CHAPTER 5: OPEN SPACE

A. INTRODUCTION

This chapter assesses the potential impacts of the Proposed Actions on open space resources. According to the *CEQR Technical Manual*, an open space assessment is conducted to determine whether a proposed project would have a direct impact resulting from the elimination or alteration of open space and/or an indirect impact resulting from overtaxing available open space by the introduction of new residential or worker population. The *CEQR Technical Manual* defines open space as publicly or privately owned land that is publicly accessible and available for leisure, play, or sport, or is set aside for the protection or enhancement of the natural environment. An open space analysis focuses on all existing or planned publicly accessible open space.

B. PRINCIPAL CONCLUSIONS

According to the *CEQR Technical Manual*, a proposed action may result in a significant adverse impact on open space resources under the following circumstances: (i) there would be a direct displacement/alteration of existing open space within the study area that has a significant adverse effect on existing user population (direct impact); or (ii) the proposed project would reduce the open space ratio and consequently result in the overburdening of existing facilities or further exacerbate a deficiency in open space (indirect impact). Based on the preliminary screening assessment, the Proposed Actions would not displace or alter an existing open space; therefore, the Proposed Actions would not result in any direct impact on open space and a detailed assessment of direct open space impacts is not warranted. An indirect assessment is warranted if a project would generate more than 200 residents or 500 employees, according to the *CEQR Technical Manual*. As the Proposed Actions are anticipated to introduce an additional 6,571 residents and 1,312 employees, a detailed assessment of indirect effects to open space was conducted both for Residents and Workers. To assess the indirect impacts of the Proposed Actions within the Non-Residential Study Area (0.25-mile) and Residential Study Area (0.5-mile), a detailed assessment was conducted pursuant to *CEQR Technical Manual* guidance. The detailed analysis determined that the Proposed Actions would result in a decrease of total and active open space ratios in the 0.5-mile Residential Study Area and, therefore, could result in a significant adverse indirect open space impact.

According to *CEQR Technical Manual* guidance, a decrease in the open space ratio of 5 percent or more is generally considered significant. An open space impact assessment also considers qualitative factors.

The detailed analysis determined that the Proposed Actions would result in a decrease of total and active open space ratios in the 0.5-mile Residential Study Area that exceed 5 percent, and therefore, could result in significant adverse indirect open space impact. As shown in Table 5-1, workers in the 0.25-mile Non-Residential Study Area would continue to be well-served by passive open space under the Proposed Actions, and would exceed planning standards defined in the *CEQR Technical Manual.* Therefore, the Proposed Actions would not result in any significant adverse impact on open space resources within the 0.25-mile Non-Residential Study Area.

In the With-Action Condition, the total open space ratio within the 0.5-mile Residential Study Area would decrease by 7.01 percent to 1.41 acres per 1,000 residents; the passive open space ratio would decrease by 5.35 percent to 0.88 acres per 1,000 residents; and the active open space ratio would decrease by 9.67 percent to 0.52 acres per 1,000 residents (Table 5-1).

Table 5-1: Open Space Ratio Summary

Study Areas	Non-Residential (0.25-mile) Study Area	Residential (0.5-mile) Study Area		
	Passive - Workers	Total - Residents	Passive - Residents	Active - Residents
CEQR Technical Manual Open Space Guidance	0.15	2.50	0.50	2.00
No-Action Open Space Ratio	1.16	1.51	0.93	0.58
With-Action Open Space Ratio	1.29	1.41	0.88	0.52
Percent Change (No-Action to Future With-Action)	**11.10%**	**-7.01%**	**-5.35%**	**-9.67%**

In the With-Action Condition, the open space ratios within the 0.5-mile Residential Study Area for total and active open space would decrease by more than 5 percent and would remain below the *CEQR Technical Manual* recommended open space ratio of 2.50 acres per 1,000 residents for total open space, and 2.00 acres per 1,000 residents for active open space. The Residential Study Area would continue to be well-served by passive open space given that the With-Action passive open space ratio of 0.88 acres per 1,000 residents and would remain above the *CEQR Technical Manual* guidance of 0.5 acres per 1,000 residents. Therefore, the Proposed Actions are anticipated to result in potentially significant adverse indirect open space impacts to the total and active open space in the Residential Study Area. There would be no potentially significant adverse indirect open space impacts on the passive open space resources in the Residential Study Area.

The incremental shadows generated by the Projected and Potential Development Sites in the With-Action Condition would not result in a significant adverse impact on the open space resources. In addition, based on the air quality and noise analyses, there would be no significant adverse air quality or noise impacts on the open space resources in the Project Area.

C. METHODOLOGY

DIRECT EFFECTS

According to the *CEQR Technical Manual*, a proposed project would directly affect open space resources if it would encroach upon, limit public access to, or cause a loss of, public open space. Direct effects may also occur if the facilities within an open space would be so changed that the open space no longer serves the same user population, or if the proposed project would result in increased noise or air pollutant emissions, odor, or shadows that would temporarily or permanently affect the usefulness of a public open space. As no open space resources would be physically displaced as a result of the Proposed Actions, no analysis of direct effects is warranted; therefore, this chapter analyzes only the Proposed Actions' indirect effects on existing open space resources.

INDIRECT EFFECTS

As described in the *CEQR Technical Manual*, open space can be indirectly affected by a proposed action if the project would add sufficient population, either residential or non-residential, to noticeably diminish the capacity of open space in the area to serve the future population. Typically, an assessment is conducted if a proposed project would generate more than 200 residents or 500 employees; however, the need for an open space assessment may vary in certain areas of the city that are considered either underserved or well-served by open space. For areas underserved by open space, the threshold for assessment is more than 50 residents or 125 employees; for areas well-served by open space, the threshold for assessment is more than 350 residents or 750 employees; and for areas that are neither well-served nor underserved by open space, the threshold for assessment is more than 200 residents or 500 employees. Based on open space maps provided in an appendix to the *CEQR Technical Manual*, the Bay Street Corridor Project Area, Canal Street Corridor Project Area, City Disposition Sites, and Stapleton Waterfront Phase III Sites are not within an area that has been identified as either underserved or well-served by open space; therefore, the threshold for assessment is more than 200 residents or 500 employees.

Pursuant to *CEQR Technical Manual* guidance, the open space analysis and impact assessment is based on the anticipated incremental development from the Projected Development Sites in the With-Action Condition. As discussed in Chapter 1, "Project Description," the Proposed Actions would result in an incremental increase of approximately 2,557 dwelling units, which would introduce an estimated 6,571 additional residents to the Project Area over the No-Action Condition.[1] In addition, the Proposed Actions would introduce approximately 1,312 new workers over the No-Action Condition.[2] As such, an open space assessment for both the residential and non-residential populations generated by the Proposed Actions is warranted.

STUDY AREAS

An appropriate study area must be established to assess the potential open space impacts as a result of the Proposed Actions. According to the *CEQR Technical Manual* methodologies, open space study areas are based on the distance a person is assumed to walk to reach a neighborhood open space, which differs by user. 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 open spaces. While residents may also visit certain regional parks, such open spaces were not included in the study area's quantitative analysis but are described qualitatively. According to the *CEQR Technical Manual*, workers are assumed to walk up to 0.25 miles to reach neighborhood open spaces, and residents are assumed to walk up to 0.5 miles.

[1] Population Multiplier: 2010-2014 American Community Survey (ACS) 5 Year Estimates average household size of renter-occupied units for Census Tracks 3, 7, 11, 21, and 27.
[2] Estimate of workers based on the following rates: four employees per 1,000 sf of office, three employees per 1,000 sf of retail/supermarket/restaurant uses, one employee per 25 dwelling units, one employee per 1,000 sf of auto-related and industrial uses, three employees per 1,000 sf of all community facility uses, and one employee per 50 parking spaces (Source: East New York Rezoning FEIS; CEQR No. 15DCP102K).

Accordingly, as shown in Figure 5-1, the Non-Residential (worker) Study Area is based on a 0.25-mile distance from the Project Area boundaries and the Residential Study Area is based on a 0.5-mile distance from the Project Area boundaries. Pursuant to the *CEQR Technical Manual*, all census tracts with at least 50 percent of their areas within the 0.25-mile or 0.5-mile boundary were included in the assessment of open space and user population and used to refine the boundaries of the study areas.

ANALYSIS FRAMEWORK

Based on the *CEQR Technical Manual,* if a project exceeds thresholds outlined in Section 200 of Chapter 7, "Open Space," a preliminary assessment to determine whether more detailed analyses are appropriate is warranted. However, if a project would introduce a large population in an area that is underserved by open space, a full, detailed analysis to evaluate any indirect impacts of the project on the open space resources should be conducted.

