

A. INTRODUCTION

According to the guidelines of the 2001 *New York City Environmental Quality Review (CEQR) Technical Manual*, an open space analysis is necessary when an action would result in the physical loss of public open space or the introduction of 200 or more residents or 500 or more workers to an area. The proposed project is the development of Fresh Kills Park, a 2,163-acre park with both active and passive recreational uses, and would include a system of park roads. Because these park roads being proposed as part of the project would pass through existing mapped parkland (portions of the project site are already mapped parkland), a State legislative action was approved for the alienation of parkland along these segments of proposed road corridors (Chapter 659 of the 2007 Laws, State of New York). However, the proposed project would still represent a major increase in the area's residential and open space supply, and would also increase the number of employees in the area. Therefore, this chapter assesses existing conditions (for both open space users and resources), examines conditions in the future without the proposed project, and identifies potential impacts that would result in the future with the proposed project. It accounts for the increased open space supply provided by a major new waterfront park, as well as the increased demand from the new worker population.

The conclusion of this analysis is that the proposed project would add a significant amount of open space and dramatically increase the recreational opportunities along and adjacent to the waterfront. Although the project would add new worker populations to the area, the amount of new open space acreage, for both passive and active use and extensive new habitats more than offsets this demand. Thus, it is concluded that the proposed project would result in significant quantitative and qualitative open space benefits and in significant positive open space impacts for local residents, the Borough, and the City as a whole.

B. METHODOLOGY**STUDY AREAS**

This analysis of open space was conducted based on methodologies contained in the *CEQR Technical Manual*. According to CEQR guidelines, the first step in conducting an open space analysis is to establish study areas appropriate for 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 of the large size of the proposed project, two study areas are evaluated—a commercial study area based on a ¼-mile distance from the project site, and a residential study area based on a ½-mile distance.

In accordance with CEQR methodology, the commercial open space study area comprises all census tracts that have 50 percent of their area located within ¼ mile of the project area. Thus, all open spaces, as well as all residents and employees within census tracts with at least 50 percent of their area within the ¼-mile radius, have been included in the study areas for this analysis (see Figure 5-1). The same methodology was applied to the ½-mile residential study area. However, given that both study areas encompass the same eight census tracts, for the purposes of this analysis the two study areas will together be referred to as “the study area,” which extends to the ½-mile boundary. In order to conduct a conservative analysis, for census tracts 170.08 and 226, and 291.02, residents and workers in these tracts were included in the analysis, but available open spaces were not, since these tracts had just slightly less than 50 percent of their area in the ½-mile study area.

OPEN SPACE USER POPULATIONS

Demographic data were used to identify potential open space users (residents and workers) within the open space study area. To determine the number of residents located within the study area, data were compiled from the 2000 Census for the study area tracts. The number of employees in the study area was determined based on journey-to-work data from the 2000 Census Transportation Planning Package (CTTP).

INVENTORY OF OPEN SPACE RESOURCES

All publicly accessible open spaces and recreational facilities within the study area were inventoried to determine their size, character, and condition. Public spaces that do not offer useable passive or active recreational areas were excluded from the quantitative analysis, as were open spaces that are not accessible to the general public. The information used for this analysis was gathered through field studies conducted in November, 2006 and data 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. Active open space features typically include basketball courts, baseball fields, or play equipment. Passive open space facilities are characterized by activities such as strolling, reading, sunbathing, and people-watching. Some spaces, such as lawns, public esplanades, and dog runs, can function as both active and passive recreation areas.

ADEQUACY OF OPEN SPACE RESOURCES

CRITERIA FOR QUANTIFIED ANALYSIS

The determination of the need for a quantified open space analysis is based on both the adequacy of the quantity of open space and how the proposed actions would change open space ratios in the future with 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 already exhibits a low open space ratio (e.g., below the guidelines set forth in the *CEQR Technical Manual*, indicating a shortfall of open space), even a small decrease in that ratio as a result of a proposed project or action may be considered an adverse effect and would warrant detailed analysis. Given that the proposed actions would substantially increase local resident and employee populations, as stated above, a quantitative analysis has been performed. However, because the project would introduce a large, significant open space resource to the community, it was determined that a detailed assessment of open

space was appropriate, as opposed to first doing the initial assessment described in the *CEQR Technical Manual*.

