

**A. INTRODUCTION**

The 2001 *New York City Environmental Quality Review (CEQR) Technical Manual* guidelines indicate the need for an open space analysis when an action would result in the physical loss of public open space, or the introduction of 200 or more residents or 500 or more workers, to an area. The proposed project would result in an increase in the number of residents and employees in the study area that would exceed the thresholds requiring a detailed analysis. Therefore, an open space analysis was conducted to determine whether the proposed project would result in any direct or indirect significant adverse open space impacts. This chapter assesses existing conditions (both users and resources) and compares conditions in the future with and without the proposed project to determine potential impacts for the 2010 and 2016 analyses.

As identified in Chapter 1, “Project Description,” and discussed in further detail in this chapter, a key component of the proposed project is the provision of eight acres of publicly accessible open space. This new open space, constructed incrementally during Phase II as buildings during this phase are completed, would provide passive and active recreational opportunities and attractive pedestrian and bicycle path connections between the adjacent neighborhoods to the north, south, and east—areas long separated visually and physically by the below-grade rail yard and the dilapidated, vacant, and underutilized properties on the project site. This open space, as discussed in greater detail below, would have a number of elements, including plazas, boardwalks, water features, lawns, and active play areas. Phase I of the project would include private open space on the roof of the arena and publicly accessible amenities, such as the Urban Room and public plazas situated around the outside of the arena. These Phase I amenities are not included in the quantitative analysis but their benefits are discussed in “Qualitative Considerations” below.

As discussed in Chapter 2, “Procedural Analytical Framework,” the proposed project allows for a variation in the program to permit commercial uses to substitute for the hotel and some residential uses on the project site. This chapter analyzes both the residential and commercial mixed-use variations, as each variation would generate different populations that would use open space resources in the respective study areas. However, the proposed project’s open space component would be the same for both variations.

Since issuance of the DEIS, the building program of the proposed project (both variations) has been modified to reflect a reduction in the proposed program and to accommodate an increase in the amount of publicly accessible open space from at least seven acres to eight acres. The quantitative open space analysis has been updated to account for these modifications.

## PRINCIPAL CONCLUSIONS

### 2010

The proposed project would introduce large, new residential and non-residential (worker) populations. Under both development scenarios, the passive open space ratios in the non-residential study area would continue to be substantially less than the New York City Department of City Planning's (DCP's) recommended weighted average as is the case in existing conditions and in the future without the proposed project. Based on the analysis of quantitative factors listed in the *CEQR Technical Manual*, the proposed project would result in a temporary significant adverse impact within the non-residential (¼-mile) study area at the end of Phase I until the Phase II open space is phased in. This temporary adverse impact is due to the added population as a result of the proposed project but no new publicly accessible open space. Providing new publicly accessible open space by the end of Phase I is not practical given that the areas that could be used as open space are needed for construction staging, worker parking, and materials storage in order to minimize construction impacts on the surrounding neighborhood. Open space would be added incrementally between 2010 and 2016 as development on the project site progresses eastward and each successive building is constructed. By 2016 (full development of the proposed project), the passive open space ratios would improve and the temporary significant adverse impact experienced in 2010 would be eliminated by the proposed project's additional eight acres of publicly accessible open space constructed between Phase I and Phase II.

Although the active and combined passive open space ratios for the residential (½-mile) study area would remain below the levels recommended by DCP for both variations in 2010, it is recognized that these are goals that are not feasible for many areas of the city and are therefore not considered impact thresholds. Although the declines in residential study area open space ratios are substantial given the study area's existing lack of open space resources, the qualitative assessment concludes that the open space elements and public amenities not included in the quantitative analysis, including the private open space on the roof of the arena, the publicly accessible Urban Room, and plaza areas—all to be developed as part of the proposed project in Phase I—and the availability of large nearby open spaces (e.g., Prospect Park and Fort Greene Park), would help alleviate the burden on this study area's open spaces. Thus, the proposed project would not result in a significant adverse impact to open space in the residential study area in 2010.

### 2016

As stated above, publicly accessible open space would be added incrementally on the project site between 2010 and 2016, resulting in eight acres of open space by 2016. This new open space would result in an increase in the combined passive open space ratios for residents and workers in the non-residential study area, thereby negating the temporary impacts experienced in this study area in 2010. Thus, the proposed project would not result in a significant adverse impact to open space in the non-residential study area.

In 2016, passive open space ratios in the residential study area would increase substantially, but the active open space ratio in this same study area would decrease. The quantitative impact on the active open space ratio is offset by qualitative factors, including the project's additional active and passive open spaces that do not exist in the future without the proposed project and the presence of Fort Greene and Prospect Parks just outside the residential study area boundaries. The proposed open space would also include a newly created bicycle path through

the project site as part of the city's Bicycle Network Development Program, creating stronger connections between the neighborhoods in the north, south, and east. Therefore, the proposed project would not result in a significant adverse impact on open space and recreational resources.

## **B. METHODOLOGY**

As discussed in Chapter 2, "Procedural and Analytical Framework," the proposed project would be developed in two phases. The project sponsors anticipate that Phase I of the proposed project would be complete in 2010. Project components expected to be complete and operational at this time include the newly reconfigured and upgraded below-grade rail yard and the development planned for the blocks housing the proposed arena (consisting of Buildings 1 through 4 in addition to the arena) and Site 5 (see Chapter 1, "Project Description").

### **STUDY AREAS**

According to the *CEQR Technical Manual* guidelines, the first step in assessing potential open space impacts is to establish study areas for the new population(s) added as a result of the proposed project. The study area is based on the distance a person is assumed to walk to reach a neighborhood open space. Workers or non-residents typically use passive open spaces and are assumed to walk up to approximately 10 minutes (about a ¼-mile distance) from their places of work. Residents are more likely to travel farther to reach parks and recreational facilities, and can be expected to walk up to about 20 minutes (about a ½-mile distance) to reach both passive and active neighborhood open spaces. Because the proposed project has both commercial, or non-residential, and residential components, two study areas are evaluated—a non-residential study area based on a ¼-mile distance from the project site, and a residential study area based on a ½-mile distance.

Per *CEQR Technical Manual* guidelines, the commercial open space study area comprises the census tracts located at least 50 percent within ¼ mile of the project area. All open spaces, as well as all residents and employees within these census tracts, were included in the non-residential study area (see Figure 6-1). The same methodology was applied to the ½-mile residential study area. In addition, open spaces located within ½ mile of the project site, but within a census tract located less than 50 percent within ½ mile of the project site, are discussed qualitatively but are not included quantitatively in the open space assessment. Since residents may also visit certain regional parks outside the ½-mile study area (e.g., Prospect Park and Fort Greene Park), such open spaces are described qualitatively but are not included in the quantitative analysis.

### **STUDY AREA POPULATIONS**

Demographic data from the 2000 U.S. Census were used to identify potential open space users (residents and workers) within the ¼- and ½-mile study areas. The number of employees in each of the study areas was determined based on reverse journey-to-work data from the Census Transportation Planning Package (CTPP). CTPP was compiled from the 2000 U.S. Census and was sponsored by the State Department of Transportation and the American Association of State Highway and Transportation Officials (AASHTO). In several census tracts, the population numbers have been updated to include the residents and workers generated by recently completed projects—as shown in Table 2-1—and not included in the 2000 U.S. Census.

## **INVENTORY OF STUDY AREA OPEN SPACES**

All publicly accessible open spaces and recreational facilities within the non-residential and residential study areas were inventoried to determine their size, character, and condition (see Figure 6-2). Public spaces that do not offer useable recreational areas, such as spaces where seating is unavailable, were excluded from the survey, as were open spaces that are not easily accessible to the general public. However, some of these open spaces are noted in the qualitative analysis. The information used for this analysis was gathered through field studies conducted in April 2004 (updated in summer 2005) on weekdays; and acquired from the New York City Department of Parks and Recreation (DPR). For each open space, active and passive recreational spaces were noted. Active open space facilities are characterized by activities such as jogging, field sports, and children's active play. Such open space features might include basketball courts, baseball fields, or play equipment. Passive open space facilities are characterized by activities such as strolling, reading, sunbathing, and people-watching. Some spaces have both active and passive recreation uses.

## **ADEQUACY OF OPEN SPACES**

### *CRITERIA FOR QUANTIFIED ANALYSIS*

For this environmental impact statement (EIS), a detailed open space analysis has been conducted because the proposed project would introduce a large new population to an area considered to have an existing deficiency of open space (i.e., below 1.5 acres of open space per 1,000 residents or below 0.15 acres of passive open space per 1,000 non-residents). To determine the significance of any potential significant adverse impacts in the future with the proposed project, the *CEQR Technical Manual* suggests both a quantitative and qualitative evaluation compared with the future without the proposed project condition.

The adequacy of open space in the study area is assessed quantitatively using a ratio of usable open space acreage to the study area population—the open space ratio. The determination of the need for a quantified analysis is based on both the adequacy of the quantity of open space and how a proposed project or action would change the open space ratios in the study area compared with the ratios in the future without the proposed project. If a potential decrease in an adequate open space ratio exceeds 5 percent, it is generally considered to be a substantial change, warranting further analysis. Furthermore, if a study area exhibits a low open space ratio (e.g., below the guidelines set forth in the *CEQR Technical Manual*, indicating a shortfall of open space), even a small decrease of less than 1 percent in that ratio may be considered an adverse effect and would warrant detailed analysis.

### *COMPARISON TO NEW YORK CITY DEPARTMENT OF CITY PLANNING GUIDELINES*

To assess the adequacy of the quantity of open space resources, open space ratios are compared against goals set by DCP. Although these open space ratios are not meant to determine whether a proposed project or action might have a significant adverse impact on open space resources, they are helpful guidelines in understanding the extent to which user populations are served by open space resources. The following guidelines are used in this type of analysis:

- For non-residential populations, 0.15 acres of passive open space per 1,000 non-residents is typically considered adequate.

