

**FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE  
CROTON WATER TREATMENT PLANT  
AT THE MOSHOLU SITE**

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## **6.5. OPEN SPACE**

### **6.5.1. Introduction**

Open space can be privately or publicly owned land that is accessible to the public for leisure, play, sport, or that has been dedicated to protecting the natural environment of an area. The purpose of the open space analysis for the proposed Croton Water Treatment Plant project (Croton project) is to characterize existing open space conditions, and to evaluate both quantitative and qualitative impacts upon open space resources during construction and operation. To facilitate an understanding of open space resources in the vicinity of the Mosholu Site, a one-half mile study area was established. The study area was measured from the limits of the potential construction disturbance at the water treatment plant site. The methodology used to prepare an Open Space analysis is presented in Section 4.5, Data Collection and Impact Methodologies, Open Space.

### **6.5.2. Baseline Conditions**

#### **6.5.2.1. Existing Conditions**

##### **6.5.2.1.1. Water Treatment Plant Site**

The proposed project would be located primarily under a portion of the existing driving range, with the construction impact area extended partially south onto Holes No. 1 and No. 8 of the Mosholu Golf Course and north to the Allen Shandler Recreation Area. The total acreage of the golf course and driving range is 74 acres. The golf course comprises approximately 59 acres and the driving range comprises approximately 13 acres. The remaining two acres consist of the access road and 75-car parking lot. The driving range is oriented east to west. Patrons can utilize the driving range from both ends. Mowed grass covers most of the driving range. A line of trees separates the driving range from Hole No. 1 of the golf course to the south. Adjacent to the driving range, to the north, is a clubhouse that including offices, the Golf Learning Center, the Golf Shop, and a snack bar.

The Mosholu Golf Course is open year-round, dawn to dusk. The course draws people from throughout New York City and Westchester and Rockland Counties. Weekday users are primarily retirees. Five local school golf teams, including teams from Herbert H. Lehman High School and Bronx High School of Science, use the course for practices and competitions. Approximately 30,000 rounds of golf were played at the Mosholu Golf Course in 2002. This user number is down from 32,669 rounds and 31,012 rounds of golf reported from 1997 and 1998. In 2002 approximately 14,250 people utilized the driving range; this user number is a slight increase from the 10,000 users reported in 1998.

##### **6.5.2.1.2. Study Area**

The study area includes several notable areas of open space: Van Cortlandt Park, (including Mosholu Golf Course and Driving Range) and Woodlawn Cemetery. There are also a small number of public parks located south of Van Cortlandt Park within the study area. Combined, the open space areas total approximately 70 percent of the study area (see Figure 6.5-1 and Table 6.5-1).

Van Cortlandt Park is New York City's third largest park. It offers a variety of recreational opportunities. Some of the many features found in Van Cortlandt Park to the north and northwest of the water treatment plant site include large expanses of mature forest, which are divided into three sections: the Northwest Forest, Croton Woods, and the Northeast Forest. These areas offer a number of nature trails. Among these popular trails are several that have been designated as priority locations for the Bronx Greenways, part of a City-wide greenway plan developed through the cooperation of city, state, and federal agencies; Borough presidents; and local community groups. These include the Aqueduct University Greenway (proposed to run north and south through Van Cortlandt Park), Putnam Railroad Greenway (also proposed to run north and south through Van Cortlandt Park), and Woodlawn/Seton Falls Greenway (proposed in the eastern section of Van Cortlandt Park). These greenways are part of an ambitious effort to link pedestrian and bicycle paths using existing linear corridors, and are described in the New York City Department of City Planning's, *A Greenway Plan for New York City*.<sup>1</sup>