COMPARISON TO DCP GUIDELINES

To assess the adequacy of the quantity of open space resources, open space ratios are compared against guideline values set by DCP. Although these open space ratios are not meant to determine whether a proposed action would have a significant adverse impact on open space resources, they are helpful in understanding the extent to which an impact can occur. The following guidelines are used in this type of analysis:

- For non-residential populations, a guideline of 0.15 acres of passive open space per 1,000 non-residents is typically considered adequate.
- For residential populations, a guideline of 2.5 acres per 1,000 residents is considered adequate. Ideally, this is comprised of 0.50 acres of passive space and 2.0 acres of active open space. For large-scale actions such as that analyzed in this EIS, the City seeks to attain a planning goal of a balance of 80 percent active open space and 20 percent passive open space.
- For the combined resident and non-resident population, a target open space ratio is established by creating a weighted average of the amount of open space necessary to meet the DCP guideline of 0.50 acres of passive open space per 1,000 residents and 0.15 acres of passive open space per 1,000 non-residents.

IMPACT ASSESSMENT

The assessment of potential significant adverse impacts on open space is both quantitative and qualitative. The assessment considers nearby destination resources and project-created open spaces or private/quasi-private recreational facilities not available to the general public. It is recognized that DCP open space planning goals are not feasible for many areas of the city, and they are not considered impact thresholds. Rather, they are benchmarks indicating how well an area is served by open space.

C. EXISTING CONDITIONS

OPEN SPACE USER POPULATION

As presented in Table 5-1, five census tracts comprise the open space study area. Based on the 2000 Census, the residential population of this area is 51,935. The worker population in the study area is estimated to be 17,680.

OPEN SPACE INVENTORY

There are four open spaces located almost entirely within the study area for the purposes of this analysis: Arden Heights Woods Park, the South Shore Golf Course, Schmul Park, and the Sleight Cemetery (see Table 5-2 and Figure 5-1).

Arden Heights Woods Park has a total of 185 acres of passive recreation, and provides no active recreation. The park is owned by DPR and is in good condition. There are trails in the park, but its principal purpose is as a natural area.

**Table 5-1
Existing Resident and Worker Populations**

Census Tract	Resident Population ¹	Worker Population ²
170.07	3,006	150
170.08	8,230	270
170.10	9,278	745
208.01	8,261	1,015
226	6,103	4,540
277.02	5,883	7,210
277.03	8,843	835
291.02	2,331	2,915
Study Area Total	51,935	17,680
Sources:		
¹ U.S. Census of Population and Housing, 2000.		
² 2000 Census Transportation Planning Package.		

**Table 5-2
Open Space Inventory**

#	Name/Address	Owner/ Agency	Features	Acres of Active Open Space	Acres of Passive Open Space	Condition/ Utilization
1	Arden Heights Woods Park	DPR	Natural habitat	0	185	Good/moderate
2	South Shore Golf Course	DPR	18-hole golf course, restaurant	171	0	Good/heavy
3	Schmul Park	DPR	Basketball courts, baseball field, playground	5.5	3	Good/heavy
4	Sleight Cemetery	DPR	Cemetery	0	0.23	Poor/light
Study Area Total				176.5	188.23	
Source: New York City Department of Parks and Recreation						

The South Shore Golf Course Park is an 18-hole golf course and provides 171 acres of active recreation. It also has restaurant facilities. It is owned by DPR (operation of the golf course is a franchise) and is also in good condition. This park is heavily used during the warmer months.

Schmul Park is about 8.5 acres in size and contains both active and passive recreational spaces. It features basketball courts and a baseball field, as well as a playground.

Three other open spaces in the study area have not been included in the quantitative analysis: LaTourette Park, because it is largely outside the study area; and William T. Davis Wildlife Refuge because it is largely a natural area space. In addition, there is the Isle of Meadows property on the Fresh Kills site which is a 100-acre open space that is a natural area and is not publicly accessible (without DPR supervision).

ANALYSIS OF THE ADEQUACY OF OPEN SPACE RESOURCES

QUANTITATIVE ANALYSIS

As described above, the quantitative analysis of the study area focuses on passive open spaces that may be used by workers in the area (and shared by residents in the area) and active open spaces that may be used predominantly by residents. To assess the adequacy of the open spaces in the area, the ratio of workers to acres of open space is compared to DCP’s planning guideline of 0.15 acres of passive space per 1,000 workers. In addition, the passive open space ratio for both workers and residents in the area is compared to the recommended weighted average ratio, and the active open space ratio for residents is compared to DCP’s planning guideline of 2.0 acres of active open space per 1,000 residents (see Table 5-3).

Table 5-3
Analysis of Adequacy of Public Open Space Resources in the Study Area: Existing Conditions

Study Area Population	
Residents	51,935 ¹
Workers	17,680 ²
Total	69,615
Open Space Acreage	
Passive	188.23
Active	176.5
Total	364.73
Open Space Ratios	
Active	3.4/1,000 residents
Recommended Weighted Average Ratio for Passive	0.41/1,000 residents and workers
Combined Passive	2.7/1,000 residents and workers
Worker Passive	10.63/1,000 workers
Sources:	
¹	2000 U.S. Census.
²	2000 Census Transportation Planning Package.