The adequacy of open space can be assessed both quantitatively and qualitatively by using the inventory of available public open space and potential users in the study areas. According to the *CEQR Technical Manual*, the quantitative approach computes the open space ratio (ratio of open space acreage to the population in the study area) and compares it with certain citywide open space standards and guidance. The qualitative assessment examines other factors that may affect conclusions about adequacy, including proximity to additional resources beyond the study areas, the availability of private recreational facilities, and the demographic characteristics of the study area's population. Specifically, the analysis in this chapter will:

- Establish the study area boundaries, specifically: a study area of 0.25 miles and 0.5 miles around the Project Area for the worker and residential populations, respectively. All census tracts with at least 50 percent of their area falling within these study areas will be included in the open space study areas;

- Determine the characteristics of the two open space user groups (residents and workers/daytime users). To determine the number of residents in the study areas, data from the U.S. Census Bureau, 2012-2016 American Community Survey (ACS) 5-Year Estimates will be compiled for census tracts comprising the non-residential and residential open space study areas. Given that the study areas include a workforce and daytime population that may also use open spaces, the number of employees and daytime workers in the study areas will also be calculated, based on reverse journey-to work census data from the U.S. Census Bureau, ACS 2006-2010 Five-year estimates. Special Tabulation: Census Transportation Planning (A202105 - Means of Transportation (18) (Workers 16 years and over));

- Compile an inventory of all publicly accessible passive and active open spaces, both publicly and privately owned, for the study areas. This will be accomplished by coordinating with the New York City Department of Parks and Recreation (DPR) and private owners of open spaces, and verified through field visits. The inventory will include an evaluation of the condition and use of existing open spaces, as well as acreage. Qualitative discussions of major publicly accessible open spaces in proximity to the Project Area but outside the Study Area will also be included;

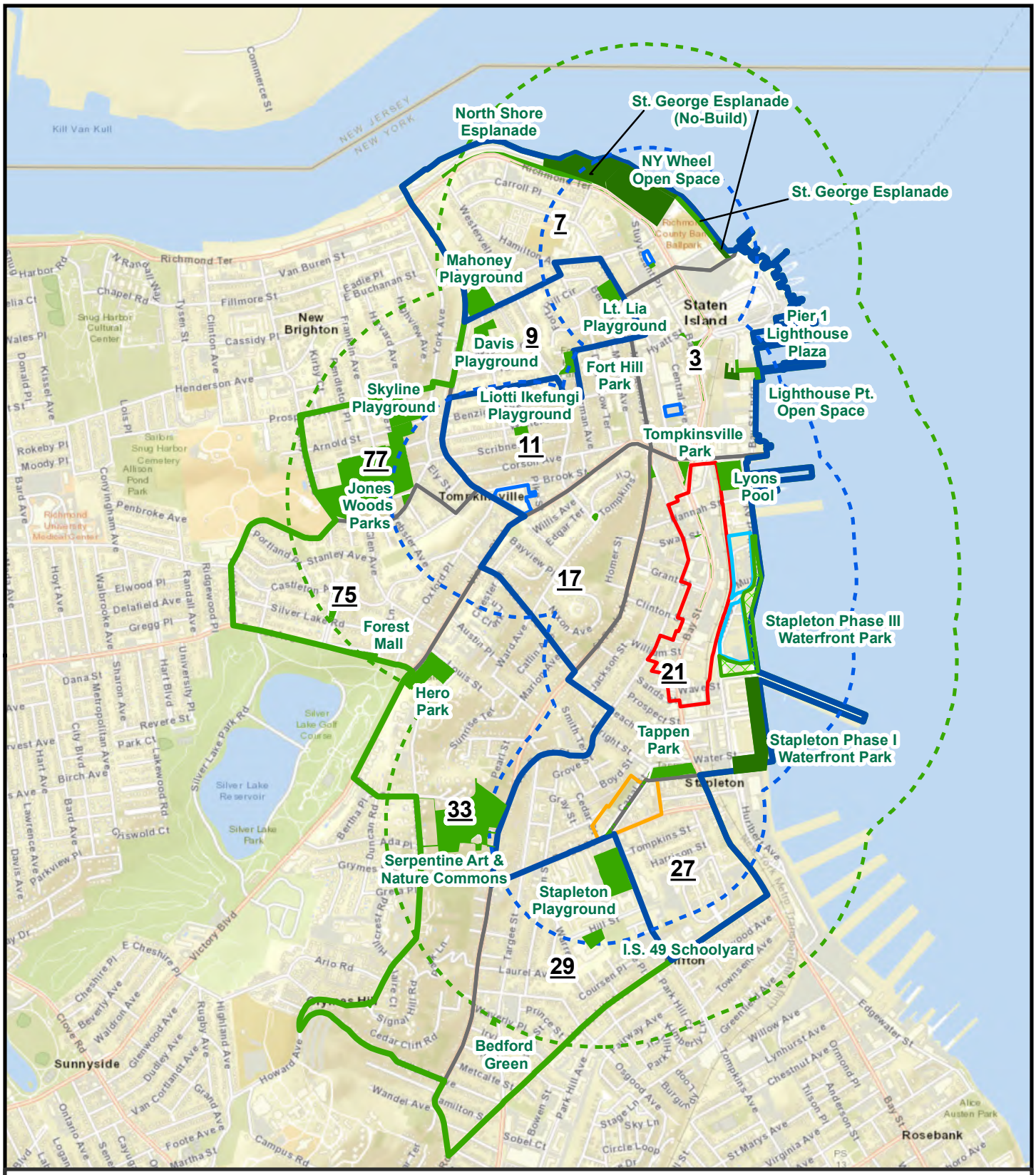

FIGURE 5-1: OPEN SPACE STUDY AREAS MAP

BAY STREET CORRIDOR REZONING AND RELATED ACTIONS
STATEN ISLAND, NY

Map Reference:
Basemap: ESRI
Shapefile: NYC DCP; MapPLUTO Data; NYC DPR

0 0.25 0.5 1 Miles

N

- Bay Street Corridor Project Area
- Canal Street Corridor Project Area
- City Disposition Sites
- Stapleton Waterfront Phase III Sites
- Existing Open Space Resources
- No-Build Open Space Resources
- Open Space Resources generated by the Proposed Actions
- Non-Residential Study Area (0.25-mile Radius)
- Residential Study Area (0.5-mile Radius)
- 0.25-mile Radius
- 0.5-mile Radius
- 21 Census Tracts

- Assess the quantitative ratio of open space in the Non-Residential Study Area and the Residential Study Area by computing the open space ratio in each study area and comparing this open space ratio with Citywide standards defined in the *CEQR Technical Manual*. For the residential population, there are generally two guidelines that are used to evaluate residential open space ratios. The *CEQR Technical Manual* generally recommends a comparison to the median ratio for community districts in New York City, which is 1.50 acres of open space per 1,000 residents. However, the *CEQR Technical Manual* planning guidance is 2.50 acres of open space per 1,000 residents, including 2.0 acres of active open space and 0.50 acres of passive open space. According to the *CEQR Technical Manual*, a ratio of 0.15 acres of passive open space per 1,000 workers represents a reasonable amount of open space for the non-residential population. The needs of workers and residential populations are also considered together in each study area because it is assumed that both would use the same passive open spaces. Therefore, a weighted average is also considered for the analysis that balances the amount of open space necessary to meet the guideline of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 workers. Because this ratio changes depending on the proportion of residents and workers in each study area, the tables in this chapter that summarize the open space ratios outline the amount of open space needed in each condition in each study area, and calculate the weighted average ratio of passive open space acres per 1,000 combined residents and workers;

- Evaluate qualitative factors affecting open space use;

- Determine the adequacy of open space in the non-residential and residential open space study areas;

- Assess expected changes in future levels of open space supply and demand in the 2030 analysis year based on other planned development projects and anticipated background growth rates within the open space study areas. To estimate the population expected in the study areas in the Future Without the Proposed Actions (No-Action Condition), an average household size of 2.57 persons is applied to the number of new housing units expected to occur in the study areas.[3] The daytime population is estimated based on standard ratios of 4 employees per 1,000 sf of office; 3 employees per 1,000 sf of retail/supermarket/restaurant uses; 1 employee per 25 dwelling units; 1 employee per 1,000 sf of auto related and industrial uses; 3 employees per 1,000 sf of all community facility uses; and 1 employee per 50 parking spaces.[4] Background growth rates were based on changes in the study area residential and non-residential populations between 2000 and 2010. Any new open space or recreational facilities that are anticipated to be operational by the analysis year are also accounted for. Open space ratios are calculated for the future With-Action Condition and compared with No-Action ratios to determine changes in future levels of adequacy. Mitigation measures are discussed in the Chapter 21, "Mitigation."

[3] U.S. Census Bureau, 2010-2014 ACS 5 Year Estimates; average household size for Staten Island Census Tracts 3, 7, 11, 21, and 27.
[4] (Source: East New York Rezoning FEIS; CEQR No. 15DCP102K).

