not fit this definition because they are not available to the public on a regular basis or are available only to a limited set of users are considered private open space and are not included in the quantitative open space analysis.

The character, condition, and use of the publicly accessible open spaces and recreational facilities within the study area were determined based on field observations made in May 2021 and March 2022 and supplemented with online research and recent environmental review documents. Active and passive amenities were noted at each open space. Active facilities are intended for vigorous activities, such as jogging, field sports, and children's active play. Such facilities might include basketball and handball courts, jogging paths, ball fields, and playground equipment. Passive facilities encourage such activities as strolling, reading, sunbathing, and people watching. Passive open spaces are characterized by picnic areas, walking paths, seating area, or gardens. Certain areas, such as lawns or public esplanades, can serve as both active and passive open spaces. The analysis also accounts for any open spaces within the study area that will be created in the No Action or With Action condition. For the purposes of a conservative analysis, all open space introduced by the Proposed Development is assumed to be passive open space.

ADEQUACY OF OPEN SPACE RESOURCES

The adequacy of open space in the study area is quantitatively assessed using a ratio of usable open space acreage to the study area population; this is referred to as the open space ratio. As the Proposed Development is in an area that is lacking in open space, the differences in open space ratios are numerically small. Therefore, this particular analysis has used three decimal places to show the changes in the open space ratios between the Existing, No Action and With Action conditions. To assess the adequacy of open space resources, open space ratios are compared with planning goals set by the City for both non-residential and residential populations as described in the *CEQR Technical Manual*.

For worker populations, 0.150 acres of passive open space per 1,000 workers is typically considered adequate. If an assessment shows that a study area's open space ratio falls below the City guidelines of 0.150 acres of passive open space per 1,000 workers; and a proposed action would result in a decrease in the ratio of more than 5 percent, it could be considered a substantial change warranting a more detailed analysis. However, in areas that are extremely lacking in open space, any change in the ratio is considered significant.

For the combined worker and residential populations, the guideline ratio is determined by creating a weighted average of 0.500 acres of passive open space per 1,000 residents and 0.150 acres of

passive open space per 1,000 workers. This weighted average ratio changes depending on the proportion of workers and residents in the study area.

For residential populations, the *CEQR Technical Manual* guideline for the citywide median ratio at the Community District (CD) level is 1.500 acres of open space per 1,000 residents. In addition to this median ratio, the City has set a planning goal of 2.500 acres per 1,000 residents, which includes 0.500 acres of passive space and 2.000 acres of active space per 1,000 residents. This planning goal represents an area well-served by open spaces and is consequently used as an optimal benchmark for residential populations. It should be noted that the City's open space planning goals are often not feasible for many areas of the City, and they are not considered a threshold for a significant adverse effect. Rather, they are used as benchmarks to represent how well an area is served by its open space resources.

IMPACT ASSESSMENT

The assessment of the potential for significant adverse impacts on open space is both quantitative and qualitative. According to the *CEQR Technical Manual*, a total open space ratio decrease approaching or exceeding 5 percent suggests that a potential for a significant adverse open space impact may exist and warrants further consideration. In this analysis, a 1 percent change is used for impact assessment given the low existing open space ratio and limited active space resources in the study area. If a study area exhibits a low open space ratio, indicating a shortfall of open space, smaller decreases in that ratio as a result of the proposed actions may constitute significant adverse impacts. In addition to the quantitative factors cited above, the *CEQR Technical Manual* also recommends consideration of qualitative factors in assessing the potential for open space impacts, including the availability of nearby destination open space, the beneficial effects of new open space resources provided by a project, or other factors. It is recognized that the open space ratios of the City guidelines presented are not feasible for many areas of the City, and they are not considered impact thresholds on their own. Rather, these are benchmarks that indicate how well an area is served by open space.

When assessing the effects of a change in the open space ratio, the assessment should consider the balance of passive and active open space resources appropriate to support the affected population and the condition of existing open spaces within the study area. Determinations as to what constitutes a significant adverse open space impact are not based solely on the results of the quantitative assessment. Qualitative considerations—such as the distribution of open space, whether an area is considered well-served or underserved by open space, the distance to regional parks, the connectivity of open space, and any additional open space provided by the project—should be considered in a determination of significance.

C. EXISTING CONDITIONS

STUDY AREA POPULATION

Based on 2019 Census data, the non-residential study area has a population of approximately 7,365 workers (see **Table 5-1**). The worker population consists primarily of health care and social assistance, educational services, retail trade workers, and administrative and support, waste management and remediation. Typically, these "non-residential" open space users seek leisure in passive open spaces during the lunch hour and midday period.

Table 5-1
Existing Worker Population

Census Tract	Worker Population
55	3,784
57	2,326
157	801
159	454
Total Worker Population	**7,365**
Source: U.S. Census Bureau LEHD Data, 2019	

As shown in **Table 5-2**, the ¼-mile study area has a residential population of approximately 11,309. Therefore, the combined worker and residential population in the ¼-mile study area is 18,674.

Based on 2020 U.S. Census data, the ½-mile study area has a residential population of approximately 42,146 (see **Table 5-2**).

Table 5-2
Study Area Residential Populations

Census Tract	Population
¼-mile Residential Population	
55	1,367
57	4,277
157	1,655
159	4,010
Subtotal	**11,309**
½-mile Residential Population	
51	2,512
53	5,397
59	4,231
61	6,291
153	2,131
155	2,344
161	2,291
169	5,577
171.01	36
171.02	27
Total	**42,146**
Source: 2020 U.S. Census Bureau	

AGE DISTRIBUTION

Table 5-3 summarizes the age distribution of the residential population within the residential study area and compares this distribution to the age distributions of Queens and New York City overall. As shown in **Table 5-3**, the study area's working adult population (residents 20 to 64 years old) comprises a greater proportion of its population (73 percent) when compared with that of Queens (63 percent) and New York City (63 percent). In all other age categories, the study area has lower proportions than that of Queens and New York City.