As shown in Table 5-3, the study area includes a total of approximately 364.73 acres of open space, of which 188.23 are passive space and 176.5 are active space. A total of 51,935 residents live within this vicinity, and 17,680 people work within the study area boundary. The combined residential and worker population is 69,615.

The combined active and passive open space ratio for the study area’s residents is 7.0 acres per 1,000 residents, which is well above the planning goal of 2.5 acres of combined active and passive per 1,000 residents. The area has a passive open space ratio of 10.63 acres of passive open space per 1,000 workers, which is significantly higher than the City’s guideline of 0.15 acres. The combined passive open space ratio is 2.7 acres per 1,000 residents and workers, which is also higher than the recommended weighted average ratio of 0.41 acres per 1,000 residents and workers. Thus, based on DCP guidelines, there is sufficient passive open space to serve the combined worker and resident populations. In addition, the area has 3.4 acres of active

open space per 1,000 residents, which is also well above the City's recommended ratio of 2.0 acres of active open space per 1,000 residents.

QUALITATIVE ANALYSIS

There are several passive open spaces outside the study area that study area open space users are also likely to use. These are not reflected in the quantitative analyses, but could be used by persons willing to travel slightly farther to visit an open space.

One of the largest open spaces available just outside the study area is LaTourette Park. LaTourette Park consists of 511 acres, four hiking trails, and offers hiking, golf, softball, and other active and passive recreational activities. It is likely that both residents and workers at least occasionally take advantage of the recreational resources that this park has to offer, even though it is located just outside of the open space study area boundary.

The Isle of Meadows is a natural area in the Arthur Kill that is currently under DPR jurisdiction.

The William T. Davis Wildlife Refuge is found in the northern part of the study area and contains 340 acres of open space, devoted mostly to natural areas.

D. THE FUTURE WITHOUT THE PROPOSED PROJECT: 2016 AND 2036

STUDY AREA POPULATION

Several new residential and commercial developments are currently planned and expected to be completed within the study areas by 2016 and 2036. These new developments will increase both the residential and non-residential populations within the study areas. However, in order to conservatively estimate the increase in the residential population by 2016, a growth rate of 5.2 percent was applied (see Table 2-3 in Chapter 2, "Land Use, Zoning, and Public Policy.") In order to conservatively estimate the increase in the residential population by 2036, a growth rate of 6.6 percent was applied, based on population projections issued by DCP in 2006. For workers, growth rates were based on the worker projections issued by the New York Metropolitan Transportation Council (NYMTC) in 2005. Table 5-4 below shows the projected study area population by 2016 and 2036.

PROJECT SITE

Absent the proposed project, it is anticipated that the project site will remain a landfill going through completion of final closure construction. No other development is expected on the project site absent the proposed project through the 2016 and 2036 analysis years.

OPEN SPACE INVENTORY

In the future without the proposed project, it is expected that the Brookfield Landfill will be converted to a public open space. This new open space is expected to provide approximately four miles of walking trails (with an estimated width of 10 feet for an additional 4.8 acres of active open space), ten acres of active recreation, and eight acres of passive recreation. Therefore, the total amount of open space added by this park project will be 22.8 acres (see Figure 5-2).

In addition, the 21-acre Owl Hollow Park will be constructed and the Isle of Meadows will continue to be preserved and maintained as a natural habitat area. However, these open spaces would not be mapped as parkland in the Future Without the Proposed Project. However, the addition of Owl Hollow open space acreage is presented quantitatively in Table 5-4 for the Future Without the Proposed Project, since it would be publicly accessible although not mapped as parkland.

Table 5-4

Analysis of Adequacy of Public Open Space Resources in the Study Area in the Future Without the Proposed Project: 2016 and 2036

	2016	2036
Study Area Population		
Residents	59,373	67,165
Workers	23,114	31,081
Total	82,487	98,246
Open Space Acreage		
Passive	196.23	196.23
Active	212.3	212.3
Total	408.53	408.53
Open Space Ratios		
Active	3.58/1,000 residents	3.16/1,000 residents
Recommended Weighted Average Ratio for Passive	0.40/1,000 residents and workers	0.39/1,000 residents and workers
Combined Passive	2.38/1,000 residents and workers	1.99/1,000 residents and workers
Worker Passive	8.48/1,000 workers	6.31/1,000 workers
<p>Notes: Population projections based on New York City Department of City Planning Population Projections, 2006; and New York Metropolitan Transportation Council Population Projections, 2005.</p> <p>Source: <u>Source for the size of the future Brookfield Park is the "Brookfield Avenue Landfill Public Meeting" presentation, April 29, 2004 from http://home.nyc.gov/html/dep/pdf/brookfield.pdf; AKRF, 2007.</u></p>		