IMPACT ASSESSMENT

Open space impacts are based in part on how a project would change open space ratios in the study areas. According to the *CEQR Technical Manual*, if the decrease in the open space ratio approaches or exceeds 5 percent, it is generally considered to be a substantial change warranting a more detailed analysis and may constitute a significant adverse impact. If a study area exhibits a low open space ratio (*e.g.,* below 1.50 acres per 1,000 residents or 0.15 acres of passive space per 1,000 non-residential users), indicating a shortfall of open space, then smaller decreases in that ratio as a result of the proposed action may constitute significant adverse impacts. In addition to quantitative analyses, the *CEQR Technical Manual* also recommends conducting qualitative analyses in order to assess potential open space impacts. Qualitative analyses look at the availability of open space resources, the beneficial effects of new open space resources provided by a project, and the comparison of projected open space ratios with established City guidelines. Accordingly, the ratios provided by the City guidelines to measure quantitative impacts are often not feasible for many areas of the City, and the City does not consider these ratios as its open space policy for every neighborhood. Per *CEQR Technical Manual* guidance, the ratios do not constitute an absolute impact threshold, but rather benchmarks that represent how well an area is served by its open space.

D. EXISTING CONDITIONS

STUDY AREA POPULATION

NON-RESIDENTIAL (0.25-MILE) STUDY AREA

Non-Residential (Worker) Population

As shown in Table 5-2, based on U.S. Census Bureau, ACS 2006-2010 reverse journey-to-work data compiled by the Census Transportation Planning Products (CTPP) Program, the existing worker population for the Non-Residential Study Area (0.25-mile radius) is estimated at approximately 11,310 workers.

Table 5-2: 0.25-mile Non-Residential Study Area – Existing Residential and Non-Residential Populations

Census Tract	Residential Population	Non-Residential (Worker) Population	Total Population
0.25-mile Non-Residential Study Area			
3	1,919	4,595	6,514
7	6,228	1,570	7,798
11	3,174	790	3,964
17	1,500	505	2,005
21	4,285	1,860	6,145
27	2,186	1,990	4,176
TOTAL (0.25-mile Study Area)	**19,292**	**11,310**	**30,602**

***Source**: Residential Population: U.S. Census Bureau, 2012-2016 ACS 5 Year Estimates; Non-Residential (Worker) Population: A202105 - Means of Transportation (18) (Workers 16 years and over) U.S. Census Bureau, ACS 2006-2010 Five-year estimates. Special Tabulation: Census Transportation Planning.*

Residential Population

As shown in Table 5-2, according to the 2012-2016 ACS Census data the 0.25-mile Non-Residential Study Area has a residential population of approximately 19,292 people.

Total User Population

Within the Non-Residential Study Area, the total population (residents plus workers) is estimated at 30,602 people, as shown in Table 5-2. This analysis conservatively assumes that residents and employees are separate populations. Residents who work from home are not included in the total worker population.[5]

RESIDENTIAL (0.5-MILE) STUDY AREA

Non-Residential Population

As shown in Table 5-3, based on 2006-2010 ACS reverse journey-to-work census data compiled by the CTPP Program, the existing worker population for the Residential 0.5-mile Study Area is estimated to be 14,825 workers.

Table 5-3: 0.5-mile Residential Study Area – Existing Residential and Non-Residential Populations

Census Tract	Residential Population	Non-Residential (Worker) Population	Total Population
0.5-mile Residential Study Area			
9	1,724	520	2,244
29	5,237	875	6,112
33	3,708	575	4,283
75	4,313	1,185	5,498
77	1,497	360	1,857
0.25-mile Study Area	19,292	11,310	30,602
TOTAL (0.5-mile Study Area)	**35,771**	**14,825**	**50,596**

Source: Residential Population: U.S. Census Bureau, 2012-2016 ACS 5-Year Estimates; and Non-Residential (Worker) Population: A202105 - Means of Transportation (18) (Workers 16 years and over) U.S. Census Bureau, 2006-2010 ACS 5 Year Estimates. Special Tabulation: Census Transportation Planning

Residential Population

As shown in Table 5-3, according to the 2012-2016 ACS, the 0.5-mile Residential Study Area has a residential population of approximately 35,771 people. As shown in Table 5-4 below, residents between the ages of 20 and 64 make up the largest age cohort (approximately 61.1 percent) of the residential population in the 0.55-mile Residential Study Area. Children and teenagers (5 to 19 years old) account for next largest age cohort at approximately 21.5 percent. There are a higher percentage of children and teenagers within the 0.5-mile Residential Study Area as compared to Staten Island and New York City as a whole, and a lower percent of adults 65 years and over.

[5] U.S. Census Bureau, 2010-2014 ACS 5 Year Estimates; Special Tabulation: Census Transportation Planning

The relatively higher percentage of children and teenagers in the Residential Study Area is also evident when comparing the median age of the Residential Study Area population to that of Staten Island and New York City as a whole. As shown in Table 5-4, the Residential Study Area's average median age is approximately 34.4, compared to 39.6 in Staten Island and 35.9 in New York City as a whole. The Residential Study Area median ages by census tract range from a low of 28.7 years (Staten Island Census Tract 77) to a high of 41.5 years (Staten Island Census Tract 3).

A population's age distribution affects the way open spaces are used and the need for different types of recreational facilities. According to the *CEQR Technical Manual*, children four years old or younger typically use traditional playgrounds and "tot lots" that have play equipment for toddlers and preschool children. Children ages five through nine use traditional playgrounds with play equipment suitable for school-age children, as well as grassy and hard-surfaced open spaces, which are important for ball playing, running, and skipping rope. Children ages 10 through 14 use playground equipment, court spaces, and ball fields. Teenagers and young adults tend to use court facilities such as basketball courts and sports fields, such as football or soccer fields. Adults ages 20 through 64 continue to use court facilities and fields for sports, as well as space for more individualized recreation, such as rollerblading, biking, and jogging, which require bike paths, esplanades, and vehicle-free roadways. Adults also gather with families for picnicking and other recreational activities in which all ages can participate. Finally, adults 65 years and older engage in active recreation such as handball, tennis, gardening, and swimming, as well as other passive recreational activities.

As noted above, the demographic data for the residential open space study area suggests a need for facilities geared towards the recreational needs of adults, as the 0.5-mile Residential Study Area contains a high percentage of residents in the 20- to 64-year-old bracket. It should also be noted that children and teenagers (5 to 19 years old) account for approximately 21.5 percent of the Residential Study Area population, suggesting a need for facilities geared toward the recreational needs of that age group.

Total User Population

As shown in Table 5-3, within the Residential Study Area, the total population (residents and workers) is estimated to be 50,596people. As described above, this analysis conservatively assumes that residents and employees are separate populations. Residents who work from home are not included in the total worker population.[6]

[6] U.S. Census Bureau, 2006-2010 ACS 5 Year Estimates; Special Tabulation: Census Transportation Planning.

Table 5-4: Residential Study Area (0.5-mile) Residential Population Age Breakdown

Census Tract	Total Residential Population	Age Distribution												Median Age
		Under 5		5 to 9		10 to 14		15 to 19		20 to 64		65 years and over		
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
3	1,919	111	5.8%	126	6.6%	61	3.2%	42	2.2%	1,312	68.4%	267	13.9%	41.5
7	6,228	777	12.5%	491	7.9%	581	9.3%	246	3.9%	3,513	56.4%	620	10.0%	32.6
9	1,724	127	7.4%	148	8.6%	173	10.0%	164	9.5%	983	57.0%	129	7.5%	31.7
11	3,174	264	8.3%	193	6.1%	156	4.9%	220	6.9%	2,146	67.6%	195	6.1%	35.1
17	1,500	36	2.4%	115	7.7%	160	10.7%	65	4.3%	938	62.5%	186	12.4%	40.5
21	4,285	181	4.2%	348	8.1%	321	7.5%	214	5.0%	2,883	67.3%	338	7.9%	31.1
27	2,186	213	9.7%	160	7.3%	83	3.8%	128	5.9%	1,243	56.9%	359	16.4%	36.0
29	5,237	367	7.0%	433	8.3%	552	10.5%	413	7.9%	3,071	58.6%	401	7.7%	29.6
33	3,708	241	6.5%	181	4.9%	254	6.9%	178	4.8%	2,443	65.9%	411	11.1%	37.3
75	4,313	327	7.6%	242	5.6%	441	10.2%	271	6.3%	2,485	57.6%	547	12.7%	37.5
77	1,497	45	3.0%	129	8.6%	190	12.7%	218	14.6%	836	55.8%	79	5.3%	28.7
0.5-Mile Study Area Totals	35,771	2,689	7.5%	2,566	7.2%	2,972	8.3%	2,159	6.0%	21,853	61.1%	3,532	9.9%	34.4
Total for Staten Island	473,324	27,420	5.8%	29,083	6.1%	30,516	6.4%	29,923	6.3%	287,575	60.8%	68,807	14.5%	39.6
Total for NYC	8,461,961	555,383	6.6%	487,643	5.8%	466,493	5.5%	479,928	5.7%	5,373,184	63.5%	1,099,330	13.0%	35.9

Source: U.S. Census Bureau, 2012-2016 ACS 5-Year Estimates (Selected Characteristics of the Total and Native Populations in the United States)

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 CEQR guidance, publicly accessible open space is defined as recreational facilities open to the public at designated hours on a regular basis and is assessed for impacts using both a quantitative and a qualitative analysis, whereas private open space not accessible to the general public on a regular basis is considered qualitatively. Field surveys and secondary sources were used to determine the number, availability, and condition of publicly accessible open space resources in the Non-Residential and Residential study areas. Figure 5-2 shows publicly accessible open space and recreational resources located within both the Residential and Non-Residential study areas, and Table 5-5 describes these resources.