Table 5-3
Residential Study Area Population Age Distribution

Age Category	Study Area		Queens		New York City	
	Persons	Percent	Persons	Percent	Persons	Percent
Under 5 Years	1,935	5.0%	143,079	6.3%	544,971	6.5%
5 to 9 Years	1,475	3.8%	121,021	5.3%	468,577	5.6%
10 to 14 Years	1,169	3.0%	125,731	5.5%	469,890	5.6%
15 to 19 Years	1,091	2.8%	116,565	5.1%	450,091	5.3%
20 to 64 Years	28,217	72.8%	1,430,478	62.6%	5,263,520	62.6%
65 Years and Over	4,889	12.6%	350,514	15.3%	1,222,267	14.5%
Total	38,776	100%	2,287,388	100%	8,419,316	100%

Sources: U.S. Census Bureau ACS 2015–2019 (5-Year Estimates).

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 five 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 typically use playground equipment, court spaces, and ball fields. Teenagers and young adults tend toward court game facilities such as basketball and field sports. Adults (ages 20 to 64) use court game facilities and sports fields, along with more individualized recreation such as rollerblading, biking, and jogging that require bike paths, and vehicle-free roadways. Adults also gather with families for picnicking, active informal sports such as Frisbee, and recreational activities in which all ages can participate. Senior citizens (65 years and older) engage in active recreation such as handball, tennis, gardening, fishing, walking, and swimming, as well as recreational activities that require passive facilities. There is a comparatively greater working adult population within the study area, which indicates a need for open space resources that cater to this age group, such as flexible spaces for individualized recreation or active informal sports or picnicking.

OPEN SPACE INVENTORY

There are two publicly accessible open spaces located within the ¼-mile study area, providing a total of 0.51 acres, of which 0.38 acres is active recreation and 0.13 aces is passive recreation (see **Figure 5-1** and **Table 5-4**). There are three additional publicly accessible open spaces located within the ½-mile study area, for a total of five open spaces, providing a total of 3.37 acres, of which 2.73 acres is active recreation and 0.64 acres is passive recreation.

The open space nearest to the Proposed Development is Playground Thirty Five XXXV. This resource contains 0.22 acres, of which 0.18 acres is active and 0.04 is passive and contains amenities such as playground equipment including swings, picnic tables, and benches, and primarily serves children who live in the nearby residential area. The playground was recently renovated, which included installation of new playground equipment, a spray shower area, planting beds, lighting, and fencing. Playground Thirty Five XXXV, is in excellent condition and exhibits moderate utilization (as noted above, moderate utilization is considered 25 to 75 percent capacity utilization at peak hour). The other open space resources within the study areas include the A.R.R.O.W. Field House, Dwyer Square, Torsney/Lou Lodati Playground, and Sean's Place, which are described below.

The A.R.R.O.W. Field House, which stands for Astoria Residents Reclaiming Our World, is an approximately 0.29-acre recreation center located at 35-30 35th Street. This recreation center has indoor amenities such as media labs and multipurpose rooms as well as outdoor amenities such as a garden, benches, and a basketball court. Normally, the Field House hosts Pre-K, after school, and community fitness classes. However, due to COVID-19 response, adult fitness classes have not yet resumed at the Field House The outdoor amenities exhibited low utilization at the time of field observation. The Field House is in excellent condition.

Dwyer Square is an approximately 0.25-acre traffic plaza located at the intersection of Northern Boulevard and 34th Avenue between 47th and 48th Streets. The plaza features passive amenities such as trees, permeable pavers, and benches. The square is in fair condition and exhibited low utilization.

The Torsney/Lou Lodati Playground is an approximately 2.03-acre playground located on Skillman Avenue between 41st and 43rd Streets (south of the Sunnyside Yard). The playground consists mainly of active amenities and includes a dog park, blacktop, a handball court, a playground, a comfort station, and spray showers. During field observation, the playground was in fair to good condition and exhibited heavy utilization.

Sean's Place is an approximately 0.58-acre park located at 38th Street between 31st Avenue and Broadway. This park includes amenities such as playgrounds, benches, handball and basketball courts, and a water feature. During field observation, Sean's Place was in excellent condition and exhibited moderate to heavy utilization.

Table 5-4
Study Area Open Space Inventory

Map No.[1]	Name	Location	Owner	Total Acres	Active	Passive	Amenities	Condition/ Utilization[2]	Users
1/4-mile Study Area									
1	Playground Thirty Five XXXV	35th Avenue between Steinway Street and 41st Street	NYC Parks	0.22	0.18	0.04	Playground equipment including swings, picnic tables, and benches	Excellent/ Moderate	Adults/ Small Children
2	ARROW Field House	35-30 35th Street	NYC Parks	0.29	0.20	0.09	Basketball court, blacktop, media lab, multipurpose room, benches, garden	Excellent/Low	Children/ Adults
1/4-mile Study Area Total				**0.51**	**0.38**	**0.13**			
1/2-mile Study Area									
3	Dwyer Square	Northern Boulevard, 34th Avenue, between 47th Street and 48th Street	NYC Parks	0.25	0.00	0.25	Benches	Good/Low	Adults
4	Torsney/Lou Lodati Playground	Skillman Avenue between 41st Street and 43rd Street	NYC Parks	2.03	1.83	0.20	Dog Park, blacktop, handball, playground, comfort station, spray showers	Fair-Good/ Heavy	Children/ Adults
5	Sean's Place	38th Street between 31st Avenue and Broadway	NYC Parks	0.58	0.52	0.06	Playgrounds, benches, handball courts, basketball courts, water feature	Excellent/ Heavy-Moderate	Adults/ Small Children
1/2-mile Study Area Total				**3.37**	**2.73**	**0.64**			
Qualitative Open Space Resources									
A	Dutch Kills Playground	28th Street, Crescent Street between 37th Avenue and 36th Avenue	NYC Parks/DOE	2.40	1.92	0.48	Handball courts, playgrounds, roller hockey rink, spray showers, swings, benches, picnic tables, exercise equipment,	Excellent/ Moderate	Children/ Adults/ Teenagers
B	P.S. 151 - Playground	50-05 31st Avenue	DOE/NYC Parks	1.29	1.03	0.26	Turf field, playground, floor games, basketball, running track	Excellent/Low	Children
C	Lawrence Virgilio Playground (aka Windmuller Park)	52nd Street, Woodside Avenue between 39th Road and 39th Drive	NYC Parks	3.01	1.81	1.20	Basketball courts, fitness equipment, handball courts, outdoor pools, playgrounds, running tracks, spray showers	Fair/Heavy-Moderate	Children/ Adults
D	Dutch Kills Green	Queens Plaza	EDC	1.09	0.11	0.98	Bike path, benches, landscaping	Excellent/ Moderate	Adults
E	Doughboy Park	Woodside Avenue between 54th Street and 56th Street	NYC Parks	1.71	0.00	1.71	Dog-friendly areas, benches	Excellent/Moderate	Adults
F	Queensboro Bridge Greenway	Queens Plaza North between 21st Street and 29th Street	DOT	0.33	0.17	0.17	Landscaping, bike path, benches, bike rentals,	Fair/Low	Adults