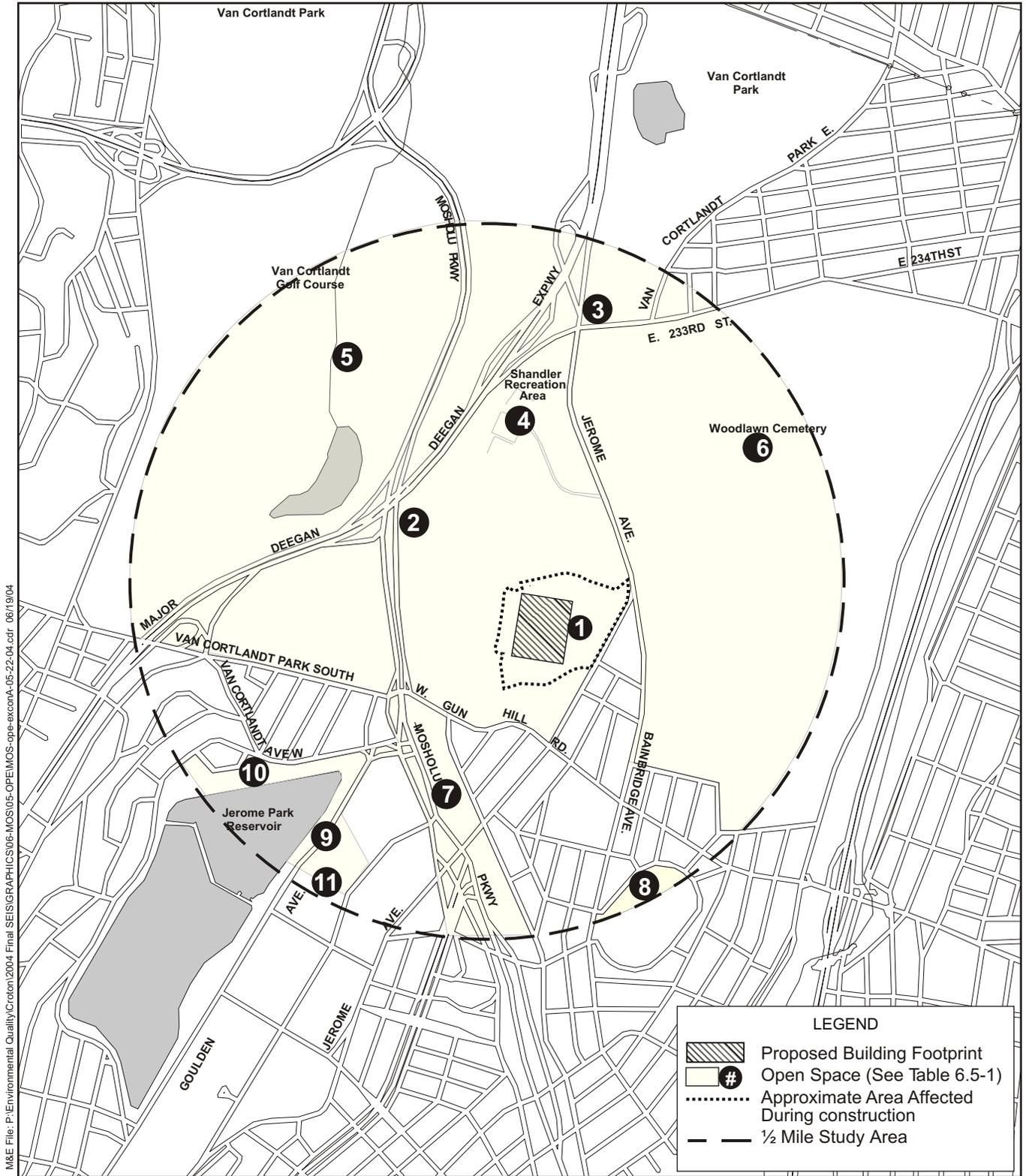
The New York City Department of Parks and Recreation (NYCDPR) has begun the acquisition process for the part of the Putnam Railroad bed in Van Cortlandt Park. In addition to the trails noted above, the park provides athletic fields and courts, horse stables, playgrounds, and golf courses. Northwest of the water treatment plant site within the study area is Van Cortlandt Golf Course, which opened in 1895 as the first public golf course in the country. Another facility within the study area is the Allen Shandler Recreation Area, located on the northern edge of the water treatment plant site. The Allen Shandler Recreation Area has the largest picnic/barbecue area in Van Cortlandt Park. It consists of woods and a natural landscape, two baseball fields, picnic tables, barbecue grills, paved paths, and a paved parking lot capable of holding more than 200 cars. The ballfields are used by youth and adult baseball leagues from April through September.

An important open space feature of the study area is Van Cortlandt Lake, which is located west of the water treatment plant site. This lake was created when Tibbett's Brook was dammed by the Van Cortlandt family to provide power to mills, and is the largest freshwater lake in the Bronx. It provides a habitat for a variety of birds, including ducks, geese, egrets and swans.