NON-RESIDENTIAL (0.25-MILE) STUDY AREA

As shown in Table 5-5, the Non-Residential Study Area contains 12 open space resources totaling 15.87 acres of open space, of which approximately 8.82 acres (56 percent) are used for passive recreation and approximately 7.05 acres (44 percent) are used for active recreation. Figure 5-2 and Table 5-5 show the publicly accessible open space and recreational resources located within the Non-Residential Study Area.

The largest of these resources is the Stapleton Waterfront Phase I (Park No. 10 in Figure 5-2), which includes 4.61 acres of open space, comprised of both passive and active space. The park includes green space, benches, a fish cleaning station, and several resiliency measures to help prevent flooding to the neighborhood. The second largest resource in the Non-Residential Study Area is Mahoney Playground (Park No. 2 in Figure 5-2) located north of the Project Area and City Disposition Sites in the St. George neighborhood. It comprises 2.21 acres and provides a range of active recreational opportunities, including basketball courts, handball courts, playgrounds, and spray showers. Lyons Pool (Park No. 9 in Figure 5-2) is the third largest open space resource. It is located east of the Bay Street Corridor Project Area and north of the Stapleton Waterfront Phase III Sites A and B1. Lyons Pool is a popular recreation center in the Tompkinsville neighborhood and provides 2.13 acres of active recreational uses to the community.[7] Lyons Pool contains an outdoor pool and an indoor recreation center, which includes a cardio room and fitness room in addition to locker rooms. As discussed in Chapter 7, "Historic and Cultural Resources," Lyons Pool is also a New York City Landmark (NYCL), New York City Interior Landmark, and eligible for listing on the State and National Register (S/NR) of Historic Places.

[7] Due to the closure of the dive pool, the Lyons Pool acreage has been reduced from 2.48 acres to 2.13 acres.

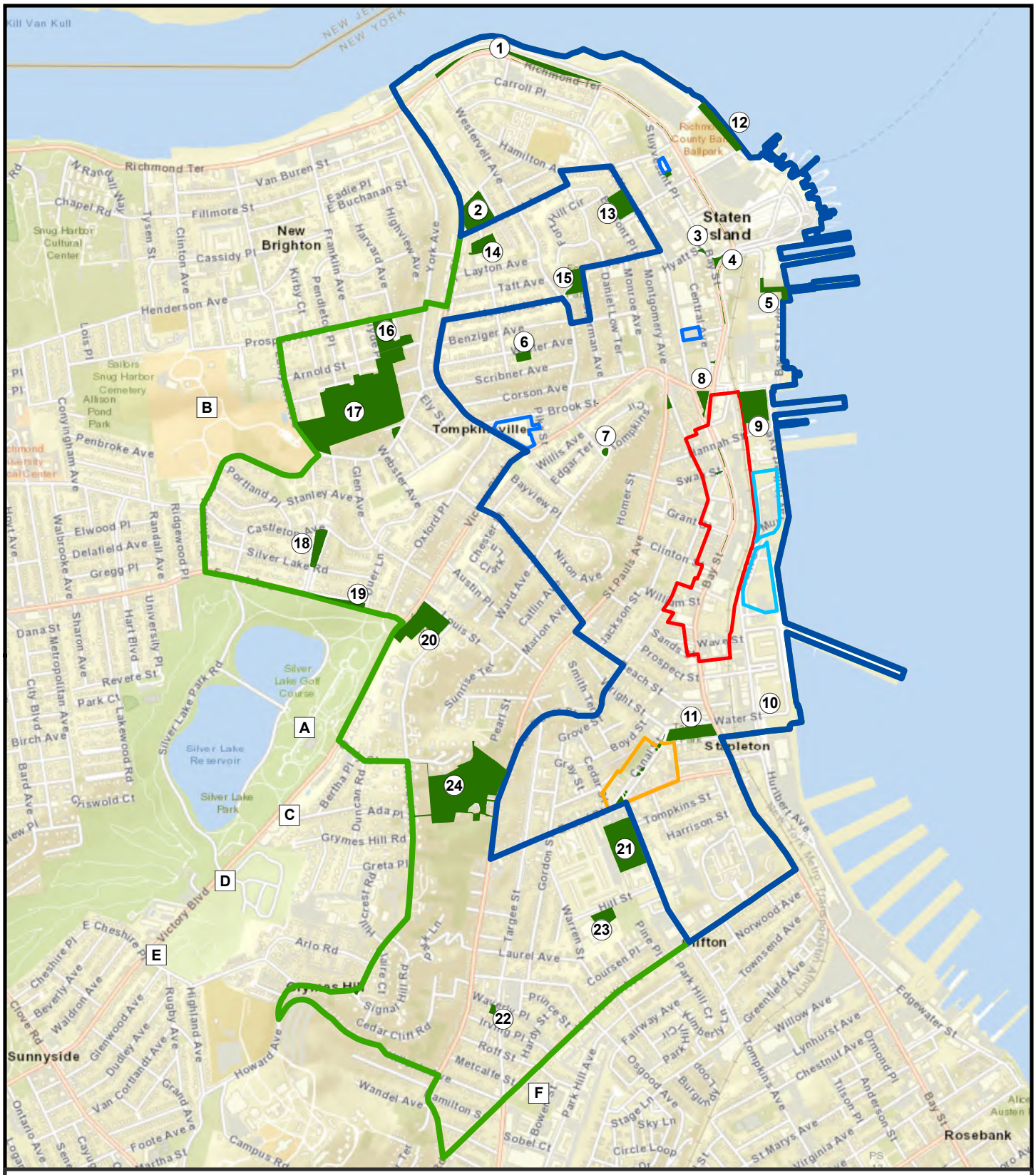

FIGURE 5-2: OPEN SPACE RESOURCES ANALYZED

BAY STREET CORRIDOR REZONING AND RELATED ACTIONS
STATEN ISLAND, NY

Map Reference:
Basemap: ESRI
Shapefile: NYC DCP; MapPLUTO
Data; NYC DPR

0 0.225 0.45 0.9 Miles

N

- Bay Street Corridor Project Area
- Canal Street Corridor Project Area
- Stapleton Waterfront Phase III Sites
- City Disposition Sites
- (1) Open Space Resources within Study Areas (Quantitative Assessment)
- [A] Open Space Resources outside the Study Areas (Qualitative Assessment)
- Non-Residential Study Area (0.25-mile Radius)
- Residential Study Area (0.5-mile Radius)

Table 5-5: Open Space Resources within the Non-Residential and Residential Open Space Study Areas