Table 5-4 (cont'd)
Study Area Open Space Inventory

Map No.[1]	Name	Location	Owner	Total Acres	Active	Passive	Amenities	Condition/ Utilization[2]	Users
Qualitative Open Space Resources (cont'd)									
G	Astoria Heights Playground	30th Road between 45th Street and 46th Street	NYC Parks	2.20	1.87	0.33	Tennis courts, blacktop, running track, tennis courts, basketball, benches, comfort station, landscaped areas, fitness equipment, basketball, handball, spray showers, picnic tables	Excellent/ Moderate	All ages
H	I.S. 010	31st Avenue between 45th Street and 46th Street	DOE/NYC Parks	0.51	0.51	0.00	Basketball and handball courts	Good/-	-
I	Ravenswood Playground[3]	21st Street between 34th Avenue and 35th Avenue	NYC Parks	2.76	2.48	0.28	Handball courts, playgrounds, roller hockey rink, spray showers, swings, benches, picnic tables, exercise equipment	-	-
Qualitative Open Space Total				**15.30**	**9.89**	**5.41**			

Notes:
[1] See **Figure 5-1** for open space resources.
[2] Condition and utilization are based on field observations made in May 2021 and March 2022.
[3] Under construction at time of field survey.
NYC Parks = NYC Department of Parks and Recreation
DOE = NYC Department of Education
EDC = NYC Economic Development Corporation
DOT = NYC Department of Transportation
Sources: NYC Parks; AKRF field survey, May 2021 and March 2022.

ASSESSMENT OF OPEN SPACE ADEQUACY

QUANTITATIVE ASSESSMENT

Non-Residential Study Area

The ¼-mile study area has a total of 0.131 acres of passive open space. With an estimated worker population of 7,365, the worker study area has a passive open space ratio of 0.018 acres per 1,000 workers (see **Table 5-5**). Non-residential or worker populations typically use passive open space during the workday/school day, so the passive open space ratio is the relevant ratio for consideration. This is below the City's goal of 0.150 acres of passive space per 1,000 workers. The combined passive open space ratio of 0.007 acres per 1,000 workers and residents is also below the goal of 0.362 acres of passive space per 1,000 workers and residents.

Table 5-5
Adequacy of Open Space Resources in the Study Area—
Existing Conditions

		Open Space Acreage			Open Space Ratios per 1,000 Persons			*CEQR Technical Manual* Open Space Guidelines		
	Population	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
Non-residential (1/4-mile) Study Area										
Workers	7,365			0.131			0.018			0.150
Combined	18,674			0.131			0.007			0.362
Residential (1/2-mile) Study Area										
Residents	42,146	3.371	2.728	0.643	0.080	0.065	0.015	2.500	2.000	0.500

Source: 2020 U.S. Census; NYC Parks; AKRF field survey, May 2021 and March 2022

Residential Study Area

The ½-mile residential study area has a total open space ratio of 0.080 acres per 1,000 residents, with an active open space ratio of 0.065 acres per 1,000 residents, and a passive open space ratio of 0.015 acres per 1,000 residents (see **Table 5-5**). The total open space ratio is lower than the citywide median of 1.500 acres per 1,000 residents and the City's planning goal of 2.500 acres of total open space. Similarly, the passive open space ratio is lower than the City's planning goal of 2.000 acres per 1,000 residents, and the active open space ratio is lower than the City's planning goal of 0.500 acres per 1,000 residents.

QUALITATIVE ASSESSMENT

As noted above, the *CEQR Technical Manual* also recommends consideration of qualitative factors in assessing the potential for open space impacts, when warranted. These include the capacity and utilization of open space resources, the connectivity of open space, and the distance to regional parks or other parks just outside the study area.

The study area open spaces are utilized to varying degrees, with Torsney/Lou Lodati Playground and Sean's Place experiencing the heaviest utilization. The condition of these open space resources also varies, although there are more resources in excellent condition. These include Playground Thirty Five XXXV, A.R.R.O.W. Field House, and Sean's Place. Open space resources that are in excellent condition such as Playground Thirty Five XXXV (moderate utilization) and the

A.R.R.O.W. Field House (low utilization) have capacity for higher utilization. Although in fair condition, Dwyer Square (low utilization) also has capacity for higher utilization.

Generally, the study area open spaces, which are generally playgrounds, are utilized by children and adults, with teenagers and seniors underrepresented. As noted in **Table 5-3**, the study area includes a higher percentage of working-age adults (ages 20 to 64), as compared with Queens and New York City overall (73 percent in the study area compared with 63 percent in Queens and New York City). As indicated in the *CEQR Technical Manual*, adults tend to utilize active recreational amenities (such as handball and basketball courts and sports fields) and other passive recreational amenities (such as promenades). Open spaces within the residential study area include amenities that would be utilized by working-age adults, such as picnic tables, benches, and handball and basketball courts (see **Table 5-4**).

The study area is not near a regional park that could augment the existing open space in the study area. However, there are several open spaces located just beyond the open space study area that are not considered in the quantitative assessment but could be used by residents (see **Figure 5-1**). These open spaces include Dutch Kills Playground, P.S. 151 Playground, Windmuller Park, Dutch Kills Green, Doughboy Park, and the Queensboro Bridge Greenway. Combined, these open space resources offer an additional 15.30 acres of open space, including a substantial amount of active space (9.89 acres). Although not included in the quantitative analysis, it is reasonable to assume that residents would utilize these resources, described below.

Dutch Kills Playground is a 2.40-acre playground bounded by Crescent Street, 36th Avenue, 28th Street, and 37th Avenue, outside the study area's boundaries but within a ½-mile radius of the Project Area. The northern portion of this playground is also newly renovated (2019). The playground includes amenities such as adult fitness equipment, basketball and handball courts, accessible play equipment, a spray shower, playgrounds, a roller hockey rink, benches, and picnic tables. The Dutch Kills Playground is in excellent condition and was in moderate use at the time of field observation.

