

**A. INTRODUCTION**

This chapter examines the extent and character of existing open space resources and population in Manhattanville, and addresses the effects of the Proposed Actions on the area's open spaces.

Using City Environmental Quality Review (CEQR) criteria, an analysis of open space is conducted to determine whether a proposed action would have either a direct or indirect impact on area open spaces. A direct effect on an open space would occur if the proposed action would cause the physical loss of public open space; change the use of an open space so that it no longer serves the same user population; limit public access to an open space; or cause increased noise or air pollutant emissions, odors, or shadows that would affect its usefulness, whether on a permanent or temporary basis. An indirect impact would occur if the proposed action would overtax available open space. According to the *CEQR Technical Manual*, an initial quantitative open space assessment may be useful to determine if a detailed open space analysis is necessary, or whether the open space assessment can be targeted to a particular user group. This initial assessment calculates an open space ratio by relating the existing residential and non-residential populations to the total open space in the study area. It then compares that ratio with the open space ratio in the future with the proposed action. If there is a decrease in the open space ratio that would approach or exceed 5 percent, or if the study area exhibits a low open space ratio from the onset (indicating a shortfall of open spaces), a detailed analysis is warranted. The detailed analysis examines passive and active open space resources available to both residents and non-residents (e.g., daily workers and visitors) within study areas delineated in accordance with the *CEQR Technical Manual*.

The Proposed Actions would have the potential to result in significant adverse shadow and noise impacts on open spaces; therefore, an assessment of the potential for the Proposed Actions to result in direct effects on area open spaces is provided. In addition, the Proposed Actions would add substantial new residential and non-residential populations to the study areas, and in some cases would result in a decrease in the open space ratios by greater than 5 percent. Therefore, a detailed open space assessment has been conducted.

**PRINCIPAL CONCLUSIONS**

The Proposed Actions would establish new areas of passive open space in Manhattanville that would be available to area residents, existing and future workers, and visitors. Proposed open spaces would be located in the new Academic Mixed-Use Development between Broadway and Twelfth Avenue and include: open space on the block bounded by Broadway and Twelfth Avenue, West 129th, and West 130th Streets at Site 3 (the Small Square); at the western tip of Site 1 between West 125th and West 129th Streets (the Grove); and just west of the center of the new Academic Mixed-Use Development between West 130th and West 131st Streets (the Square). In addition, the Proposed Actions would include midblock open areas in the new Academic Mixed-Use Development, including north-south open areas extending between West 129th and West 133rd Streets, and an east-west midblock open area extending between Broadway and Old Broadway. These open spaces

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would be landscaped plazas with seating. In total, the Proposed Actions would create 2.16 acres (93,965 square feet) of privately owned, publicly accessible open space.

*DIRECT EFFECTS*

The Proposed Actions would result in direct significant adverse impacts on open spaces due to shadows. In 2015 the Proposed Actions would result in no impacts, but in 2030, shadows from the proposed buildings are expected to result in a significant adverse impact on the I.S. 195 Playground during the March and December analysis periods, when large incremental shadows would cover the playground for long durations (see Chapter 7, “Shadows”). Mitigation measures to reduce or fully mitigate the Proposed Actions’ shadow impact on the I.S. 195 Playground are discussed in Chapter 23, “Mitigation.”

*INDIRECT EFFECTS*

As shown in Table 6-1, in the existing and future without the Proposed Actions conditions, passive open space ratios are all above the City’s open space guidelines. Like many areas in Manhattan, the existing and future without the Proposed Actions active open space ratio and the combined total residential study area open space ratio are below City guidelines of 2.0 acres of active open space per 1,000 residents, and 2.5 acres of total open space per 1,000 residents (see below in “Methodology”). However, the *CEQR Technical Manual* recognizes that these goals are not feasible for many areas of the City, and they are not considered specific impact thresholds. Rather, the ratios are benchmarks that represent areas well served by open space.

**Table 6-1  
Summary Open Space Ratios, 2015 and 2030**

Ratio	City Guideline Ratio	Existing Ratio	Future Without the Proposed Actions	Future with the Proposed Actions	Percent Change
			Ratio	Ratio	
<b>2015 Non-Residential Study Area</b>					
Passive/non-residents	0.15	5.04	<u>4.13</u>	2.45	(40.7)
Passive/total population	0.40	0.78	<u>0.78</u>	0.71	(9.0)
<b>2015 Residential Study Area</b>					
Total/residents	2.5	1.68	<u>1.64</u>	<u>1.66</u>	<u>1.2</u>
Passive/residents	0.5	0.90	<u>0.88</u>	<u>0.90</u>	<u>2.3</u>
Active/residents	2.0	0.79	<u>0.75</u>	0.76	<u>1.3</u>
Passive/total population	0.39	0.66	<u>0.63</u>	0.61	(3.2)
<b>2030 Non-Residential Study Area</b>					
Passive/non-residents	0.15	5.04	<u>4.13</u>	1.66	(59.8)
Passive/total population	0.38	0.78	<u>0.73</u>	0.59	(19.2)
<b>2030 Residential Study Area</b>					
Total/residents	2.5	1.68	<u>1.52</u>	<u>1.52</u>	<u>0</u>
Passive/residents	0.5	0.90	<u>0.82</u>	0.83	<u>1.2</u>
Active/residents	2.0	0.79	<u>0.70</u>	0.69	(1.4)
Passive/total population	0.38	0.66	<u>0.60</u>	0.55	(8.3)
<b>Note:</b> Ratios in acres per 1,000 people.					

The Proposed Actions would increase the residential and non-residential population over the existing and future without the Proposed Actions conditions in both 2015 and 2030, and would also create new privately owned, publicly accessible open space resources for a total of approximately 93,965 square feet by 2030. The Proposed Actions would not displace or eliminate any existing open space resources, and the new resources are intended to provide a better connectivity of open space resources to existing and future workers and residents in the area.

The combined effect of this change is presented in Table 6-1, which shows that while overall open space ratios would decrease with the Proposed Actions, the combination of existing and new resources would provide for all passive open space ratios to be substantially higher than established City guidelines. However, because passive open space ratios would decrease in the non-residential study area, the Proposed Actions would result in a significant adverse impact on passive open spaces in this study area in both the 2015 and 2030 analysis years.

Although the active open space ratios would continue to be below the levels recommended by the City in the future with the Proposed Actions, it is recognized that this goal is not feasible for many areas of the City, and they are not considered impact thresholds. As described below, according to the *CEQR Technical Manual*, a 5 percent decrease in open space ratios is considered a substantial change warranting a detailed analysis. However, in areas where the open space ratio is very low (e.g., below 1.5 acres per 1,000 residents), a decrease of 1 percent or less in the open space ratio may result in a potential significant adverse impact on open space. The Proposed Actions would reduce the active open space ratio by 1.4 percent by 2030. Because the active open space ratio is substantially lower than established City guidelines, this decline would constitute a significant adverse impact on active open spaces in the 2030 analysis year.

In considering the significance of the projected decline in the open space ratios, it is important to note that the Proposed Actions would add open space where it would not otherwise exist. There are a number of factors not accounted for in the quantitative analysis of open space ratios in the future with the Proposed Actions. As described in the proposed Special Manhattanville Mixed-Use Zoning District text (see Appendix A.1), mandatory five-foot widened sidewalks on some east–west cross streets would be required. The setbacks along these east–west streets would have to be improved as paved surfaces with planted landscape treatments permitted, potentially including seating, as required by the proposed rezoning. While these open areas would be accessible directly from an adjoining public sidewalk, they are not included in the quantitative analysis as passive open space.

Because the Proposed Actions could result in indirect significant adverse impacts on passive and active open spaces, it is necessary to identify measures to mitigate these impacts to the greatest extent practicable. Mitigation measures are discussed in detail in Chapter 23.

## **B. METHODOLOGY**

The open space analysis has been conducted in accordance with the methodology set forth in the *CEQR Technical Manual*.

### **DIRECT EFFECTS ANALYSIS**

As stated above, a direct effect on an open space would occur if the Proposed Actions would cause the physical loss of public open space; change the use of an open space so that it no longer serves the same user population; limit public access to an open space; or cause increased noise or air pollutant emissions, odors, or shadows that would affect its usefulness, whether on a

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permanent or temporary basis. This chapter uses information from Chapter 7, Chapter 19, “Air Quality,” and Chapter 20, “Noise,” to determine whether the Proposed Actions would directly affect any of the area open spaces. In addition, a discussion of the potential for the Proposed Actions to impact the open spaces created as part of the Proposed Actions is provided. The direct effects analysis is included in the “2015 Future with the Proposed Actions” and “2030 Future With the Proposed Actions” sections of this chapter.

The potential for the Proposed Actions to result in direct impacts on open space during the construction period is assessed in Chapter 21, “Construction.”

### **INDIRECT EFFECTS ANALYSIS**

#### *STUDY AREAS*

The first step in assessing potential open space impacts is to establish study areas that encompass the likely open space resources that would be used by the new population(s) to be added as a result of the Proposed Actions. The study area is based on the distance a person is assumed to walk to reach a neighborhood open space. Workers typically use passive open spaces and are assumed to walk 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. They are assumed to walk about 20 minutes (about a ½-mile distance) to reach both passive and active neighborhood open spaces. Because the Proposed Actions would have components that would generate both new residents and workers, two study areas were evaluated: a worker or commercial study area based on a ¼-mile distance from the Project Area, and a residential study area based on a ½-mile distance.

#### *Non-Residential Study Area*

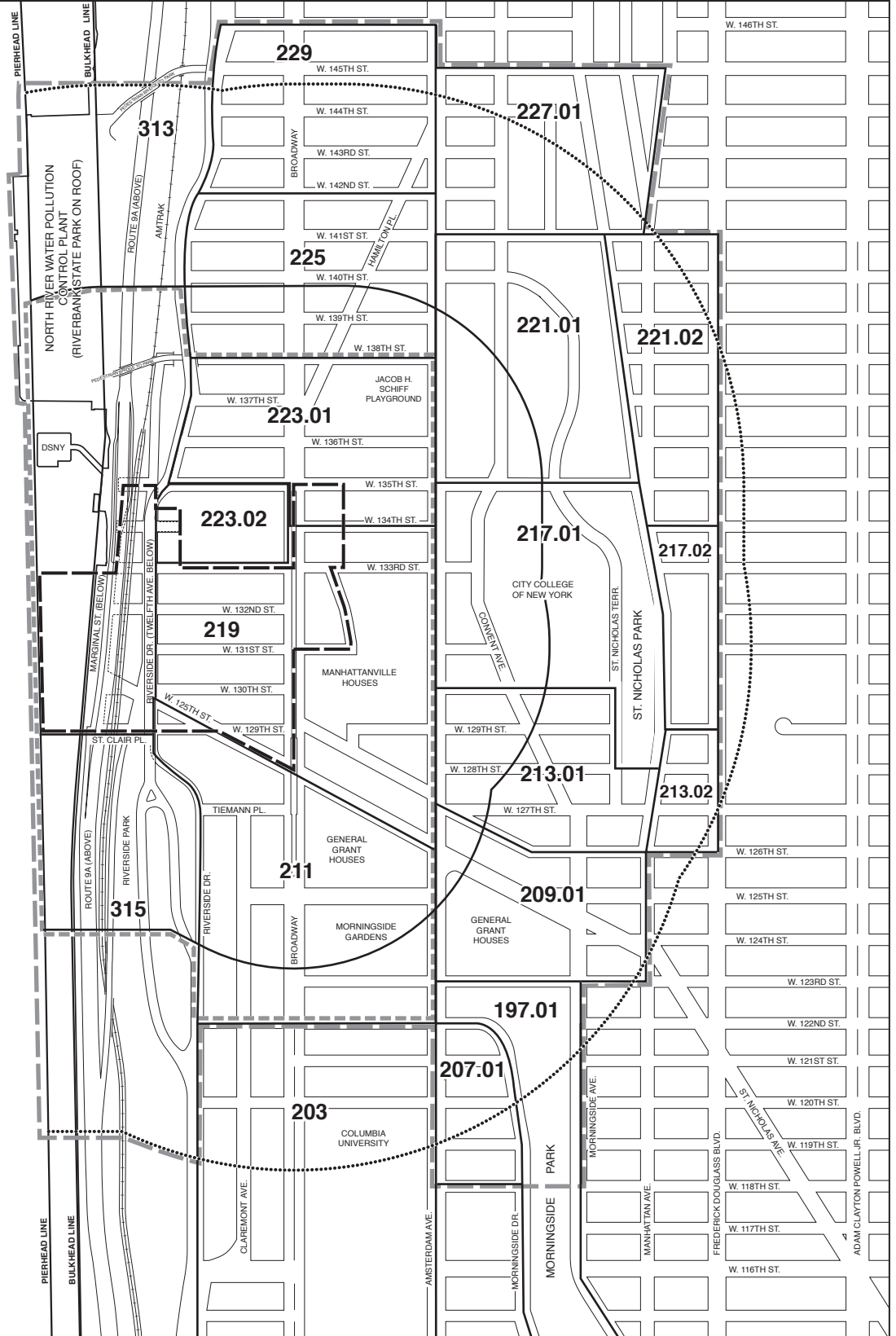
As recommended in the *CEQR Technical Manual*, the “non-residential” open space study area comprises all census tracts that have 50 percent of their area located within ¼ mile of the Project Area. All open spaces, as well as all residents and employees within census tracts that fall at least 50 percent within the ¼-mile radius, were included in the study area for non-residents (see Figure 6-1), with the exception of tracts 313 and 315, located west of Twelfth Avenue. Tract 313 is located in the Project Area and extends north from St. Clair Place to Dyckman Street in Community District 12. Because this tract is so large, less than 50 percent of the tract falls within the non-residential study area. However, a portion of the Project Area is located in this tract and is not excluded from the analysis. The percentage of the tract, in land area, that was located within the non-residential study area was applied to the total employment of the tract (there are no residential uses in those portions of the tract located within the non-residential study area). The same methodology was applied to tract 315, which extends south from St. Clair Place to West 72nd Street.

#### *Residential Study Area*

As described above, residents typically walk up to ½ mile for recreational spaces. While they may also visit certain regional parks (like Central Park), such open spaces were not included in the quantitative analysis but were described qualitatively. Therefore, the open space study area includes all census tracts that have at least 50 percent of their area located within ½ mile of the Project Area. All open spaces and the residents and employees of all census tracts that fall at least half within this radius were included in the study area (see Figure 6-1).