To the west of the water treatment plant site, outside the study area, is a public pool, a football stadium with a running track, nature trails, playground areas, stables and a bridle path for horseback riding, and an educational ecology center which sponsors children's programs. The Van Cortlandt Museum and associated lands, which were once the home of the Van Cortlandt family, are also located west of the study area. The museum is the oldest building in the Bronx, and was utilized by both British General Sir William Howe and George Washington at various points throughout the Revolutionary War. French and United States military troops stationed on the parade grounds surrounding the mansion conducted training and practiced war maneuvers for several important battles, including the Battle of White Plains. These grounds were used by the military during World War I for similar exercises. They are currently used and maintained as athletic fields for soccer, football, baseball/softball, and cricket. The mansion has been a national and city landmark since shortly after the Van Cortlandt family sold their entire estate to the City in the late 1800s.

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<sup>1</sup> New York City Department of City Planning. 1993. *A Greenway Plan for New York City*.



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Not to Scale

# Open Space Mosholu Site

Figure 6.5-1

Also located throughout the study area are Greenstreets. Launched in 1996, Greenstreets is a City-wide program to convert paved, vacant traffic islands and medians into green spaces filled with shade trees, flowering trees, shrubs, and groundcover. As of August 2003, the NYCDPR has placed over 2,002 Greenstreets sites throughout the five boroughs. 379 sites are located in the Bronx, 387 in Brooklyn, 250 in Manhattan, 703 in Queens, and 283 in Staten Island.

As Table 6.5-1 indicates, there are approximately 599 acres of open park space in the study area of the water treatment plant site (see Figure 6.5-1 and Table 6.5-1). Of the 599 acres, 230.3 are active open space and 368.2 acres are passive open space.

The estimated population for the study area is 26,200 residents (see Section 6.7, Socioeconomic Analysis). The open space ratio estimate derived from the acres of open space and study area population is approximately 23 acres per 1,000 residents (9 acres/1,000 residents for active open space and 14 acres/1,000 residents for passive open space).

For comparison purposes, New York State Office of Parks, Recreation, and Historic Preservation has standard ratios for specific open space facilities, shown in Table 6.5-2. Mosholu Golf Course and Driving Range is within Van Cortlandt Park, which is a city park. The open space ratio goal for city parks would be 5 acres per 1,000 residents. The New York City planning goal for open space is 2.5 acres per 1,000 residents.

**TABLE 6.5-1. OPEN SPACE INVENTORY WITHIN THE MOSHOLU SITE STUDY AREA**

| Name  | Map Key (Fig. 6.5-1) | Public/Private | Acreage within study area (Approx.) | Description <sup>1</sup> |           | Open Space Features: Facility Types                                | Facility Conditions | Hours of Access  | User Group     | Utilization Levels |
|---|----------------------|----------------|-------------------------------------|--------------------------|-----------|--|---------------------|------------------|----------------|--------------------|
|   |                      |                |                                     | Active %                 | Passive % |  |                     |                  |                |                    |
| Mosholu Golf Course and Driving Range             | 1                    | Public         | 74                                  | 100                      | 0         | 9 Hole Golf Course and Driving Range                               | Good                | Dawn to Dusk     | All            | High               |
| Van Cortlandt Park                                | 2                    | Public         | 139                                 | 60                       | 40        | Forest, playground, trails, athletic fields                        | Moderate            | Dawn to Dusk     | All            | Moderate/High      |
| Van Cortlandt Park: Indian Field/Woodlawn Section | 3                    | Public         | --                                  | 100                      | 0         | 3 Baseball Fields, 2 Bocce, Football/Soccer Field, 8 Tennis Courts | Moderate            | Dawn to Dusk     | All            | Moderate/High      |
| Allen Shandler Recreation Area                    | 4                    | Public         | 70                                  | 40                       | 60        | 2 Baseball fields, picnic areas, paved paths, parking lot, benches | Poor                | Dawn to Dusk     | All            | High               |
| Van Cortlandt Golf Course                         | 5                    | Public         | 29                                  | 100                      | 0         | 18 Hole Golf Course  | Good                | Dawn to Dusk     | All, for a fee | High               |
| Woodlawn Cemetery                                 | 6                    | Public         | 256                                 | 0                        | 100       | Lawn/road benches  | Moderate            | 9:00AM to 4:30PM | All            | Moderate           |