The P.S. 151 Playground is a 1.29-acre playground located at 50-05 31st Avenue, outside the study area's boundaries but within a ½-mile radius of the Project Area. The playground includes amenities such as a turf field, playgrounds, floor games, basketball courts, and a running track. As a schoolyards to playgrounds site, the playground is available to the public on weekdays after school until dusk and from 8:00 a.m. to dusk on weekends and holidays. The playground is in excellent condition and was in low use at the time of field observation.

The Lawrence Virgilio Playground, also known as Windmuller Park, is a 3.01-acre park bounded by 39th Road, 52nd Street, 39th Drive, and Woodside Avenue, outside the study area's boundaries and immediately outside a ½-mile radius of the Project Area. Windmuller Park is also connected to Doughboy Plaza (described below). The park's amenities include basketball courts, fitness equipment, handball courts, outdoor pools, playgrounds, a running track, benches, and spray showers. This park is in fair condition and was in moderate to high use at the time of field observation.

Dutch Kills Green is an approximately 1.09-acre plaza bounded by Queens Plaza North, Queens Boulevard, and Northern Boulevard, outside the study area's boundaries and outside a ½-mile radius of the Project Area. This plaza, formerly a parking lot, was developed in 2011 with benches, landscaping, and pedestrian and bicycle paths. This park is in excellent condition and was in moderate use at the time of field observation. The park is connected to the Queensboro Bridge Greenway, an approximately 0.33-acre pedestrian path and bikeway that runs between 21st and

29th Streets. This resource includes amenities such as landscaping, a bike path, benches, and bike rentals and provides a connection from Dutch Kills Green to Queensboro Bridge Park (a 20.34-acre park located on the waterfront). This greenway is in excellent condition and was in moderate use at the time of field observation.

Doughboy Park is an approximately 1.71-acre park bounded by Woodside Avenue, 54th and 56th Streets, and Windmuller Park, outside the study area's boundaries and outside a ½-mile radius of the Project Area (approximately 0.68 miles). This park has recently been renovated and reopened and includes amenities such as dog run areas and benches.

Astoria Heights Playground is an approximately 2.20-acre playground on 30th Road between 45th and 46th Streets, outside the study area's boundaries and outside a ½-mile radius of the Project Area (approximately 0.80 miles). This park is in excellent condition and was in moderate use at the time of field observation.

I.S. 010 Horace Greeley Intermediate School is a schoolyards to playgrounds site that is approximately 0.51-acres that is outside the study area's boundaries and outside a ½-mile radius of the Project Area (approximately 0.80 miles). This amenity is open to the public after school hours and includes handball and basketball courts.

Ravenswood Playground is a 2.76-acre open space that abuts the New York City Housing Authority's Ravenswood Houses, outside the study area's boundaries and outside a ½-mile radius of the Project Area (approximately 0.90 miles). The open space is primarily active and features fitness equipment, playground equipment, handball courts, and a spray shower. However, this resource is currently under construction with expected completion in 2022. Active amenities anticipated to be available once construction is completed include a reconstructed asphalt sports field, full size basketball and handball courts, adult fitness equipment, and playground equipment. The passive amenities that will be available include a picnic grove with seating area. In addition, residents of Sunnyside Gardens (located in Census Tract 169, in the residential study area) have access to Sunnyside Gardens Park, which is a members-only open space resource located at 48-21 39th Avenue, within the residential study area. This approximately 3.16-acre park is accessible to approximately 5,856 residents of the study area (eligible residents may pay a membership fee and are given a key to the park which provides regular access) and offers amenities such as a bike track, a skate ramp, a ping pong table, a baseball diamond, soccer goals, tennis courts, basketball courts, sprinklers, playgrounds, and areas for picnicking. The Sunnyside Gardens Park is also open to the public several times a year for community events including the Memorial Day Fair, Oktoberfest, and Shakespeare in the Park.[3]

D. THE FUTURE WITHOUT THE PROPOSED ACTIONS

INDIRECT EFFECTS

STUDY AREA POPULATION

Non-Residential Study Area

There are ten known development projects within the non-residential study area that are expected to be completed by 2032 and that have the potential to generate new workers and residents (see **Table**

[3] https://sunnysidegardenspark.org/

5-6). These projects will add an estimated 945 new workers to the study area. In addition, the No Action Development on the Development Site is anticipated to result in an increase of 138 workers to the study area compared to existing conditions. Therefore, the study area worker population is expected to increase by 1,083 workers to a total of 8,448 workers in the No Action condition for 2032. The ten known development projects are anticipated to include 540 DUs. Using an average household size of 2.23 people, an additional 1,204 residents are anticipated to be generated from these development projects. Therefore, the residential population is expected to increase to 12,513 residents. The combined worker and residential population is therefore anticipated to increase to 20,961.

Table 5-6
Study Area No Build Projects

#	Address	Dwelling Units	Retail GSF	Office GSF	Hotel Rooms	Community Facility GSF	Parking Spaces
Non-Residential Study Area							
1	37-29 32nd Street	10	476	0	0	0	0
2	37-19 32nd Street	86	17,320	0	0	0	43
3	37-25 32nd Street	18	0	0	0	0	9
4	37-24 32nd Street	64	12,191	0	0	0	32
5	34-38 38th Street*	0	69,767	0	0	0	23
6	35-01 36th Avenue*	0	0	38,668	0	11,417	0
7	32-72 41st Street*	25	0	0	0	0	28
8	36-02 35th Avenue*	0	0	61,649	0	0	0
9	37-06 36th Street*	0	0	0	61	0	0
10	44-01 Northern Boulevard*	337	61,400	0	0	0	175
Total		**540**	**161,154**	**100,317**	**61**	**11,417**	**310**
Residential Study Area							
11	47-00 Northern Boulevard*	0	80,177	0	0	0	375
12	32-81 45th Street*	8	0	0	0	0	0
13	47-10 Barnett Avenue	0	0	0	0	87,574	0
14	31-08 Northern Boulevard	0	0	0	0	0	0
15	31-28 Northern Boulevard	0	0	0	0	0	0
16	32-70 49th Street	0	0	0	0	0	17
17	25-16 37th Avenue	39	10,278	4,465	0	0	21
18	37-29 31st Street	70	0	18,137	0	0	55
19	37-05 30th Street	186	12,675	0	0	0	132
20	37-28 30th Street	33	0	0	0	0	8
21	37-24 30th Street	32	0	0	0	0	7
22	30 -38 Steinway Street	8	1,619	0	0	0	0
23	47-12 Broadway	7	0	0	0	0	0
24	31-07 38th Avenue	12	4,582	0	0	0	6
25	31-18 37th Street		0	0	0	9,861	0
26	25-28 Broadway	20	3,049	0	0	0	13
27	31-31 30th Street	13	0	0	0	0	12
28	31-28 38th Street	7	0	0	0	345	0
29	29-00 Queens Plaza East	82	11,630	0	0	0	0
30	31-62 Steinway Street	6	0	0	0	0	0
31	32-07 38th Street	7	0	0	0	0	0
32	31-18 31st Street	10	2,228	0	0	2,508	0
33	34-38 30th Street	6	0	0	0	0	0
34	36-11 31st Street	10	2,126	0	0	0	0
35	36-45 31st Street	40	7,159	0	0	0	20
36	36-22 31st Street	10	2,435	0	0	0	0
37	27-10 37th Avenue	10	2,188	0	0	0	0
38	36-10 31st Street	41	0	0	0	0	21
Total		**1,197**	**301,299**	**122,919**	**0**	**111,705**	**997**