HUDSON RIVER



- Project and Rezoning Area Boundary
- Census Tract Boundary
- 1/4-Mile Perimeter
- 1/2-Mile Perimeter
- Residential Study Area
- Non-Residential Study Area

**203** Census Tract Number



The methodology described above for tracts 313 and 315 was also applied to the residential study area; the percentage of the tracts, in land area, that was located within the residential study area was applied to the total employment for the tracts (there are no residential uses in those portions of the tracts located within the residential study area). Although less than 50 percent of tract 197.01 is located in the residential study area, the location of the tract is in the middle of two tracts that are included (tracts 207.01 and 209.01) in the residential study area (see Figure 6-1). It assumed the proposed new residents and workers from the Proposed Actions would use the open space in that tract due to its location. Therefore, the methodology described above was also applied to tract 197.01.

#### *OPEN SPACE USER POPULATIONS*

Demographic data were used to identify potential open space users (residents and workers) within the non-residential and residential study areas. To determine the number of residents currently located within the study areas, data were compiled from the 2000 Census for the tracts in each study area. The age distribution of the residential population was noted, as children and elderly residents are typically more dependent on local open space resources. Employment data were also compiled for the tracts in each study area from the 2000 “reverse journey-to-work” data provided by the United States Department of Transportation (USDOT).

In addition, since development resulting from the Proposed Actions is being analyzed for two future year conditions (2015 and 2030), population and employment projections have been made for these baseline conditions in the future without the Proposed Actions. These estimates were based on known developments expected to be completed by 2015. As described in Chapter 2, “Procedural and Analytical Framework,” no specific developments have been identified for completion between 2015 and 2030. For the purpose of this open space analysis, a background growth rate of 0.5 percent per year between 2015 and 2030 was applied to the residential population. Finally, an estimate of the new worker and resident population generated by the Proposed Actions was added to the 2015 and 2030 baseline conditions to determine the future with the Proposed Actions population estimates.

#### *INVENTORY OF OPEN SPACE RESOURCES*

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. Public spaces that do not offer usable recreational areas, such as spaces where seating is unavailable, were excluded from the survey, as were open spaces that are not easily accessible by the general public. The information used for this analysis was gathered through field studies conducted in June 2004 on weekdays and from the New York City Department of Parks and Recreation (DPR). At 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 such activities as strolling, reading, sunbathing, and people-watching. Some spaces, such as lawns, public esplanades, and dog runs, can be both active and passive recreation areas.

In addition to the open spaces located within the residential study area and the non-residential study area, open spaces falling outside the study areas were considered qualitatively. These spaces provide additional open space resources to the residential and non-residential populations. Also included were “destination parks,” such as portions of Riverside Park and Morningside

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Park that are located beyond the ½-mile radius of the Project Area but would be likely to be visited by the user populations studied.

### *ADEQUACY OF OPEN SPACE RESOURCES*

#### *Criteria for Quantified Analysis*

The adequacy of open space in the study areas was quantitatively assessed using a ratio of usable open space acreage to the study area population, referred to as 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 the Proposed Actions would change the open space ratios in the study areas compared with the ratios in the future without the Proposed Actions. 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. However, if a study area exhibits a low open space ratio (i.e., below the guidelines set forth in the *CEQR Technical Manual*, indicating a shortfall of open space), even a small decrease in that ratio as a result of the action may have an adverse effect and would warrant detailed analysis. As stated above, this chapter provides a detailed analysis of open space ratios.

#### *Comparison to City Guidelines*

To assess the adequacy of the quantity of open space resources, open space ratios were compared against goals set by the City. Although these open space ratios are not meant to determine whether a proposed 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 have been used in this analysis:

- For non-residential populations, 0.15 acres of passive open space per 1,000 non-residents is typically considered adequate.
- For residential populations, the City attempts to achieve a ratio of 2.5 acres per 1,000 populations 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. 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, these are benchmarks that represent how well an area is served by its open space. Throughout New York City, local open space ratios vary widely, and the median ratio at the Community District level is 1.5 acres of open space per 1,000 residents.
- For the combined resident and non-resident population, a target open space ratio, established by creating a weighted average of the amount of open space necessary to meet the City guideline of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 non-residents, is considered in this analysis. Because this ratio changes depending on the proportion of residents and non-residents in each study area, Table 6-2 outlines the amount of open space needed in each condition in each study area, and calculates the weighted average ratio of passive open space acres per 1,000 combined residents and non-residents in the existing and future year conditions with and without the Proposed Actions.

**Table 6-2**  
**Weighted Average Passive Open Space Ratios**  
**for Combined Residential and Non-Residential Populations**

Condition	Non-Residential Study Area				Residential Study Area			
	Acres Needed for Non-Residents <sup>1</sup>	Acres Needed for Residents <sup>2</sup>	Total Acres Needed	Ratio: Acres/1,000 people <sup>3</sup>	Acres Needed for Non-Residents <sup>1</sup>	Acres Needed for Residents <sup>2</sup>	Total Acres Needed	Ratio: Acres/1,000 people <sup>3</sup>
Existing conditions	0.81	14.78	15.59	0.45	3.87	35.77	39.63	0.41
<b>2015</b>								
Future without Proposed Actions	<u>1.04</u>	<u>15.45</u>	<u>16.52</u>	<u>0.43</u>	<u>4.46</u>	<u>37.58</u>	<u>42.04</u>	0.40
Future with Proposed Actions	1.84	15.10	16.94	0.40	<u>5.23</u>	<u>37.23</u>	<u>42.46</u>	0.39
<b>2030</b>								
Future without Proposed Actions	<u>1.04</u>	<u>16.60</u>	<u>17.67</u>	<u>0.44</u>	<u>4.46</u>	<u>40.36</u>	<u>44.82</u>	0.41
Future with Proposed Actions	2.86	17.36	20.22	0.38	<u>6.25</u>	<u>41.12</u>	<u>47.37</u>	0.38
<b>Notes:</b>								
<sup>1</sup> Based on the number of non-residents in the study area and the <i>CEQR Technical Manual</i> guideline recommending 0.15 acres of open space per 1,000 non-residents.								
<sup>2</sup> Based on the number of residents in the study area and the <i>CEQR Technical Manual</i> guideline recommending 0.50 acres of passive open space per 1,000 residents.								
<sup>3</sup> Accounts for the total open space acres needed for both residents and non-residents as well as the total residential and non-residential population in each study area.								

### *Impact Assessment*

The impact assessment is based on how the Proposed Actions would change the open space ratios in the study areas combined with a qualitative assessment of factors such as the availability of nearby destination resources, the beneficial effects of new open space resources provided by the project, and the comparison of projected open space ratios with established City guidelines. It is recognized that the open space ratios of the City guidelines described above are not feasible for many areas of the City, and they are not considered impact thresholds on their own. Rather, these are benchmarks that indicate how well an area is served by open space.

## **C. EXISTING CONDITIONS**

### **STUDY AREA POPULATION**

#### *NON-RESIDENTIAL STUDY AREA*

Based on the study area criteria described above, Figure 6-1 shows the non-residential study area, which generally extends to West 140th Street to the north, West 122nd Street to the south, Amsterdam Avenue to the east, and the Hudson River to the west. The non-residential study area includes four full census tracts—211, 219, 223.01, and 223.02—and portions of two other



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census tracts that fall within ¼ mile of the Project Area—tracts 313 and 315. Geographic Information System (GIS) mapping analyses were conducted to determine the percentages of census tracts 313 and 315 to be included in the non-residential study area. These percentages were applied to New York State Department of Labor and New York City Department of City Planning data to determine worker populations within each portion of tracts 313 and 315<sup>1</sup>.

*Non-Residential Population*

Based on year 2000 reverse journey-to-work data provided by USDOT, the worker population within the non-residential study area was 5,418 in the year 2000, as shown in Table 6-3.

**Table 6-3  
Existing Population in the Non-Residential and Residential Study Areas**

Census Tracts	Residential Population	Non-Residential Population	Total User Population
<b>Non-Residential Study Area</b>			
211	10,726	1,710	12,436
219	6,423	2,395	8,818
223.01	8,410	875	9,285
223.02	3,997	380	4,377
313	0	57	57
315	0	2	2
<b>Total Non-Residential Area</b>	<b>29,556</b>	<b>5,419</b>	<b>34,975</b>
<b>Residential Study Area</b>			
197.01	0	109	109
207.01	2,448	525	2,973
209.01	3,521	835	4,356
213.01	4,555	385	4,940
213.02	244	60	304
217.01	1,390	7,380*	8,604
217.02	2,678	146	2,823
221.01	444	7,090*	7,368
221.02	2,163	180	2,343
225	10,973	720	11,693
227.01	4,721	2,140	6,861
229	8,843	725	9,568
313	0	57	57
315	0	1	1
<b>Total Residential Area</b>	<b>71,536</b>	<b>25,772</b>	<b>97,308</b>
<b>Note:</b> * Includes approximately half of the City College total enrollment during the 2005 academic year (approximately September through May).			
<b>Sources:</b> U.S. Census of Population and Housing, 2000; reverse journey-to-work data, compiled by USDOT.			

*Residential Population*

The non-residential study area includes three major tracts of residential population. To the south, the housing developments of Morningside Gardens and General Grant Houses are located in tract 211. In the central portion of the non-residential study area, Manhattanville Houses is located in tract

<sup>1</sup> There are no residential populations in the portion of these census tracts located within the ¼-mile or ½-mile radius of the Project Area.

219, and the residential development of Riverside Park Community is located in tract 223.02. As shown in Table 6-3, the residential population in the non-residential study area was 29,556 in 2000.

People between the ages of 20 and 64 make up the majority (approximately 62 percent) of the residential population of the non-residential study area (see Table 6-4). Children and teenagers (0 to 19 years old) account for approximately 28 percent of the entire residential population. Persons 65 and over account for approximately 11 percent of the non-residential study area population.

**Table 6-4  
Age Distribution of Non-Residential Study Area**

Age	Number of Residents	Percentage of Total Population	Percentage of Total Manhattan
Under 5	1,947	6.6	4.9
5 to 9	2,392	8.1	4.8
10 to 14	2,016	6.8	4.5
15 to 19	1,814	6.1	4.9
20 to 64	18,245	61.7	68.7
65 and over	3,144	10.6	12.2
<b>Source:</b> U.S. Census of Population and Housing, 2000.			

*Total User Population*

Within the non-residential study area, the total population (residents plus non-residents) is 34,975. Although this analysis conservatively assumes that residents and employees are separate populations, it is possible that some of the residents live near their workplace. As a result, there is likely to be some double-counting of the daily user population in which residential and non-residential populations overlap, resulting in a more conservative analysis.

**RESIDENTIAL STUDY AREA**

The residential study area includes the four census tracts located in the non-residential study area, plus 11 full census tracts and three partial tracts (197.01, 313, and 315), delineating a residential study area that extends generally northward to West 146th Street, eastward as far as Frederick Douglass Boulevard, southward to West 118th Street, and westward to the Hudson River (see Figure 6-1). GIS mapping analyses were conducted to determine the percentage of tracts 197.01, 313, and 315 in the residential study area. As with the non-residential study area, these percentages were applied to U.S. Census, New York State Department of Labor, and New York City Department of City Planning data to determine worker and residential populations within each census tract portion.

*Non-Residential Population*

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 passive open space ratio for the total population within the residential study area, which includes the non-residential as well as the residential populations.

Based on year 2000 reverse journey-to-work data provided by USDOT, the worker and visitor populations within the residential study area, which includes the non-residential study area, was 25,772 in the year 2000 (see Table 6-3). City College of New York, a university within the City University of New York, is located in two census tracts (tracts 217.01 and 221.01) in the residential study area. In total, approximately 12,440 undergraduate and graduate students (full

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time and part time) were enrolled at City College of New York during the 2005 academic year (approximately September through May). These students are visitors to the residential study area, since City College of New York does not provide dormitories or other student housing (the recently constructed City College dormitory is considered in the 2015 future without the Proposed Actions condition). For analysis purposes, all students (100 percent of the enrollment) were considered visitors to the area, even though this population does not exist year-round, and only a portion of the entire student population visits the campus on any given day. Under this conservative assumption, half of the 2005 enrollment for City College of New York (6,220 students) were included in tract 217.01, and half were included in tract 221.01.

*Residential Population*

Much of the residential populations within the residential study area are clustered within the Hamilton Heights neighborhood to the north. The residential study area, which includes the non-residential study area, has a residential population of 71,536 (see Table 6-3).

The residential age-distribution characteristics remain relatively constant between the non-residential and residential study areas. Within the residential study area, adults between the ages of 20 and 64 again represent the highest percentage (approximately 63 percent) of the residential population (see Table 6-5). The 65 and over age group accounts for approximately 10 percent of the residential study area population, and children 19 and younger represent about 28 percent of the residential study area population. For both study areas, the population characteristics show a younger population with a higher proportion of young residents when compared with Manhattan as a whole (28 percent compared with 19 percent), with a slightly lower proportion of older residents (10 percent compared with 12 percent). While this makes the assessment of open spaces more sensitive to these two important user groups in this study area (children and the elderly are typically the greatest users of open space), the overall age composition of the population does not run counter to the basic City open space ratio guidelines.

**Table 6-5  
Age Distribution of Residential Study Area**

<b>Age</b>	<b>Number of Residents</b>	<b>Percentage of Total Population</b>	<b>Percentage of Total Manhattan</b>
Under 5	4,767	6.7	4.9
5 to 9	5,371	7.5	4.8
10 to 14	4,941	6.9	4.5
15 to 19	4,668	6.5	4.9
20 to 64	44,801	62.6	68.7
65 and over	7,064	9.9	12.2
<b>Source:</b> U.S. Census of Population and Housing, 2000.			

*Total User Population*

Within the residential study area (and including the population within the smaller non-residential study area), the total residential and non-residential population is 97,308. Again, this count conservatively assumes that the residential and non-residential populations are entirely distinct from each other.