Map ID[1]	Open Space Resource	Location	Study Area	Owner/Agency	Amenities	Acreage	Passive		Active		Open Space Category	Condition	Utilization
							Acres	%	Acres	%			
1	North Shore Esplanade	Richmond Terr. from Nicholas St. to Westervelt Ave.	0.25-Mile	DPR	Benches and walkway	1.62	1.62	100%	-	-	Passive	Acceptable	Low
2	Mahoney Playground	Beechwood Ave., Crescent Ave. and Jersey St.	0.25-Mile	DPR	Basketball courts, handball courts, playgrounds, spray showers and bathrooms	2.21	-	-	2.21	100%	Active	Acceptable	Moderate
3	Baker Square	Hyatt St., Central Avenue, and Stuyvesant Pl.	0.25-Mile	DPR/DOT	Greenstreet with seating and landscaping	0.06	0.06	100%	-	-	Passive	Acceptable	Low
4	Barrett Triangle	Hyatt St., Bay St., Stuyvesant Pl. and Richmond Ter.	0.25-Mile	DPR	Benches with monument of Major Clarence Tynan Barrett	0.16	0.16	100%	-	-	Passive	Acceptable	Low
5	Lighthouse Plaza and Pier 1	Borough Pl. and Bay St. Landing	0.25-Mile	EDC	Benches, tables, chairs, and fishing area	1.19	1.19	100%	-	-	Passive	Acceptable	Low
6	Liotti Ikefugi Playground	Winter Ave., between Bismark Ave. and Westervelt Ave.	0.25-Mile	DPR	Basketball courts and playgrounds	0.41	-	-	0.41	100%	Active	Acceptable	Moderate
7	Tompkins Circle	Tompkins Circle and Fieder Ave.	0.25-Mile	DPR/DOT	Greenstreet with seating and landscaping	0.10	0.10	100%	-	-	Passive	Acceptable	Low
8	Tompkinsville Park	Bay St., Victory Blvd.	0.25-Mile	DPR	Benches and the *Hiker* monument	0.42	0.42	100%	-	-	Passive	Acceptable	Moderate
9	Lyons Pool	Murray Julbert Ave. bet. Victory Blvd. and Hannah St.	0.25-Mile	DPR	Outdoor pools, recreation centers, and bathrooms	2.13	-	-	2.13	100%	Active	Acceptable	Moderate
10	Stapleton Waterfront Phase I	Wave St., Front St., and Canal St.	0.25-Mile	DPR	Green space, benches, and fishing area	4.61	2.31	50%	2.3	50%	Active and Passive	Acceptable	Low
11	Tappen Park	Canal St., Water St., Bay St.	0.25-Mile	DPR	Lawn, trees, benches, and Edgewater Village Hall	1.78	1.78	100%	-	-	Passive	Acceptable	Moderate
12	St. George Esplanade	Waterfront, near Staten Island Yankees ballfield	0.25-Mile	DPR	Pathway, artwork, seating, vegetation	1.18	1.18	100%	-	-	Passive	Acceptable	Moderate
Non-Residential Study Area (0.25-mile) Total						**15.87**	**8.82**	**56%**	**7.05**	**44%**			
13	Lt. Lia Playground	Wall St. between St Marks Pl. and Belmont Pl.	0.5-Mile	DPR	Playgrounds and spray showers	1.37	-	-	1.37	100%	Active	Acceptable	Moderate
14	Davis Playground	Jersey St., Crescent Ave., Layton Ave., Beechwood Ave.	0.5-Mile	DPR	Basketball courts and playgrounds	0.95	-	-	0.95	100%	Active	Acceptable	Low
15	Fort Hill Park	Sherman Ave. bet. Fort Pl. and Hendricks Ave.	0.5-Mile	DPR	Nature area	0.84	0.84	100%	-	-	Passive	Acceptable	
16	Skyline Playground	Arnold St. to Prospect Ave. bet. Harvard Ave and Clyde Pl.	0.5-Mile	DPR	Playground and benches	2.06	-	-	2.06	100%	Active	Acceptable	Moderate

Table 5-5 (cont.): Open Space Resources within the Non-Residential and Residential Open Space Study Areas

Map ID[1]	Open Space Resource	Location	Study Area	Owner/Agency	Amenities	Acreage	Passive		Active		Open Space Category	Condition	Utilization
17	Jones Woods Park	Arnold St., Brighton Ave., Lafayette Ave.	0.5-Mile	DPR	Nature area with trails	16.93	8.47	50%	8.46	50%	Active and Passive	Acceptable	Low
18	Haven Esplanade	Silver Lake Rd. between Haven Esplanade and Castleton Ave.	0.5-Mile	DPR/DOT	Greenstreet; large, grassy median with seating and landscaping	0.023	0.023	100%	-	-	Passive	Acceptable	Low
19	Forest Mall	Forest Ave. between Haven Esplanade and Duer La.	0.5-Mile	DPR/DOT	Greenstreet; Grassy median with landscaping	0.45	0.45	100%	-	-	Passive	Acceptable	Low
20	Hero Park	Victory Blvd., Louis St., Howard Ave.	0.5-Mile	DPR	Greenway and WWI memorial	3.02	3.02	100%	-	-	Passive	Acceptable	Low
21	Stapleton Playground	Tompkins Ave., Broad St. and Hill St.	0.5-Mile	DPR	Baseball fields, basketball courts, handball courts, playgrounds, outdoor pools, and bathrooms	4.10	-	-	4.10	100%	Active	Acceptable	Moderate
22	Bedford Green	Waverly Pl. and Targee St.	0.5-Mile	DPR	Park	0.11	0.11	100%	-	-	Passive	Acceptable	Low
23	I.S. 49 School Yards to Playground	Between Hill and Warren Sts.	0.5-Mile	DOE/DPR	Asphalt yard, basketball courts, track; and mini-soccer pitch	0.93	-	-	0.93	100%	Active	Acceptable	Moderate
24	Serpentine Art and Nature Commons	Hillside between Van Duzer St. and Howard Ave.	0.5-Mile	Not-for-Profit	Nature Preserve, trails, wooded areas	10.9	10.9	100%	-	-	Passive	Acceptable	Low
Residential Study Area (0.5-Mile) Total						**57.55**	**32.63**	**57%**	**24.92**	**43%**			

***Source**: New York City Department of Parks and Recreation. Park (DPR) Property Information. 2015.*
Notes: [1] Reference Figure 5-2.

There are no other significant open space resources (*i.e.,* open spaces greater than 2 acres) within the Non-Residential Study Area. Although not substantially large, Tappen Park, an approximately 1.78-acre park located north of Canal Street Corridor Project Area, is home to the S/NR-listed Edgewater Village Hall (Park No. 11 in Figure 5-2). The North Shore Esplanade located directly north of the Project Area in the St. George neighborhood includes 1.62 acres of passive open space (Park No. 1 in Figure 5-2). St. George Esplanade is a 1.52-acre, EDC-managed open space located in the 0.25-mile Non-Residential Study Area along the North Shore waterfront. Currently, only 1.18 acres of the esplanade are accessible to the public.[8] This is the portion of the esplanade that extends in front of the Staten Island Yankees ballfield. The remainder of the open space is closed due to construction. It is labeled in Figure 5-2 as No. 12. Lighthouse Plaza and Pier 1 (Park No. 5 in Figure 5-2), with 1.19 acres of passive open space, is located north of the Bay Street Corridor Project Area and features sitting areas and fishing area. All other open space resources located within the Non-Residential Study Area are less than one acre each and comprise a mix of passive and active recreational uses.

RESIDENTIAL (0.5-MILE) STUDY AREA

The Residential Study Area includes all open space in the Non-Residential Study Area as well as 12 additional resources (refer to Figure 5-2 and Table 5-5). As shown in Table 5-5, the Residential Study Area contains a total of 57.55 acres of publicly accessible open space, including all of the open space listed in the Non-Residential Study Area. Of the total, approximately 32.63 acres (57 percent) are dedicated to passive space and 24.92 acres (43 percent) are dedicated to active space.

Jones Woods Park (Park No. 17 in Figure 5-2) is the largest open space within the Residential Study Area. This heavily wooded park is located to the northwest of the Project Area and contains 16.93 acres of recreational uses (8.47 acres of passive recreational use and 8.46 acres of active recreational use), including trails. Serpentine Art and Nature Commons (Park No. 24 in Figure 5-2), Stapleton Playground (Park No. 21 in Figure 5-2) and Hero Park (Park No. 19 in Figure 5-2) are the three other significant open space resources within the Residential Study Area. Serpentine Art and Nature Commons is located south of the Project Area on the hillside between Van Duzer Street and Howard Avenue with is main entrance on Van Duzer Street between Broad Street and the intersection of Van Duzer Street and St. Paul's Avenue. It comprises nearly 11 acres and features wooded areas, hilly trails, and scenic overlooks. Stapleton Playground, located to the south of the Project Area and city disposition sites, comprises 4.1 acres of active open space that includes baseball fields, basketball courts, handball courts, playgrounds, and outdoor pools. The playground is currently being reconstructed to include a natural turf field, basketball courts, fitness area, play areas and a mini-pool. Hero Park is located northwest of the Canal Street Corridor Project Area and directly west of the Bay Street Corridor Project Area. The Park contains 3.02 acres of passive uses, including walking paths and a World War I memorial. All other open space resources in the Residential Study Area are less than three acres each and comprise a mix of active and passive uses.

[8] The St. George Esplanade also includes a small portion of playground area. However, due to the small size, the resource is analyzed as fully passive open space resource, see Table 5-5.

ASSESSMENT OF OPEN SPACE ADEQUACY

NON-RESIDENTIAL (0.25-MILE) STUDY AREA

As described above, the analysis of the Non-Residential Study Area focuses on passive open spaces that may be used by the worker population in a 0.25-mile radius of the Project Area boundaries. To assess the adequacy of open space in the Non-Residential Study Area, the ratio of the number of workers to acres of passive open space is compared to the open space ratio guideline of 0.15 acres of passive open space per 1,000 workers in the *CEQR Technical Manual*. In addition, the ratio of the combined number of workers and residents to 1,000 acres of passive open space within the 0.25-mile Non-Residential Study Area is compared to the *CEQR Technical Manual* recommended passive open space ratio.[9]

Quantitative Assessment

The Non-Residential Study Area includes a total of 15.87 acres of open space, of which approximately 8.82 acres are passive open space (Table 5-6). An estimated total of 19,292 people live within the Non-Residential Study Area, and approximately 11,310 people work within the boundary; the combined residential and non-residential population is approximately 30,602.