Notes: * See Also as Table 2-1 and Figure 2-3 in Chapter 2, "Land Use, Zoning, and Public Policy."
Sources: New York City Department of City Planning Housing Database, New York City Department of Buildings, accessed June 2021

Residential Study Area

There are 38 development projects within the residential study area that are expected to be completed by 2032 and that have the potential to generate new residents (see **Table 5-6**). These projects will add an estimated 2,669 residents to the study area. Therefore, in the No Action condition, the study area population is expected to increase by 2,669 residents, to a total of 44,815 residents.

STUDY AREA OPEN SPACES

Non-Residential Study Area

There are no additional open space resources planned for the non-residential study area by the 2032 analysis year.

Residential Study Area

There is one additional open space resource that is anticipated to be available to residents by the 2032 analysis year. The Lt. Michael R. Davidson Playground, located south of the Sunnyside Yard at 39th Avenue and 50th Street, is currently in the design phase and would add approximately 0.25-acres of open space to the study area. Construction of this playground is anticipated to be complete by 2023. For the purposes of analysis, this playground is assumed to include 80 percent active and 20 percent passive space, which results in approximately 0.200 acres of active space and 0.050 acres of passive space. With the addition of this open space, the total open space acreage will increase to 3.622 acres, with 2.929 acres of active space and 0.693 acres of passive space.

ASSESSMENT OF OPEN SPACE ADEQUACY

Quantitative Assessment

Non-Residential Study Area

As shown in **Table 5-7**, with a total worker population of 8,448 and 0.131 acres of passive open space, the passive open space ratio will decrease slightly to 0.016 acres per 1,000 workers in the No Action condition. The open space ratio will remain well below the City's goal of 0.150 acres per 1,000 workers. The non-residential study area will have a residential population of 12,513, which will result in a combined worker and residential population of 20,961. With a combined worker and residential population of 20,961, the combined passive open space ratio of 0.006 acres per 1,000 workers and residents will decrease from existing conditions and remain below the goal of 0.359 acres of passive space per 1,000 workers and residents.

Table 5-7
Adequacy of Open Space Resources—
No Action Condition (Non-Residential Study Area)

	Total Population	Passive Open Space Acreage	Passive Open Space Ratio per 1,000 People	Passive Open Space Goal
Workers	8,448	0.131	0.016	0.150
Combined Workers and Residents	20,961		0.006	0.359

Note: Ratios in acres per 1,000 people.
Sources: NYC Parks; MapPLUTO.

Residential Study Area

As shown in **Table 5-8**, the total open space ratio will increase slightly from existing conditions to 0.081 acres per 1,000 residents in the No Action condition; however, it will remain below the citywide median of 1.500 and the City's planning goal of 2.500 acres per 1,000 residents. The active open space ratio will remain the same at 0.065 acres per 1,000 residents and remain below the City's goal of 0.500 active acres per 1,000 residents. The passive open space ratio will also slightly increase to 0.016 acres per 1,000 residents and will remain below the City's goals for passive open space.

Table 5-8
Adequacy of Open Space Resources—
No Action Condition (Residential Study Area)

		Open Space Acreage			Open Space Ratios per 1,000 Persons			*CEQR Technical Manual* Open Space Guidelines		
	Population	Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
Residential (½-Mile) Study Area										
Residents	44,815	3.622	2.929	0.693	0.081	0.065	0.016	2.500	0.500	2.000
Sources: 2020 U.S. Census, NYC Parks, AKRF field survey, May 2021 and March 2022.										

Qualitative Assessment

As noted above, there remain several public open spaces that are available to residents that are located just beyond the study area and that provide an additional 15.30 acres of open space. Additionally, the members-only Sunnyside Gardens Park provides an additional 3.16-acres of open space to the residents of Sunnyside Gardens. The Sunnyside Gardens Park is also open to the public several times a year for community events, including the Memorial Day Fair, Oktoberfest, and Shakespeare in the Park.

E. THE FUTURE WITH THE PROPOSED ACTIONS

DIRECT EFFECTS

The Proposed Actions would not result in any direct effects related to encroachments on or loss of open space, or changes in open space such that it no longer serves the same user population, and there are no anticipated direct effects related to air quality or operational noise on open space resources from the Proposed Actions. However, as described in Chapter 6, "Shadows," the shadows analysis concluded that the development resulting from the Proposed Actions would cast new shadows on Playground Thirty Five XXXV moving throughout the day in all seasons, covering large areas of the playground at times, eliminating much or all of the remaining sunlight in the park at times, particularly in the fall, winter, and early spring, and cause significant adverse impacts to the user experience in all seasons. As described in Chapter 19, "Construction," based on the prediction of temporary construction noise levels up to the high-70s dBA resulting in construction noise level increments up to approximately 10 dBA and exceedances of the *CEQR Technical Manual* construction noise screening thresholds occurring over the course of up to 48 months, construction noise associated with the Proposed Actions would result in a temporary significant adverse impact at Playground Thirty Five XXXV.