**TABLE 6.5-1. OPEN SPACE INVENTORY WITHIN THE MOSHOLU SITE STUDY AREA**

| Name                                    | Map Key (Fig. 6.5-1) | Public/Private | Acreage within study area (Approx.) | Description <sup>1</sup> |           | Open Space Features: Facility Types  | Facility Conditions | Hours of Access | User Group | Utilization Levels |
|---|----------------------|----------------|-------------------------------------|--------------------------|-----------|--|---------------------|-----------------|------------|--------------------|
|   |                      |                |                                     | Active %                 | Passive % |  |                     |                 |            |                    |
| Mosholu-Pelham Greenway Mosholu Parkway | 7                    | Public         | 23                                  | 50                       | 50        | Bike path, basketball courts, benches, gardens, two playgrounds  | Good                | Not Posted      | All        | High               |
| Williams-bridge Oval Playground         | 8                    | Public         | 2.5                                 | 80                       | 20        | Football/Soccer field, 8 Tennis courts, 0.2 mile Running Track, Recreation Center, playgrounds, paths, benches | Good                | Dawn to Dusk    | All        | High               |
| Harris Park Annex                       | 9                    | Public         | 2                                   | 0                        | 100       | Mowed Lawns  | N/A                 | N/A             | N/A        | N/A                |
| Fort Independence Park                  | 10                   | Public         | 3.02                                | 80                       | 20        | Playground   | Good                | Dawn to Dusk    | All        | Moderate           |
| DeWitt Clinton High School              | 11                   | Public         | --                                  | 100                      | 0         | Football/Soccer Field, Softball Field, Baseball Field, 3 Tennis Courts, 0.25 mile Running Track                | Moderate            |                 | Students   |                    |

**TABLE 6.5-1. OPEN SPACE INVENTORY WITHIN THE MOSHOLU SITE STUDY AREA**

| Name                    | Map Key (Fig. 6.5-1) | Public/ Private | Acreage within study area (Approx.) | Description <sup>1</sup> |           | Open Space Features: Facility Types | Facility Conditions | Hours of Access | User Group | Utilization Levels |
|-------------------------|----------------------|-----------------|-------------------------------------|--------------------------|-----------|-------------------------------------|---------------------|-----------------|------------|--------------------|
|                         |                      |                 |                                     | Active %                 | Passive % |                                     |                     |                 |            |                    |
| <b>TOTAL STUDY AREA</b> |                      |                 | 599                                 | 38%                      | 62%       |                                     |                     |                 |            |                    |

**Notes:**

1 Active open space includes resources used for sports, exercise, or active play, and passive open space includes resources used for relaxing

**Source:** *Recreation and Open Space in New York City*, The Bronx, NYCDOP, Spring 1995

**TABLE 6.5-2. NEW YORK STATE STANDARD OPEN SPACE RATIOS (ACRES/1,000 RESIDENTS)**

| <b>Play Lot</b> | <b>Pocket Park</b> | <b>Neighborhood Park</b> | <b>District Park</b> | <b>City Park</b> | <b>Large Regional Park</b> | <b>Metro</b> |
|-----------------|--------------------|--------------------------|----------------------|------------------|----------------------------|--------------|
| 2               | 0.25               | 1                        | 2                    | 5                | 15                         | 0.124        |

**6.5.2.2. Future Without the Project**

The Future Without the Project conditions were developed for the anticipated peak year of construction (2010) and the anticipated year of operation (2011) for the proposed project. The anticipated peak year of construction is based on peak truck traffic and the peak number of workers. Open space resources in the vicinity of the Mosholu Site are not anticipated to change substantially by the year 2010 or by 2011.

**6.5.2.2.1. Water Treatment Plant Site**

The Lew Rudin Youth Golf Center is still evolving and there would be continued need for improvements and space allocated on the golf course for these new golfers to learn and play. As for future developments, there is a plan to construct a new structure that would offer golf instructional programs year-round.

As noted in Section 6.2, Land Use Zoning, and Public Policy, there are numerous projects and proposals within the study area.

**6.5.2.2.2. Study Area**

The NYCDOP, the NYCDOT, and the NYCDPR have developed a greenway plan for New York City. This entails the development and/or improvement of rail and highway right-of-ways, river corridors, waterfront spaces, parklands, and city streets for the use of bicycles and pedestrians. The plan calls for the rehabilitation of some of the existing greenways in the study area, such as the Mosholu-Pelham Greenway, and the acquisition of land for new greenways, the Putnam Railroad Trail, and the Aqueduct-University Greenway. The greenway plan would increase the amount of active and passive open space in the study area.