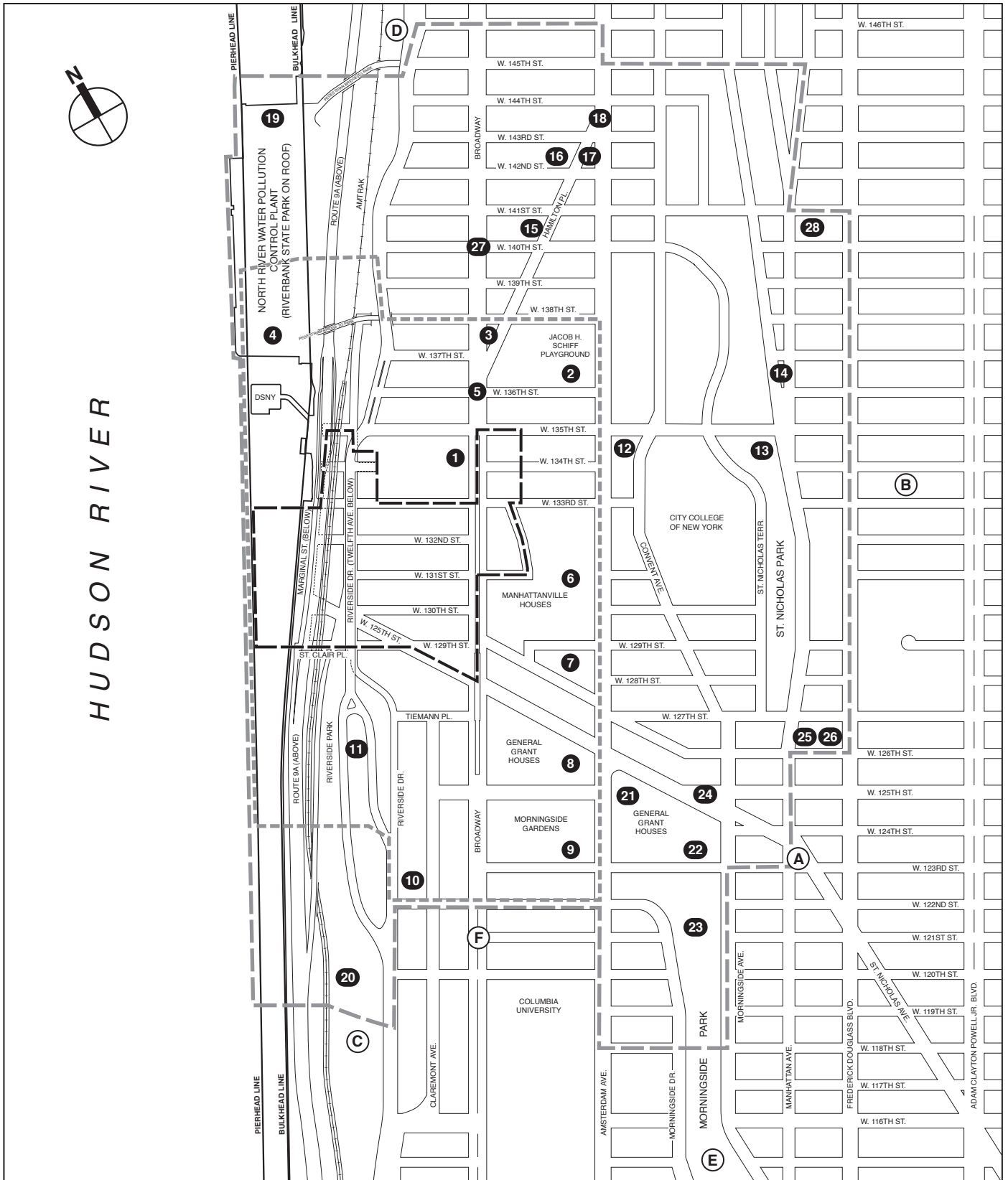
**STUDY AREA OPEN SPACES**

*NON-RESIDENTIAL STUDY AREA*

Eleven public open space and recreational resources are located within the non-residential study area. These open spaces include publicly owned open spaces and privately owned spaces that are open to the public. Altogether, the open space resources in the non-residential study area total approximately 47.61 acres (see Figure 6-2 and Table 6-6).

**Table 6-6  
Inventory of Open Space Resources**

Map # <sup>1</sup>	Name	Location	Owner	Acres	Acres		Amenities	Condition	Use Level
				Total Acres	Passive	Active			
<b>Non-Residential Study Area</b>									
1	I.S. 195	Broadway between West 133rd and 135th Streets	DOE	0.68	0.00	0.68	Paved basketball courts, jungle gym	Good	Moderate
2	P.S. 192/Jacob Schiff Playground	Amsterdam Avenue between West 136th and 138th Streets	DPR	3.85	2.31	1.54	Swings, slides, baseball/softball fields, paved walkways, benches, jungle gyms	Good	Moderate
3	Montefiore Park	West 138th Street between Broadway and Hamilton Place	DPR	0.34	0.340	0.00	Paved walkways, trees, planters	Good	Light
4	Riverbank State Park <sup>2</sup>	Hudson River between West 137th and 138th Streets	NYS OPRHP	8.90	1.78	7.12	Swings, slides, basketball courts, baseball/softball fields, paved walkways, benches, track	Excellent	Moderate
5	Broadway Malls (North)	Broadway, West 135th Street to West 138th Street	DPR	0.31	0.31	0.00	Benches, trees, planters	Good	Moderate
6	Manhattanville Houses	West 129th to 133rd Streets between Amsterdam Avenue and Broadway	NYCHA	1.94	0.79	1.15	Baseball/softball fields, benches, basketball courts, jungle gym, paved walkways, trees, planters	Fair	Moderate
7	Sheltering Arms Park	West 126th to 129th Streets between Amsterdam Avenue and Old Broadway	DPR	1.43	0.07	1.36	Slides, paved walkways, benches, jungle gyms,	Excellent	Moderate
8	General Grant Houses I	LaSalle to West 125th Streets between Amsterdam Avenue and Broadway	NYCHA	2.33	0.61	1.72	Slides, jungle gyms, benches, paved walkways, trees, benches	Fair	Moderate
9	Morningside Gardens	LaSalle to West 123th Streets between Amsterdam Avenue and Broadway	Morning-side Heights Housing Corp.	2.77	0.72	2.05	Slides, jungle gyms, benches, walkways, planters, lawn area	Excellent	Moderate
10	Sakura Park	West 122nd Street between Riverside Drive and Claremont Avenue	DPR	2.07	1.96	0.10	Swings, paved walkways, benches, gazebo, trees, planters, sandbox, fountain	Good	Moderate
11	Riverside Park <sup>3</sup>	West of Riverside Drive, West 122nd Street to St. Clair Place and West 135th Street to West 140th Street	DPR	23.00	18.40	4.60	Slides, paved walkways, benches, jungle gyms, planters, Grant's Tomb	Good	Moderate
			<b>Total</b>	<b>47.62</b>	<b>27.29</b>	<b>20.32</b>			
<b>Residential Study Area</b>									
12	Annunciation Park	West 135th Street between Convent and Amsterdam Avenue	DPR	1.24	0.99	0.25	Slides, benches, jungle gyms, paved walkways, trees	Good	Moderate
13	St. Nicholas Park	West 128th Street to West 141st Street between St. Nicholas Avenue and St. Nicholas Terrace	DPR	22.74	13.25	9.49	Swings, slides, basketball courts, handball courts, paved walkways, benches, jungle gyms, trees, planters	Good	Moderate
14	Dorrence Brook Square	West 136th Street to West 137th Street between St. Nicholas and Edgecombe Avenues	DPR	0.04	0.04	0.000	Paved walkways, benches, trees, planters	Good	Light



- Project and Rezoning Area Boundary
- - Residential Study Area
- - - Non-Residential Study Area

- ① Open Space Resource
- Ⓐ Open Space Resource not Included in Quantitative Analysis



**Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development FEIS**

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

Map #	Name	Location	Owner	Acres	Acres		Amenities	Condition	Use Level
15	Alexander Hamilton Playground	Hamilton Place from West 140th Street to West 141st Street	DPR	0.81	0.65	0.16	Swings, slides, handball courts, paved walkways, benches, jungle gyms, trees, planters	Good	Light
16	Frank White Neighborhood Service Center Inc., Community Garden	506–508 West 143rd Street	DPR	0.09	0.09	0.00	Trees, planters, flowers	Good	Light
				<b>Total Acres</b>	<b>Passive</b>	<b>Active</b>			
17	Hope Stevens Garden	1656 Amsterdam Avenue	TPL	0.060	0.06	0.00	Community garden	Excellent	Light
18	Johnny Hartman Plaza (formerly Alexander Hamilton Square)	Amsterdam Avenue between West 143rd Street and Hamilton Place	DPR	0.001	0.001	0.00	Benches, trees, planters	Good	Light
19	Riverbank State Park <sup>2</sup>	Hudson River between West 138th and 145th Streets	NYS OPRHP	19.20	1.92	17.28	Skating rink, pool, jungle gyms, swings, slides, paved walkways, trees, benches, planters, football field, waterfront amphitheatre, carousel, cultural center	Excellent	Moderate
20	Riverside Park <sup>3</sup>	West of Riverside Drive, West 114th to 122nd Street and West 140th to 145th Street	DPR	15.50	10.85	4.65	Trees, planters, benches, paved walkways, 119th Street tennis courts	Good	Moderate
21	General Grant Houses II	West 123rd to 125th Streets between Morningside and Amsterdam Avenues	NYCHA	2.50	0.65	1.85	Slides, jungle gyms, paved walkways, trees, benches	Fair	Moderate
22	Morningside Playground/P.S. 125	West 123rd Street between Morningside and Amsterdam Avenues	DPR	1.69	1.52	0.17	Baseball/softball fields, benches, jungle gym, paved walkways, trees, planters	Excellent	Heavy
23	Morningside Park	West 118th to West 123rd Street between Morningside Avenue and Morningside Drive	DPR	7.46	5.22	2.24	Swings, slides, basketball courts, handball courts, paved walkways, benches, jungle gyms, trees, planters	Fair	Moderate
24	Roosevelt Triangle	West 125th Street and Morningside Avenue	DPR	0.04	0.04	0.0	Benches, trees, planters	Fair	Light
25	William B. Washington Memorial Garden	321–325 West 126th Street	HPD	0.03	0.03	0.00	Community garden	Excellent	Light
26	Clayton Williams Community Garden	303 West 126th Street	TPL	0.11	0.11	0.00	Community garden	Excellent	Light
27	Broadway Malls (North)	Broadway, West 138th Street to West 146th Street	DPR	0.84	0.84	0.00	Benches, trees, planters	Good	Moderate
28	P.S. 123	Edgecombe Avenue, between West 140th and 141st Streets	DOE	0.57	0.51	0.06	Slides, basketball courts, jungle gym, trees	Excellent	Moderate
<b>Total Non-Residential and Residential Study Areas</b>				<b>120.53</b>	<b>64.06</b>	<b>56.47</b>			

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

Map #	Name	Location	Owner	Acres		Amenities	Condition	Use Level	
				Total Acres	Passive				Active
<b>Open Spaces Resources Not Included in Quantitative Analysis</b>									
A	Hancock Park	West 123rd Street between St. Nicholas and Manhattan Avenues	DPR	0.067	0.07	0.00	Trees, planters, benches	Good	Light
B	P.S. 92	West 133rd Street to West 134th Street between Frederick Douglass Boulevard and Adam Clayton Powell Jr. Boulevard	DOE	0.71	0.57	0.14	Swings, slides, basketball courts, paved walkways, benches, jungle gyms, trees, planters	Excellent	Moderate
C	Riverside Park South	West of Riverside Drive, West 114th Street to West 72nd Street	DPR	235.15	164.61	70.55	Skateboard park, ballfields, playgrounds, paved walkways, benches, planters	Good	Moderate
D	Riverside Park North	West of Riverside Drive, West 145th Street to West 158th Street	DPR	42.0	29.40	12.60	Trees, planters, benches, paved walkways	Good	Moderate
E	Morningside Park	West 110th Street to West 118th Street between Morningside Avenue and Morningside Drive	DPR	22.4	15.70	6.7	Swings, slides, basketball courts, handball courts, paved walkways, benches, jungle gyms, trees, planters	Fair	Moderate
F	Broadway Malls (South)	Broadway, West 110th Street to West 122nd Street	DPR	1.7	1.7	0.0	benches, trees, planters	Good	Moderate
<b>Notes:</b> CUNY = City University of New York DOE = New York City Department of Education DPR = New York City Department of Parks and Recreation HPD = New York City Department of Housing and Preservation Development NYCHA = New York City Housing Authority NYSOPRHP = New York State Office of Parks, Recreation and Historic Preservation TPL = Trust for Public Land 1. Refer to Figure 6-2 2. Riverbank State Park acreage in the non-residential study area includes only the portion of the Park located within the ¼-mile boundary (see Figure 6-2). The acreage in the residential study area includes the portion of the Park located within the ½-mile boundary, but excludes the non-residential study area acreage to avoid "double-counting". 3. Riverside Park acreage in the non-residential study area includes only the portion of the Park located within the ¼-mile boundary (see Figure 6-2). The acreage in the residential study area includes the portion of the Park located within the ½-mile boundary, but excludes the non-residential study area acreage to avoid "double-counting".									

Although there are no open spaces currently located in the Project Area, several are located in close proximity and provide both active and passive open space amenities. Within the total of 47.61 acres, 27.29 acres are passive and 20.32 acres are active. Six mapped City parks under the jurisdiction of the DPR are located within the non-residential study area. Approximately 23 acres of Riverside Park (No. 11 in Figure 6-2) falls within the non-residential study area. Riverside Park extends beyond the non-residential study area, in total stretching approximately four miles along the Hudson River from West 72nd Street to West 158th Street. The portion of Riverside Park within the non-residential study contains both active and passive amenities but is predominantly occupied by passive space. The General Grant National Memorial, commonly referred to as Grant’s Tomb, is located in the middle of the park on land controlled by the National Park Service. Admission is free to the memorial. Claremont Playground, located within Riverside Park at West 124th Street behind Grant’s Tomb, is dedicated to both active and passive use, and is equipped with slides, swings, and jungle gyms; it also has a fountain, benches, paved walkways, trees, and planters.

Jacob Schiff Playground (No. 2 in Figure 6-2), located on Amsterdam Avenue between West 136th and West 138th Streets, is an open space that is primarily used for active recreation, although it contains large areas of passive space. The playground is equipped with swings, slides, basketball

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courts, baseball and softball fields, and jungle gyms. Benches, paved walkways, trees, and planters allow for passive use of the park. The park's amenities are equally used by the students at P.S. 192.