ANALYSIS OF THE ADEQUACY OF OPEN SPACE RESOURCES

By 2016 without the proposed project, based on City of New York and regional projection data, the number of non-residents in the study area is expected to increase to 23,114, the number of residents is expected to increase to 59,373, and the total amount open space is expected to increase to 408.53. Therefore, in 2016, the ratio of passive open space per 1,000 non-residents will be 8.48; this is significantly higher than the City's guideline of 0.15 acres (see Table 5-4). For the combined residential and non-residential population, the passive open space ratio will be 2.38 acres per 1,000 people, which is also higher than the recommended weighted average ratio of 0.40 acres per 1,000 residents and workers. In addition, the area will have 3.58 acres of active open space per 1,000 residents, which is also well above the City's recommended ratio of 2.0 acres of active open space per 1,000 residents.

By 2036, the number of non-residents in the study area is expected to increase to 31,081, the number of residents is expected to increase to 67,165, and the total amount open space is expected to increase to 408.53 acres. Therefore, in 2036, the ratio of passive open space per 1,000 non-residents would be 6.31. This ratio would continue to be significantly higher than the City's guideline of 0.15 acres (see Table 5-4). For the combined residential and non-residential population, the passive open space ratio would be 1.99 acres per 1,000 people, which is also

significantly higher than the recommended weighted average ratio of 0.39 acres per 1,000 residents and workers. In addition, the area would have 3.16 acres of active open space per 1,000 residents, which is also above the City's recommended ratio of 2.0 acres of active open space per 1,000 residents.

E. THE FUTURE WITH THE PROPOSED PROJECT: 2016 AND 2036

In the Future With the Proposed Project, the project site would be transformed into a 2,163-acre public park with both active and passive recreational uses, as well as natural habitat areas. For the purposes of this analysis, only the directly publicly accessible portions of the project site have been quantified.

2016

STUDY AREA POPULATION

As described in Section D, "The Future without the Proposed Project," DCP and NYMTC projections were used to estimate the increase in the residential and non-residential population within the study area by 2016. The proposed park is expected to add approximately 400 workers to the study area, but would not add any residents to the study area.

PROPOSED PARK IMPROVEMENTS

By 2016, a number of the future park's elements, encompassing a broad range of active and passive uses as well as natural areas not accessible to the public, would be completed (see Chapter 1, "Project Description," for a more detailed description of the proposed park; see Table 5-5 below for a list of active and passive park elements anticipated for completion by 2016 and used in calculating open space ratios in the study area). As shown in Table 5-5, for the purposes of these calculations, only the directly publicly accessible portions of the project site have been quantified, including active and passive recreational spaces, such as multi-use trails, footpaths, recreational fields, meadows, and overlooks. The areas of landscape enhancements have not been included in the calculations; however, it is recognized that the overall area of public parkland created would be 2,163 acres with the proposed project.

OPEN SPACE INVENTORY

As noted in Table 5-5 above, the proposed project would add an estimated 47.78 acres of active open space and 22.4 acres of passive open space to the study area by 2016. As shown in Table 5-6, this would increase the total amount of open space in the study area to 528.17 acres.

ANALYSIS OF THE ADEQUACY OF OPEN SPACE RESOURCES

As shown below in Table 5-6, by 2016 the number of non-residents in the study area is expected to increase to 23,514, the number of residents is expected to increase to 59,373, and the total amount open space is expected to increase to 528.17 acres (not including natural areas that would not be publicly accessible). Therefore, in 2016, the ratio of passive open space per 1,000 non-residents would be 9.23. This ratio is significantly above the City's guideline of 0.15 acres (see Table 5-6). For the combined residential and non-residential population, the passive open space ratio would be 2.62 acres per 1,000 people, which is also significantly above the recommended weighted average ratio of 0.40 acres per 1,000 residents and workers. In addition, the area would have 5.24 acres of

active open space per 1,000 residents, which is also significantly above the City's recommended ratio of 2.0 acres of active open space per 1,000 residents.