**6.5.3. Potential Impacts**

**6.5.3.1. Potential Project Impacts**

The anticipated year of operation of the proposed plant is 2011. Therefore, potential project impacts have been assessed by comparing the Future With the Project conditions against the Future Without the Project conditions for the year 2011.

The proposed project at the Mosholu Site is designed so that the driving range and golf course would be reconstructed above the proposed water treatment plant facilities upon completion of construction. There would not be a significant loss of open space acreage or any loss of existing functions. Therefore, there would be no quantitative impacts to open space in the study area because the open space ratio would remain well above the recommended ratio of 5 acres per

1,000 residents. However, the ratio would decrease to 21.3 acres per 1,000 residents in the year 2011 from 23 acres per 1,000 residents due to loss of space associated with above ground structures.

The transfer of control of the property from the NYCDPR to the NYCDEP is authorized by the New York State Legislature. This action (alienation) is discussed in Section 6.2.3.1.2. As a result of the Alienation Legislation authorizing the use of portions of the Mosholu Golf Course for the proposed Croton Water Treatment Plant, a total of approximately 43 acres would be permanently alienated and would no longer be parkland (Table 6.5-3). During construction, an additional approximately 4.43 acres would be temporarily alienated for construction staging. After construction, the areas temporarily alienated during construction would revert back to being parkland. As a result of this permanent alienation, approximately 43 acres would no longer be under the jurisdiction of the NYCDPR and therefore NYCDPR would need to program future uses in consultation with NYCDEP. However, upon completion of construction only approximately 2 acres of the 43 acres permanently alienated would be entirely removed from use by NYCDPR in the vicinity of the two above-grade structures on site. The remaining 41 acres includes 24.11 acres in proximity to the WTP footprint, 18.11 acres along tunnel rights-of-way, 0.06 acres near the 233<sup>rd</sup> Street exit ramp from the Major Deegan Expressway and 0.29 acres around Gate House No. 1. These 41 acres could continue to be utilized by NYCDPR for park uses with the exception of the 0.29-acre area immediately surrounding Gate House No. 1. Since the Gate House No. 1 property is currently fenced to prevent public access to this buried facility, future conditions would not be substantially different from the current condition. As a result, the alienation of this 0.29-acre parcel merely represents an acknowledgement of the current situation. Within the 24.11-acre area around the WTP, 10 acres would continue to serve as the golf course driving range, 2 acres would be restricted for NYCDEP access to the below-grade water treatment plant (0.4 acres of buildings and 1.6 acres of roadways and security area), and the remaining 12.11 acres would continue to be used as part of the Mosholu Golf Course or could be used for other park uses subject to NYCDEP approval.

**TABLE 6.5-3. USES FOR ALIENATED PARCELS AT THE MOSHOLU SITE**

| Type                 | Proposed Use                               | Area (acres) |
|----------------------|--|--------------|
|                      | Water Treatment Plant parcel               |              |
|                      | Golf Course Driving Range                  | 10.0         |
|                      | NYCDEP restricted area around buildings    | 2.0          |
|                      | Remainder of parcel suitable for Park uses | 12.11        |
| Permanent Alienation | Water Treatment Plant parcel               | 24.11        |
| Permanent Alienation | Above-grade buildings                      | 0.42         |
| Permanent Alienation | Below grade alignments for deep tunnels    | 18.11        |
| Permanent Alienation | Roadway improvements                       | 0.06         |
| Permanent Alienation | Gate House No. 1 (existing facility)       | <u>0.29</u>  |
|                      | TOTAL Permanent                            | 42.99        |
| Temporary Alienation | Construction Staging Areas                 | 29.09        |

The 18.11 acres alienated for the tunnels provide rights-of-way for the connecting tunnels between the water treatment plant, NCA, and distribution connections. These tunnels would be

in deep rock, a hundred feet and more below ground. Similar tunnels pass under many parts of the City with easements with no restrictions on surface activities, and no restriction on surface uses is expected for the alienated property for the water tunnels within Van Cortlandt Park.

The roadway improvements include a new exit ramp from the Major Deegan Expressway at 233<sup>rd</sup> Street, a left turn lane for the westbound traffic on 233<sup>rd</sup> Street that could turn south onto Jerome Avenue, and a new southbound right turn lane into the Mosholu Golf Course from Jerome Avenue. These improvements were designed to prevent impacts from construction traffic, but they would be retained after construction because they would reduce existing congested conditions at these intersections.