Sheltering Arms Park (No. 7 in Figure 6-2) is a City park dedicated mainly to active use. The park spans from West 126th Street to West 129th Street between Amsterdam Avenue and Old Broadway. Slides and jungle gyms make up the park's active open space, while benches, paved walkways, and planters comprise its passive open space. Sakura Park (No. 10 in Figure 6-2), located on West 122nd Street between Riverside Drive and Claremont Avenue, is a City park dedicated to mostly passive activities. The lawn occupying most of the park is designated as a "passive lawn," which is restricted solely to passive activity. The active space in the park contains swings and a sandbox. Other features in the park that support passive uses include benches, paved walkways, trees, planters, a fountain, and a gazebo.

Two City parks solely dedicated for passive recreation include Montefiore Park (No. 3 in Figure 6-2), located on West 138th Street between Broadway and Hamilton Place, and the portion of the Broadway Malls (No. 5 in Figure 6-2) located in the non-residential study area. The Broadway Malls, a stretch of center island passive open space, extend beyond the non-residential study area, running along Broadway from West 114th Street to West 122nd Street and from West 138th Street to West 146th Street. The Broadway Malls contain shrubs, trees, flowers, benches, and some sculptures.

Riverbank State Park (No. 4 in Figure 6-2) is a resource owned by the New York State Office of Parks, Recreation and Historic Preservation. Located on the Hudson River between West 137th and West 145th Streets on the roof of the North River Water Pollution Control Plant, the park's active space is fully equipped with swings, slides, basketball courts, a baseball and softball field, tennis courts, jungle gyms, a running track, and a skating rink. The park also contains an indoor Olympic-size swimming pool, an outdoor 25-yard lap pool, and an outdoor wading pool. The passive space in the park contains paved walkways and a waterfront amphitheatre. Approximately 8.9 acres of the park are located in the non-residential study area.

The New York City Housing Authority (NYCHA) owns and operates many open spaces in connection with the Manhattanville Houses and General Grant Houses I developments in the non-residential study area (No. 6 and No. 8, respectively, in Figure 6-2). These developments have a tower-in-the-park configuration, which typically consists of a superblock with residential towers surrounded by lawns, trees, walkways, benches, playgrounds, basketball and handball courts, and sometimes parking and community centers. Although the open spaces associated with these developments are primarily meant for the residents, they are publicly accessible and therefore were included in this analysis. Some of the open areas between the residential buildings are fenced off and are therefore not accessible. The acreage for the NYCHA open spaces in Table 6-6 reflect only these accessible areas. These publicly accessible open spaces are equipped with jungle gyms, slides, basketball courts, swings, benches, and paths. Although not under the jurisdiction of NYCHA, Morningside Gardens (No. 9 in Figure 6-2) is a cooperative housing development in the non-residential study area. It contains a playground and several accessible passive open lawns areas that are not enclosed by fencing.

Located directly across West 133rd Street from the Project Area is the playground associated with I.S. 195, Roberto Clemente Intermediate School (No. 1 in Figure 6-2). The playground contains six paved basketball courts, a jungle gym, and other paved areas for active recreation activities. This playground is under the jurisdiction of the New York City Department of Education (DOE) and is primarily used by the children attending the school; however, the open space is open to the public after school hours.



*RESIDENTIAL STUDY AREA*

Within the residential study area, a total of 28 public open spaces and recreational facilities serve the surrounding residential and commercial populations. This total includes the 11 open spaces within the non-residential study area, as listed in Table 6-6. Including all of the public parks and open spaces listed in the non-residential study area, the residential study area contains a total of 120.53 acres of public open space, 64.06 acres of which are passive space and 56.47 acres of which are active (see Figure 6-2 and Table 6-6).

In addition to the open spaces identified within the non-residential study area, the residential study area includes 11 additional New York City parks. The largest of these parks is St. Nicholas Park, which stretches from West 128th Street to West 141st Street between St. Nicholas Avenue and St. Nicholas Terrace (No. 13 in Figure 6-2). The park is devoted to both active and passive uses. Such amenities as swings, slides, basketball courts, handball courts, and jungle gyms enable visitors to enjoy the park's active open space. In addition, paved walkways, benches, trees, and planters are part of the passive open space.

Annunciation Park, which is devoted to both active and passive use, is located on West 135th Street between Convent and Amsterdam Avenues (No. 12 in Figure 6-2). Equipped with slides and jungle gyms, this park's active space is enjoyed by area locals and residents. In addition, there are benches, trees, and planters that allow for passive enjoyment of this public open space. Located in the northern portion of the residential study area, on Hamilton Place between West 140th and West 141st Streets, Alexander Hamilton Playground (No. 15 in Figure 6-2) comprises passive and active open space. Equipped with swings, slides, handball courts, and jungle gyms, this active open space also contains various passive amenities, such as benches, trees, paved walkways, and well-maintained landscaping.

Morningside Park, another large City park, is located in the southern portion of the residential study area. Approximately 7.46 acres of Morningside Park (No. 23 in Figure 6-2) fall within the residential study area. Morningside Park extends beyond the residential study area, stretching farther south to West 110th Street. The portion of Morningside Park within the residential study area is devoted to both passive and active open space, with such amenities as swings, slides, basketball and handball courts, jungle gyms, and a wading pool. The benches, trees, planters, and lighting all add to the passive enjoyment of the park. Located directly north of Morningside Park is Morningside Playground (No. 22 in Figure 6-2), an open space that is primarily used for active recreation, although it contains areas of passive space. The playground is equipped with swings, slides, baseball and softball fields, and jungle gyms. Benches, paved walkways, trees, and planters allow for passive use of the park. The park's amenities are equally used by the students at P.S. 125.

There are four City parks used solely for passive recreation in the residential study area. Dorrence Brook Square (No. 14 in Figure 6-2) is located between West 136th and West 137th Streets and St. Nicholas and Edgecombe Avenues; Frank White Neighborhood Service Center is located on West 143rd Street between Amsterdam Avenue and Broadway (No. 16 in Figure 6-2); Johnny Hartman Plaza is located on Amsterdam Avenue between West 143rd Street and Hamilton Place (No. 18 in Figure 6-2); and Roosevelt Triangle is a small triangular open space located at the intersection of West 125th Street and Morningside Avenue (No. 24 in Figure 6-2). These passive City parks contain well-maintained flowers, planters, and shrubs, and are surrounded by benches. The Broadway Malls also extend within the residential study area between West 138th and West 146th Streets.

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Similar to the non-residential study area, portions of both Riverside Park and Riverbank State Park extend into the residential study area. The NYCHA General Grant Houses II housing development is located in the residential study area (No. 21 in Figure 6-2). As mentioned earlier, while open space in this housing development is primarily meant for use by residents, it is accessible to the public. Amenities include benches, trees, walkways, playgrounds, jungle gyms, and basketball courts. The residential study area also contains the playground associated with P.S. 123 elementary school under the jurisdiction of the DOE (No. 28 in Figure 6-2).

The residential study area also contains several community gardens open to the public under the jurisdiction of various organizations. In the northern portion of the residential study area, Hope Stevens Garden, located along Amsterdam Avenue between West 142nd and West 143rd Streets (No. 17 in Figure 6-2), is owned by the Trust for Public Land. Two community gardens are located on West 126th Street between Manhattan Avenue and Frederick Douglass Boulevard. Clayton Williams Community Garden (No. 26 in Figure 6-2) is also owned by the Trust for Public Land, and William B. Washington Memorial Garden is located on property owned by the New York City Department of Housing Preservation and Development (No. 25 in Figure 6-2). All three community gardens are well maintained and are operated by GreenThumb, a program of DPR.

### **ADEQUACY OF OPEN SPACES**

#### *NON-RESIDENTIAL STUDY AREA*

As described above, 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 the City'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.

#### *Quantitative Analysis*

The non-residential study area includes a total of 47.61 acres of open space, of which 27.29 acres are passive space. A total of 29,556 residents live within this vicinity, and 5,419 people work within the non-residential study area boundary. The combined residential and non-residential population is 34,975.

Based on *CEQR Technical Manual* methodology, the area has a passive open space ratio of 5.04 acres of passive open space per 1,000 workers; this is substantially higher than the City's guideline of 0.15 acres (see Table 6-7). The combined passive open space ratio is 0.78 acres per 1,000 residents and workers, which is higher than the recommended weighted average ratio of 0.45 acres per 1,000 residents and workers. Thus, there is sufficient passive open space to serve the worker and the combined worker and resident populations.

#### *Qualitative Analysis*

As shown in Table 6-6, the non-residential study area open spaces are mostly in good or excellent condition, and use levels are moderate at the majority of these facilities. The non-residential study area includes a large proportion of passive open space with features such as lawns, benches, and pathways suitable for use by the worker and other non-residential populations in the area.

**Table 6-7**

**Existing Conditions: Adequacy of Open Space Resources**

	Total Population	Open Space Acreage			Open Space Ratios per 1,000 People			City Open Space Guidelines		
		Total	Passive	Active	Total	Active	Passive	Total	Active	Passive
<b>Non-Residential Study Area</b>										
Non-residents	5,419	47.61	27.29	20.32	N/A	N/A	5.04	N/A	N/A	0.15
Combined non-residents and residents	34,975				N/A	N/A	0.78	N/A	N/A	0.45*
<b>Residential Study Area</b>										
Residents	71,536	120.53	64.08	56.47	1.68	0.79	0.90	2.5	2.0	0.50
Combined non-residents and residents	97,308				N/A	N/A	0.66	N/A	N/A	0.41*
<b>Notes:</b> *Based on a target open space ratio established by creating a weighted average of the amount of open space necessary to meet the City guideline of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 non-residents is considered in this analysis. Non-residents typically use passive spaces; therefore, for the non-residential study area, only passive open space ratios are calculated. For the residential study area, active, passive, and total park space ratios are calculated.										

The major regional open space resources of Riverside Park and Riverbank State Park extend beyond the non-residential study area. While the portions of these open spaces outside the ¼-mile non-residential study area were excluded from the quantitative analysis, these areas are likely to serve residents and workers within the non-residential open space study area. There are several pathways within these parks that provide access beyond the non-residential study area boundary to portions of the parks that also offer recreational opportunities. It is likely that visitors to these parks would venture farther south or north into both Riverside Park and Riverbank State Park, beyond the approximately ¼-mile boundary of the non-residential study area, to use existing facilities. Though not included in the quantified analysis, these portions of major regional open spaces would likely contribute to meeting the open space needs of residential and worker populations in the study area.

#### *RESIDENTIAL STUDY AREA*

##### *Quantitative Analysis*

The following analysis of the adequacy of open space resources within the residential study area takes into consideration the ratios of active, passive, and total open space resources per 1,000 residents, as well as the ratio of passive open space per 1,000 combined residents and non-residents.

With a total of 120.53 acres of open space, of which 56.47 are for active use and 64.06 are for passive use, and a total residential population of 71,536, the residential study area has an overall open space ratio of 1.68 acres per 1,000 residents (see Table 6-7). This is less than the City's planning guideline of 2.5 acres of combined active and passive open space per 1,000 residents. While the area currently has a shortage of active open space, this open space ratio is higher than many other areas and neighborhoods in Manhattan.

In addition, there are also destination open space resources nearby that provide additional active open space resources, such as the remainder of Riverside Park, Morningside Park, and others. While these open space resources extend beyond the boundary of the residential study area and are therefore not included in the quantitative analysis, they are considered "destination parks,"

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and residents would typically travel farther than the ½-mile extent of the residential study area to enjoy the open space and recreational amenities within these parks. Riverside Park extends south to West 72nd Street and contains many active and passive recreation amenities, including numerous playgrounds, ballfields, tennis courts, walking and bicycle paths, beach volleyball courts, and a skateboarding park. Extending south of West 72nd Street, Riverside Park South currently contains 7 acres of parkland between West 72nd and 65th Streets along the Hudson River. Ultimately, 21.5 acres will be developed for Riverside Park South between West 72nd and 59th Streets. Morningside Park extends south to West 110th Street and also provides numerous basketball courts, walking paths, and lawn areas for either passive or active recreational uses.

The residential study area's residential passive open space ratio is 0.90 acres of passive open space per 1,000 residents, which is above the City's planning goal of 0.5 acres per 1,000 residents. The area's residential active open space ratio is 0.79 acres per 1,000 residents, which is below the City's planning guideline of 2.0 acres per 1,000 residents, indicating that there is a shortfall of active open space in the study area. As shown in Table 6-6, the residential study area open spaces are mostly in good or excellent condition, and use levels are moderate at the majority of these facilities. While the study area includes a number of parks with active recreational facilities such as ball fields and playgrounds, given that the age distribution in the residential study area includes slightly more children and teens than Manhattan as a whole, it is desirable to have a higher proportion of active open space.

When the employees who work within the residential study area are added to the population, the passive open space ratio is lower. As described earlier, workers typically use passive open spaces during the workday, so the passive open space ratio is the relevant ratio for consideration. With a worker and residential population of 97,308, the combined passive open space ratio in the residential study area is 0.66, higher than the recommended weighted average guideline ratio of 0.41 acres per 1,000 residents and workers.

### *Qualitative Analysis*

As described above, portions of Riverside Park extend beyond the residential study area and therefore were excluded from the quantitative analysis. However, it is likely that this open space (and others to the south of Riverside Park) would be used by people who live and work in the residential study area. Similarly, the portion of Morningside Park that extends beyond the residential study area was excluded from the quantitative analysis, though residents would likely be drawn to this portion of the park to make use of its active and passive recreational resources. As described earlier, these parks are considered "destination parks," and residents would typically travel farther than the ½-mile extent of the residential study area to enjoy the open space and recreational amenities within these parks. There are several pathways within these parks that provide access beyond the residential study area boundary to other areas within the parks. It is likely that visitors to these parks would venture farther south or north into both Riverside and Morningside Parks, beyond the approximately ½ -mile boundary of the residential study area, to use existing facilities.

## D. 2015 FUTURE WITHOUT THE PROPOSED ACTIONS

### STUDY AREA POPULATION

Several new residential, community facility, and commercial developments are currently planned and expected to be completed within the study areas by 2015, as discussed in Chapter 2. These new developments would increase both the residential and non-residential populations within the study areas. As described in Chapter 2, for each site associated with the rezoning applications submitted by Tuck-It-Away Associates, L.P., a residential reasonable worst-case development scenario has been developed in which the existing storage use and building would be demolished and a new residential building would be developed. For the site associated with the rezoning application submitted by Hudson North American, a redevelopment scenario has been identified by the applicant in which the existing building would be converted to residential and retail uses and new residential development would be constructed above. All of these redevelopment scenarios are assumed for this analysis.