- For residential populations, City guidelines attempt to achieve a ratio of 2.5 acres per 1,000 residents for large-scale proposals. Ideally, this would comprise 0.50 acres of passive space and 2.0 acres of active open space per 1,000 residents. A citywide survey and review of all community districts have indicated that half the community districts have an open space ratio of 1.5 acres of open space per 1,000 residents. However, as noted above, these goals are often not feasible for many areas of the City, and they do not constitute an impact threshold. Rather, they act as a benchmark to represent how well an area is served by its open space.
- The needs of these populations are considered together because it is assumed that both residents and non-residents will use the same passive open spaces. Therefore, a weighted average of the amount of open space necessary to meet the DCP guideline of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 non-residents is considered in this analysis. The recommendation for this ratio is recalculated and can change depending on the proportion of residents and non-residents in each study area for each analysis year.

## C. EXISTING CONDITIONS

### STUDY AREA POPULATION

#### *NON-RESIDENTIAL STUDY AREA*

The non-residential study area for the proposed project generally extends north to Lafayette and Greene Avenues, east to Washington and Grand Avenues, south to Sterling Place, and west to Nevins Street and 4th Avenue. It includes 10 census tracts: 35, 39, 129.01, 129.02, 161, 163, 179, 199, 203, and 205.

Based on reverse journey-to-work data from CTPP and on recent development, the non-residential population in the ¼-mile study area is estimated to be 14,404 (see Table 6-1). Drawing on the 2000 U.S. Census and taking into account recently completed known projects, the residential population is estimated to be 23,866. The total open space user population of this study area is therefore estimated to be 38,270. Although this analysis conservatively assumes that residents and non-residents are separate populations, it is possible that some residents live near their workplaces. Thus, there is likely to be some double counting of the daily user population where residential and non-residential populations overlap.

#### *RESIDENTIAL STUDY AREA*

The residential study area includes the 10 census tracts located in the non-residential study area, and 12 additional census tracts. The study area extends generally north to DeKalb Avenue, east as far as Classon Avenue, south to Union Street, and west to Hoyt Street.

Although there is no quantitative analysis dedicated exclusively to the non-residential population within the residential study area, the *CEQR Technical Manual* calls for a quantitative analysis of the total population within the residential study area, which includes the non-residential and the residential populations.

Based on reverse journey-to-work data from 2000 and recent development, the non-residential population within the residential study area is 41,124. Drawing on the 2000 U.S. Census and taking into account recently completed development, the residential population is 65,515 for a total

open-space user population of 106,639. Again, this estimate conservatively assumes that the residential and non-residential populations are entirely distinct from each other.

**AGE OF OPEN SPACE USER POPULATION**

*NON-RESIDENTIAL STUDY AREA*

At approximately 70 percent, people between the ages of 22 and 64 make up the vast majority of the residential population in the study area (see Table 6-2). Children and teenagers (0-21 years old) account for approximately 22 percent of the entire residential population. Persons who are 65 and older account for the remaining 8 percent of the study area population.

**Table 6-1  
Existing Population in the Non-Residential  
and Residential Use Study Areas**

<b>Census Tracts</b>	<b>Residential Population</b>	<b>Non-Residential Population</b>	<b>Total User Population</b>
<b>Non-Residential Study Area (¼-Mile Radius)</b>			
35	1,477	5,735	7,212
39	2,119	2,460	4,579
129.01	2,239	825	3,064
129.02	2,125	1,290	3,415
161	2,568	1,305	3,873
163	3,175	590	3,765
179	3,581	624	4,205
199	2,946	575	3,521
203	1,192	530	1,722
205	2,444	470	2,914
<b>Total Non-Residential Area</b>	<b>23,866</b>	<b>14,404</b>	<b>38,270</b>
<b>Residential Study Area (½-Mile Radius)</b>			
33	2,348	6,980	9,328
37	357	12,195	12,552
41	3,251	1,409	4,660
71	4,609	480	5,089
127	3,405	775	4,180
131	3,994	615	4,609
159	5,091	1,845	6,936
181	3,952	581	4,533
197	3,577	610	4,187
201	3,632	445	4,077
207	4,659	310	4,969
231	2,774	475	3,249
<b>Total Residential Area</b>	<b>65,515</b>	<b>41,124</b>	<b>106,639</b>
<b>Notes:</b>	Census numbers have been updated to include recently completed known projects.		
<b>Sources:</b>	U.S. Census of Population and Housing, 2000; Central Transportation Planning Package (CTPP) 2000.		

**Table 6-2**  
**Age Distribution in the Non-Residential and Residential Use Study Areas**

Age	Number of Residents	Percentage of Total Population
<b>Non-Residential Study Area</b>		
Under 21	5,161	22
22 to 64	16,530	70
65 and Over	1,973	8
<b>Residential Study Area</b>		
Under 21	14,500	22
22 to 64	45,165	69
65 and Over	5,591	9
<b>Note:</b>	The residential population has increased since the 2000 U.S. Census as a result of new development in the study area. Although these numbers do not reflect those increases, it is likely that the age distribution has not changed significantly.	
<b>Source:</b>	U.S. Census of Population and Housing, 2000.	

*RESIDENTIAL STUDY AREA*

The residential age-distribution characteristics are similar to the non-residential area. In the residential study area, adults between the ages of 22 and 64 are by far the largest residential population component (approximately 69 percent); persons of 65 and over account for approximately 9 percent. The two populations expected to utilize the open spaces the most (children and the elderly) make up the smallest percentages of the residential population; therefore, the residential population would not impose a disproportionately heavy burden on open spaces in either the non-residential or residential study areas.

**STUDY AREA OPEN SPACES**

*NON-RESIDENTIAL STUDY AREA*

Fourteen publicly accessible open space and recreational resources are located within the non-residential open space study area. Most of these open spaces are publicly owned. Altogether, the open space resources in this study area total approximately 8.72 acres (see Table 6-3 and Figure 6-2).

**Atlantic Yards Arena and Redevelopment Project EIS**

**Table 6-3  
Open Space Resources**

Map No. <sup>1</sup>	Name	Owner	Amenities	Total Acres	Active	Passive	Condition	Use Level
<b>Non-Residential Study Area (¼-Mile Radius)</b>								
1	Atlantic Terminal Plaza	FCRC	Tables, chairs, benches	0.50	0.00	0.50	Excellent	Heavy
2	South Oxford Playground	DPR	Playground equipment, benches, asphalt tennis courts, spray showers, synthetic turf oval, casual play area, community garden	0.60	0.30	0.30	Excellent	NA
3A	Atlantic Terminal Houses—Carlton Ave.	NYCHA	Playground, spray shower, seating, trees, mostly paved	0.12	0.06	0.06	Average	Moderate
3B	Atlantic Terminal Houses—Atlantic Ave.	NYCHA	Seating, playground, trees	0.12	0.06	0.06	Average	Moderate
4	Charles B. Wang Field/Brooklyn Technical H.S. <sup>2</sup>	DOE/Take the Field	Football/soccer field, track, bleachers	0.81	0.81	0.00	Excellent	Moderate
5	Dean Playground <sup>3</sup>	DPR	Playground, basketball and handball courts, slides, jungle gyms	1.30	1.04	0.26	Average	Moderate
6	P.S. 9 Playground	DOE	Playground, basketball and handball courts, playground equipment, paved	0.97	0.87	0.10	Average	Moderate
7	Underhill Playground	DPR	Playground, benches, handball courts, bathrooms	0.59	0.47	0.12	Good	Moderate
8	Lowry Triangle	DPR	Trees, benches	0.11	0.00	0.11	Good	Low
9	Greene Park/ P.S. 11 Playground	DPR	Jungle gym, playground, swings, gaming tables, bathrooms, slides, basketball and handball courts, mostly paved	1.26	1.01	0.25	Good/ Average	Moderate/ Heavy
10	Cuyler Gore	DPR	Lawns, benches, trees, playground, jungle gyms	1.16	0.29	0.87	Good	Low
11	Temple Square	NA	Trees, benches	0.07	0.00	0.07	Average	Moderate
12	Sixteen Sycamores Playground	DPR	Playground, handball court, slide, jungle gym, benches, bathrooms, swings	0.57	0.46	0.11	Average	Moderate
13	North Pacific Playground and Greenthumb	DPR	Playground, jungle gym, benches	0.16	0.08	0.08	Good	Moderate/ Heavy
14	P.S. 38/The Pacific School Playground	DOE	Paved play area, baseball diamond, basketball, playground	0.38	0.34	0.04	Excellent	Moderate
<b>SUBTOTAL</b>				<b>8.72</b>	<b>5.79</b>	<b>2.93</b>		
<b>Residential Study Area (½-Mile Radius)</b>								
15	Nicholas Nequan Heyward Jr. Park at Gowanus Houses	DPR	Handball and basketball courts, playground, sculpture, benches	1.04	0.94	0.10	Average	Low
16	Gowanus Houses Open Space	NYCHA	Benches, lawns, playgrounds, jungle gyms	1.13	0.56	0.57	Average	Low/ Moderate
17	Wyckoff Gardens Open Space	NYCHA	Benches, lawn, playgrounds, basketball	0.48	0.24	0.24	Average	Low/ Moderate
18	Police Athletic League	PAL	Jungle gym, seating, interactive sculpture	0.24	0.12	0.12	Average	Low
19	Park Slope / P.S. 282 Playground	DPR	Basketball, jungle gym, benches, swings, slides, paved play areas	0.96	0.86	0.10	Excellent	Heavy
20	Triangle	DPR	Trees, benches	0.05	0.0	0.05	Average	Low
21	Grand Army Plaza/ Memorial Arch <sup>4</sup>	DPR	Trees, landscaping, seating, fountain, paths	8.0	1.6	6.4	Average	Low
22	P.S. 56	DOE	Playground, basketball court	0.71	0.64	0.07	Average	Moderate
23	Underwood Park	DPR	Playgrounds, benches, game tables, landscaping, trees	1.19	0.60	0.59	Good/ Average	Heavy
24	Edmunds/JHS 294 Playground	DPR	Playground, basketball court, jungle gym, slides, swings, benches, restrooms	0.92	0.64	0.28	Good/ Average	Heavy
25	Macomber Square	NYC	Trees, seating	0.11	0.00	0.11	Average	Moderate
26	MTA	MTA	Seating, planters, designated smoking area	0.24	0.00	0.24	Average	Moderate
<b>TOTAL</b>				<b>23.79</b>	<b>11.99</b>	<b>11.80</b>		