An increase in shadows and construction noise on a public open space, such as Playground Thirty Five XXXV, has the potential to affect its function, usability, and enjoyment, on a permanent basis in the case of shadows, and on a temporary basis in the case of construction noise. Potential

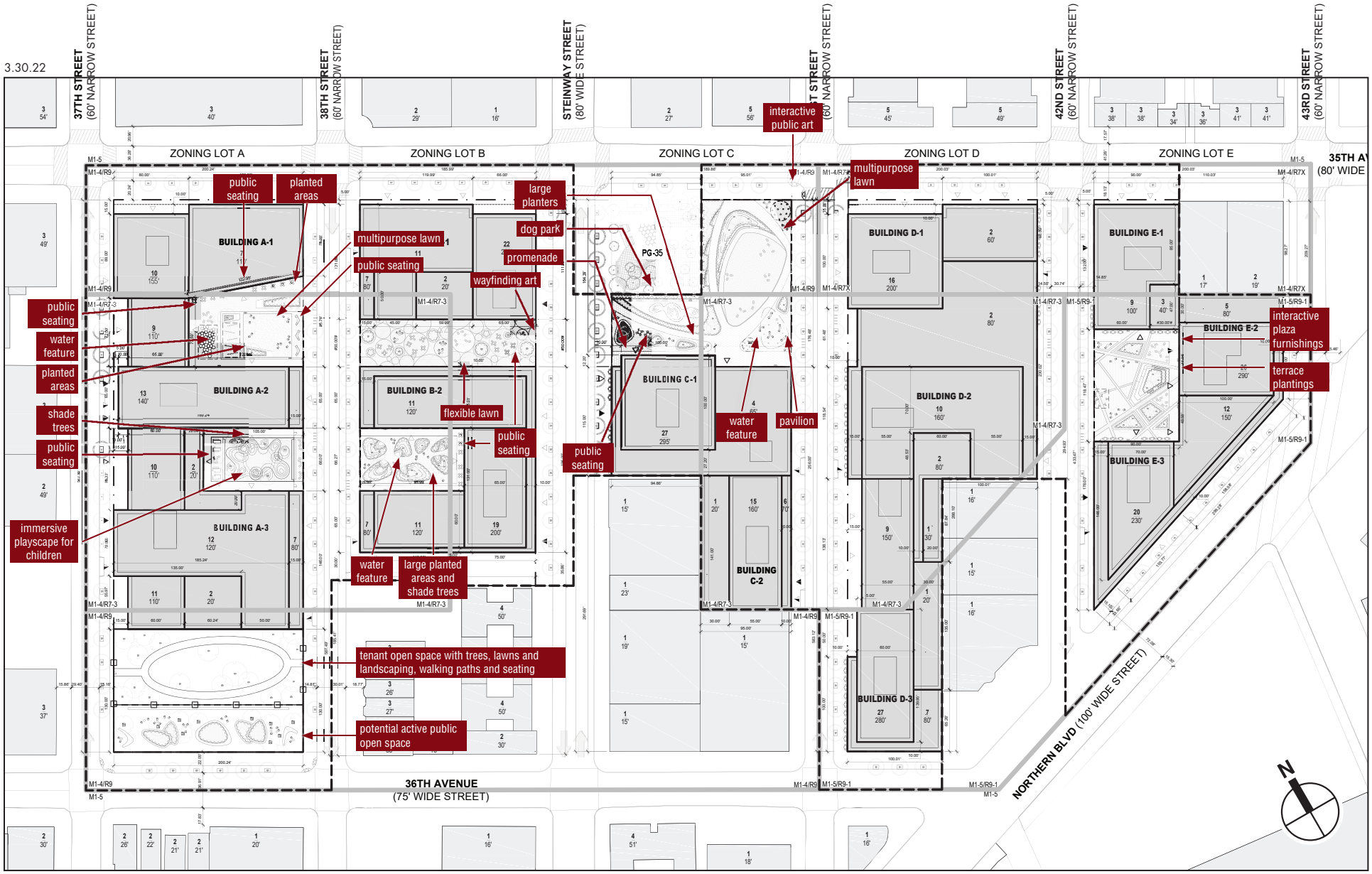
mitigation for the shadows and construction noise impacts to Playground Thirty Five XXXV is discussed further in Chapter 20, "Mitigation."

The Proposed Development would also result in an increase to open space in the Project Area. As described in Chapter 1, "Project Description," the Proposed Development would include a total of approximately 2.17 acres of publicly accessible open space. The current designs include amenities for a wide variety of users, including potential plazas for the community to gather, inviting courtyards surrounded by local cafes and restaurants, landscaped pedestrian pathways for families to stroll. Other publicly accessible amenities would include immersive playscapes for children, open markets, kiosks, public art installations, sculptures, and enhanced streetscapes.

According to the Applicant, the ground floor open spaces and adjacent program uses are currently designed and envisioned to enhance the public realm and create a uniquely engaging pedestrian experience while simultaneously breaking up the long city blocks. The Proposed Development's open space would be owned and maintained by the Applicant, and is expected to be primarily passive space with some potential active space (see **Figure 5-2**). Programming in the open spaces may include art exhibits, covered outdoor seating serving the world market, performances, farmer's markets, and events.

- Two proposed publicly accessible open spaces on Projected Development Site A would be located on 38th Street between 35th and 36th Avenues and would include approximately 0.393 acres of passive open space. Based on a conceptual design, one of these proposed open spaces is planned as a passive community gathering space which would include public seating, planted areas, a multipurpose lawn, and a water feature; the other space is planned as a playscape for children, with additional seating including tables and chairs. A third open space on the southern end of the block, with frontage along both 37th and 38th Streets and spanning the width of the block, would contain a 16,000 sf area containing trees, lawns landscaping, walking paths, and seating for residential tenants. A fourth open space, (the third publicly accessible open space on the block) would be 10,000 sf area abutting the private open space, extending along the entire 36th Avenue blockfront from 37th to 38th Streets. This additional open space is planned for potential active public use.
- Across 38th Street, the proposed open spaces for Projected Development Site B would include approximately 0.381 acres of passive open space. Based on the conceptual design, these open spaces are planned as passive space that encourages strolling or reading. One of the spaces would be a through-block pedestrian plaza with large planted areas and shade trees, public seating, wayfinding art and other public art installations, artistic pavement, and a flexible lawn. The other space in the midblock area along 38th Street, is planned as a community gathering space with seating, planting, and a skim fountain.
- On Projected Development Site C, the Proposed Development would enhance the existing Playground Thirty Five XXXV by surrounding it with an approximately 0.552-acre passive open space. Based on the conceptual design, this space is planned as a large civic oriented public open space, which would include a dog run and a walkway area along the playground's existing fence and shade trees and seating along its eastern border. This plaza is also envisioned to include other passive amenities such as large planters, public seating, a pedestrian promenade, a water feature, a pavilion, a multipurpose lawn, and interactive public art.
- Open space on Projected Development Site D would link 41st and 42nd Streets, between 35th Avenue and Northern Boulevard/36th Avenue, and is proposed to include approximately 0.371 acres of passive open space. Based on the conceptual design, the proposed World Market open space is planned as a through-block pedestrian promenade and plaza which