A portion of the 125th Street Corridor Rezoning area would extend into the residential study area. Of the 26 total projected development sites identified in the Draft Scope for this rezoning (see Chapter 2), only five sites would overlap with the residential study area. Two sites would be located on the south side of 125th Street between Morningside and Manhattan Avenues and three sites would be located between Manhattan Avenue and Frederick Douglass Boulevard—two on the north side and one on the south side of 125th Street. In total, these five projected development sites would result in 260 residential units, 71,632 sf of retail, 103,958 sf of office, and 11,890 sf of community facility uses.

### *NON-RESIDENTIAL STUDY AREA*

At this time, the only known residential developments planned for the non-residential study area by 2015 are the redevelopment scenarios associated with the Tuck-It-Away and Hudson North American rezoning applications. The total residential population in the non-residential study area is estimated to increase to 30,899. Four non-residential projects planned by Columbia University, the reasonable worst-case development scenarios associated with the rezoning applications submitted by Tuck-It-Away Associates, L.P., and Hudson North American, and other known projects expected to be developed by 2015 (as discussed in Chapter 2), are expected to increase the total non-residential population within the non-residential study by 32 percent. There will be 7,149 employees in the non-residential study area by 2015. The 2015 combined residential and worker population in the non-residential study area is projected to be 38,048.

In the future without the Proposed Actions, it is expected that the demographics would remain similar to those under existing conditions. People between the ages of 20 and 64 will continue to make up the majority (approximately 62 percent) of the residential population of the non-residential study area. Children and teenagers (0 to 19 years old) will continue to account for approximately 28 percent of the entire residential population. Persons 65 and over will account for approximately 11 percent of the non-residential study area population.

### *RESIDENTIAL STUDY AREA*

Both the residential and worker populations within the residential study area are expected to increase by 2015. The residential population in the residential study area for 2015 is estimated to be 74,725, based on the increase in residents from projects described in Chapter 2.

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The number of new workers would also increase by 2015, due to several commercial developments expected to be constructed within the residential study area. By 2015, the total worker population within the residential study area (including the new worker population within the non-residential study area) is expected to increase to 29,530. Total residential and non-residential populations within the residential study area are estimated to be 104,255 by 2015. The residential age-distribution characteristics are expected to remain relatively constant between the non-residential and residential study areas.

### **STUDY AREA OPEN SPACES**

#### *NON-RESIDENTIAL STUDY AREA*

Within the non-residential study area, one new open space is expected to be completed prior to 2015. The West Harlem Waterfront park is planned along the Hudson River between West 129th and West 133rd Streets. This City-owned open space will include walking and biking paths, an excursion pier to allow docking for excursion and ferry boats, a recreation pier, an ecological platform, a small multi-purpose building, and several passive recreation areas, such as lawns and sitting areas. The upland area would contain a system of passive linear landscape elements and gathering places (approximately 2.26 acres) and approximately 9,995 square feet (0.23 acres) for a new pedestrian and bike path.

With a net gain of 2.26 acres of passive open space, the passive open space in the non-residential study area would increase to 29.55 acres. With a net gain of 0.23 acres of active open space, the active open space in the non-residential study area would increase to 20.55 acres. The total amount of open space would increase to 50.10 acres.

#### *RESIDENTIAL STUDY AREA*

Other than the West Harlem Waterfront park described above, no new additional open spaces are expected in the residential study area by 2015. With a net gain of 2.26 acres of passive open space, the passive open space in the residential study area would increase to 66.32 acres. With a net gain of 0.23 acres of active open space, the active open space in the residential study area would increase to 56.7 acres. The total amount of open space would increase to 123.02 acres.

### **ADEQUACY OF OPEN SPACES**

By 2015 without the Proposed Actions, residential and non-residential populations in the study areas will increase, as would the open space acreage. The increase in open space resources would partially offset the increased populations. All open space ratios would decrease with the exception of the residential study area passive open space ratio, which will remain the same as under existing conditions, and the non-residential study area passive open space ratio per total population, which would increase slightly, from 0.78 to 0.79 acres per 1,000 persons.

#### *NON-RESIDENTIAL STUDY AREA*

##### *Quantitative Analysis*

By 2015 without the Proposed Actions, the number of non-residents in the non-residential study area is expected to increase to 7,149 and the total amount of passive open space is expected to increase to 29.55 acres. The increase in passive recreational space would not offset the increase in the non-residential population, resulting in a decrease of the passive open space available for

non-residents. In 2015, the ratio of passive open space per 1,000 non-residents would be 4.13 (see Table 6-8), an 18 percent decrease from existing conditions. Although a decrease from existing conditions, this ratio would remain well above City guidelines. For the combined residential and non-residential population, the passive open space ratio would remain 0.78 acres per 1,000 people, the same as existing conditions and above City guidelines.

**Table 6-8**  
**2015 Future Without the Proposed Actions: Adequacy of Open Space Resources**

	Total Population	Open Space Acreage			Open Space Ratios per 1,000 people			City Open Space Guidelines		
		Total	Passive	Active	Total	Active	Passive	Total	Active	Passive
<b>Non-Residential Study Area</b>										
Non-residents	<u>7,149</u>	50.10	29.55	20.55	N/A	N/A	<u>4.13</u>	N/A	N/A	0.15
Combined non-residents and residents	<u>38,048</u>				N/A	N/A	<u>0.78</u>	N/A	N/A	<u>0.43</u>
<b>Residential Study Area</b>										
Residents	<u>75,159</u>	123.02	66.32	56.70	<u>1.64</u>	<u>0.75</u>	<u>0.88</u>	2.5	2.0	0.50
Combined non-residents and residents	<u>104,895</u>				N/A	N/A	<u>0.63</u>	N/A	N/A	0.40*
<b>Notes:</b> * Weighted average combining 0.15 acres per 1,000 non-residents and 0.50 acres per 1,000 residents. Non-residents typically use passive spaces; therefore, for the non-residential study area, only passive open space ratios are calculated. For the residential study area, active, passive, and total park space ratios are calculated.										

*Qualitative Analysis*

As described above in “Existing Conditions,” Riverside Park and Riverbank State Park extend beyond the non-residential area. Though these areas are not included in the quantified analysis, they would contribute to meeting the open space needs of the additional residential and worker populations in the study area in the 2015 future without the Proposed Actions. As described above in “Existing Conditions,” it is likely that visitors to these parks would venture farther north and south of the non-residential study area along pathways in the parks to other areas that offer recreational opportunities.

**RESIDENTIAL STUDY AREA**

*Quantitative Analysis*

Both passive open space and population are expected to increase in the residential study area in the future without the Proposed Actions. The combined residential and non-residential passive open space ratio within the residential study area would decrease by 4.5 percent to 0.63 acres per 1,000 residents and non-residents (see Table 6-8), which is higher than the recommended weighted average ratio of 0.40 acres per 1,000 residents and workers. The active residential open space ratio would decrease by 5.1 percent to 0.75 acres per 1,000 residents, which is less than the City’s planning guideline of 2.0 acres per 1,000 residents. The total residential open space ratio would decrease by 2.4 percent to 1.64 acres per 1,000 residents, which is less than the City’s planning guideline of 2.5 acres of combined active and passive open space per 1,000 residents.

The residential population would remain underserved by the available active open space resources in the 2015 without the Proposed Actions. While nearby open spaces outside the residential study area, such as Morningside Park and Riverside Park, would help to alleviate the problem, an active open space deficiency would persist.

*Qualitative Analysis*

As described above in “Existing Conditions,” the portion of Morningside Park that extends beyond the residential study area was excluded from the quantitative analysis, though residents would likely be drawn to this portion of the park to make use of its active and passive recreational resources. Additionally, residents and workers would likely make use of the nearby portions of Riverside Park that fall outside the study area boundary. These additional open space resources would help to meet the open space needs of new residents and workers introduced to the area in the 2015 future without the Proposed Actions. As described above in “Existing Conditions,” these parks are considered “destination parks,” and residents would typically travel farther than the ½-mile extent of the residential study area along pathways in the parks to enjoy the open space and recreational amenities within these parks.

**E. 2015 FUTURE WITH THE PROPOSED ACTIONS**

**DIRECT EFFECTS**

As discussed in Chapter 7, development that would occur as a result of the Proposed Actions by 2015 would cast new shadows on six existing open spaces and on the open spaces that would be created as part of the Proposed Actions. Because they would be of limited duration, the shadows cast on existing open spaces would not result in significant adverse impacts by the 2015 analysis year.

As described in Chapter 7, the Small Square, between West 129th and West 130th Streets, would be in shadow for all or most of the day in the March, May, and December analysis periods. During the June analysis period, when shadows are shorter, this open space would receive midday sun. During the March and May analysis periods, the Grove, at the intersection of West 125th and West 129th Streets, would be in shadow in the morning but would have sun in the afternoon. During the June and December analysis periods, this open space would be in sun only for a few hours in the middle of the day. While the shadows on these open spaces would diminish their appeal for certain passive recreational activities such as sunbathing, they could still be used for other activities, such as strolling or reading. In the warmer months, shaded portions of these open spaces would be desirable for passive recreational activities. Although new open space resources created as part of the Proposed Actions would be affected by shadow, this shadowing is not considered to be significant or adverse, as the open spaces are created as part of the Proposed Actions.

**INDIRECT EFFECTS**

*STUDY AREA POPULATION*

The Proposed Actions would introduce new residential, worker, student, and other visitor populations to the non-residential and residential study areas by 2015. As fully described in Chapter 1, “Project Description,” by 2015 the reasonable worst-case development scenario for the Project Area includes full development of the projected developments sites in Subdistrict B<sup>1</sup> and Other Areas, and the first

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<sup>1</sup> CPC is contemplating certain modifications to Subdistrict B. The proposed modifications would rezone Subdistrict B to a modified M1-2 light manufacturing district to support light manufacturing and retail uses. It is anticipated that this modification would not result in any projected development sites in Subdistrict B. The proposed modifications are more fully described in Chapter 29, “Modifications to the



phase of development of Subdistrict A. Since the actual program for the development of Subdistrict A (the Academic Mixed-Use Area) would vary depending on Columbia University's needs over the long-term future, for EIS purposes, maximum and minimum ranges of zoning floor areas were established for the Academic Mixed-Use Development for the full build and 2015 development. The 2015 and 2030 maximum and minimum floor ranges are fully described in Chapter 2.

For purposes of conducting a conservative open space analysis, the reasonable worst-case development scenario for Subdistrict A assumes the maximum amount of housing for graduate students, faculty, and other employees, and the maximum amount of other uses that generate the highest employment. In total, the maximum development for the Academic Mixed-Use Development would not exceed 1,408,634 gross square feet (gsf) by 2015. Regardless of the maximum or minimum floor ranges, the 2015 development would require 305,195 gsf of below-grade space, comprising a central energy plant, academic research support, mechanical space, and storage space. Therefore, for consideration of the reasonable worst-case development scenario using the maximum and minimum floor ranges, the total amount of development above ground cannot exceed 1,103,439 gsf.

As described in Chapter 4, "Socioeconomic Conditions," the components of the Academic Mixed-Use Development that would generate the largest number of employees are, in descending order, active ground-floor uses such as restaurant and retail, academic, and academic research uses. As noted in Chapter 2, there is also a minimum amount of 300,000 sf of academic research space in 2015. Therefore, the reasonable worst-case development scenario for 2015 for the Academic Mixed-Use Development would maximize housing for graduate students, faculty, and other employees, and active ground-floor uses, and include the minimum amount of academic research. The difference between the subtotal of these three maximum uses and the total above-ground development in 2015 would comprise academic space. Therefore, for the 2015 analysis year, this open space analysis assumed the reasonable worst-case development scenario for Subdistrict A—referred to as the "open space reasonable worst-case development scenario"—as presented in Table 6-9.

As described in Chapter 2, in the future with the Proposed Actions, the analysis assumes that the reasonable worst-case development scenarios developed for the Tuck-It-Away rezoning applications would not occur. Instead, the analysis considers that these sites would be rezoned as the Special Manhattanville Mixed-Use Zoning District with the Proposed Actions and redeveloped in accordance with the proposed Academic Mixed-Use Development. Therefore, the 2015 future with the Proposed Actions would not include the following associated with the Tuck-It-Away rezoning applications from the future without the Proposed Actions: 389 employees in the non-residential study area, and 538 residents in the residential study area.

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Proposed Actions." Chapter 29 also analyzes the potential environmental impacts that could result from the proposed modifications.

**Table 6-9**

**2015 Subdistrict A: Open Space Reasonable Worst-Case Development Scenario**

<b>Use</b>	<b>Development (gsf)</b>
<b>Community Facility Uses</b>	
Housing for graduate students, faculty, and other employees	175,000
Academic	448,439
Academic research	300,000
<b>Commercial Uses</b>	
Active ground-floor uses <sup>1</sup>	180,000
<b>Above-grade subtotal</b>	<b>1,103,439</b>
<b>Below-Grade Support Uses</b>	
Central energy plant	50,870
Below-grade program	69,830
Mechanical/circulation/loading facilities	94,638
Academic research support	58,563
Storage	31,294
<b>Below-grade subtotal</b>	<b>305,195</b>
<b>Total</b>	<b>1,408,634</b>
<b>Note:</b> <sup>1</sup> Assumes 90,000 sf of retail and 90,000 sf of restaurant space.	

*Non-Residential Study Area*

*Non-Residential Population*

Based on the employment ratios described in Chapter 4, in the open space reasonable worst-case development scenario, a net increase of 2,777 workers would be introduced to the non-residential study area as a direct result of the Proposed Actions. The total number of daily workers in the non-residential study area would reach 9,705. The proposed Academic Mixed-Use Development would not provide housing for all the students using the Academic Mixed-Use Development. Students not living in the student housing would be considered visitors to the Academic Mixed-Use Development and the area’s open spaces. It is anticipated that there would be approximately 2,583 students/visitors to the area who are not housed at the Academic Mixed-Use Development. Therefore, the total number of non-residential users of open space would be 12,288.