**Chapter 6: Open Space and Recreational Facilities**

**Table 6-3 (cont'd)  
Open Space Resources**

Map No. <sup>1</sup>	Name	Owner	Amenities	Total Acres	Active	Passive	Condition	Use Level
<b>Open Spaces not included in the Non-Residential Quantitative Analysis</b>								
A	Brooklyn Bear's Pacific Street Community Garden	TPL	Garden, benches	0.12	0.00	0.12	Good	Heavy
B	Atlantic Center Seating	FCRC	Benches, plantings	0.09	0.00	0.09	Good	Moderate
C	Warren/St. Marks Community Garden	NA	Garden, seating	0.05	0.00	0.05	Good	NA
D	Baltic Street Community Garden at P.S. 133 <sup>5</sup>	NA	Garden, seating	0.10	0.00	0.10	Good	NA
E	Community Garden at Street Marks Place	NA	Garden, seating	0.08	0.00	0.08	Good	NA
F	Community Garden at Prospect Place	NA	Garden, seating	0.07	0.0	0.07	Good	NA
G	Hollenbach Community Garden	NA	Garden, seating	0.16	0.00	0.16	Good	NA
H	Gateway Triangle	DPR	Trees, flowers, plants, landscaping	0.07	0.00	0.07	Good	NA
<b>TOTAL</b>				<b>0.74</b>	<b>0.00</b>	<b>0.74</b>		
<b>Open Spaces not included in the Residential Quantitative Analysis</b>								
I	Fowler Square at Fulton Street and Lafayette Avenue	TPL	Lawn, landscaping, trees, benches, pagoda	0.16	0.00	0.16	Good	NA
J	Brooklyn Bear's Rockwell Place Garden <sup>6</sup>	DPR	Garden, seating	0.03	0.00	0.03	Good	NA
K	Lincoln Berkeley Community Garden	NA	Garden, seating	0.05	0.00	0.05	Good	NA
L	Classon Ful-Gate Garden	Greenthumb	Garden, seating	0.12	0.00	0.12	Good	NA
M	Clifton Place Block Assn Community Garden	Greenthumb	Garden, seating	0.08	0.00	0.08	Good	NA
N	Greene Garden	Greenthumb	Garden, seating	0.08	0.00	0.08	Good	NA
O	Fort Greene Park	DPR	Rolling lawns, trees, monuments, playgrounds, basketball, and tennis courts	30.17	15.08	15.09	Excellent	Heavy
P	Thomas Greene Playground	DPR	Playground, basketball and handball courts, trees, benches, and picnic tables	2.53	1.27	1.26	Good	Moderate
Q	Gardens of Union	DPR	Garden, seating	0.20	0.00	0.20	Good	NA
R	Prospect Park	DPR	Lawns, paths, landscaped areas, water features, baseball diamonds, playgrounds, trees, seating, bandshell	585.00	292.5	292.5	Excellent	Heavy
S	Crispus Attucks Playground	DPR	Playground, handball courts, trees, benches	0.93	0.74	0.19	Average	NA
<b>TOTAL</b>				<b>620.09</b>	<b>309.59</b>	<b>310.50</b>		

**Notes:**

- <sup>1</sup> See Figure 6-2.
- <sup>2</sup> Field is open to the public outside of regular school hours. During scheduled practices and games, the public can use portions of the field not being utilized.
- <sup>3</sup> School playground closes at 6 PM.
- <sup>4</sup> The eight acres of Grand Army Plaza used in this analysis represents usable open space.
- <sup>5</sup> Contains a playground that is accessory space to P.S. 133.
- <sup>6</sup> A portion of the community garden is being used temporarily for construction staging by the MTA. The acreage of the garden has been adjusted to reflect existing conditions.

NA = Not Available

**Sources:** New York City Department of Parks and Recreation (DPR); New York City Department of Education (DOE); New York City Housing Authority (NYCHA); Police Athletic League (PAL); Trust for Public Land (TPL); Forest City Ratner Companies (FCRC); AKRF, Inc. field surveys: April 2004 (updated in summer 2005).

## **Atlantic Yards Arena and Redevelopment Project EIS**

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A privately owned, publicly accessible open space is a recent addition to the area. A 0.50-acre triangular-shaped plaza is located in front of the Atlantic Terminal Mall/Bank of New York Tower (which sits directly above the LIRR Flatbush Terminal) along Atlantic Avenue. This large paved plaza features tables with shade-umbrellas and chairs during warmer months. Permanent benches are located along the perimeter. This passive open space is associated with the Atlantic Terminal Mall and Bank of New York Tower and is primarily intended for use by employees, shoppers, and transit users. Although it is not intended as a destination open space, it is accessible to everyone.

Eight city parks under the jurisdiction of DPR are located within the non-residential study area and contain both active and passive uses. The largest of these—Dean Playground, Greene Park/P.S. 11 Playground, and Cuyler Gore—are each over 1 acre in size. Dean Playground and Greene Park (1.30 and 1.26 acres, respectively) are mostly paved and are predominantly used for active recreation. Amenities include playgrounds with play equipment and basketball and handball courts. P.S. 11 also uses Greene Park as its playground. Cuyler Gore is used primarily for passive recreation. At 1.16 acres, this open space fills the entire triangle-shaped block on which it is located. It contains trees, landscaped areas, and benches. The play areas are aimed at younger children and feature jungle gyms and play equipment. In June 2006, South Oxford Park, was opened to the public. The new open space is located at South Oxford Street and Atlantic Commons, just north of the project site. The 0.6-acre park features asphalt tennis courts, playground equipment, spray showers, a synthetic turf oval, a casual play area, and a community garden. The park consists of active and passive open space (approximately 0.3 acres of each).

The irregular street grid forms several small medians that have been converted into passive recreational space. Lowry Triangle and Temple Square both have seating and trees.

Three other playgrounds in the study area are associated with public schools. While these are primarily for the use of students attending these schools, they are open for use by the community outside of school hours. The Charles B. Wang Field at Brooklyn Technical High School was renovated in 2001 by the Take the Field initiative. Take the Field is a public-private partnership dedicated to rebuilding outdoor athletic facilities at New York City public schools. The 0.81-acre open space is in excellent condition and features a football/soccer field, a four-lane 400-meter track, and bleachers. P.S. 9 Playground is just under one acre in size and consists of a paved open area, play equipment, and basketball and handball courts. P.S. 38/The Pacific School Playground has recently been renovated. The new design includes a turf field surrounded by running tracks, a basketball court, baseball diamond, and new jungle gym.

Across the street from the project site to the north is the New York City Housing Authority's (NYCHA) Atlantic Terminal Houses. This development has a tower-in-the-park configuration, which consists of a residential tower surrounded by lawns, trees, walkways, benches, and playgrounds. The open space is divided into two areas by a one-story senior citizens center: the Carlton Avenue side, the northern half of the open space; and the Atlantic Avenue side, the southern half. Although the open space associated with this type of housing development is primarily meant for residents, these spaces are publicly accessible and are therefore included in this analysis. The acreage of this open space has been adjusted to reflect that some of the open areas adjacent to the residential building are fenced off and not accessible.

### ***RESIDENTIAL STUDY AREA***

Within the residential study area, 26 publicly accessible open spaces and recreational resources serve the surrounding residential and commercial populations. The residential study area

contains a total of approximately 23.79 acres of public open spaces, and includes all of the public parks and open spaces listed in the non-residential study area.

Grand Army Plaza/Memorial Arch (eight acres) is the largest open space within this study area. The open space is the central feature of an oval-shaped street pattern and consists of an oval-shaped inner plaza surrounded by an additional ring of predominantly passive open space. A multi-lane rotary separates the inner plaza and the outer ring. The plaza also acts as an entranceway to Prospect Park, a 585-acre park located across the street from the residential study area boundary. The most prominent feature of the inner plaza is a massive 80-foot arch. The arch, similar to the Arc de Triomphe in Paris, is a military memorial that is elaborately carved and decorated with bronze sculptures. Another prominent feature of the center plaza is the Bailey Fountain which includes a sculpture of Neptune and is surrounded by a strolling and seating area. Additional fountains and sculptures are also found within the plaza, including a monument to John F. Kennedy. Other amenities include trees, benches, landscaping, flowers, and plants. The outer ring of the plaza consists of a berm (a mound of earth used as a barrier) that was designed to block out the urban setting. The berm also acts as a sound barrier between the traffic rotary and the residences that surround the plaza. Although the berm is fenced off and inaccessible (and therefore not included in the quantitative analysis), it is covered with trees and plants and is an important visual resource. Benches and a widened sidewalk around the berm allow for further enjoyment of Grand Army Plaza. Across the street from the arch, at the entrance to Prospect Park, the plaza hosts a weekend Greenmarket where local vendors sell a variety of products.

Several of the open spaces in the ½-mile study area are associated with schools or housing projects. A few of these school-related open spaces—Park Slope/P.S. 282 Playground and Edmunds/J.H.S. 294 Playground—are under the jurisdiction of DPR and are publicly accessible and generally larger, with more amenities. These spaces have a variety of features, including playgrounds with jungle gyms, swings, slides, benches, paved play areas, basketball courts, and rest rooms. P.S. 56 playground is under the jurisdiction of the New York City Department of Education (DOE). Similar to other school playgrounds, this playground is open to the public after school hours. It consists of a paved area with a playground and basketball courts.