Based on *CEQR Technical Manual* guidance, the 0.25-mile Non-Residential Study Area has an existing passive open space ratio of 0.78 acres per 1,000 workers, which is more than 5 times greater than the open space ratio of 0.15 acres per 1,000 workers, defined as a planning standard by the *CEQR Technical Manual*. Therefore, under existing conditions workers in the Non-Residential Study Area are well-served by open space. In the 0.25-mile Non-Residential Study Area, the existing passive space open space ratio for combined workers and residents is 0.29 acres per 1,000 residents and workers, which is slightly lower than the calculated weighted average ratio of 0.37 acres per 1,000 residents and workers as recommended by the *CEQR Technical Manual*. However, as described in Chapter 7, "Open Space" in the *CEQR Technical Manual*, it is more likely that residents within the Non-Residential Study Area would travel further distances to reach parks and recreational facilities that include both passive and active uses. Because residents have more open space options outside the Non-Residential Study Area, as described below, they are less constrained to the passive open space within the 0.25-mile radius and more likely to seek other open space resources that may be further distances from their residences.

Qualitative Assessment

As shown in Table 5-5, the majority of the Non-Residential Study Area open spaces are in acceptable condition, and all have low to moderate use levels on weekdays. The Non-Residential Study Area includes several passive open space features, such as benches, lawns, greenways, and pathways, which are suitable for use by the non-residential population in the area. As shown in Table 5-5, all of the open space resources within the Non-Residential Study Area are in acceptable condition, with low to moderate utilization.

[9] Adjusted based on recommended weighted average ratio.

In addition, four open space resources fall just outside the boundary of the 0.25-mile Non-Residential Study Area but are not included in this quantitative assessment. These include the Stapleton Playground, Fort Hill Park, Lt. Lia Playground, and Davis Playground. As shown in Table 5-5, these four resources comprise approximately 7.26 acres of open space, with approximately 6.42 acres (88.5 percent) reserved for active uses. Given the proximity of these open space resources to the Non-Residential Study Area it is possible that workers in this area would utilize passive open space in these four open spaces.

As noted above, the quantitative analysis is conservative because it assumes residents and daytime users are separate populations. However, considering the size of the Non-Residential Study Area, it is possible some residents may live near their workplaces, resulting in some double-counting of the daily user population in the non-residential study area.

Table 5-6: Adequacy of Open Space Resources: Existing Conditions

	Population	Open Space Acreage			Open Space Ratios per 1,000 People			*CEQR Technical Manual* Open Space Guidance		
		Total	Passive	Active	Total	Passive	Active	Total	Passive	Active
Non-Residential (0.25-Mile) Study Area										
Workers	11,310	15.87	8.82	7.05	-	0.78	-	-	0.15	-
Combined Workers & Residents	30,602				-	0.29	-	-	0.37[1]	-
Residential (0.5-Mile) Study Area										
Residents	35,771	57.55	32.63	24.92	1.61	0.91	0.70	2.50	0.50	2.00
Combined Workers & Residents	50,596				-	0.65	-	-	0.40[1]	-

Notes: [1] Based on target open space ratios established by creating a weighted average of the amount of open space necessary to meet the City guidance of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 workers.

RESIDENTIAL (0.5-MILE) STUDY AREA

The following analysis of the adequacy of open space resources within the Residential Study Area under existing conditions considers the ratios of active, passive, and total open space resources per 1,000 residents, as well as the ratio of passive open space per 1,000 combined residents and workers.

Quantitative Assessment

There is a total of 57.55 acres of open space within the Residential Study Area, of which approximately 32.63 acres are for passive use and approximately 24.92 acres are for active uses. As shown in Table 5-6, the residential population is approximately35,771, which results in a total open space ratio of 1.61acres per 1,000 residents. This is less than the open space ratio of 2.50 acres of combined active and passive open space per 1,000 residents as defined as a planning standard by the *CEQR Technical Manual*. The Residential Study Area's passive and active open space ratios are 0.91 acres and 0.70 acres per 1,000 residents, respectively. The Residential Study Area's passive open space ratio of 0.91 is above the *CEQR Technical Manual* recommended passive open space ratio of 0.5 acres of passive open space per 1,000 residents. However, the Residential Study Area's active open space ratio is 0.70, which is below the *CEQR Technical Manual* recommended active open space ratio of 2.0 acres of active open space per 1,000 residents. Therefore, there is an existing shortfall of total and active open space resources in the Residential Study Area.

The passive open space ratio decreases when workers who are employed within the 0.5-mile boundary are added to the residential population. As previously described, workers typically use passive open space during the workday, which makes the passive open space ratio a relevant ratio for analysis purposes. The combined worker and residential population is 50,596 in the 0.5-mile Residential Study Area, resulting in a passive open space ratio of 0.65 acres per 1,000 residents and workers; this is above the calculated recommended weighted average guideline ratio of 0.40 acres per 1,000 combined users.

Qualitative Assessment

The Residential Study Area provides a mix of active and passive open space resources, with 53 percent dedicated to passive uses and 47 percent dedicated to active uses. However, the total open space ratio of 1.61 is below the *CEQR Technical Manual* recommended open space ratio of 2.00 acres per 1,000 residents. The active open space ratio of 0.70 acres per 1,000 residents is below the *CEQR Technical Manual* recommended open space ratios of 2.00 acres per 1,000 residents for active uses, as well as the Citywide median ratio of 1.5 acres per 1,000 residents.

The deficiency of total and active open space resources within the Residential Study Area is partly ameliorated by several factors. As shown in Table 5-5, the Residential Study Area open spaces include a wide variety of actively programmed open spaces appropriate for the residential user groups. As noted above, the study area includes a high percentage of children and teenagers, as compared to the borough of Staten Island and New York City as a whole (refer to Table 5-4). The percentage of children and teenagers is particularly marked, with 5 to 19 year olds comprising approximately 21.5 percent of the study area population. As indicated in the *CEQR Technical Manual*, these age groups tend to use playgrounds, court facilities, such as basketball courts, and sports facilities, such as football or soccer fields. Several of the Residential Study area's open spaces include such facilities (refer to Table 5-5), with a number of playgrounds, basketball/handball courts, and outdoor pools. In addition, and as noted in Table 5-5, all are in acceptable condition with low to moderate utilization rates.

It should also be noted that six additional open space resources fall just outside the Residential Study Area boundary and are therefore not included in the quantitative analysis. These include Silver Lake Park, Goodhue Park, Silver Mount Cemetery, Silver Lake Cemetery, Woodland Cemetery, and Sobel Court Park (resources A through F in Figure 5-2). These parks include active and passive uses, and cemeteries provide additional passive open space resources that border the Residential Study Area and should be considered open space resources for the purposes of this qualitative analysis. As shown in Table 5-7, these six open space resources outside the Residential Study Area total approximately 175.70 acres of passive and active open space. [GB1]Active open space amenities include a number of playgrounds, ball courts, recreational centers, and greenways, among others. While these six open space resources are excluded from the quantitative analysis, it can be assumed that they are used by persons who live and work in the 0.5-mile Residential Study Area.

It should be noted that one of those six resources, Silver Lake Park, is a significant destination open space resource located just outside the study area boundary and provides additional active and

passive open space resources. This 109-acre park[10], with 76.31 acres of passive recreational space and 32.70 acres of active recreational space, contains a variety of active uses, such as baseball fields, basketball courts, football fields, soccer fields, tennis courts, playgrounds, a dog park, and spray showers. Silver Lake Park also includes walking paths and trails that surround a reservoir, the park's most dominant feature. As Silver Lake Park is considered a "destination park," residents would travel farther than the ½-mile extent of the Residential Study area (either by vehicle, transit, or bike) to enjoy its open space and recreational amenities.

Table 5-7: Open Space Resources for Qualitative Assessment

Map ID[1]	Open Space Resource	Location	Owner/ Agency	Amenities	Acreage	Open Space Category
A	Silver Lake Park	Victory Blvd., Clove Rd., Forest Ave.	DPR	Baseball fields, basketball courts, dog park, playgrounds, football fields, soccer fields, spray showers, and tennis courts	109.01	Active and Passive
B	Goodhue Park	Brighton Ave. Bet. Lafayette Ave. & N. Randall Ave.	DPR/Children's Aid Society	Greenways, playing fields, and basketball courts	37.8	Active and Passive [GB2]
C	Silver Mount Cemetery	918 Victory Blvd.	Silver Mount Cemetery Association	Cemetery	17.00	Passive
D	Silver Lake Cemetery	926 Victory Blvd.	The Hebrew Free Burial Association	Cemetery	4.75	Passive
E	Woodland Cemetery	982 Victory Blvd.	Woodland Cemetery Association	Cemetery	6.00	Passive
F	Sobel Court Park	Bowen St., Vanderbilt Ave., Targee St.	DPR	Playground	1.14	Active
				Total (acres)	**175.70**	

Moreover, as noted above, the quantitative analysis is conservative because it assumes residents and daytime users (workers) are separate populations, whereas it is possible, especially considering the size of the study area, that some of the residents live near their workplace, resulting in some double-counting of the daily user population. Residents who work from home were not included in the total worker population in the 0.5-mile Residential Study Area.

E. THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO-ACTION CONDITION)

STUDY AREA POPULATION

As discussed in Chapter 2, "Land Use, Zoning, and Public Policy," in the No-Action Condition, the identified Projected and Potential development sites are assumed to either remain unchanged from existing conditions or become occupied by uses that are as-of-right under existing zoning. In addition, as shown in Figure 2-8 in Chapter 2, several known and anticipated developments in the vicinity of the Project Area were identified. These anticipated developments (No-Build Projects) are expected to introduce approximately 2,935 residents and 2,193 workers to the 0.5-mile and 0.25-mile study areas. In addition, residential and non-residential growth rates were calculated based on growth that

[10] The 96.97-acre Silver Lake Golf Course is excluded from the park's acreage because it is fee-based recreational facility.

occurred in the two study areas between 2000 and 2010. These growth rates were applied to the existing residential and non-residential populations to account for general background growth anticipated in the area. As shown in Table 5-8, the anticipated No-Action development, combined with the residential and non-residential growth rates, are expected to increase the 0.25-mile Non-Residential Study Area population to 14,756 workers and 39,722 combined workers and residents. The 0.5-mile Residential Study Area population is expected to increase to 43,835 residents and 62,106 combined workers and residents.

Table 5-8: No-Action - Open Space Study Area Population

	Existing Population	Incremental Background Population Growth[1]	Population in Study Area (No-Build Projects)	New No-Action Population on Projected Development Sites	TOTAL No-Action Population (2030)
Non-Residential (0.25-Mile) Study Area					
Workers	11,310	0	2,193	1,253	**14,756**
Combined Workers & Residents	30,602	2,708	5,128	1,284	**39,722**
Residential (0.5-Mile) Study Area					
Residents	35,771	5,098	2,935	31	**43,835**
Combined Workers & Residents	50,596	5,098	5,128	1,284	**62,106**

Notes: [1] Incremental Background Growth for 2030 based on ten-year residential population growth rate of 7.1 percent (2000 and 2010 Census) in the Non-Residential Study Area and 3.6 percent (2000 and 2010 Census) in the Residential Study Area, and non-residential growth rate is assumed to be zero in both study areas based on the limited commercial/office uses in the 0.25-mile and 0.5-mile study areas.

OPEN SPACE RESOURCES

Of the No-Build development projects within a 0.25-mile and 0.5-mile radius of the Project Area, three are anticipated to include new open space: the NY Wheel, Empire Outlets, and the Lighthouse Point Development. Accordingly, as shown in Table 5-9, the No-Action Condition would include a total of 8.79 acres of new open space, which would include 8.33 acres of passive open space and 0.46 acres of active open space. No other changes to open space in the Study Area are anticipated by the 2030 analysis year.

Table 5-9: New Open Space Resources in No-Action Condition

No-Build Open Space			
	Total Acreage	**Passive**	**Active**
St. George Esplanade (Empire Outlets)	4.66	4.66	0.00[GB3][SS(4]
NY Wheel[1]	2.84	2.38	0.46[GB5][SS(6]
Lighthouse Point	1.29	1.29[GB7][SS(8]	0
Total	**8.79**	**8.33**	**0.46**

Notes: [1]While the specific development at the NY Wheel site will not be developed, the restrictions recorded against the property would require 2.84 acres of open space to be provided.

By 2030, in the No-Action Condition, the 0.25-mile Non-Residential Study Area would be served by a total of 24.66 acres of open space (including 17.15 acres of passive open space and 7,51 acres of active open space), and the 0.5-mile Residential Study Area would be served by approximately 66.34 acres of open space (including 40.96 acres of passive open space and 25.38 acres of active open space).

ASSESSMENT OF OPEN SPACE ADEQUACY

NON-RESIDENTIAL (0.25-MILE) STUDY AREA

As discussed above, as a result of the anticipated new development in the future without the Proposed Actions (No-Action Condition), there would be an increase in population and open space within the 0.25-mile Non-Residential Study Area. As a result, the passive open space ratio in the No-Action Condition would increase to 1.16 (from 0.78 under existing conditions; see Table 5-6); with this increase, the passive open space ratio would continue to exceed the *CEQR Technical Manual* guidance ratio of 0.15 acres (see Table 5-10). The passive open space ratio for the combined worker and residential population would increase to 0.43 (from 0.29 under existing conditions; see Table 5-6), and would be higher than the calculated recommended weighted ratio of 0.37 (see Table 5-10).

Table 5-10: Adequacy of Open Space Resources: No-Action Condition

		Open Space Acreage[1]			Open Space Ratios per 1,000 People[2]			*CEQR Technical Manual* Open Space Guidance		
	Population	Total	Passive	Active	Total	Passive	Active	Total	Passive	Active
Non-Residential (0.25-mile) Study Area										
Workers	14,756	24.66	17.15	7.51	-	1.16	-	-	0.15	-
Combined Workers & Residents	39,722				-	0.43	-	-	0.37[3]	-
Residential (0.5-mile) Study Area										
Residents	43,835	66.34	40.96	25.38	1.51	0.93	0.58	2.50	0.50	2.0
Combined Workers & Residents	62,106				-	0.66	-	-	0.40[3]	-

Notes:
[1] The Open Space Acreage includes 8.33 acres of passive open space and 0.46 acres of active open space proposed under the known development projects within the 0.25-mile and 0.5-mile study areas for 2030 Analysis Year. These development projects include the New York Wheel, Empire Outlets, and the Lighthouse Point Development.
*[2] No-Action Open Space Ratio = Acres of Open Space/ population * 1000.*
[3] Based on target open space ratios established by creating a weighted average of the amount of open space necessary to meet the City guideline of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 workers.

RESIDENTIAL (0.5-MILE) STUDY AREA

As shown in Table 5-10, the population increase together with the 8.79 acres of new open space introduced in the No-Action Condition in 2030 Analysis Year would result in a decrease in the open space ratios in the 0.5-mile Residential Study Area. As a result, in the No-Action Condition the total open space ratio for residents would decrease to 1.51 (from 1.61 under existing conditions; see Table 5-6)acres per 1,000 residents; and would continue to be below the *CEQR Technical Manual* guidance ratio of 2.50 acres (see Table 5-10). The passive open space ratio for residents would increase to 0.93 from 0.91 under existing conditions (Table 5-6); for combined workers and residents, the passive open space ratio would increase to 0.66 from 0.65 (Table 5-6). The passive open space ratio would continue to exceed the *CEQR Technical Manual* guidance ratio of 0.50 acres for residents and the calculated recommended weighted ratio of 0.40 for combined workers and residents (see Table 5-10). The active open space ratio for residents would decrease to 0.58 from 070 under existing conditions (Table 5-6). The active open space ratio would continue to remain below the *CEQR Technical Manual* guidance ratio of 2.00 acres.

F. THE FUTURE WITH THE PROPOSED ACTIONS (WITH-ACTION CONDITION)

In the With-Action Condition, it is anticipated that incremental development on the 30 Projected Development Sites would comprise 2,557 dwelling units, 275,348 sf of commercial uses, 46,799 sf of community facility uses, and 1,290 accessory parking spaces over the No-Action Condition. In total, the RWCDS With-Action development would introduce an estimated 6,571 new residents and 1,312 new workers over the No-Action condition.

DIRECT EFFECTS

No publicly accessible open space is currently located on any of the Projected Development Sites. Therefore, the Proposed Actions are not anticipated to cause the physical loss of publicly accessible open space. Based on this information, the Proposed Actions are not anticipated to result in any potentially significant adverse direct impacts to open space.

INDIRECT EFFECTS

STUDY AREA POPULATION

In total, the RWCDS With-Action development would introduce an estimated 6,571 new residents and 1,312 new workers over the No-Action condition. As shown in Table 5-11, the anticipated With-Action development, combined with estimated residential and non-residential populations in the study areas in the No-Action condition, would result in a population of 16,163 workers and 48,653 combined workers and residents in the 0.25-mile Non-Residential Study Area. The 0.5-mile Residential Study Area population is expected to increase to 51,359 residents and 71,037 combined workers and residents.

Table 5-11: With-Action - Open Space Study Area Population

	No-Action Population	Additional With-Action Population on Projected Development Sites	TOTAL With-Action Population (2030)
Non-Residential (0.25-Mile) Study Area			
Workers	14,756	1,312	**16,068**
Combined Workers & Residents	39,722	7,883	**47,605**
Residential (0.5-Mile) Study Area			
Residents	43,835	6,571	**50,406**
Combined Workers & Residents	62,106	7,883	**69,989**
Notes: [1] Incremental Background Growth for 2030 based on ten-year residential population growth rate of 7.1 percent (2000 and 2010 Census) in the Non-Residential Study Area and 3.6 percent (2000 to 2010 Census) in the Residential Study Area, and non-residential growth rate is assumed to be zero in both study areas based on the limited commercial/office uses in the 0.25-mile and 0.5-mile study areas.			