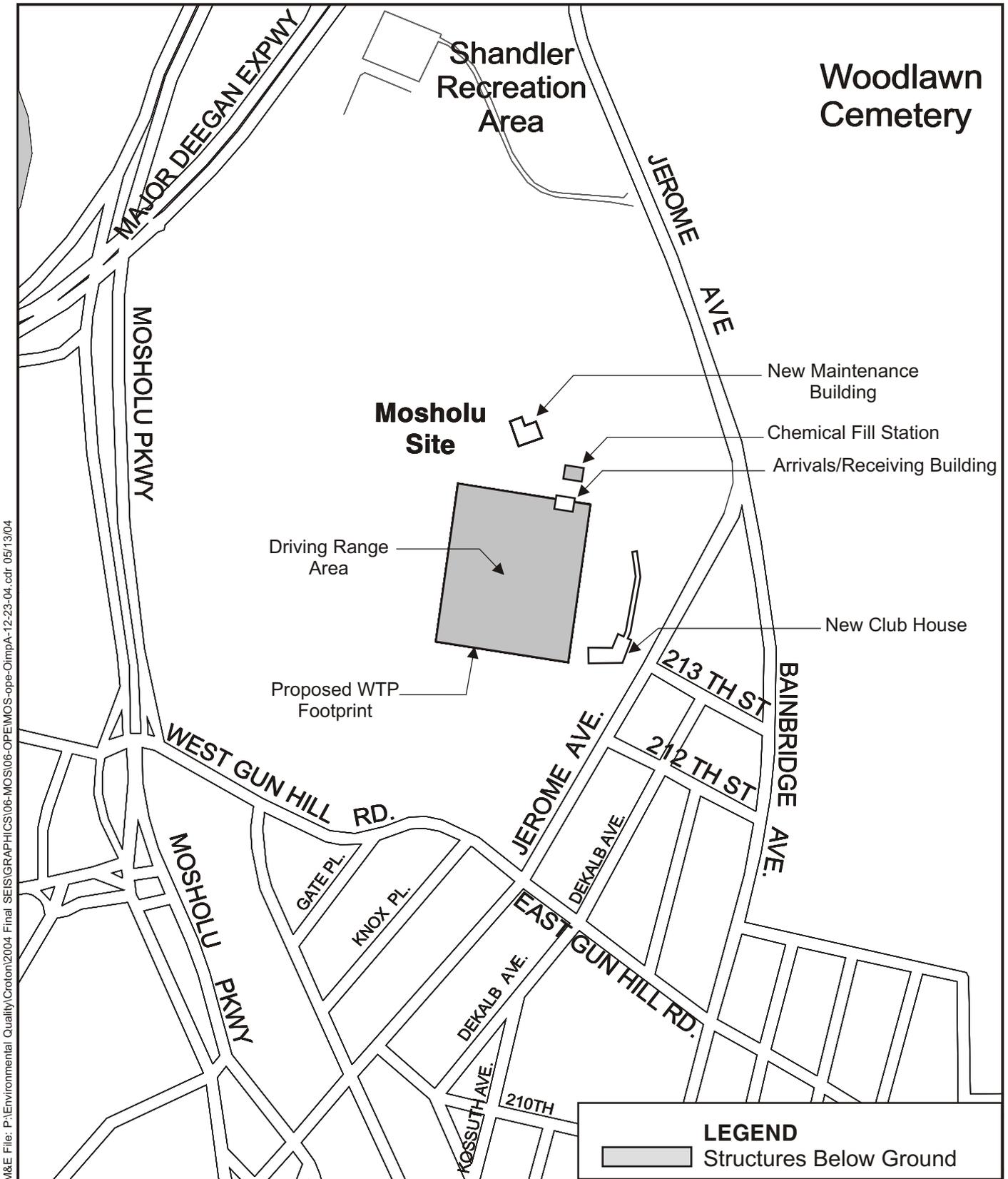
As a result of the proposed project, alienation of parkland, and the removal of property from NYCDPR's jurisdiction, the open space ratio would change from the existing ratio of 23 acres per 1,000 residents (9 acres/1,000 residents for active open space and 14 acres/1,000 residents for passive open space) to 21.3 acres per 1,000 residents if all 43 of the permanently alienated acres are taken into account, 22.1 acres per 1,000 residents if only the 24 acres being alienated in the vicinity of the WTP are taken into account, and 22.5 acres per 1,000 residents if only the 12 acres including the area directly above the footprint of the water treatment plant and the secured area. In any case, the project-affected ratios would remain well above the recommended ratio of 5 acres per 1,000 residents.