Gowanus Houses and Wyckoff Gardens open spaces are under the jurisdiction of NYCHA, and are housing developments with tower-in-the-park configurations located on superblocks within the residential study area. As mentioned earlier, while these open spaces are primarily meant for use by residents, they are accessible to the public. Features are consistent with other NYCHA developments and include lawns, benches, walkways, trees, playgrounds, basketball and handball courts, and parking. The Nicholas Nequan Heyward Jr. Park, under the jurisdiction of DPR, is located on the grounds of the Gowanus Houses. This park contains handball and basketball courts, play areas, jungle gyms, and benches. A Police Athletic League (PAL) playground is located along Baltic Street between 3rd and 4th Avenues adjacent to a residential building. This small playground contains jungle gyms with seating located along the perimeter.

It should be noted that approximately half of Fort Greene Park, a 30-acre, substantial open space resource (see “Qualitative Assessment” below), is located within ½ mile of the project site. However, it is not included in the quantitative analysis because it is located in a census tract that is less than 50 percent within the ½-mile radius.

## **ADEQUACY OF OPEN SPACES**

### *NON-RESIDENTIAL STUDY AREA*

As described in “Study Area Open Spaces,” the analysis of the non-residential study area focuses on passive open spaces that may be used by workers in the area. To assess the adequacy of the open spaces in the area, the ratio of workers to acres of open space is compared with DCP’s planning guideline of 0.15 acres of passive space per 1,000 workers. In addition, the passive open space ratio for both workers and residents in the area is compared with the recommended weighted average ratio.

The non-residential study area includes a total of 8.72 acres of open space, of which approximately 2.93 acres are passive space. A total of 23,866 residents live in this vicinity, and 14,404 people work within the non-residential study area boundary. The combined residential and worker population is 38,270.

Based on *CEQR Technical Manual* guidelines, the area has a ratio of 0.20 acres of passive open space per 1,000 workers, which is higher than the City’s guideline of 0.15 acres (see Table 6-4). But the combined passive open space ratio is 0.08 acres per 1,000 residents and workers, which is lower than the recommended weighted average ratio of 0.37 acres per 1,000 residents and workers. There is therefore a deficiency in passive open space to serve the combined non-residential and residential populations.

### *RESIDENTIAL STUDY AREA*

There is a total of 23.79 acres of open space in the residential study area, which is almost evenly split between active and passive uses (11.99 acres and 11.80 acres, respectively). With a total residential population of 65,515, the residential study area has an overall open space ratio of approximately 0.36 acres per 1,000 residents (total active and passive open space acreage divided by total residential population). This is less than the citywide median of 1.5 acres per 1,000 residents and the City’s optimal planning goal of 2.5 acres of combined active and passive open space ratio per 1,000 residents. The area currently has a shortage of open space, a situation that is typical of many neighborhoods in New York City.

The shortage of active open space is pronounced as the residential study area’s residential active open space ratio is only 0.18 acres per 1,000 residents, substantially less than the planning goal of 2.0 acres per 1,000 residents. The area’s residential passive open space ratio (0.18 acres per 1,000 residents) is also below the recommended goal of 0.5 acres per 1,000 residents.

When the employees who work within the residential study area are added to the population, the passive open space ratio is lower. With a worker and residential population of 106,639, the combined passive open space ratio in the residential study area is 0.11 acres, lower than the recommended weighted average ratio of 0.37 acres per 1,000 residents and workers.

### *QUALITATIVE ASSESSMENT*

Several open spaces were not included in the quantitative analysis but are located within ¼ and ½ mile of the project site. These open spaces include several community gardens, a few DPR parks, and several private open spaces.

**Table 6-4  
2010 Analysis of Adequacy of Open Spaces  
in the Non-Residential and Residential Study Areas**

Non-Residential Study Area (¼-Mile Radius)				
	Existing Conditions	Future without the Proposed Project (No Build Conditions)	Future with the Proposed Project (Build Conditions)	
			Residential Mixed-Use Variation	Commercial Mixed-Use Variation
<b>Study Area Population</b>				
Residents	23,866 <sup>1</sup>	24,771	29,201	26,881
Workers	14,404 <sup>2</sup>	14,691	17,621	22,591
<b>Total</b>	38,270	39,462	46,822	49,472
<b>Open Space Acreage</b>				
Passive	2.93	2.93	2.93	2.93
<b>Open Space Ratios</b>				
Recommended Weighted Average Ratio for Passive	0.37/1,000 residents and workers	0.37/1,000 residents and workers	0.37	0.34
Combined Passive (Residents and Workers)	0.08/1,000 residents and workers	0.07/1,000 residents and workers	0.06	0.06
Passive (Workers)	0.20/1,000 workers	0.20/1,000 workers	0.17	0.13
<b>Percent Change in Ratios</b>			<b>No Build to Build</b>	
Combined Passive (Residents and Workers)			(15.70%)	(20.22%)
Passive (Workers)			(16.58%)	(34.94%)
Residential Study Area (½-Mile Radius)				
	Existing Conditions	Future without the Proposed Project (No Build Conditions)	Future with the Proposed Project (Build Conditions)	
			Residential Mixed-Use Variation	Commercial Mixed-Use Variation
<b>Study Area Population</b>				
Residents	65,515 <sup>1</sup>	68,997	73,426	71,106
Workers	41,124 <sup>2</sup>	41,516	44,436	49,406
<b>Total</b>	106,639	110,513	117,862	120,512
<b>Open Space Acreage</b>				
Total	23.79	23.79	23.79	23.79
Active	11.99	11.99	11.99	11.99
Passive	11.80	11.80	11.80	11.80
<b>Open Space Ratios</b>				
Active (Residents)	0.18/1,000 residents	0.17/1,000 residents	0.16	0.17
Recommended Weighted Average Ratio for Passive	0.37/1,000 residents and workers	0.37/1,000 residents and workers	0.37	0.36
Combined Passive (Residents and Workers)	0.11/1,000 residents and workers	0.11/1,000 residents and workers	0.10	0.10
<b>Percent Change in Ratios</b>			<b>No Build to Build</b>	
Active (Residents)			(6.03%)	(2.97%)
Combined Passive (Residents and Workers)			(6.24%)	(8.30%)
<b>Sources:</b>				
<sup>1</sup> U.S. Census of Population and Housing, 2000.				
<sup>2</sup> Census Transportation Planning Package, 2000.				

Community gardens are a valuable open space resource. The Brooklyn Bear’s Pacific Street Community Garden is located adjacent to Site 5. The 0.12-acre triangular-shaped garden is located along Flatbush Avenue at Pacific Street and features a variety of flowers, plants, and trees enclosed by a decorative metal fence. A bench is also located within the garden to allow for appreciation of the surroundings. This is one of 12 gardens scattered throughout the overall

study area. Given that access is limited to members (a phone number for membership information is listed at the sites) or to the few hours when the gardens are open, these gardens are not included in the quantitative analysis. However, they do serve as important visual and passive recreational resources to the community.

Within ½ mile of the project site, the largest New York City park is Fort Greene Park (30 acres), which occupies approximately eight city blocks bounded by Myrtle Avenue, Washington Park, DeKalb Avenue, and St. Edwards Street. Fort Greene Park is a destination park devoted to both active and passive uses, and contains walkways, benches, trees, open grassy areas, monuments, basketball and tennis courts, and playgrounds. Thomas Greene Playground and Crispus Attucks Playground (2.53 and 0.93 acres, respectively) contain active and passive uses. Since these parks are located outside of the census tract study area, even though they are located within ½ mile of the project site, they are not included in the quantitative analysis. However, these resources are used by the area's population and substantially improve open space conditions in the area.

Two open spaces are created out of the irregular street pattern. Gateway Triangle, a small, 0.07-acre park, is located at the intersection of Gates and Vanderbilt Avenues, and Fulton Street within the commercial study area. This open space has been developed into a garden with a wide variety of trees, plants, flowers, and other landscaping. Although under the jurisdiction of DPR, the triangle is locked and inaccessible. Fowler Square, a private open space that is inaccessible to the public, is located within the residential study area bounded by Fulton Street, Lafayette Avenue, and St. Felix Street. The space contains a rolling landscape, a pagoda, flowers, pathways, and seating. Since both of these spaces are locked and inaccessible, they were not included in the quantitative analysis, but they do contribute to the aesthetic appeal of the area.

Also not included in the quantitative analysis is a privately owned, publicly accessible seating area located in front of the entrance to Atlantic Center. This small (0.09 acres) seating area, known as Atlantic Center Seating, consists of several cube-shaped planters with benches attached to four sides.

Prospect Park, Brooklyn's 585-acre preeminent destination park, is located across the street from the residential study area boundary. Prospect Park contains an abundance of features, including rolling hills, a forest, a 60-acre lake, the Prospect Park Zoo, and several facilities for cultural activities, including a band shell for live music. Because of its size, Prospect Park serves as a valuable open space resource for the residents within the study area and the entire borough.

## **D. FUTURE WITHOUT THE PROPOSED PROJECT—2010**

### **STUDY AREA POPULATION**

#### *NON-RESIDENTIAL STUDY AREA*

As described in Chapter 2, "Procedural and Analytical Framework," several new projects are expected to be completed in the non-residential study area by 2010 in the future without the proposed project. The largest of these developments, the Williamsburgh Savings Bank Building, is currently being converted into 189 residential units, with ground-floor retail, and 30,000 square feet of dental office space, by 2007. These projects would increase the residential population to 24,771 and the worker population to 14,691. The 2010 combined residential and worker population in the non-residential study area is projected at 39,462 persons.