3.30.22



Source: SWA/Balsley

NOTE: CONCEPTUAL DESIGN FOR FOR ILLUSTRATIVE PURPOSES

INNOVATION QNS
ASTORIA, QUEENS
COMMUNITY DISTRICT 1

Proposed Development
Open Space—Conceptual Design
Figure 5-2

includes the entrance to the cinema. The open space is planned to include amenities such as public art installations, holiday and farmer's markets, interactive plaza furnishings, and communal tables. Additionally, the plaza space is planned to be flexible space to include temporary recreational features such as seesaws, communal games, and adult swings.

- Finally, directly across 42nd Street, Projected Development Site E is envisioned to include an approximately 0.246-acres of passive open space. Based on the conceptual design, this space is planned as a community plaza, including public seating, planters, and interactive public art installations.

INDIRECT EFFECTS

STUDY AREA POPULATION

Non-Residential Study Area

The With Action development in the Project Area is anticipated to result in a net increase of 1,133 workers. This would result in a total worker population in the study area of 9,443 in the With Action condition. In the future with the Proposed Actions, the new development in the Project Area would be expected to add approximately 8,124 new residents to the study area. The study area would have a residential population of 20,637, which would result in a combined worker and residential population of 30,080.

Residential Study Area

In the future with the proposed actions, the new development in the Project Area would be expected to add approximately 8,124 new residents to the study area. Therefore, the study area population is expected to increase to a total of 52,939 residents in the With Action condition.

STUDY AREA OPEN SPACES

The Proposed Actions would result in changes to the amount of open space acreage of the study area. As described above, the Proposed Development would include a total of approximately 2.17 acres of publicly accessible open space in 8 proposed locations across the Development Site: this includes 7 PAAs on the northern and mid-block portions of the Development Site and the additional PAA planned at the southern end of the Development Site. The amenities to be included in the proposed open spaces will be determined in a detailed design: based on the conceptual design, the spaces are planned to be primarily passive space. Although the final design of the spaces may include active amenities (e.g., a children's playscape), for the purposes of a conservative analysis, all of the open space introduced by the Proposed Development is assumed to be passive. In addition, the new publicly accessible open space considered in the quantitative analysis does not include the space at the southern end Projected Development Site A site along 36th Avenue that is being planned as two open spaces (a portion of this space is planned as tenant recreation space that would not be publicly accessible); although a portion of this space would is an additional PAA that would potentially provide active public use, for the purposes of a conservative estimate of project-included publicly accessible open space, it is not included. Therefore, the total of 1.943 acres of publicly accessible open space included in the 7 other PAAs is assumed for the purposes of analysis.

ASSESSMENT OF OPEN SPACE ADEQUACY

Quantitative Assessment

Non-Residential Study Area

As shown in **Tables 5-9 and 5-10**, with a total worker population of 9,443 and 2.074 acres of passive open space, the passive open space ratio would increase to 0.220 acres per 1,000 workers in the With Action condition. The open space ratio would exceed the City's goal of 0.150 acres per 1,000 workers. With a combined worker and residential population of 30,080, the combined passive open space ratio of 0.069 acres per 1,000 workers and residents would remain below the combined goal of 0.390 acres of passive space per 1,000 workers and residents.

Table 5-9
Adequacy of Open Space Resources—
With Action Condition (Non-Residential Study Area)

	Total Population	Passive Open Space Acreage	Passive Open Space Ratio per 1,000 People	Passive Open Space Goal
Workers	9,443	2.074	0.220	0.150
Combined Workers and Residents	30,080		0.069	0.390

Note: Ratios in acres per 1,000 people.
Sources: NYC Parks; MapPLUTO.

Table 5-10
Passive Open Space Ratios Summary (Non-Residential Study Area)

Ratio	City Goal (acres per 1,000)	No Action Condition	With Action Condition	Percent Change
Passive Worker	0.150	0.016	0.220	+1,317%
Passive Combined Worker and Residential	0.390	0.006	0.069	+1,011%

In the future with the Proposed Actions, the 1.943 acres of open space that would be introduced by the Proposed Development would substantially increase the worker and combined worker and resident ratios in the non-residential study area, such that the open space ratio would exceed the City's guideline of 0.150 acres of passive open space per 1,000 residents for workers, which is considered adequate.

Residential Study Area

As shown in **Table 5-11**, in the With Action condition the study area's total open space ratio would increase to 0.105 acres per 1,000 residents; however, it would remain below the citywide median of 1.500 and the City's goal of 2.500 acres per 1,000 residents. The active open space ratio would decrease to 0.055 acres per 1,000 residents and would remain below the City's planning goal of 2.000 active acres per 1,000 residents. The passive open space ratio would increase to 0.050 acres per 1,000 residents and remain below the City's goal of 0.500 acres per 1,000 residents for passive open space.

Table 5-11
Adequacy of Open Space Resources—
With Action Condition (Residential Study Area)

	Population	Open Space Acreage			Open Space Ratios per 1,000 Persons			*CEQR Technical Manual* Open Space Guidelines		
		Total	Active	Passive	Total	Active	Passive	Total	Active	Passive
Residential (1/2-Mile) Study Area										
Residents	52,939	5.565	2.929	2.636	0.105	0.055	0.050	2.500	2.000	0.500
Source: 2020 U.S. Census; NYC Parks; AKRF field survey, May 2021 and March 2022.										