*Residential Population*

Based on the maximum housing for graduate students, faculty, and other employees for the Academic Mixed-Use Development, the open space reasonable worst-case development scenario for Subdistrict A would consist of approximately 281 units with 384 residents for the 2015 analysis year. The open space reasonable worst-case development scenario for the Other Areas, as described in Chapter 1, would consist of 99 units on Projected Development Site 25. Using an average household size of 2.65, which is the average household size in the ¼-mile study area, the projected residential development in the Other Areas is anticipated to generate 262 residents. Therefore, it is expected that the Proposed Actions would yield a net increase of 646 residents to the non-residential study area by 2015. The total number of residents within the non-residential study area would increase to approximately 30,202.

In 2015, the residential population that would be introduced by the Proposed Actions in the non-residential study area would consist of graduate students, faculty, and other employees within the Academic Mixed-Use Development Subdistrict A, and additional residents in the Other Areas. It is expected that the age distribution of new residents in Subdistrict A would be predominantly between 20 and 64, and that the age distribution of the residents in the Other

Areas would be similar to age distribution in the future without the Proposed Actions (i.e., 62 percent would be between 20 and 64, 28 percent would be between 0 and 19, and 11 percent would be 65 and over).

Total User Population

Including both the residential and non-residential populations, it is expected that the total daily user population would reach 42,490 by 2015. Although this analysis conservatively assumes that residents and employees are separate populations, it is likely that many of the faculty and graduate students housed in the Academic Mixed-Use Development would also work in the Academic Mixed-Use Development. As a result, there is likely to be some double-counting of the daily user population in which residential and non-residential populations overlap, resulting in a more conservative analysis.

*Residential Study Area*

Non-Residential Population

In 2015 with the Proposed Actions, the number of non-residents in the residential study area would increase from 29,736 to an estimated 34,875. This figure includes the additional workers, students, and other visitors who would be introduced to the study area as a result of the Proposed Actions, as well as the additional workers who would be generated by the projected projects in the area.

Residential Population

The number of residents within the residential study area would increase from 75,159 to an estimated 74,462. This figure includes the additional residents who would be introduced to the residential study area as a direct result of the Proposed Actions and the projected developments in the area.

As in the non-residential study area, it is expected that the graduate students, faculty, and other employees introduced by the Proposed Actions would be between the ages of 20 and 64, with the population introduced by the projected development sites similar to age distribution in the future without the Proposed Actions.

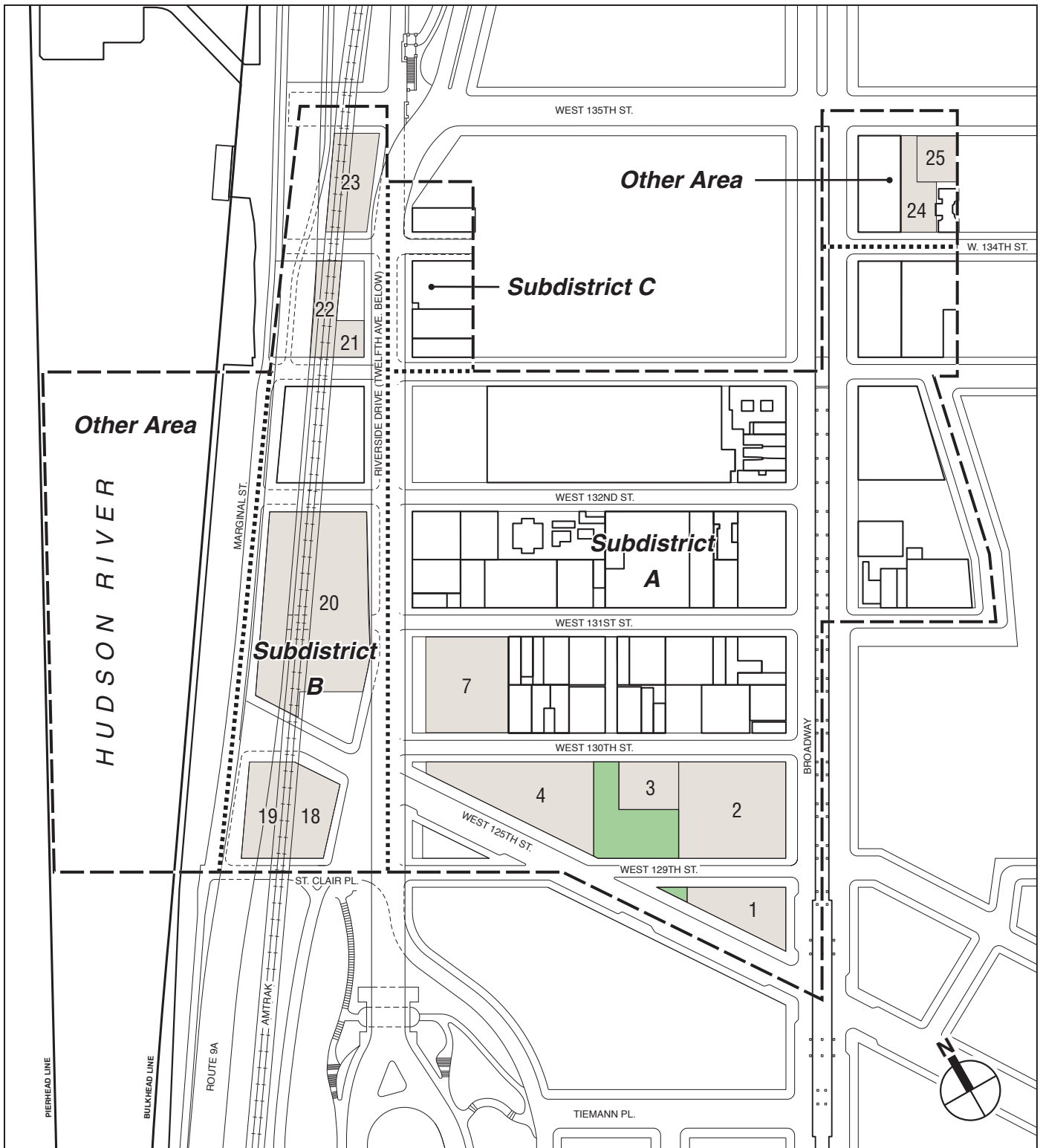
Total User Population

The total user population within the residential study area is expected to increase from 104,895 to 109,347 by 2015. This figure includes both the residents and non-residents in the residential study area. As stated above, while this analysis conservatively assumes that residents and employees are separate populations, it is likely that many of the faculty and graduate students generated by the Proposed Actions would both live and work in the study area. As a result, there is likely to be some double-counting of the daily user population in which residential and non-residential populations overlap, resulting in a more conservative analysis.

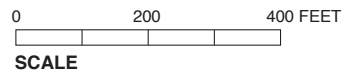
*STUDY AREA OPEN SPACES*

*Non-Residential Study Area*

By 2015 with the Proposed Actions, a net increase of approximately 22,355 sf of privately owned, publicly accessible open space would be introduced to the Project Area. This would include open space on the block bounded by Broadway and Twelfth Avenue, West 129th and West 130th Streets at Site 3 (the Small Square); and at the western tip of Site 1 between West 125th and West 129th Streets (the Grove [see Figure 6-3]). These open spaces would form a central square connected to the street grid.



-  Project and Rezoning Area Boundary
-  Subdistrict Boundary
-  1 Development Site
-  Open Space



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These open spaces are required by the proposed Special Manhattanville Mixed-Use Zoning District. While the design of these open spaces has not yet been developed, the Special Manhattanville Mixed-Use Zoning District text contains urban design requirements for the open spaces. Specifically, no fences or gates would be permitted anywhere in any of the proposed open spaces. The zoning text would limit the open space grade and height of planters to 2½ feet above the grade of the adjacent sidewalk. The Grove and the Small Square must be improved with paved surfaces of a non-skid material and landscaped with trees. Movable seats would be required in the Small Square, and although not required, movable and fixed seats would be permitted in the Grove. Temporary or movable amenities would also be permitted only in the Square, including elements such as trellises, movable tables, game tables, play equipment, and performance facilities, provided they not exceed 10 percent of the area of the Square. The proposed Special Manhattanville Mixed-Use Zoning District would also contain requirements for access and hours of operation of all open spaces (see Appendix A.1).

As a result of the Proposed Actions, the passive open space in the non-residential study area would increase to 30.06 acres. These new open space resources would benefit both existing and future populations in the area and are expected to enhance all open spaces by creating better continuity of access and linking inland areas with existing and future waterfront open space resources. Since no changes in active open space are expected to occur, that acreage would remain unchanged at 20.55 acres. The total amount of open space would increase to 50.61 acres.

### *Residential Study Area*

With the changes to public open spaces mentioned above, the total open space in the residential study area would increase from 120.53 to 123.53 acres. Passive recreational space would increase from 64.06 to 66.83 acres. Active recreational space would remain at 56.70 acres, the same as in the future without the Proposed Actions. Aside from the open space that would be created by the Proposed Actions, no other new publicly accessible open spaces are expected to be developed within the residential study area (as detailed above in “2015 Future Without the Proposed Actions.”

### *ADEQUACY OF OPEN SPACES*

#### *Non-Residential Study Area*

The combined passive open space ratio would decrease from 0.78 acres per 1,000 workers and residents in the future without the Proposed Actions to 0.71 acres with the Proposed Actions (see Table 6-10). Although the ratio would be substantially higher than the recommended weighted average ratio of 0.40 acres per 1,000 residents and workers (see Table 6-11), this change would represent a 9.0 percent decrease in the open space ratio as compared with the future without the Proposed Actions. The passive open space ratio would decrease from 4.13 acres per 1,000 non-residents to 2.45. While this ratio would continue to be substantially higher than the City recommended ratio of 0.15 acres per 1,000 workers, this change would represent a 40.7 percent decrease in the passive open space ratio as compared with the future without the Proposed Actions.

**Table 6-10**  
**2015 Future with the Proposed Actions: Adequacy of Open Space Resources**

	Total Population	Open Space Acreage			Open Space Ratios per 1,000 People			City Open Space Guidelines		
		Total	Passive	Active	Total	Active	Passive	Total	Active	Passive
<b>Non-Residential Study Area</b>										
Non-residents	12,288	50.61	30.06	20.55	N/A	N/A	2.45	N/A	N/A	0.15
Combined non-residents and residents	42,490				N/A	N/A	0.71	N/A	N/A	0.40*
<b>Residential Study Area</b>										
Residents	<u>74,462</u>	123.53	66.83	56.70	<u>1.66</u>	0.76	<u>0.90</u>	2.5	2.0	0.50
Combined non-residents and residents	<u>109,337</u>				N/A	N/A	0.61	N/A	N/A	0.39*
<b>Note:</b> * Weighted average combining 0.15 acres per 1,000 non-residents and 0.50 acres per 1,000 residents. Non-Residents typically use passive spaces; therefore, for the non-residential study area, only passive open space ratios are calculated. For the residential study area, active, passive, and total park space ratios are calculated.										

**Table 6-11**  
**2015 Future with the Proposed Actions: Open Space Ratios Summary**

Ratio	City Guideline	Existing Ratio	Future Without the Proposed Actions	Future with the Proposed Actions
			Ratio	Ratio
<b>Non-Residential Study Area</b>				
Passive/non-residents	0.15	5.04	<u>4.13</u>	2.45
Passive/total population	0.40*	0.78	<u>0.78</u>	0.71
<b>Residential Study Area</b>				
Total/residents	2.5	1.68	<u>1.64</u>	<u>1.66</u>
Passive/residents	0.5	0.90	<u>0.88</u>	<u>0.90</u>
Active/residents	2.0	0.79	<u>0.75</u>	0.76
Passive/total population	0.39*	0.66	<u>0.63</u>	0.61
<b>Note:</b> * Weighted average combining 0.15 acres per 1,000 non-residents and 0.50 acres per 1,000 residents. Non-residents typically use passive spaces; therefore, for the non-residential study area, only passive open space ratios are calculated. For the residential study area, active, passive, and total park space ratios are calculated.				

*Residential Study Area*

As a result of the Proposed Actions, the active open space ratio within the residential study area would remain at 0.76 acres per 1,000 residents. This ratio would not change from conditions in the future without the Proposed Actions. The passive open space ratio for the combined population would decrease by approximately 3.2 percent, from 0.63 to 0.61 acres per 1,000 residents and workers. This ratio would be substantially higher than the recommended weighted average ratio of 0.39 acres per 1,000 residents and workers.

**IMPACT SIGNIFICANCE**

*Quantitative Analysis*

As mentioned above, according to the *CEQR Technical Manual*, a 5 percent decrease in open space ratios is considered a substantial change; however, in areas where the open space ratio is very low, a small decrease in the open space ratio may result in a potential significant adverse impact on open space. Although all passive open space ratios in the non-residential study area would continue to be above the levels recommended by the City in the future with the Proposed Actions, the substantial decrease in the passive open space ratios in the non-residential study area would result in a significant adverse impact. Although the active open space ratio would continue

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to be below the levels recommended by City, it is recognized that this goal is not feasible for many areas of the City, and they are not considered impact thresholds. Given that the active open space ratio would not change from conditions in the future without the Proposed Actions, the Proposed Actions would not result in a significant adverse impact on active open spaces in the residential study area.

### *Qualitative Analysis*

In considering the significance of the projected decline in the passive open space ratios with the Proposed Actions, it is important to note that the Proposed Actions would add open space where it would not otherwise exist. There are a number of factors not accounted for in the quantitative analysis of open space ratios in the future with the Proposed Actions. As described in the proposed Special Manhattanville Mixed-Use Zoning District text (see Appendix A.1), the Proposed Actions would include 30-foot widened sidewalks on the east side of Twelfth Avenue between West 125th and West 131st Streets, with a 15-foot-wide zone for the provision of an open market and an adjacent 15-foot-wide clear path. Within the 15-foot open market zone, the zoning would also require permanent, fixed elements, such as landscaping and seating, with a minimum coverage of 5 percent of the market area. The open spaces along Twelfth Avenue would be paved plazas with trees and landscaping and may also allow movable furniture for seating areas. In addition, mandatory five-foot widened sidewalks would be required at grade on some east–west cross streets between Twelfth Avenue and Broadway. In accordance with the proposed Special Manhattanville Mixed-Use Zoning District text, these open areas along the side streets would be required to be improved as paved surfaces, with planted landscape treatments permitted. While these open spaces would be accessible directly from an adjoining public sidewalk, they are not included in the quantitative analysis.