**Table 5-5
Fresh Kills Park Elements Expected to be Completed by 2016**

	Acres of Active Use	Acres of Passive Use
North Park		
Travis Neighborhood Park	12	
North Park multi-use path	<u>4.28</u>	1
Hilltop field and deck overlook		10
On-mound foothpaths and other foothpaths	<u>3.42</u>	
Rock basin picnic area		<u>1</u>
South Park		
Arden Heights Neighborhood Park and ballfields	<u>4</u>	<u>1.62</u>
Sports barn and gym	<u>0.68</u>	
Tennis Center	<u>12</u>	
Equestrian Center	<u>5</u>	
South Mound Loop trails and overlooks	19.4	0.2
Mountain Bike Trails	<u>19.3</u>	
Open Meadow and Recreational Fields	<u>15</u>	
Hilltop meadow and deck overlook		7
On-mound foothpaths	2.76	
The Confluence		
Marsh boardwalk	0.2	
Footpaths	<u>0.22</u>	
Kayak/canoe rental	0.04	
TOTAL	<u>98.82</u>	<u>20.82</u>
Source: Fresh Kills Project Team, July 2007; <u>March 2009.</u>		

**Table 5-6
Analysis of Adequacy of Public Open Space Resources in the
Study Area in the Future With the Proposed Project: 2016**

Study Area Population	
Residents	59,373
Workers	23,514
Total	82,987
Open Space Acreage	
Passive	<u>217.05</u>
Active	<u>311.12</u>
Total	<u>528.17</u>¹
Open Space Ratios	
Active	5.24/1,000 residents
Recommended Weighted Average Ratio for Passive	0.40/1,000 residents and workers
Combined Passive	<u>2.62</u> /1,000 residents and workers
Worker Passive	<u>9.23</u> /1,000 workers
<p>Notes: Population projections based on New York City Department of City Planning Population Projections, 2006; and New York Metropolitan Transportation Council Population Projections, 2005.</p> <p>As shown in Table 5-5, for the purposes of these calculations, only the directly publically accessible portions of the project site have been quantified including active and passive recreational spaces, such as multiuse trails, footpaths, recreational fields, meadows, and overlooks, for example. The landscape enhancements have not been included in the calculations, however, it is recognized that the overall area of public parkland created would be 2,163 acres with the proposed project.</p> <p>¹ This figure includes only the directly accessible areas of the proposed park. Total new publicly accessible parkland with the proposed project is 1,895.</p> <p>Sources: AKRF, <u>March 2009.</u></p>	

2036

STUDY AREA POPULATION

As described in Section D, “Future without the Proposed Project,” DCP and NYMTC projections were used to estimate the increase in the residential and non-residential population within the study area by 2036. The proposed park is expected to add approximately 400 workers to the study area, but would not add any residents to the study area.

PROPOSED PARK IMPROVEMENTS

By 2036, the entire park would be developed, providing a broad range of active and passive uses as well as landscape enhancements (see Chapter 1, “Project Description,” for a more detailed description of the proposed park; see Table 5-7 below for a list of active and passive park elements planned as part of the park and used in calculating open space ratios for the study area).¹ For the purposes of these calculations, only directly publicly accessible portions of the project site have been quantified, including active and passive recreational spaces, such as multi-use trails, footpaths, recreational fields, meadows, and overlooks. The landscape enhancements have not been included in the calculations; however, it is recognized that the overall park size would be 2,163 acres with the proposed project.

Table 5-7
Fresh Kills Park Elements Expected to be Completed by 2036

	Acres of Active Use	Acres of Passive Use
From 2016	<u>98.82</u>	<u>20.82</u>
East Park		
Hilltop field		23
Picnic fields		11
Wetland boardwalk	2	
On-mound footpaths	1.16	
Berm footpaths	2.06	
Berm overlooks		0.2
<u>Multi-purpose loop trail</u>	<u>29</u>	
West Park		
September 11 Hilltop Monument and fields		<u>12</u>
Hilltop field and meadow		4
<u>Earthwork and meadow</u>		<u>7</u>
Multi-purpose loop trail	7.3	
Footpaths	4.02	
Overlooks		.02
The Confluence		
Marina	2	
Sports field	14	
Waterfront promenades	1.4	
Fishing piers, boat docks	0.7	
Boating lawn	2	
TOTAL	<u>164.46</u>	<u>77.04</u>
Source: Fresh Kills Project Team, July 2007; March 2009.		

¹ To conduct a conservative analysis, natural areas not accessible to the public were not included quantitatively in the analysis.

OPEN SPACE INVENTORY

The proposed project would add 164.46 acres of active open space and 77.04 acres of passive open space by 2036 for a total of 241.5 new acres of open space (this is a cumulative assessment and includes park elements to be completed by 2016). This would increase the total amount of directly accessible open space in the study area to 650.03 acres (the total amount of new open landscape is 2,163 acres).