*RESIDENTIAL STUDY AREA*

By 2010, it is expected that residential and worker populations within the residential study would also increase. Several new projects are located within the residential study area (but outside the non-residential study area) and include residential and retail development, and some parking. One of the largest of these projects, with over 500 residential units, would be located at 80 DeKalb Avenue. Incorporating other projects anticipated in the future without the proposed project, the residential study area population (including the residential growth from the non-residential study area) is estimated to be 68,997. The total non-residential population within the residential study area is expected to increase to 41,516. By 2010, the total population of the residential study area, including workers and residents, is estimated to be 110,513.

**STUDY AREA OPEN SPACES**

*NON-RESIDENTIAL STUDY AREA*

No changes to open spaces are expected by 2010. The passive open space in the non-residential study area would remain 2.93 acres.

*RESIDENTIAL STUDY AREA*

By 2010, no changes to open space are expected to occur within the residential study area. This results in 23.79 acres of open space, including 11.99 acres of active and 11.80 acres of passive open space.

**ADEQUACY OF OPEN SPACES**

*NON-RESIDENTIAL STUDY AREA*

New developments in the study area are expected to introduce new workers and residents to the area in the future without the proposed project, resulting in a slight decrease in the combined passive open space ratio. This ratio (measured in acres per 1,000 residents and workers) would decrease from 0.08 acres in the existing condition to 0.07 acres in the future without the proposed project (see Table 6-4). The recommended weighted average ratio would remain at 0.37 acres per 1,000 residents and workers. A shortfall of passive open space would continue into the future without the proposed project.

Considering only the worker population, the passive open space ratio would remain at 0.20 acres per 1,000 workers and would still be higher than the 0.15 acres per 1,000 workers recommended by DCP.

*RESIDENTIAL STUDY AREA*

The active open space ratio is expected to decrease by approximately 2.5 percent from 0.18 to 0.17 acres per 1,000 residents as a result of anticipated development in the residential study area independent of the proposed project. This would still be lower than the DCP recommended guidelines.

The passive open space ratio for the combined population is expected to experience a slight decrease of less than 1 percent. Since the decrease is so small, the ratio would remain the same as under existing conditions (0.11 acres per 1,000 workers and residents). The recommended weighted average for the combined population would also remain unchanged at 0.37 acres per 1,000 residents

and workers. Thus, in the future without the proposed project, the combined passive ratio (0.11) would continue to be lower than the recommended weighted average ratio (0.37).

### *QUALITATIVE DISCUSSION*

According to DPR, funding is in place for the renovation and possible expansion of Dean Playground (located within the non-residential study area). Although these renovations have yet to be finalized, proposed changes include improving the park's basketball courts and baseball diamond by replacing deteriorating asphalt, fencing and backstops; resurfacing the playground, providing new playground equipment, and creating an enclosed grassy area. Because the design has not been finalized, negotiations for expansion are still underway, and a construction start date has not been determined, the renovation and construction are not included quantitatively. The upgrade and expansion would add recreational opportunities to the neighborhood.

As mentioned above, Prospect and Fort Greene Parks (totaling over 615 acres of active and passive open space) are located just outside the open space study area boundary with approximately half of Fort Greene Park situated within ½ mile of the project site. It is likely that both residents and workers would continue to take advantage of the recreational resources that these destination parks have to offer and that these amenities would substantially enhance open space conditions.

## **E. PROBABLE IMPACTS OF THE PROPOSED PROJECT—2010**

As discussed in Chapter 2, "Procedural and Analytical Framework," the proposed project would be developed in two phases. The project sponsors anticipate that Phase I of the proposed project would be complete in 2010; project components expected to be complete and operational in 2010 include the newly reconfigured and upgraded below-grade rail yard and the development planned for the arena block (consisting of Buildings 1 through 4 in addition to the arena) and Site 5 (see Chapter 1, "Project Description").

Phase I of the proposed project would include a number of open space and publicly accessible amenities, including the Urban Room, private open space on the roof of the arena, and small streetscape plazas located along the Atlantic and Flatbush Avenue frontages of proposed arena. Located at the southeast corner of Flatbush Avenue and Atlantic Avenue at the base of Building 1, the glass-enclosed Urban Room would provide a place for people to congregate and would serve as a gateway to the project site. A new transit hub entrance would also be located in the Urban Room. In addition, private open space intended for use by the project site tenants would be built on a portion of the roof of the proposed arena. This private open space would consist of passive recreation amenities, including seating, landscaping, and walkways, and access to views of the surrounding area. These Phase I amenities are not included in the quantitative analysis but their benefits are discussed in "Qualitative Considerations" below.

The potential open space impacts of both the residential and commercial mixed-use variations are discussed below.

## **STUDY AREA POPULATION**

Both scenarios of the proposed project would introduce new residents and employees to the study area by 2010. As described in Chapter 1, "Project Description," the initial phase of construction would result in the development of the arena block and Site 5.

*NON-RESIDENTIAL STUDY AREA*

*Residential Mixed-Use Variation*

The completion of Phase I of the residential mixed-use variation would introduce 4,430 new residents, 80 residential workers, 70 hotel workers, 270 retail employees, 1,340 office workers, 1,120 arena employees, and 50 parking employees to the ¼-mile study area. As a result, the new residential population would increase to 29,201 and the non-residential population would rise to 17,621. The total combined population is estimated to be 46,822.

*Commercial Mixed-Use Variation*

In 2010, the completion of the commercial mixed-use variation would introduce 2,110 new residents, 40 residential employees, 270 retail employees, 6,420 office workers, 1,120 arena employees, and 50 employees at the parking facility. The total worker population in the non-residential study area with the completion of the first phase of the proposed project would be 22,591. The residential population would be 26,881. It is expected that the total daily open space user population in the non-residential study area would reach 49,472 by 2010 (see Table 6-4).

*RESIDENTIAL STUDY AREA*

*Residential Mixed-Use Variation*

In 2010, based on the population introduced to the area by the residential mixed-use variation, as described above, the worker and residential populations within the ½-mile study area are expected to be 44,436 and 73,426, respectively. The total user population within the residential study area is expected to reach 117,862 at the completion of Phase I.

*Commercial Mixed-Use Variation*

The population added to the ½-mile study area as a result of the commercial mixed-use variation is expected to increase the worker population to 49,406. The residential population would reach 71,106. By 2010, the combined worker and residential population would rise to 120,512 within the residential study area.

**STUDY AREA OPEN SPACES**

As stated above, the publicly accessible open space component of the proposed project would not be created during Phase I. The eight acres of publicly accessible open space would be created during Phase II and is therefore discussed in “Probable Impacts of the Proposed Project—2016” below. The open space amenities provided in Phase I are described under “Qualitative Considerations” below.

*NON-RESIDENTIAL STUDY AREA*

Phase I of the proposed project would not add publicly accessible open space to the area. As a result, the amount of passive open space would remain unchanged from the future without the proposed project conditions at 2.93 acres.

*RESIDENTIAL STUDY AREA*

As discussed previously, publicly accessible open space would not be added to the residential study area under Phase I of the proposed project. Therefore, the total amount of open space

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would be 23.79 acres. The passive open space would continue to be 11.80 acres; the amount of active open space would remain unchanged at 11.99 acres.

### **ADEQUACY OF OPEN SPACES**

#### *NON-RESIDENTIAL STUDY AREA*

##### *Residential Mixed-Use Variation*

As a result of the residential mixed-use variation, the combined passive open space ratio is expected to decrease from 0.07 to 0.06 acres per 1,000 residents and workers from conditions without the proposed project (approximately 16 percent). The recommended weighted average would remain constant at 0.37 acres per 1,000 workers and residents. The ratio would remain substantially lower than the recommended weighted average ratio. The non-resident passive open space ratio would decline from 0.20 acres to 0.17 acres per 1,000 workers. While this would represent a 17 percent decrease in the ratio, the ratio would continue to be greater than the 0.15 acres per 1,000 workers recommended by DCP. The worker population would therefore continue to be well served by passive open space.

##### *Commercial Mixed-Use Variation*

The combined passive open space ratio would decrease from 0.07 acres per 1,000 workers and residents in the future without the proposed project to 0.06 acres per 1,000 residents and workers in the future with the proposed project (see Table 6-4). This ratio would continue to be lower than the recommended weighted average ratio of 0.34 acres per 1,000 residents and workers and represents a decrease of approximately 20 percent. The passive open space ratio would decrease to 0.13 from 0.20 acres per 1,000 non-residents in the future without the proposed project. This would represent a decrease in the ratio of approximately 35 percent; the ratio would be lower than the DCP-recommended ratio of 0.15 acres per 1,000 workers. Under the commercial mixed-use variation, the worker population would be underserved by passive open space.

#### *RESIDENTIAL STUDY AREA*

##### *Residential Mixed-Use Variation*

With the residential mixed-use variation, the active open space ratio within the residential study area would decrease by approximately 6 percent to 0.16 acres per 1,000 residents from 0.17 acres per 1,000 residents—well below the DCP guideline of 2.0 acres. The passive open space ratio for the combined population would also decrease by approximately 6 percent, from 0.11 to 0.10 acres per 1,000 residents and workers. This ratio would continue to be lower than the recommended weighted average ratio of 0.37 acres per 1,000 residents and workers.

##### *Commercial Mixed-Use Variation*

The active open space ratio under the commercial mixed-use variation would decrease by just under 3 percent. This small decrease would not represent a change in the active open space ratio as compared with conditions without the proposed project (0.17 acres per 1,000 residents). As a result of the greater rate of growth in the worker population than in the residential population, the recommended weighted average would decrease from 0.37 to 0.36 acres per 1,000 residents and workers. The combined passive ratio would decline by approximately 8 percent, from 0.11 to 0.10 acres per 1,000 workers and residents. Both the worker and residential populations would continue to be underserved by active and passive open space.