Although the proposed University-associated population would use active open space facilities in the study areas, such as running and bike paths, ballfields, and basketball courts, it is also likely that most of this new population would use University recreational facilities, both indoor and outdoor, at the Morningside Heights campus in 2015. These University facilities, especially indoor, provide access to recreational facilities in the evening, when most public outdoor facilities are closed.

There are also several open spaces that are just outside of the ½-mile walking distance of the Project Area that were not included in the open space calculations. For example, residents and workers would likely use more of Riverside Park and Morningside Park that extends beyond the ½-mile radius. These regional parks are also used by the surrounding neighborhood and its associated worker and residential populations. Riverside and Riverbank State Park are among the most heavily used in Manhattan. These additional open space resources would offset the deficiency in active space within the residential study area.

In conclusion, the passive open space ratios would decrease in the future with the Proposed Actions, resulting in a significant adverse impact, although the passive open space ratios would continue to be well above the City’s recommended guidelines. While the active open space ratios would continue to be below what is recommended, the Proposed Actions would not result in a decline in the active open space ratio and therefore would not result in a significant adverse impact by 2015. Furthermore, the destination parks that extend beyond the residential study area would help to alleviate this active open space shortage.

## **F. 2030 FUTURE WITHOUT THE PROPOSED ACTIONS**

### **STUDY AREA POPULATION**

There are no known residential, commercial, or other projects that have been identified for completion within the non-residential or residential study areas between 2015 and 2030. To conservatively account for potential population growth over this period, a 0.5 percent annual growth rate has been added to the residential population for the years 2016 through 2030. In the non-residential study area, the combined residential and worker population is projected to be 40,344. In the residential study area, the residential population is projected to be 80,716, and the combined residential and worker population is projected to be 110,452. It is assumed that the age distribution of the residential population will continue to be similar to the population's age distribution in 2015.

### **STUDY AREA OPEN SPACES**

No additional changes to open space acreage in the study areas have been identified between 2015 and 2030.

### **ADEQUACY OF OPEN SPACES**

By 2030, in the future without the Proposed Actions, it is assumed that the residential population would increase at a rate of 0.5 percent per year, and the amount of open space in both the residential and non-residential study areas would remain the same as it is in 2015 in the future without the Proposed Actions. Therefore, the deficit of open space resources would increase for all user populations.

#### *NON-RESIDENTIAL STUDY AREA*

##### *Quantitative Analysis*

By 2030, the combined residential and non-residential passive open space ratio would decrease from 0.78 in existing conditions to 0.73 in the future without the Proposed Actions, an approximately 6.4 percent decrease, and the non-residential passive open space ratio would decrease from 5.04 to 4.13, an approximately 18.0 percent decrease (see Table 6-12). In the 2030 future without the Proposed Actions, the combined residential and non-residential passive open space ratio and the passive open space ratio for non-residents alone would continue to remain above City guidelines.

##### *Qualitative Analysis*

As described above in "Existing Conditions," Riverside Park and Riverbank State Park extend beyond the non-residential study area. Though these areas are not included in the quantified analysis, they would contribute to meeting the open space needs of the additional residential and worker populations in the study area in the 2030 future without the Proposed Actions.



**Table 6-12**

**2030 Future Without the Proposed Actions: Adequacy Open Space Resources**

	Total Population	Open Space Acreage			Open Space Ratios per 1,000 People			City Open Space Guidelines		
		Total	Passive	Active	Total	Active	Passive	Total	Active	Passive
<b>Non-Residential Study Area</b>										
Non-residents	<u>7,149</u>	50.10	29.55	20.55	N/A	N/A	<u>4.13</u>	N/A	N/A	0.15
Combined non-residents and residents	<u>40,344</u>				N/A	N/A	<u>0.73</u>	N/A	N/A	<u>0.44*</u>
<b>Residential Study Area</b>										
Residents	<u>80,716</u>	123.02	66.32	56.70	<u>1.52</u>	<u>0.70</u>	<u>0.82</u>	2.5	2.0	0.50
Combined non-residents and residents	<u>110,452</u>				N/A	N/A	<u>0.60</u>	N/A	N/A	0.41*
<b>Note:</b> * Weighted average combining 0.15 acres per 1,000 non-residents and 0.50 acres per 1,000 residents. Non-residents typically use passive spaces; therefore, for the non-residential study area, only passive open space ratios are calculated. For the residential study area, active, passive, and total park space ratios are calculated.										

**RESIDENTIAL STUDY AREA**

*Quantitative Analysis*

By 2030 in the future without the Proposed Actions, the total open space ratio would decrease from 1.68 to 1.52 acres per 1,000 residents, an approximately 9.5 percent decrease. The combined residential and non-residential passive open space ratio would decrease from 0.66 in existing conditions to 0.60, an approximately 9.1 percent decrease, as shown in Table 6-12. The residential active open space ratio would decrease slightly, from 0.79 to 0.70 acres per 1,000 residents, an approximately 11.4 percent decrease, and the residential passive open space ratio would decrease to 0.82 acres per 1,000 residents, an approximately 8.9 percent decrease. In 2030 without the Proposed Actions, the passive open space ratios for the residential study area would continue to be above the City’s planning guidelines, while the active open space ratio would continue to be below the guidelines.

*Qualitative Analysis*

As described above in “Existing Conditions,” the portion of Morningside Park that extends beyond the residential study area was excluded from the quantitative analysis, though residents would likely be drawn to this portion of the park to make use of its active and passive recreational resources. Additionally, residents and workers would likely make use of the nearby portions of Riverside Park and Riverbank State Park that fall outside the study area boundary. These additional open space resources would help to meet the open space needs of new residents and workers introduced to the area in the 2030 future without the Proposed Actions.

**G. 2030 FUTURE WITH THE PROPOSED ACTIONS**

**DIRECT EFFECTS**

As in the 2015 future with the Proposed Actions, buildings constructed as a result of the Proposed Actions would cast new shadows on the project-created open spaces and six existing open spaces

(see Chapter 7). Due to the limited extent and duration, only one of these shadows would result in significant adverse impacts, cast on the I.S. 195 Playground. Shadows from the proposed buildings are expected to result in significant adverse impacts on this open space during the March and December analysis periods, when large incremental shadows would cover the playground for long durations. Some sunlight would reach the playground during the midday hours in the March analysis period, and the incremental shadows would be large and cover most of the playground throughout the day. In December, significant adverse impacts are expected to occur because of large incremental shadows that would be cast on the playground for long durations, and because the incremental shadows would remove most or all of the sunlight throughout the analysis day. Mitigation measures to reduce or fully mitigate the Proposed Actions' shadow impact on the I.S. 195 Playground are discussed in Chapter 23.

The additional open spaces constructed by the 2030 analysis year would be cast in shadow for most or all of the time throughout the four analysis periods. On all analysis days, the new open spaces would only receive sunlight for a short period during the midday. Although the shadows on these open spaces could diminish their appeal for certain passive recreational activities, they could still be used for other activities, such as strolling or reading. On warm days, shaded portions of these open spaces may be preferred by users of passive open space. Further, as described in Chapter 7, the landscape design of this proposed open space is anticipated to take into account the shadow conditions, and vegetation would be selected for its shade tolerance. The open spaces would include benches, lighting, and movable tables and chairs. Therefore, even with extensive shadows during the fall through spring months, the new open spaces would be a beneficial resource for this neighborhood, which is underserved in terms of open space. The popularity of certain other open space resources in the City that are in densely developed areas and are heavily shadowed—Paley Park, Tudor City Greens, the Museum of Modern Art garden, Rockefeller Center Plaza, etc.—demonstrates that open spaces in substantial shadow can still serve as useful community amenities. Although new open spaces created as part of the Proposed Actions would be affected by shadow, this shadowing is not considered to be significant or adverse as the open spaces are created as part of the Proposed Actions.

In addition, as described in Chapter 20, the Square, located midblock between Twelfth Avenue and Broadway, and West 130th and West 131st Streets, would have noise levels above 55 dBA  $L_{10(1)}$ , exceeding the *CEQR Technical Manual* noise exposure guidelines for outdoor areas requiring serenity and quiet. However, the noise levels in this new open space area would be comparable to noise levels in several other New York City open space areas and parks, including Hudson River Park, Riverside Park, Central Park, Bryant Park, and Paley Park. Although the 55 dBA  $L_{10(1)}$  guideline is a goal for outdoor areas requiring serenity and quiet, this relatively low noise level is typically not achieved in parks and open space areas in New York City. New open space resources created as part of the Proposed Actions could be affected by noise, but this noise is not considered to be significant or adverse, as the open spaces are created as part of the Proposed Actions.

### **INDIRECT EFFECTS**

As a result of the Proposed Actions, additional residential and non-residential populations would be introduced to the study areas by 2030. However, there would also be an increase in open spaces included with the Proposed Actions.

## **Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development FEIS**

### *STUDY AREA POPULATION*

As previously described, by 2030 reasonable worst-case development scenario for the Project Area includes full development of the Academic Mixed-Use Development in Subdistrict A and the projected development sites in Subdistrict B<sup>1</sup> and Other Areas. Similar to the analysis for Subdistrict A in 2015, ranges of zoning floor areas have been established to develop the reasonable worst-case development scenario for Subdistrict A in 2030. The 2030 maximum and minimum floor ranges are fully described in Chapter 1.

Similar to the 2015 analysis, for purposes of conducting a conservative open space analysis, the reasonable worst-case development scenario for Subdistrict A assumes the maximum amount of housing for graduate students, faculty, and other employees, the minimum amount of recreational facilities, and the maximum amount of other uses that generate the highest employment. In total, the maximum development for the Academic Mixed-Use Development would not exceed 6,760,673 gsf in 2030. Regardless of the maximum or minimum floor ranges, the 2030 development would require the 1,985,657 gsf of below-grade space, comprising a central energy plant, academic research support, mechanical space, parking and loading facilities, and storage. Therefore, for consideration of the reasonable worst-case development scenario using the maximum and minimum floor ranges, the total amount of development above-ground cannot exceed 4,755,016 gsf.

As described in Chapter 4, the components of the Academic Mixed-Use Development that would generate the largest number of employees are, in descending order, active ground-floor uses, academic, and academic research uses. As noted in Chapter 2, there is also a minimum amount of 960,000 sf of academic research space in 2030. Therefore, the reasonable worst-case development scenario for 2030 for the Academic Mixed-Use Development would maximize housing for graduate students, faculty, and other employees, and active ground-floor uses, and include the minimum amount of academic research. The difference between the subtotal of these three maximum uses and the total above-ground development in 2030 would comprise academic space. Therefore, for the 2030 analysis year, the open space analysis will assume the reasonable worst-case development scenario for Subdistrict A, referred to as the “open space reasonable worst-case development scenario,” as described in Table 6-13.

### *Non-Residential Study Area*

#### *Non-Residential Population*

Based on the employment ratios described in Chapter 4, with the open space reasonable worst-case development scenario, a net increase of 9,300 workers would be introduced to the non-residential study area as a direct result of the Proposed Actions. The total number of daily workers in the non-residential study area would reach 16,226. The proposed Academic Mixed-Use Development would not provide housing for all the students generated by the Academic Mixed-Use Development. Students not living in the Academic Mixed-Use Development would be considered visitors to the Academic Mixed-Use Development and the area’s open spaces. It is anticipated that there would be approximately 2,858 students/visitors to the area who are not housed in the Academic Mixed-Use Development. Therefore, the total number of non-residential users of open space would total 19,085.

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<sup>1</sup> As described earlier, CPC is contemplating certain modifications to Subdistrict B that would not result in any projected development sites in Subdistrict B. The proposed modifications are more fully described in Chapter 29, “Modifications to the Proposed Actions.”

**Table 6-13**

**2030 Subdistrict A: Open Space Reasonable Worst-Case Development Scenario**

Use	Development (gsf)
<b>Community Facility Uses</b>	
Housing for graduate students, faculty, and other employees	1,300,000
Academic	1,915,016
Academic research	960,000
<b>Commercial Uses</b>	
Active ground-floor uses <sup>1</sup>	600,000
<b>Above-grade subtotal</b>	<b>4,775,016</b>
<b>Below-Grade Support Uses</b>	
Central energy plant	70,199
Below-grade program	69,830
Swimming and diving center	145,431
Mechanical/circulation/loading facilities	366,166
Academic research support	296,201
Storage	189,225
Parking (including ramps)	848,605
<b>Below-grade subtotal</b>	<b>1,985,657</b>
<b>Total</b>	<b>6,760,673</b>
<b>Note:</b>	<sup>1</sup> Assumes 300,000 sf of retail and 300,000 sf restaurant space.

### Residential Population

Based on the maximum housing for graduate students, faculty, and other employees for the Academic Mixed-Use Development, the open space reasonable worst-case development scenario for Subdistrict A would consist of approximately 2,087 units with 2,870 residents for the 2015 analysis year. As previously described, the reasonable worst-case development scenario for the Other Areas would generate 262 residents. Therefore, the total number of residents within the non-residential study area would increase to approximately 34,722.

It is anticipated that the residential population introduced by the Proposed Actions by 2030 in the non-residential study area would consist of graduate students, faculty, and other employees, and additional residents from the projected development in Subdistrict B and the Other Area east of Broadway. It is expected that the new graduate students, faculty, and other employees would be predominantly between ages 20 and 64, and that the age distribution of the residents from the projected development sites would be similar to age distribution in the future without the Proposed Actions (i.e., 62 percent would be between 20 and 64, 28 percent would be between 0 and 19, and 11 percent would be 65 and over).

### Total User Population

Including both the residential and non-residential populations, it is expected that the total daily user population would reach 53,807 by 2030. Although this analysis conservatively assumes that residents and employees are separate populations, it is likely that many of the faculty and graduate students housed in the Academic Mixed-Use Development would also work in the Academic Mixed-Use Development. As a result, there is likely to be some double-counting of the daily user population in which residential and non-residential populations overlap, resulting in a more conservative analysis.

## **Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development FEIS**

### *Residential Study Area*

#### Non-Residential Population

In 2030 with the Proposed Actions, the number of non-residents in the residential study area would increase from 29,736 to an estimated 41,672. This figure includes the additional workers, students, and other visitors who would be introduced to the study area as a result of the Proposed Actions, and the additional workers who would be generated by the projected projects in the area

#### Residential Population

The number of residents within the residential study area would increase from 80,716 to an estimated 82,243. This figure includes the additional residents who would be introduced to the residential study area as a direct result of the Proposed Actions and the projected developments in the area.