OPEN SPACE RESOURCES

As described in Chapter 1, "Project Description," the Proposed Actions are intended to facilitate implementation of recommendations of the Bay Street Corridor Neighborhood Planning Initiative (the "Plan"). The new open space planned for the Stapleton Waterfront Phase III Sites in the With-Action Condition would introduce approximately 4.6 acres of open space (3.6 passive open space

acres and 1 active open space acre) within the 0.25 –mile Non-Residential Study Area and 0.5-mile Residential Study Area. No other changes to open spaces in the study areas are currently proposed. Therefore, in the With-Action Condition, the Non-Residential Study Area would be served by 29.26 acres of open space (including 20.75 acres of passive open space and 8.51 acres of active open space), and the Residential Study Area would be served by approximately 70.94 acres of open space (including approximately 44.56 acres of passive open space and 26.38 acres of active open space).

ASSESSMENT OF OPEN SPACE ADEQUACY

NON-RESIDENTIAL (0.25-MILE) STUDY AREA

Quantitative Assessment

As shown in Table 5-12, with the addition of new open space at the Stapleton Waterfront Phase III sites, the passive open space ratio per 1,000 workers would increase to 1.29 in the With-Action Condition from 1.16 in the No-Action Condition (Table 5-10), and would continue to exceed the *CEQR Technical Manual* guidance ratio of 0.15 acres per 1,000 workers. The open space ratio for the combined worker and residential population would decrease to 0.44 in the With-Action Condition from 0.48 in the No-Action Condition (Table 5-10), which would continue to be above the calculated With-Action recommended weighted ratio of 0.38.

Table 5-12: Adequacy of Open Space Resources: With-Action Condition

		Open Space Acreage[1]			Open Space Ratios per 1,000 People[2]			*CEQR Technical Manual* Open Space Guidance		
	Population	Total	Passive	Active	Total	Passive	Active	Total	Passive	Active
Non-Residential (0.25-Mile) Study Area										
Workers	16,068	29.26	20.75	8.51	-	1.29	-	-	0.15	-
Combined Workers & Residents	47,605				-	0.44	-	-	0.38[3]	-
Residential (0.5-Mile) Study Area										
Residents	50,406	70.94	44.56	26.38	1.41	0.88	0.52	2.5	0.50	2.0
Combined Workers & Residents	71,037				-	0.64	-	-	0.40[3]	-

Notes:
[1] The Open Space Acreage includes 8.33 acres of passive open space and 0.46 acres of active open space proposed under the known development No-Build Projects within the 0.25-mile and 0.5-mile study areas for 2030 Analysis Year; and the new open space planned at the at Stapleton Waterfront Phase III Sites which would include 3.6 acres of passive open space and 1.0 acre of active open space. The No-Build Projects include the New York Wheel, Empire Outlets, and the Lighthouse Point Development.
*[2] With-Action Open Space Ratio = Acres of Open Space/ population * 1000*
[3] Based on target open space ratios established by creating a weighted average of the amount of open space necessary to meet the City guideline of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 workers.

RESIDENTIAL (0.5-MILE) STUDY AREA

Quantitative Assessment

As shown in Table 5-12, under the With-Action Condition, for residents within the 0.5-mile Residential Study Area, the total open space ratio would decrease to 1.41 acres per 1,000 residents (from 1.51 in the No-Action Condition; see Table 5-10); and would continue to be below the ratio of

2.50 acres per 1,000 residents, as defined as a planning guideline by the *CEQR Technical Manual*. The passive open space ratio per 1,000 residents would also decrease to 0.88 acres per 1,000 residents from 0.93 in the No-Action Condition (Table 5-10); however, it would remain above the *CEQR Technical Manual* guidance ratio of 0.50. The active open space ratio would also decrease to 0.52 acres per 1,000 residents from 0.58 in the No-Action Condition (Table 5-10), and would continue to be below the guidance ratio of 2.00 acres per 1,000 residents, as defined by the *CEQR Technical Manual*.

The passive open space ratio for combined residential and worker populations within the 0.5-mile Residential Study Area would decrease to 0.64 acres per 1,000 users from 0.66 in the No-Action Condition (Table 5-10), which continues to be above the calculated With-Action recommended weighted ratio of 0.40.

Qualitative Assessment

In the With-Action Condition, the total and active use open space ratios for the 0.5-mile Residential Study Area would continue to be lower than recommended by the *CEQR Technical Manual* open space adequacy guidance. The population generated in the With-Action Condition as compared to the No-Action Condition is not expected to have any special characteristics, such as a disproportionately younger or older population that would place heavy demands on the area's open space resources.

As previously discussed, the 0.5-mile Residential Study Area is currently underserved by both total and active open space resources, and based on *CEQR Technical Manual* guidance, the Residential Study Area would continue to be deficient in both the No-Action and With-Action conditions. However, while the amounts of total and active open space resources in the Residential Study Area are, and would continue to be, deficient in comparison to City guidance, all the open spaces included in the quantitative analysis have low to moderate utilization levels, and all are in acceptable condition (refer to Table 5-5).

Furthermore, as described above, there are six publicly accessible parks and cemeteries located just beyond the boundary of the Residential Study Area that total 175.70 acres of open space. While these six open space resources are conservatively excluded from the quantitative analysis, it is likely that they are used by people that live and work in the 0.5-mile Residential Study Area, in particular, children and teenagers (5 to 19 years old) that account for approximately 21.5 percent of the Residential Study Area population. It should be noted one of those six resources, Silver Lake Park, is a significant destination open space resource with 109 acres of active and passive recreation, and residents would likely travel farther than the 0.5-mile extent of the Residential Study area to enjoy its open space and recreational amenities, which could help to partially offset this quantitative deficit.

DETERMINING IMPACT SIGNIFICANCE

According to the *CEQR Technical Manual*, a significant adverse open space impact may occur if a proposed action would reduce the open space ratio by more than 5 percent in areas that are currently below the City's median community district open space ratio of 1.50 acres per 1,000 residents. In areas that are extremely lacking in open space, a reduction as little as 1 percent may be considered significant, depending on the area of the City. These reductions may result in overburdening existing facilities or further exacerbating a deficiency in open space. Table 5-13 shows the percent change

from the No-Action Condition to the With-Action Condition for both the Non-Residential and Residential study areas.

NON-RESIDENTIAL (0.25-MILE) STUDY AREA

In the With-Action Condition, the passive open space ratio within the 0.25-mile Non-Residential Study Area would increase by 11.10 percent from the No-Action Condition, and would remain well above the *CEQR Technical Manual* guidance's recommended open space ratio of 0.15 acres per 1,000 workers, at 1.29 acres per 1,000 workers (see Table 5-13). Accordingly, workers within the 0.25-mile Non-Residential Study Area would continue to be well-served by passive open space resources, and there would be no significant adverse impacts on passive open space in the Non-Residential Study Area as a result of the Proposed Actions.

Table 5-13: Open Space Ratio Summary

Study Areas	Non-Residential (0.25-Mile) Study Area	Residential (0.5-Mile) Study Area		
	Passive - Workers	Total – Residents	Passive - Residents	Active – Residents
CEQR Technical Manual Open Space Guidance	0.15	2.50	0.50	2.00
Existing Open Space Ratio	0.78	1.61	0.91	0.70
No-Action Open Space Ratio	1.16	1.51	0.93	0.58
With-Action Open Space Ratio	1.29	1.41	0.88	0.52
Percent Change (No-Action to With-Action)	**11.10%**	**-7.01%**	**-5.35%**	**-9.67%**

RESIDENTIAL (0.5-MILE) STUDY AREA

Under the With-Action Condition, the total open space ratio within the 0.5-mile Residential Study Area would decrease by more than 5 percent from the No-Action Condition (7.01 percent); and would remain below the *CEQR Technical Manual* guidance of 2.50 acres per 1,000 residents. The passive open space ratio of 0.88 acres per 1,000 residents in the With-Action Condition would represent a decrease of 5.35 percent from the No-Action Condition, and would remain above the *CEQR Technical Manual* guidance of 0.50 acres per 1,000 residents. The active open space ratio of 0.52 acres per 1,000 residents would constitute a 9.67 percent decrease from the No-Action condition and remain below the *CEQR Technical Manual* guidance of 2.00 acres of active open space per 1,000 residents.

The open space ratios within the 0.5-mile Residential Study Area for total and active open space would decrease by more than 5 percent, and as such the Residential Study Area would continue to be underserved by total and active open space in the With-Action Condition.

Based on this information, the Proposed Actions would result in significant adverse indirect impacts on total and active open space in the 0.5-mile Residential Study Area. Proposed mitigation measures are discussed in Chapter 22, "Mitigation."