The *CEQR Technical Manual* indicates that a decrease in the open space ratio of 1 percent in areas severely lacking in open space, particularly in areas below the City-wide median community district open space ratio of 1.500 acres per 1,000 residents, could result in an open space impact. However, as noted in the *CEQR Technical Manual*, decreases as small as one percent can also result in significant adverse open space impacts in areas with very low ratios.

The Proposed Actions would result in an approximately 30 percent increase in the total open space ratio, an approximate 15 percent decrease in the active open space ratio, and an approximately 221 percent increase in the passive open space ratio (see **Table 5-12**). While the total and passive open space ratios in the study are currently low and would remain low in the future with the Proposed Actions, they would see a significant increase in their respective ratios. Therefore, the Proposed Actions would not result in a significant adverse indirect impact to total and passive open space. Similarly, the active open space ratio is currently low and would remain low in the future with or without the Proposed Actions. However, based on this analysis and its assumptions, there is a significant decrease in the active open space ratio due to the Proposed Development. This decrease is considered a significant adverse indirect impact.

Table 5-12
Open Space Ratio Summary (Residential Study Area)

Ratio	*CEQR Technical Manual* Open Space Guideline	Open Space Ratios per 1,000 Persons			Percent Change (With Action)
		Existing	No Action	With Action	
Residential (½-Mile) study area					
Total—Residents	2.500	0.080	0.081	0.105	+30%
Active—Residents	2.000	0.065	0.065	0.055	-15%
Passive—Residents	0.500	0.015	0.016	0.050	+221%

Qualitative Assessment

As described above, the study area is not near regional parks that could augment the existing open space in the study area. However, there are several open spaces located just beyond the open space study area that could be used by residents, such as the Dutch Kills Playground, P.S. 151 Playground, Windmuller Park, Dutch Kills Green, Doughboy Park, the Queensboro Bridge Greenway, Astoria Heights Playground, I.S. 010, and Ravenswood Playground. The Queensboro Bridge Greenway also provides a pedestrian and bikeway connection from Dutch Kills Green to Queensboro Bridge Park, which is a 20.34-acre waterfront park. It is reasonable to assume that residents would also utilize these resources, which provide an additional 15.30 acres of open space. Additionally, the members-only Sunnyside Gardens Park provides an additional 3.16 acres of open space to the residents of Sunnyside Gardens—by paying a membership fee, eligible residents are given a key to the park which provides regular access—and is open to the public several times a year for community events, therefore this resource also partially serves the open space needs of

the area. Furthermore, some residents of the study area have access to private open spaces via backyards, which also partially service the open space needs of the area.

The Proposed Development would result in an increase to open space in the Project Area and the addition of 1.943-acres of largely passive publicly accessible open space, where there is currently limited open space. These spaces are intended to be flexible and provide for passive uses throughout the year. The Proposed Development would provide a large publicly accessible open space to complement Playground Thirty Five XXXV and a series of open spaces would link the blocks in the Project Area. The amenities to be provided are envisioned to include plazas for the community to gather, inviting courtyards surrounded by local cafes and restaurants, and landscaped pedestrian pathways for families to stroll. Other amenities would include an immersive playscape for children, open markets, kiosks, public art installations, sculptures, and enhanced streetscapes. These spaces have been designed and programmed as publicly accessible open space, pursuant to community input.

As described above, the ground floor open spaces and adjacent program uses have been planned to enhance the public realm and create a uniquely engaging pedestrian experience while simultaneously breaking the monotony of the long city blocks. The Proposed Development's open space would be owned and maintained by the Applicant, and is expected to include primarily passive space. Programming in the open spaces may include art exhibits, covered outdoor sea-1ting serving the world market, performances, farmer's markets and events.

More specifically, based on a conceptual design, the two open spaces for Projected Development Site A located on 38th Street between 35th and 36th Avenues would include public seating, planted areas, a multipurpose lawn, a water feature, a playscape for children, and shade trees. A third open space on the southern end of the site with frontage along both 37th and 38th Streets and spanning the width of the block would contain a 16,000-sf area containing trees, lawns, landscaping, walking paths and seating for residential tenants. A fourth open space (the third publicly accessible open space on the block) would be a 10,000-sf area abutting the private open space, extending along the entire 36th Avenue blockfront from 37th to 38th Streets. This additional open space is planned for potential active public use.

Across the street, the open space proposed on Projected Development Site B would include passive space that encourages strolling and reading, with a through-block pedestrian plaza including large planted areas and shade trees, a water feature, public seating, wayfinding art and other public art installations, artistic pavement, and a flexible lawn, as well as a community gathering space with seating and lawn areas. On Projected Development Site C, the Proposed Development would complement the existing Playground Thirty Five XXXV by introducing a large civic oriented public open space which would include a dog park, large planters, public seating, a through-block promenade, a water feature, a pavilion, a multipurpose lawn, and interactive public art. Open space on Projected Development Site D is planned as a through-block pedestrian promenade and plaza, with amenities such as public art installations, interactive plaza furnishings, communal tables. Additionally, flexible space would be provided for temporary recreational features such as seesaws, communal games, and adult swings. Finally, across the street, Projected Development Site E is planned as a community plaza, including public seating, planters, and interactive public art installations. As shown in the non-residential quantitative assessment above, the proposed publicly accessible open space would substantially increase the worker and combined worker and resident ratios, such that the open space ratio would exceed the City's guideline of 0.150 acres of passive open space per 1,000 residents for workers, which is considered to be an adequate provision of open space for these populations.

Although the Proposed Development would result in a significant adverse indirect impact to active open space in the residential study area, the Proposed Development would include private residential amenities as well as one or more Physical Culture Establishments (PCEs), i.e., a gym or fitness center, which would support active recreation for both existing and future residents of the study area and would partially offset the expected open space demand from the new resident population. In addition, as noted above, the Proposed Development's open space is intended to be flexible. For example, the largely passive courtyards would provide space for fitness or yoga classes. Overall, these qualitative factors partially offset the expected demand from the new resident population. However, the Proposed Development results in a decrease in the active open space ratio that is greater than the *CEQR Technical Manual* threshold of 1 percent in an area severely lacking in open space. Therefore, based on the quantitative analysis, this decrease is considered a significant adverse indirect impact. Potential mitigation for the indirect impact on active open space is discussed further in Chapter 20, "Mitigation." ✶