ANALYSIS OF THE ADEQUACY OF OPEN SPACE RESOURCES

By 2036, the number of non-residents in the study area is expected to increase to 31,481, the number of residents is expected to increase to 67,165, and the total amount open space is expected to increase to 650.03 acres (not including natural areas that would not be accessible to the public. Therefore, in 2036, the ratio of passive open space per 1,000 non-residents would be 8.68. This ratio would continue to be significantly above the City’s guideline of 0.15 acres (see Table 5-8). For the combined residential and non-residential population, the passive open space ratio would be 2.77 acres per 1,000 people, which is also significantly above the recommended weighted average ratio of 0.41 acres per 1,000 residents and workers. In addition, the area would have 5.6 acres of active open space per 1,000 residents, which is also significantly above the City’s recommended ratio of 2.0 acres of active open space per 1,000 residents.

Table 5-8
Analysis of Adequacy of Public Open Space Resources in the Study Area in the Future With the Proposed Project: 2036

Study Area Population	
Residents	67,165
Workers	31,481
Total	98,646
Open Space Acreage	
Passive	<u>273.27</u>
Active	<u>376.76</u>
Total	<u>650.03¹</u>
Open Space Ratios	
Active	<u>5.6/1,000</u> residents
Recommended Weighted Average Ratio for Passive	0.41/1,000 residents and workers
Combined Passive	<u>2.77/1,000</u> residents and workers
Worker Passive	<u>8.68/1,000</u> workers
<p>Notes: Population projections based on New York City Department of City Planning Population Projections, 2006; and New York Metropolitan Transportation Council Population Projections, 2005. ¹ This figure includes only the directly accessible parkland shown in Table 5-7. The total area of the proposed project is 2,163 acres. Sources: AKRF, March 2009.</p>	

IMPACT SIGNIFICANCE

QUANTITATIVE ANALYSIS

As shown in Table 5-9 below, the proposed project would significantly improve open space ratios in the study area. By 2036, it would increase the passive open space for local workers from 6.31 acres per 1,000 non-residents to 8.68 acres, which would be an increase of 37.6 percent.

**Table 5-9
Open Space Ratios Summary**

Ratio	DCP Guideline	Existing Ratio	Future Without the Proposed Project		Future With the Proposed Project		Percent Change from Future Without	
			2016	2036	2016	2036	2016	2036
Study Area								
Passive/non-residents	0.15	10.63	8.48	6.31	9.23	8.68	8.8	37.6
Passive/total population	0.41*	2.7	2.38	1.99	2.62	2.77	10.1	39.2
Active/residents	2.0	3.4	3.58	3.16	5.24	5.6	46.3	77.2
Note: * 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.								

Moreover, the DCP guideline for passive open space ratios is only 0.15 acres per 1,000 non-residents. In addition, by 2036 the proposed project would increase the ratio of passive open space for the combined residential and non-residential population from 1.99 acres per 1,000 people to 2.77 acres, representing an increase of 39.2 percent, while the DCP guideline for passive open space ratios for is only 0.41 acres per 1,000 people. Finally, the proposed project would increase the active open space ratio for residents by 77.2 percent, from 3.16 acres to 5.6 acres per 1,000 residents, while the DCP guideline for active open space ratios is 2.0 acres per 1,000 residents. Therefore, the proposed project would have a positive effect on open space ratios in the study area, and no significant adverse impacts to open space would occur.

QUALITATIVE ANALYSIS

Analysis of Commercial Wind Turbines

With respect to the proposed commercial-scale wind turbines, this GEIS considers five commercial wind turbines, to be sited on elevated locations at North, South and East park.¹ They would be of sizable height, with a structural tower about 230 to 300 feet in height with a rotor and blade system about 230 to 320 feet in diameter, for a maximum total height of about 460 feet.

As described in Chapter 1, “Project Description,” if the proposed project is approved, it is expected that the commercial wind turbines would be operated as a concession and would be subject to separate and additional approvals that would be required of the operator, which is expected to include additional detailed environmental review.