Overall, the removal of the 2 acres from the publicly accessible open space inventory within the Bronx would not represent an adverse impact to open space. Similarly, the removal of the approximately 43 acres from the jurisdiction of NYCDPR would also not result in an adverse impact to open space since a majority of those 43 acres would continue to be used for park uses.

Operation of the proposed project would not generate a substantial number of employees. Furthermore, since the proposed plant would provide an employee lunchroom, employees would most likely eat their meals on the site as opposed to spending time in the nearby park. However, if the employees decide to use the facilities outside the water treatment plant, the addition of 41 employees would not produce a significant new usership and would not reduce the open space ratio. Therefore, no significant impact to the surrounding open space resources is anticipated from the employees at the water treatment plant.

In addition, it is not anticipated that operation of the proposed project would exceed any air quality or noise thresholds at nearby open space locations, so functions at those locations would not be impaired. Details of the noise and air quality assessments in the vicinity of the Mosholu Site are provided in Section 6.10, Noise and Section 6.11, Air Quality, respectively. The community would also benefit from the improved access and safety conditions introduced under the proposed project. Therefore, no significant adverse impacts are anticipated to the open space under the proposed project.

The new golf course is anticipated to have a similar configuration to the existing golf course. The reconfigured golf course could potentially have 9 to 18 holes, depending on the final design. The new L-shaped golf clubhouse would be located on the southeast side of the site and a new maintenance building would be located north of the proposed water treatment plant (Figure 6.5-2).



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Not To Scale

## Open Space Mosholu Site During Operations

Croton Water Treatment Plant

Figure 6.5-2

### **6.5.3.2. Potential Construction Impacts**

The anticipated year of peak construction of the proposed plant is 2010. Therefore, potential construction impacts have been assessed by comparing the Future With the Project conditions against the Future Without the Project conditions for the year 2010. It is anticipated that a peak number of 660 construction workers would be at the water treatment plant site in 2010.

The construction activities associated with the proposed project at the Mosholu Golf Course and Driving Range would require approximately 24 of the 78 acre golf facility. However, while part of the 78 acre facility, including the clubhouse, would be considered temporarily displaced during the construction period, a temporary golf course and clubhouse would be constructed and be in operation during the construction of the proposed project. The New York City Department of Parks and Recreation would design and operate the temporary golf course made up of the existing holes not being used for construction staging. This temporary loss of active open space during construction would decrease the total open space ratio from 23 to 21.8 acres/1,000 residents in the year 2010, when the peak number of workers and their families are anticipated. The reduction in the open space ratio would not represent a significant change since it would remain well above the recommended ratio of 5 acres/1,000 residents. Therefore, no significant impacts would result from the temporary displacement of the 29.3 acres of golf course and driving range facility.