## IMPACT SIGNIFICANCE

### QUANTITATIVE DISCUSSION

#### *Non-Residential Study Area*

In the future without the proposed project, the passive open space ratio in the non-residential study area for workers would remain above the levels recommended by DCP. Under the commercial mixed-use variation, the passive open space ratio for workers in the non-residential study area would be lower than levels recommended by DCP. Thus, there would be a shortage of passive open space for workers under the commercial mixed-use variation. This condition would not occur under the residential mixed-use variation due to the lower worker population.

Under both development scenarios, the combined passive open space ratio in the non-residential study area would continue to be substantially less than DCP's recommended weighted average. Both scenarios would represent a substantial decrease in the combined passive open space ratio. The effect of the added populations would amount to sizeable decreases in the combined open space ratios under both scenarios and, from a quantitative standpoint, would result in a significant decrease in open space resources. Both variations would exacerbate an existing shortfall of passive open space for the total population.

Providing new publicly accessible open space by the end of Phase I on the project site is not practical given that the areas that could be used as open space are needed for construction staging, worker parking, and materials storage in order to minimize construction impacts on the surrounding neighborhood. Thus, based on the analysis of quantitative factors listed in the *CEQR Technical Manual*, the proposed project would result in a temporary significant adverse impact within the non-residential (¼-mile) study area at the end of Phase I until the Phase II open space is phased in. By 2016 (full development of the proposed project), the passive and combined passive open space ratios would improve and the temporary significant adverse impact experienced in 2010 would be eliminated by the proposed project's eight acres of publicly accessible open space constructed incrementally between Phase I and Phase II.

Mitigation for the significant noise impact on Dean Playground (see Chapter 15, "Noise"), which would include a number of improvements to make this space more enjoyable to the general public would also serve to partially mitigate the significant adverse impact in the non-residential study area (see Chapter 19, "Mitigation").

#### *Residential Study Area*

The combined passive open space ratio under both scenarios would continue to be substantially lower than the weighted average recommended by DCP. However, it is recognized that these are goals that are not feasible and not achievable for many areas of the city. Both variations would exacerbate an existing shortfall of passive open space for the total population, but the percentage changes in the open space ratios for the ½-mile residential study area are much smaller than in the ¼-mile non-residential study area. The changes in the open space ratios would be partially offset by the proposed project's Phase I private open space and other publicly accessible amenities not included in the quantitative analysis, most notably Prospect Park and Fort Greene Park, which are located along the edges of the study area and are well utilized by the study area population. These resources would help alleviate the burden on existing open spaces within the study areas. As discussed in "Qualitative Considerations" below, no significant adverse impacts

to open spaces in the residential study area are anticipated as a result of the proposed project in 2010.

*QUALITATIVE CONSIDERATIONS*

Phase I of the proposed project would include the development of Site 5 (Block 927) and the arena block, which comprises the properties on Blocks 1118, 1119, and 1127, in addition to the closed portions of Pacific Street between Flatbush and 6th Avenue, and 5th Avenue between Atlantic and Flatbush Avenues. As noted previously, the Brooklyn Bear's Pacific Street Community Garden, which shares the block with Site 5, is not part of the proposed project and would remain unchanged as a result. Although Phase I would not add any publicly accessible open spaces, several amenities are anticipated that would add to the area's pedestrian experience (see Figure 6-3).

A prominent pedestrian feature on the arena block is the Urban Room, which would be located at the southeast corner of Flatbush Avenue and Atlantic Avenue at the base of Building 1. The Urban Room, as currently conceived, would consist of a large, minimum of 10,000-square-foot, publicly accessible atrium that would provide a place for people to congregate and would serve as a gateway to the project site. This glass-enclosed space is expected not only to serve as an entrance to Building 1, the arena and the transit hub, but would include programming that would serve as a destination, including small concerts, cultural events, art shows, and readings that would be open to the public. Within the Urban Room, a café would be centrally located in the middle of this space and located on the street level for ease of access for pedestrians going to and from the subway and the street during both event and non-event periods. The second level mezzanine of the Urban Room, accessed externally by a grand stoop at the corner of Atlantic and Flatbush Avenues or internally by a number of stairs and escalators, would be activated by a restaurant and hotel lobby uses. The arena ticket booths would also be located in the Urban Room (see Chapter 1, "Project Description," for further details). There would be a small outdoor plaza—approximately 1,300 square feet—at the entrance to the Urban Room.

In addition, approximately one acre of private open space intended for use by the project site tenants would be built on a portion of the roof of the proposed arena. This open space would partially offset the additional demands on open space resources in the study areas expected from the population generated as a result of the proposed project. The rooftop open space is expected to consist of passive recreation amenities, including seating, landscaping, and walkways, and access to views of the surrounding area. This green space would be designed with detention and retention basins to limit the amount of runoff that flows directly into the City's water drainage system (see Chapter 11, "Infrastructure," for discussion of green design features). Phase I of the proposed project would also include public seating areas, situated around the outside of the arena along Atlantic and Flatbush Avenues.

As stated above, the quantitative analysis excludes several open spaces that are just outside of the study area, including the 585-acre Prospect Park and the 30-acre Fort Greene Park. The presence of these two large open spaces, located just outside the residential study area boundaries, contribute to the qualitative factors that would partially offset additional demand on open space within the residential study area in 2010. Although the declines in residential study area open space ratios are substantial given the study area's existing lack of open space resources, the qualitative assessment concludes that the proposed project would not result in a significant adverse impact to open space in the residential study area.

## **F. FUTURE WITHOUT THE PROPOSED PROJECT—2016**

### **STUDY AREA POPULATION**

#### *NON-RESIDENTIAL STUDY AREA*

Two projects, Atlantic Center and the Brooklyn Academy of Music Local Development Corporation's (BAM LDC) Visual and Performing Arts Library, are expected to increase the population in the non-residential study area between 2010 and 2016 (see Chapter 2, "Procedural and Analytical Framework"). In addition to the developments completed by 2010, these projects would increase the residential population to 26,609 and the non-resident population to 17,153. The 2016 combined residential and non-residential population in the non-residential study area is projected to be 43,762 (see Table 6-5).

#### *RESIDENTIAL STUDY AREA*

Several of the new projects within the residential study area (but outside the non-residential study area) are expected to be developed as a result of the rezoning associated with the Downtown Brooklyn Development Plan. These projects would bring residential, office, and retail uses to the study area. In addition to the projects expected to be completed by 2010, it is estimated that there would be 73,065 residents and 47,766 workers in the residential study area by 2016. The combined residential and non-residential population is projected to be 120,831.

### **STUDY AREA OPEN SPACES**

#### *NON-RESIDENTIAL STUDY AREA*

No additional open space improvements are planned within the study area between 2010 and 2016. Passive open space in the non-residential study area would remain at 2.93 acres.

#### *RESIDENTIAL STUDY AREA*

Approximately 0.16 acres of passive open space (BAM LDC North project, see Table 2-1 in Chapter 2, "Procedural and Analytical Framework") is expected to be added to the residential study area by 2016, bringing the total to 11.96 acres of passive open space. The amount of active open space would remain at 11.99 acres. By 2016, the total amount of open space within the residential study area would be 23.95 acres.

### **ADEQUACY OF OPEN SPACES**

#### *NON-RESIDENTIAL STUDY AREA*

In 2016 without the proposed project, the combined passive open space ratio would decrease to 0.07 acres per 1,000 residents and workers (see Table 6-5). As a result of the greater rate of growth in the worker population than in the residential population, the recommended weighted average ratio is expected to fall slightly from 0.37 to 0.36 acres, and there would still be a shortfall of passive open space.

Considering only the worker population, the passive open space ratio is expected to fall from 0.20 to 0.17 acres per 1,000 workers, remaining higher than the 0.15 acres per 1,000 workers recommended by DCP.

**Table 6-5**  
**2016 Analysis of Adequacy of Open Spaces**  
**in the Non-Residential and Residential Study Areas**

Non-Residential Study Area (¼-Mile Radius)				
	Existing Conditions	Future without the Proposed Project (No Build Conditions)	Future with the Proposed Project (Build Conditions)	
Study Area Population			Residential Mixed-Use Variation	Commercial Mixed-Use Variation
Residents	23,866 <sup>1</sup>	26,609	<u>40,108</u>	<u>37,788</u>
Workers	14,404 <sup>2</sup>	17,153	<u>20,753</u>	<u>25,713</u>
<b>Total</b>	38,270	43,762	<u>60,861</u>	<u>63,501</u>
Open Space Acreage				
Passive	2.93	2.93	<u>10.13</u>	<u>10.13</u>
Open Space Ratios				
Recommended Weighted Average Ratio for Passive	0.37/1,000 residents and workers	0.36/1,000 residents and workers	0.38	0.36
Combined Passive (Residents and Workers)	0.08/1,000 residents and workers	0.07/1,000 residents and workers	<u>0.17</u>	<u>0.16</u>
Passive (Workers)	0.20/1,000 workers	0.17/1,000 workers	<u>0.49</u>	<u>0.39</u>
Percent Change in Ratios			No Build to Build	
Combined Passive (Residents and Workers)			<u>148.59%</u>	<u>138.26%</u>
Passive (Workers)			<u>185.76%</u>	<u>130.64%</u>
Residential Study Area (½-Mile Radius)				
	Existing Conditions	Future without the Proposed Project (No Build Conditions)	Future with the Proposed Project (Build Conditions)	
Study Area Population			Residential Mixed-Use Variation	Commercial Mixed-Use Variation
Residents	65,515 <sup>1</sup>	73,065	<u>86,565</u>	<u>84,245</u>
Workers	41,124 <sup>2</sup>	47,766	<u>51,366</u>	<u>56,326</u>
<b>Total</b>	106,639	120,831	<u>137,931</u>	<u>140,571</u>
Open Space Acreage				
Total	23.79	23.95	<u>31.95</u>	<u>31.95</u>
Active	11.99	11.99	<u>12.79</u>	<u>12.79</u>
Passive	11.80	11.96	<u>19.16</u>	<u>19.16</u>
Open Space Ratios				
Active (Residents)	0.18/1,000 residents	0.16/1,000 residents	0.15	0.15
Recommended Weighted Average Ratio for Passive	0.37/1,000 residents and workers	0.36/1,000 residents and workers	0.37	0.36
Combined Passive (Residents and Workers)	0.11/1,000 residents and workers	0.10/1,000 residents and workers	<u>0.14</u>	<u>0.14</u>
Percent Change in Ratios			No Build to Build	
Active (Residents)			<u>(9.96%)</u>	<u>(7.48%)</u>
Combined Passive (Residents and Workers)			<u>40.34%</u>	<u>37.70%</u>
<b>Sources:</b>				
<sup>1</sup> U.S. Census of Population and Housing, 2000.				
<sup>2</sup> Census Transportation Planning Package, 2000.				