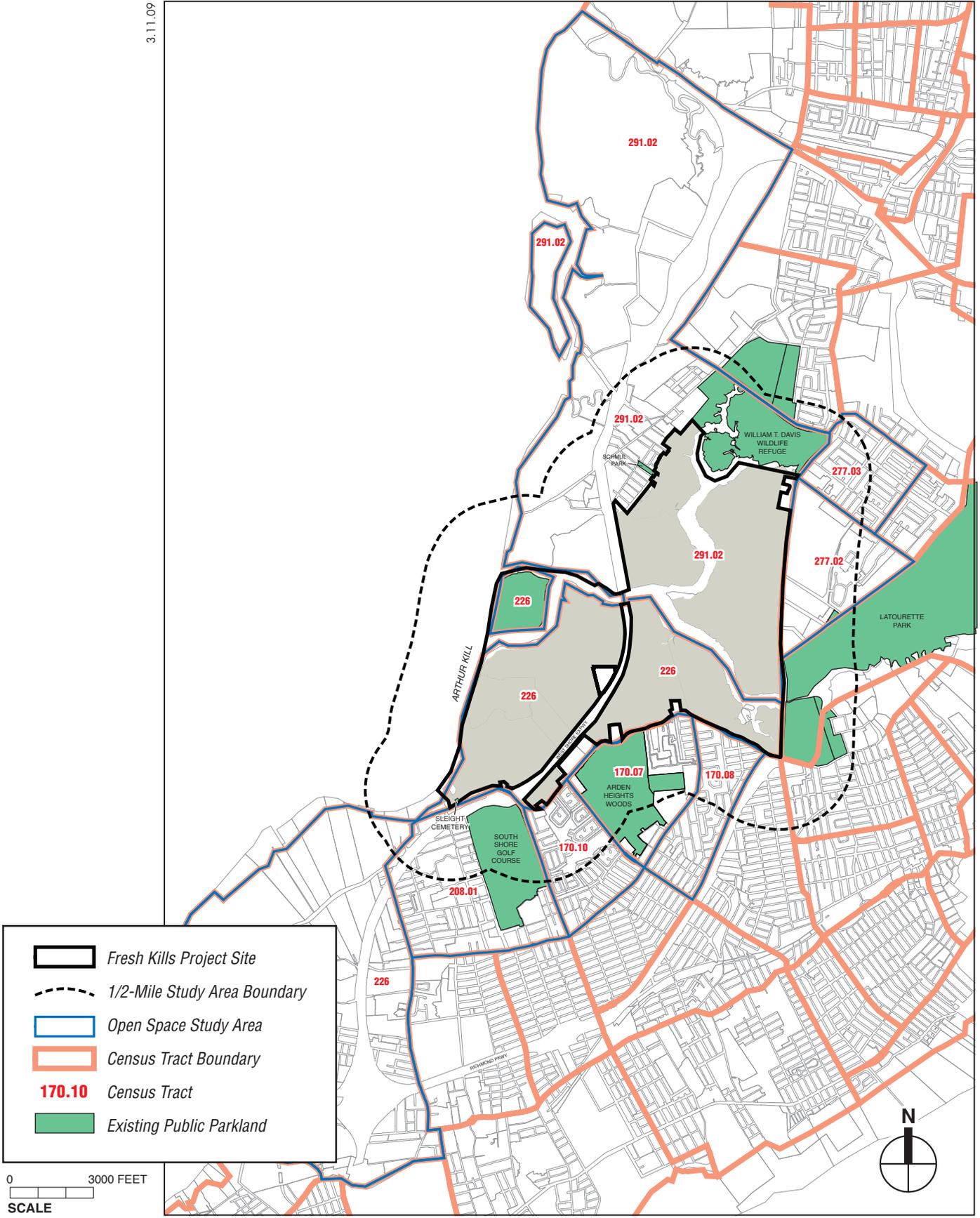
While exact locations for the proposed commercial wind turbines are yet to be determined in order to be effective, it is anticipated that they would need to be on the higher elevations of the landfill sections in each of the parks. If approved, the wind turbines as assumed in the GEIS would be the largest structures in the park. Given that the higher elevations of the parks are proposed for passive or quasi-passive open space experiences (e.g., hiking, picnicking, enjoyment of scenic vistas), the commercial wind turbines would have the potential to compromise these experiences, particularly

¹ The commercial wind turbine systems would be in addition to DPR wind turbines that may be used to power individual DPR facilities. Alternative 1 in the BQ Energy feasibility study conducted for Fresh Kills included two wind turbines in West Park for a total of seven; it was the conclusion of DPR that wind turbines in West Park would be incompatible with City plans for the proposed 9-11/WTC Monument at this location. This five-turbine design is consistent with Alternative 2 in the BQ Energy study.