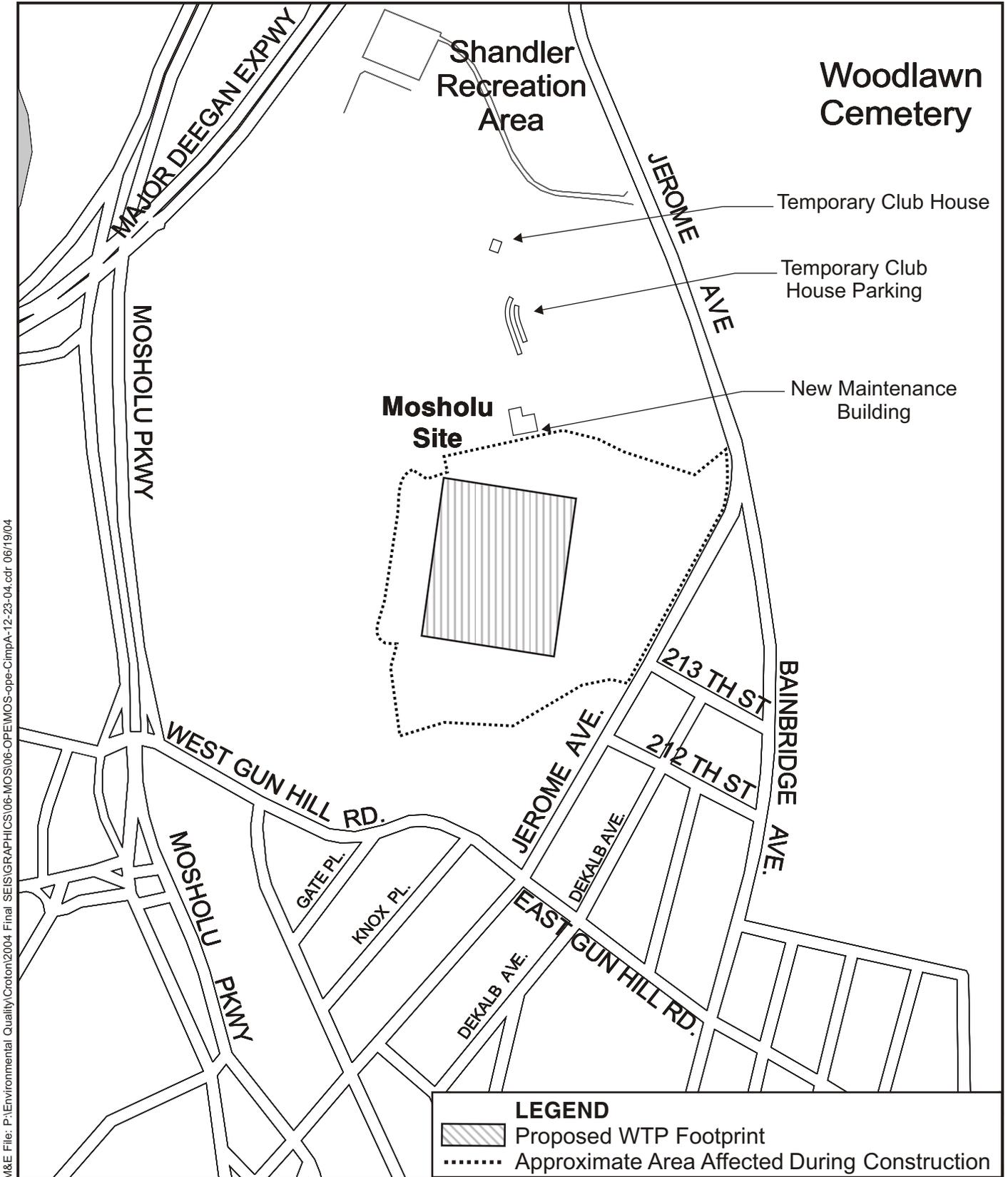
Some construction workers could be anticipated to utilize open space during their lunch break. Typical use during this time of day is low within Van Cortlandt Park. Given the existing open space ratio for the study area and the low usership of the park during weekday business hours, no significant impact on open space is anticipated from the construction workers' utilization of study area open space resources.

48.7 acres of the Mosholu Golf Course and Driving Range would remain open after being transformed into a temporary golf course and driving range. The temporary golf clubhouse and parking lot would be located north of the proposed water treatment plant near the existing comfort station (Figure 6.5-3). The existing golf course would be reconfigured to accommodate construction activities while providing space for golfers. Golf course hole number one, located to the southeast side of the site, would be used for construction staging for the duration of construction. Golf course hole number eight, located on the northeastern side of the course, would be utilized by the concessionaire as a temporary driving range and for golf training programs. Two of the longer existing holes would be divided in two to maintain the nine-hole golf course during construction.

Golfers representing approximately 30,000 rounds of golf per year (22,500 peak season and 7,500 off-peak season) as well as the driving range users, would still be able to utilize the Mosholu Golf Course and Driving Range, but would also have the option to relocate to other local public golf courses in the surrounding area while construction is going on. The other local golf courses include Van Cortlandt Golf Course; a popular 18-hole golf course with approximately twice as many rounds of golf played a year and Pelham Split Rock Golf Course, which contains two courses. Golfers who decide to use these other golf courses could not be

accommodated at these courses during peak usage hours, and would therefore have to use those courses at non-peak hours in order to avoid long waiting times. A mitigation plan has been developed to address these issues. Please refer to Section 9, Mitigation.

Based on the analyses presented above, the proposed Croton project at the Mosholu Site would have no significant adverse impacts on Open Space. For comparison purposes, this is true of the Eastview and Harlem River sites as well.



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Not To Scale

# Open Space Mosholu Site During Construction

Croton Water Treatment Plant

Figure 6.5-3