**RESIDENTIAL STUDY AREA**

In the residential study area, the active open space ratio is expected to decrease by approximately 8 percent, from 0.18 to 0.16 acres per 1,000 residents, and thus would continue to be lower than DCP recommended guidelines. The passive open space ratio for the combined

population is expected to decrease from 0.11 to 0.10 acres per 1,000 workers and residents (by approximately 8 percent). The recommended weighted average ratio for passive open space for the total population would also decrease from 0.37 to 0.36 acres per 1,000 residents and workers. The combined passive ratio in the future without the proposed project (0.10 acres per 1,000 residents and workers) continues to represent a shortfall of passive open space within the residential study area.

#### *QUALITATIVE DISCUSSION*

As previously noted, Dean Playground, located within the non-residential study area, is expected to be renovated and potentially expanded. It is also expected that both residents and workers would continue to utilize the active and passive open spaces in Prospect and Fort Greene Parks, both located just outside the residential open space study area.

### **G. PROBABLE IMPACTS OF THE PROPOSED PROJECT—2016**

Phase II of the proposed project is expected to be complete by 2016. In addition to the development completed in Phase I, the Phase II development would include 11 residential buildings (Buildings 5 through 15) with community facilities, local retail use, and eight acres of publicly accessible active and passive open space on a deck constructed over the renovated rail yard. The proposed publicly accessible open space would account for approximately 36 percent of the entire project site acreage. The open space has been designed, and the buildings around the open space have been arranged, to create contiguous open space on the project site and to promote public access to, and use of, this space. The site area created by the closure of Pacific Street between Carlton and Vanderbilt Avenues would allow for a unified open space plan, and would allow for a contiguous footprint to accommodate a major sustainable design element—water features that serve as detention and retention basins that are part of the project’s comprehensive stormwater management system (see Chapter 11, “Infrastructure”). This open space would include a number of entrances. In the east-west direction, the open space would continue along Pacific Street (including the closed portion between Carlton and Vanderbilt Avenues), preserving this corridor as a pedestrian thoroughfare east of the arena block. In the north-south direction, the open space would extend to Atlantic Avenue with entrances located across from the terminus of each of the neighborhood streets to the north. The open space would also extend to Pacific and Dean Streets, linking the project site to Fort Greene and Clinton Hill to the north both visually and functionally. A bicycle path would also be included as another open space amenity that would further link the project site to the surrounding area and would create a greater sense of the public accessibility of the open space. New publicly accessible open space would be added incrementally between 2010 and 2016 as construction of each of the buildings east of 6th Avenue (Phase II) are completed.

The proposed open space has been designed to maximize the number of users accommodated by the eight acres dedicated to open space. Passive areas such as walkways, seating, and open lawn space are capable of serving larger numbers of users when compared with active areas, such as basketball and tennis courts, baseball diamonds, and soccer fields, with their specialized programming and limited number of users. The open space would not be an appropriate venue for large playing fields, because such uses would consume most of the available area and require fencing, which would make the open space seem smaller and less public. Thus, approximately 7.2 acres (90 percent) of the open space areas would be programmed for passive and flexible use, consisting of paths and lawns for strolling, sitting, people watching, and picnics. The balance of the open space area, approximately 0.8 acres (10 percent), would be designated for

active uses and include a half basketball court, a volleyball court, two bocce courts, and a children's playground.

All of the proposed, publicly accessible open space would be at street level and would include features that invite local residents and workers into the space. The open space would be designed without fences or gates. Complementary types of retail and community facility uses (the intergenerational facility) are expected to line the perimeter of the open space. This open space, as discussed below, would have a number of elements, including plazas, boardwalks, water features, lawns, and a quiet garden. The open space would be available for public use from 7:00 AM to 10:30 PM from May through September, and from 7:00 AM to the later of 8:00 PM and sunset in other months, seven days a week. These access hours are similar to those of other city parks.

The potential open space impacts of both the residential mixed-use and commercial mixed-use variations are discussed below.

## **STUDY AREA POPULATION**

As fully described in Chapter 1, "Project Description," full development of the proposed project would introduce new residential, worker, and visitor populations to the study area by 2016, including those populations added before 2010. It is assumed that all planned projects included in the future without the proposed project that are expected to be completed between 2010 and 2016 would be realized in the future with the proposed project.

### *NON-RESIDENTIAL STUDY AREA*

#### *Residential Mixed-Use Variation*

In 2016, 13,500 residents and 3,600 non-residents would be introduced to the residential study area as a result of full development of the residential mixed-use variation. As a result, the worker population would rise to 20,753 and the residential population would reach 40,108. The total population is expected to increase to 60,861.

#### *Commercial Mixed-Use Variation*

By 2016, the completion of the commercial mixed-use variation would introduce a total of 8,560 workers and 11,180 residents to the non-residential study area. Upon completion of the commercial mixed-use variation, the total non-residential population in the non-residential study area would be 25,713, while the residential population would be 37,788. It is expected that the total daily open space user population in the non-residential study area would reach 63,501 by 2016.

### *RESIDENTIAL STUDY AREA*

#### *Residential Mixed-Use Variation*

In 2016, the residential and non-residential populations would increase to 86,565 and 51,366, respectively. The total open space user population within the residential study area is expected to reach 137,931 by 2016.

#### *Commercial Mixed-Use Variation*

As a result of the commercial mixed-use variation, the residential and non-residential population would reach 84,245 and 56,326, respectively. By 2016, the total daily open space user population

within the residential study area under the commercial mixed-use variation would increase to 140,571.

## STUDY AREA OPEN SPACES

### *DESCRIPTION OF PROPOSED OPEN SPACE*

In Phase II, eight acres of publicly accessible open space would be designed as one park that spans from the edge of the proposed buildings to the property line of Blocks 1120, 1121, and 1129. The open space is designed to take advantage of the site's unique location at the convergence of several street grids and draw together the surrounding neighborhoods. All entrances to this open space would be designed as gateways at least 60 feet wide (comparable to the width of a neighborhood street) with an axis leading to a visible interior focal destination and/or through the block to the opposite street (see Figure 6-4). The open space has been designed to allow users to see into and through the open space from points of entry. This design allows users to see access and egress points from any location within the open space, increasing the safe and inviting character of this space (see viewshed diagrams on Figures 6-5a and 6-5b).

This open space would be an integral part of the mixed-use development, facilitating connections between the residential neighborhoods to the north and south of the project site, and repairing the existing gap in the neighborhood fabric. The proposed project would increase street-level activity on the project site by creating at-grade active and passive open space and providing complementary uses (including local retail and community facility uses) on the ground floors of the residential buildings (see Figure 6-6). The open space has also been designed to maximize the amount of tree canopy cover as trees cool and clean the air, buffer sound, and create a more human and comfortable scale for the open space. This open space, in addition to the other components of the proposed project, would revitalize an area currently composed largely of dilapidated, vacant, and underutilized properties.

The design of the proposed open space considered the shadow effects of the proposed project's buildings in its placement of open space and recreational amenities. Major landscape elements would be located where they will maximize their exposure to the midday sun, from 11:00 AM to 2:00 PM, throughout the year (see Figures 6-7a, 6-7b, and 6-7c). The open space design also takes advantage of smaller pockets of sun that exist in the early mornings and late afternoons, when other areas of the site are in shade. These landscape spaces are designed for passive uses and typically include benches, tables, and chairs. For example, even in December when buildings on the project site cast the longest shadows, the proposed open space would receive sunlight during afternoon periods (see Figure 6-7c).

On Block 1120, much of the planned open space would be located adjacent to and along Pacific Street, with wide openings/passageways between the three planned residential buildings (see Figure 6-8). These openings, or passageways, would create landscaped connections to, and align the open space with, the Fort Greene street grid to the north of Atlantic Avenue. This would create north-south visual and physical connections. As currently envisioned, the "connecting" open space between Buildings 5 and 6 would feature a paved area with planting beds, café terraces, and trees; the open space adjacent to Building 7 would contain a plaza with planting beds, seating, and a half basketball court, or other recreational amenities. Pacific Street would be designed with a continuous street edge garden with street trees, benches, and border planting (see Figure 6-9). A flat lawn with plantings around its edges is planned for the area buttressed by the two wings of Building 6.

Blocks 1121 and 1129 would be combined (with the intervening Pacific Street closed to vehicular traffic and incorporated into open space) to create a unified publicly accessible open space (see Figure 6-10). There would be several open space access points: two points along Atlantic Avenue, aligned to the Fort Greene street grid to the north; three points along Dean Street; and one point at each end of the through-block meandering path, the Pacific Street pedestrian pathway, which would broadly align itself with the closed portion of Pacific Street at Carlton and Vanderbilt Avenues (see Figures 6-11a and 6-11b for entrances at Carlton and Vanderbilt Avenues, respectively). The Pacific Street pedestrian pathway would consist of a wide walkway lined with trees and benches and would be delineated with a cobbled edge. The pedestrian pathway would wind around several active and passive open space features, including a lawn surrounded by trees; one fenced children's playground; a water feature surrounded by plantings, paths, benches, and café terraces; and an active play area with volleyball, bocce, and benches for viewing (see Figures 6-12 and 6-13). The ground floors of the buildings adjacent to the Pacific Street pedestrian pathway within the proposed open space would be lined with complementary uses—such as restaurants, cafés, and delis—which could have both interior and exterior areas.