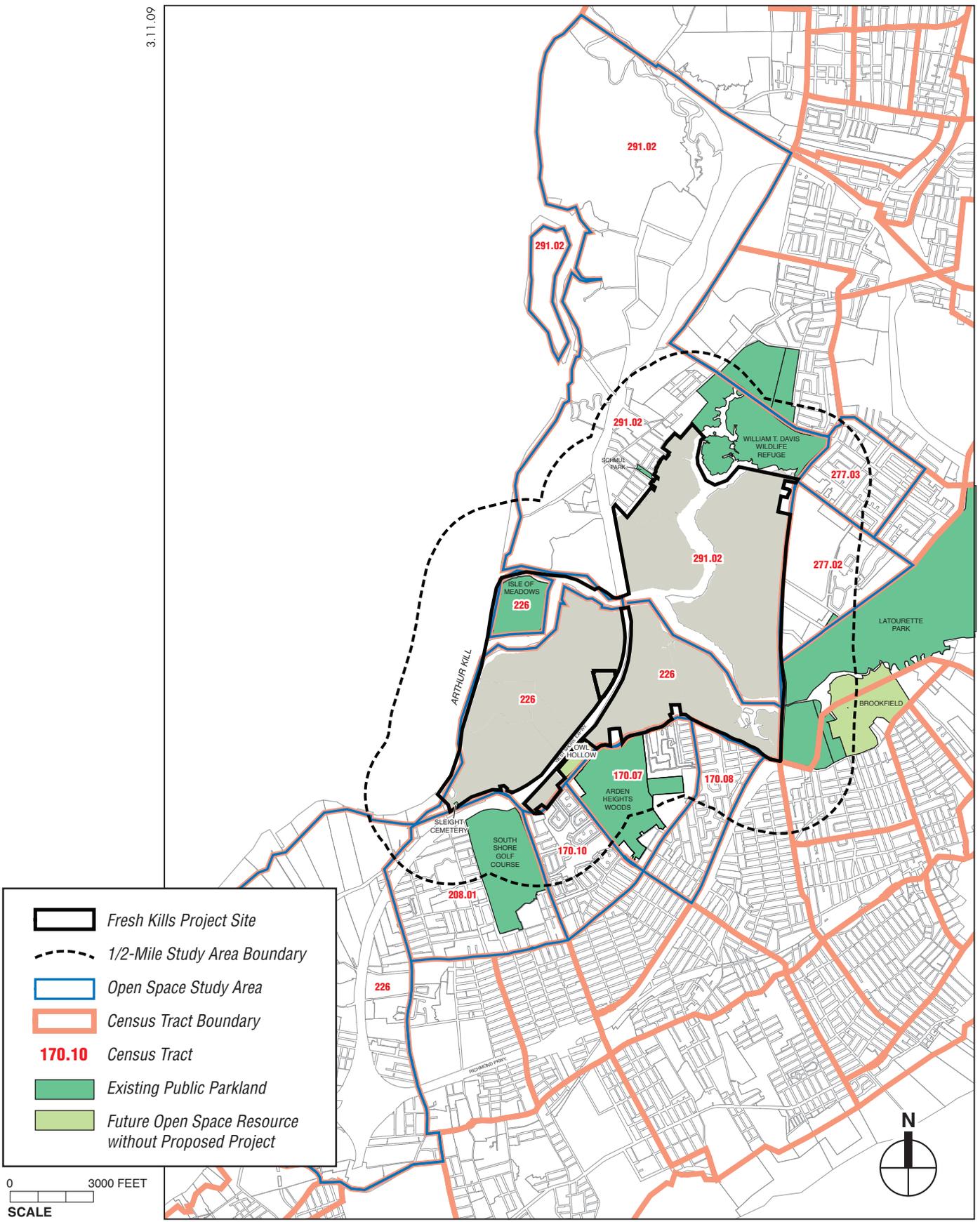
if sited in locations that are intended to have public access. If sited in locations that are intended to provide habitat, the impact on the open space user experience would be reduced, although it is expected that the impact on visual resources would be the same in either location (see Chapter 8 “Urban Design and Visual Resources”). Given the large size of the proposed North, South and East parks, selection of a location with the least impact would be a major factor in the assessment of impacts for these wind turbines. Other considerations would be potential shadow, visual, natural resources, and noise impacts. A preliminary assessment of these potential impacts is presented in Chapters 6, 8, 10, and 19 of this GEIS, respectively.

CONCLUSIONS

The conclusion of this analysis is that the proposed project would add a significant amount of new publicly accessible parkland totaling about 2,163 acres. It would be a new regional park that is expected to be used by residents of the borough, the City, visitors to the City, and residents of the region. Thus the proposed Fresh Kills Park would be a major new recreational resource that would also dramatically increase the recreational opportunities along and adjacent to the waterfront. Although the project would add new worker populations to the area, the amount of new open space acreage, for both passive and active use and extensive new habitats would more than offset this demand. It is therefore concluded that the proposed project would result in significant quantitative and qualitative open space benefits and in significant positive open space impacts for local residents, the Borough, and the City as a whole. *



Existing Open Space Resources
Figure 5-1



Future Open Space Resources without the Proposed Project