As in the non-residential study area, it is expected that the graduate students, faculty, and other employees introduced by the Proposed Actions would be between the ages of 20 and 64, with the population introduced by the projected development sites similar to age distribution in the future without the Proposed Actions.

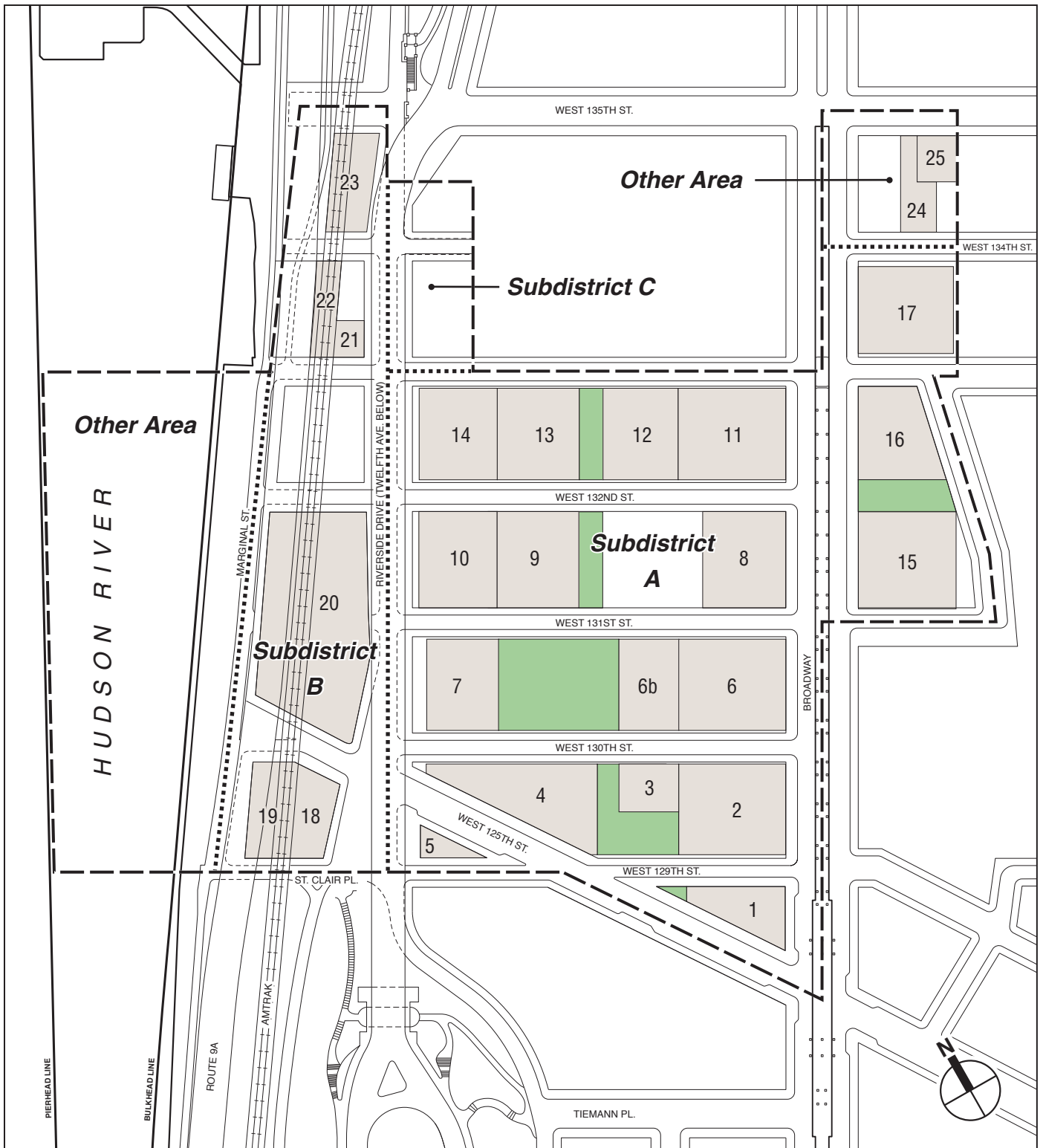
#### Total User Population

The total user population within the residential study area is expected to reach 123,915 by 2030. This figure includes both the residents and non-residents in the residential study area. As stated above, while this analysis conservatively assumes that residents and employees are separate populations, it is likely that many of the faculty and graduate students generated by the Proposed Actions would both live and work in the study area. As a result, there is likely to be some double-counting of the daily user population in which residential and non-residential populations overlap, resulting in a more conservative analysis.

### *STUDY AREA OPEN SPACES*

By 2030 with the Proposed Actions, a net increase of approximately 2.16 acres (93,965 sf) of privately owned, publicly accessible open space would be introduced to the Project Area, as shown in Figure 6-4. As described in the proposed Special Manhattanville Mixed-Use Zoning District text (see Appendix A.1), the Square would be permitted to accommodate a range of activities, such as ceremonies, outdoor instruction, seating and eating areas, and other passive uses, like reading, sunbathing, strolling, and people-watching. The Special Manhattanville Mixed-Use Zoning District text would also contain urban design requirements for the Square. A minimum of 50 percent of the Square must be landscaped with soft ground cover, including trees, grasses, or shrubs. Fixed and/or movable seating and bicycle racks must be provided, and permanent structures such as kiosks, pavilions, exit stairs, or public restrooms would be permitted, provided that they are no more than 20 feet high. Temporary or movable amenities would also be permitted only in the Square, including elements such as trellises, movable tables, game tables, play equipment, and performance facilities, provided they not exceed 10 percent of the area of the Square. The proposed Special Manhattanville Mixed-Use Zoning District would also contain requirements for access and hours of operation of all open spaces (see Appendix A.1).

Additional open space in 2030 would include a north–south midblock open area between West 131st and West 133rd Streets, and an east–west midblock open area between Broadway and Old Broadway. These open spaces would be paved and would include trees, landscaping and seating. As a result of the Proposed Actions, the passive open space in the non-residential study area would increase to 31.71 acres. Since no changes in active open space are expected to occur, that



- - - - -** Project and Rezoning Area Boundary
- .....** Subdistrict Boundary
- 1** Development Site
- Green** Open Space

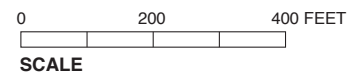


Figure 6-4  
**2030 Future with the Proposed Actions:  
 Open Space Resources**

acreage would remain unchanged at 20.55 acres. The total amount of open space would increase to 52.26 acres.

*Residential Study Area*

With the changes to public spaces mentioned above, the total open space in the residential study area would increase to 125.18 acres. Passive recreational space would increase to 68.48 acres. Active recreational space would remain at 56.70 acres, the same as in the future without the Proposed Actions.

*ADEQUACY OF OPEN SPACES*

*Non-Residential Study Area*

The passive open space ratio for non-residents in the non-residential study area would decrease from 4.13 acres per 1,000 persons in the future without the Proposed Actions to 1.66 acres per 1,000 persons with the Proposed Actions. Although an open space ratio of 1.66 is more than 10 times the guideline for passive open space, the decrease from ratios in the future without the Proposed Actions would be substantial (59.8 percent). Therefore, this change is considered to be a significant adverse impact on passive open space resources for non-residents in the non-residential study area.

The combined passive open space ratio would decrease from 0.73 acres per 1,000 workers and residents in the future without the Proposed Actions to 0.59 acres with the Proposed Actions (see Table 6-14). Although the ratio would be substantially higher than the recommended weighted average ratio of 0.38 acres per 1,000 residents and workers, this change represents a 19.2 percent decrease in the open space ratio, and is considered to be a significant adverse impact on passive open space.

**Table 6-14**  
**2030 Future with the Proposed Actions: Adequacy of Open Space Resources**

	Total Population	Open Space Acreage			Open Space Ratios per 1,000 People			City Open Space Guidelines		
		Total	Passive	Active	Total	Active	Passive	Total	Active	Passive
<b>Non-Residential Study Area</b>										
Non-residents	19,085	52.26	31.71	20.55	N/A	N/A	1.66	N/A	N/A	0.15
Combined non-residents and residents	53,807				N/A	N/A	0.59	N/A	N/A	0.38*
<b>Residential Study Area</b>										
Residents	<u>82,243</u>	125.18	68.48	56.70	1.52	0.69	0.83	2.5	2.0	0.50
Combined non-residents and residents	<u>123,915</u>				N/A	N/A	0.55	N/A	N/A	0.38*
<b>Notes:</b> * Weighted average combining 0.15 acres per 1,000 non-residents and 0.50 acres per 1,000 residents. Non-residents typically use passive spaces; therefore, for the non-residential study area, only passive open space ratios are calculated. For the residential study area, active, passive, and total park space ratios are calculated.										

*Residential Study Area*

As a result of the Proposed Actions, the active open space ratio within the residential study area would decrease slightly, to 0.69 acres per 1,000 residents. This would represent a decrease of approximately 1.4 percent from conditions in the future without the Proposed Actions. The passive open space ratio for the combined population would decrease by approximately 8.3 percent, from 0.60 to 0.55 acres per 1,000 residents and workers. This ratio would be higher than

**Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development FEIS**

the recommended weighted average ratio of 0.38 acres per 1,000 residents and workers. Although the active open space ratio would continue to be below the levels recommended by the City, it is recognized that this goal is not feasible for many areas of the City, and they are not considered impact thresholds. As mentioned above, according to the *CEQR Technical Manual*, a 5 percent decrease in open space ratios is considered a substantial change, though a decrease of a smaller percentage can constitute a significant adverse impact in areas that are underserved by open space. Given that the active open space ratio would decrease by 1.4 percent in an area that currently does not meet City guidelines for active open space ratios, the Proposed Actions would result in a significant adverse impact on active open spaces in the residential study area. Table 6-15 provides a summary of the open space ratios in existing conditions, in the future without the Proposed Actions, and in the future with the Proposed Actions.

**Table 6-15**  
**2030 Future with the Proposed Actions: Open Space Ratios Summary**

Ratio	City Guideline	Existing Ratio	Future Without the Proposed Actions	Future with the Proposed Actions
			Ratio	Ratio
<b>Non-Residential Study Area</b>				
Passive/non-residents	0.15	5.04	<u>4.13</u>	1.66
Passive/total population	0.38*	0.78	<u>0.73</u>	0.59
<b>Residential Study Area</b>				
Total/residents	2.5	1.68	<u>1.52</u>	<u>1.52</u>
Passive/residents	0.5	0.90	<u>0.82</u>	0.83
Active/residents	2.0	0.79	<u>0.70</u>	0.69
Passive/total population	0.38*	0.66	<u>0.60</u>	0.55
<b>Notes:</b> * Weighted average combining 0.15 acres per 1,000 non-residents and 0.50 acres per 1,000 residents. Non-residents typically use passive spaces; therefore, for the non-residential study area, only passive open space ratios are calculated. For the residential study area, active, passive, and total park space ratios are calculated.				

*IMPACT SIGNIFICANCE*

*Quantitative Analysis*

All passive open space ratios in the non-residential study area would continue to be above the levels recommended by the City in the future with the Proposed Actions. Although the active open space ratio would continue to be below the levels recommended by the City, it is recognized that this goal is not feasible for many areas of the City, and they are not considered impact thresholds. As mentioned above, according to the *CEQR Technical Manual*, a 5 percent decrease in open space ratios is considered a substantial change, though a decrease of a smaller percentage can constitute a significant adverse impact in areas that are underserved by open space.

As discussed above, the passive open space ratios in the non-residential study area would decrease by approximately 59.8 and 19.2 percent for the non-residential and total populations, respectively. Given the magnitude of this decrease, it would constitute a significant adverse impact on passive open space within the non-residential study area.

In the residential study area, the Proposed Actions would result in significant adverse impacts on passive and active open spaces. Given that the active open space ratio would decrease by 1.4 percent in an area that currently does not meet City guidelines for active open space ratios, the Proposed Actions would result in a significant adverse impact on active open spaces in the



residential study area. Additionally, the total open space ratio for residents, which is currently below City guidelines, would decrease by 1.0 percent, resulting in a significant adverse impact.

*Qualitative Analysis*

In considering the significance of the projected decline in the open space ratios with the Proposed Actions, it is important to note that the Proposed Actions would add open space where it would not otherwise exist. There are a number of factors not accounted for in the quantitative analysis of open space ratios in the future with the Proposed Actions. As described in the proposed Special Manhattanville Mixed-Use Zoning District text (see Appendix A.1), additional 30-foot widened sidewalks would also be developed along Twelfth Avenue between West 131st and West 133rd Streets, with a 15-foot-wide zone for the provision of an open market and an adjacent 15-foot-wide clear path. Within the 15-foot open market zone, the zoning would also require permanent, fixed elements, such as landscaping and seating, with a minimum coverage of 5 percent of the market area. In addition, mandatory setbacks at grade would be required. The setbacks along the east–west narrow streets would be required to be improved as paved surfaces, with planted landscape treatments permitted. These setbacks and landscaping would improve pedestrian access through the Project Area and to the West Harlem Waterfront park. All the open areas required by the proposed zoning would be accessible directly from an adjoining public sidewalk.

Although the proposed University-associated population would use active open space facilities in the study areas, such as running and bike paths, ballfields, and basketball courts, it is likely that most of this new population would use University recreational facilities, both indoor and outdoor, at the Morningside Heights campus. These University facilities, especially indoor, provide access to recreational facilities in the evening, when most public outdoor facilities are closed. In addition, although not included in the open space reasonable worst-case development scenario, the Illustrative Plan includes a recreational building in the Academic Mixed-Use Area.

There are also several open spaces that are just outside of the ½-mile walking distance of the Project Area that were not included in the open space calculations. For example, residents and workers would likely use more of Riverside Park and Morningside Park that extends beyond the ½-mile radius. These regional parks are also used by the surrounding neighborhood and its associated worker and residential populations. Riverside and Riverbank State Park are among the most heavily used in Manhattan. Additionally, by 2030, the Proposed Actions would include the construction of recreational space, including a gym and a pool, that would be available for use by students, faculty, and other employees at the University. This facility, though not included in the open space reasonable worst-case development scenario, would help to meet the new population’s demand for active recreational space. \*