Along with the Pacific Street pedestrian pathway, there would be another through-block path that would connect Dean Street and Atlantic Avenue near the end of Clermont Avenue; trees, seating, and water features would line this pathway (see Figure 6-14). As discussed above, the water features would serve dual purposes as detention and retention basins, which are fundamental elements of a comprehensive stormwater management system. The westernmost entrance along Atlantic Avenue would consist of a path lined with plantings and a pergola with vines. The buildings to the south of the open space on Block 1129 would be lower in height allowing sunlight to reach into the open space.

A bicycle path would also be included as another open space amenity that would further link the project site to the surrounding area and would create a greater sense of the public accessibility of the open space (see Figure 6-3). The dedicated southbound bicycle path would be part of the City's Bicycle Network Development Program and part of the larger citywide network of bicycle lanes and paths (see Chapter 12, "Traffic and Parking"). The bike path would enter the project site along Atlantic Avenue at Cumberland Street. The path would continue southbound between Buildings 6 and 7. The route would turn east running along Pacific Street. The path would reenter the project site at the Pacific Street pedestrian pathway at Carlton Avenue. As currently conceived, it would continue southeast around Building 14 to Dean Street. The bike path would continue eastward along Dean Street toward Vanderbilt Avenue where it would connect with the larger network. The path would be approximately five feet wide and, within the boundaries of the project site, consist of approximately 0.07 acres. Although the bicycle path goes through a portion of the project site, conflicts with pedestrian or passive uses of the space would be minimal. A bicycle station providing storage for 400 bikes, space for a bicycle repair shop, and an accessory retail shop would be located in the base of Building 3 on the arena block.

Amenities would also include public restrooms, an information booth, and on-site maintenance facilities and personnel. All project-created open spaces would comply with Americans with Disabilities Act (ADA) guidelines. As previously noted, the open space would be available for public use from 7:00 AM to 10:30 PM from May through September, and from 7:00 AM to the later of 8:00 PM and sunset in other months, seven days a week. The proposed open space would be owned by a conservancy or other not-for-profit entity established by the project sponsors, which would be responsible for maintenance, operation and security. The conservancy or other not-for-profit entity will be governed by a board, which will include representatives of

the project sponsors, civic group(s) active in park matters, representatives of the surrounding properties on the project site, and, on an *ex officio* basis, DPR and local community boards.

In addition, some of the residential buildings constructed during Phase II would have private rooftop open space.

#### *NON-RESIDENTIAL STUDY AREA*

As a result of the proposed project, passive open space would more than triple from 2.93 to 10.13 acres.

#### *RESIDENTIAL STUDY AREA*

As a result of the eight acres of open space included as part of the proposed project, the total amount of open space in the residential study area would increase to approximately 31.95 acres in 2016. The additional open space would increase passive and active totals to 19.16 and 12.79 acres, respectively.

### **ADEQUACY OF OPEN SPACES**

#### *NON-RESIDENTIAL STUDY AREA*

##### *Residential Mixed-Use Variation*

As a result of the open space component of the residential mixed-use variation, the combined passive open space ratio is expected to increase from 0.07 to 0.17 acres per 1,000 residents and workers when compared with the conditions in the future without the proposed project (see Table 6-5). This would represent more than a 148 percent increase in the ratio, substantially improving the conditions that would exist in the future without the proposed project. The ratio would continue to be lower than the recommended weighted average ratio of 0.38 acres per 1,000 residents and workers. The non-resident passive open space ratio would also increase from 0.17 acres to 0.49 acres per 1,000 workers. This would represent more than a 185 percent increase in the passive open space ratio and would be substantially greater than the 0.15 acres per 1,000 workers recommended by DCP. Accordingly, the worker population would continue to be well served by passive open space.

##### *Commercial Mixed-Use Variation*

The combined passive open space ratio under the commercial mixed-use variation would increase from 0.07 to 0.16 acres per 1,000 workers. Although this ratio would be lower than the recommended weighted average ratio of 0.36<sup>1</sup> acres per 1,000 residents and workers, this change would represent an approximately 138 percent increase in the open space ratio. The passive open space ratio would increase by approximately 131 percent to 0.39 acres per 1,000 non-residents when compared with the future without the proposed project. This ratio would continue to be appreciably higher than the DCP recommended ratio of 0.15 acres per 1,000 workers.

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<sup>1</sup> The recommended weighted average under the commercial mixed-use variation would be lower than the recommendation under the residential mixed-use variation given that more workers than residents would be introduced to the area under the commercial mixed-use variation, and considering that passive open space guidelines for workers are lower than those for residents.

*RESIDENTIAL STUDY AREA*

*Residential Mixed-Use Variation*

In 2016, the active open space ratio within the residential study area would decrease slightly (by approximately 10 percent) from 0.16 to 0.15 acres per 1,000 residents, remaining well below the DCP guideline of 2.0 acres per 1,000 residents. The passive open space ratio for the combined population would increase by approximately 40 percent, from 0.10 acres to 0.14 acres per 1,000 residents and non-residents. This ratio would continue to be lower than the recommended weighted average ratio of 0.37 acres per 1,000 residents and workers.

*Commercial Mixed-Use Variation*

Under the commercial mixed-use variation, the active open space ratio would decrease by approximately 7.5 percent from 0.16 to 0.15 acres per 1,000 residents. The passive open space ratio for the combined population would increase by approximately 38 percent from 0.10 to 0.14. This ratio would continue to be lower than the recommended weighted average ratio of 0.36 acres per 1,000 residents.

**IMPACT SIGNIFICANCE**

*QUANTITATIVE DISCUSSION*

*Non-Residential Study Area*

The open space component of both variations would result in increases in both the passive and combined passive open space ratios in the non-residential study area. Under both variations, passive open space ratios would be more than double the DCP-recommended 0.15 acres per 1,000 workers. The residential mixed-use variation would result in an approximately 186 percent increase in the passive open space ratio for workers from conditions in the future without the proposed project (it would increase from 0.17 to 0.49 acres per 1,000 workers). The passive open space ratio for workers under the commercial mixed-use variation would result in an approximately 131 percent increase from 0.17 to 0.39 acres per 1,000 workers. This indicates that the worker population would be well served by passive open spaces in the non-residential study area under both residential and commercial mixed-use variations.

Although the combined ratio for passive open space remains below DCP recommendations, the passive open space added to the area as a result of the proposed project would increase these ratios. Under the residential mixed-use variation, the combined passive ratio would increase by more than 148 percent (from 0.07 to 0.17) and under the commercial mixed-use variation the ratio would increase by approximately 138 percent (from 0.07 to 0.16) as compared with conditions in the future without the proposed project.

*Residential Study Area*

The active open space ratios would decrease and remain below the levels recommended by DCP for both variations, but these levels are not considered impact thresholds, as it is understood that they are not feasible for most neighborhoods in New York City. While the open space ratio planning guidelines would not be met, nearby open spaces outside the study area, such as Prospect Park and Fort Greene Park, would serve as additional resources (see “Qualitative Considerations”). In addition, the proposed project would create new open spaces that would partially offset the effect of additional population. The combined passive open space ratio under

both variations would increase substantially when compared with conditions in the future without the proposed project, but would still be lower than the weighted average recommended by DCP. The added open space, as part of the residential and commercial mixed-use variations, would result in increases of approximately 40 and 38 percent, respectively, in the combined passive open space ratios of the residential and the commercial mixed-use variations.

#### *QUALITATIVE CONSIDERATIONS*

The proposed project would introduce a connected system of eight acres of open space that would serve residents, workers, and visitors alike. This open space would also create north-south connections and improve access between the surrounding neighborhoods. As demonstrated in the quantitative analysis (see Table 6-5), the creation of the new open space would meet the passive open space needs for the future populations expected to work on the project site. Although the combined passive open space ratios are still well below DCP guidelines, the increase in open space would help reduce the open space deficit. In considering the significance of the projected decline in the active open space ratios as a result of the proposed project, it is important to note that the proposed project would add approximately 0.8 acres of active open space where it would not otherwise exist.

There are a number of important factors not addressed in the quantitative analysis of open space ratios in the future with the proposed project. In addition to the project's publicly accessible open space component, the proposed project would include a number of open space amenities: the Urban Room, approximately one acre of private open space on the roof of the arena and public seating areas situated around the arena block (all constructed during Phase I), and private rooftop open space on some of the residential buildings constructed during Phase II. In addition, two of the most significant open spaces in this area of Brooklyn, the 585-acre Prospect Park and the 30-acre Fort Greene Park, are located just outside the residential study area, and the active spaces located in these open space resources would be used by residents of the proposed project.

The proposed project would affect an open space in another way. It would result in a significant adverse shadows impact on the Atlantic Terminal Houses—both the Carlton Avenue and Atlantic Avenue sides—which would experience incremental shadows from the full development (see Chapter 9, “Shadows”). On the cooler analysis days when shadows are longer (March/September and December), the duration and extent of the shadow coverage would adversely affect users as these shadows might diminish the attraction to use this open space resource. Potential mitigation for this shadow impact is discussed in Chapter 19, “Mitigation.”

A temporary significant open space impact would result upon completion of Phase I of the proposed project in the non-residential study area, and that impact would be eliminated by the open space provided in Phase II. Overall, the proposed project would create eight acres of active and passive open space in what historically was an exposed, below-grade open rail yard, providing a substantial amount of high-quality open space resources and recreational opportunities for both residents and non-residents. Therefore, the proposed project would not result in significant adverse open space impacts upon completion of Phase II. \*