

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

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## 6.18. SOLID WASTE

### 6.18.1. Introduction

This section examines the production, management, and collection of solid wastes currently and potentially generated at the proposed Croton Water Treatment Plant (WTP) at the Mosholu Site, located in the Borough of the Bronx, New York. A study area of one mile surrounding the water treatment plant site was utilized in conducting this analysis. The assessment also describes how solid waste is and would be managed in light of New York City's *Comprehensive Solid Waste Management Plan, Final Update and Plan Modification*<sup>1</sup> and its amendments. The methodology used to prepare this analysis is presented in Section 4.18, Data Collection and Impact Methodologies, Solid Waste.

### 6.18.2. Baseline Conditions

The New York State Solid Waste Management Act of 1988 (updated in 1999-2000)<sup>2</sup> and the New York State Department of Environmental Conservation (NYSDEC) Regulations (Official Compilation of Codes, Rules, and Regulations of the State of New York (NYCRR) Part 360-15)<sup>3</sup> establish a hierarchy of waste management techniques to minimize reliance on landfills by maximizing waste prevention and recycling. The State established a target goal of reducing waste by eight to ten percent, and having 40 percent of the waste being recycled by 1997<sup>4</sup>. NYSDEC also maintains a comprehensive register of all permitted solid waste landfills within the State of New York. According to the Active Solid Waste Facility Register<sup>5</sup>, there are no waste disposal facilities within the study area.

The City of New York manages its solid waste in compliance with New York City's *Comprehensive Solid Waste Management Plan, Final Update and Plan Modification*. This plan establishes a hierarchy for waste management, with waste prevention being the first priority, followed by reuse and recycling, including composting and export by barge or rail out of the City. The 2001 modifications accounted for the premature closure of Fresh Kills Landfill in April 2001, nine months prior to the State-mandated closure date of January 1, 2002. Implementation of this proposal includes long-term export (via barge or rail) of non-recyclable solid waste collected by the New York City Department of Sanitation (NYCDOS), previously disposed of at the Fresh Kills Landfill. The plan facilitates the New York City Department of Sanitation's (NYCDOS) efforts to comply with the City's mandatory recycling law, Local Law 19 of 1989, which requires source separation of specific recyclables. However, due to budgeting

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<sup>1</sup> New York City Department of Sanitation. November 27, 2000. *Comprehensive Solid Waste Management Plan Draft Modification and Final Environmental Impact Statement*. <http://www.nyc.gov/html/dos/html/swmp2k.html>.

<sup>2</sup> New York State Department of Environmental Conservation. 2000. *New York State Solid Waste Management Plan: 1999-2000 Update*. <http://www.dec.state.ny.us/website/dshm/prgmngnt/2kupdte.pdf>

<sup>3</sup> New York State Department of Environmental Conservation. November 24, 1999. Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York 6 NYCRR. <http://www.dec.state.ny.us/website/regs/360v.htm>.

<sup>4</sup> New York State Department of Environmental Conservation. 2002. <http://www.dec.state.ny.us/website/dshm/sldwaste/index.htm>

<sup>5</sup> New York State Department of Environmental Conservation. 2002. DEC Environmental Navigator. <http://www.dec.state.ny.us/website/imsmaps/decnav/viewer.htm?Title=DEC%20Environmental%20Navigator>

restrictions, this procedure was modified in July 2002 (NYCDOS, 2002). Under this procedure the recycling of all glass, plastic, and beverage containers was suspended; paper and metal were still recycled. In June 2003 the City reinstated the recycling of plastic and beverage containers. The recycling of glass is anticipated to be in service on August 2004<sup>6</sup>.

Currently, the NYCDOS serves 59 districts within the City. The NYCDOS collects over 13,000 tons of residential and institutional refuse and recyclables a day. The City's businesses, whose waste is collected by private carting companies, generate another 13,000 tons of refuse each day.

#### **6.18.2.1. Existing Conditions**

The water treatment plant site, if it were built in at Mosholu Site, would be located in Bronx County within Van Cortlandt Park. Van Cortlandt Park is bounded to the south by West Gun Hill Road, to the west by the Major Deegan Expressway, to the east by the INT No.4 elevated subway and Jerome Avenue and to the north by Shandler Recreation Area. The park contains large tracts of wooded land, two golf courses including the Mosholu Golf Course, several playing fields, swimming facilities, hiking and horseback riding trails, and greenhouse facilities. As described in Section 6.2, Land Use, Zoning and Public Policy, a substantial portion of the water treatment plant site study area is comprised of parks and recreation land use due to the site's location within Van Cortlandt Park.

##### **6.18.2.1.1. Water Treatment Plant Site.**

The water treatment plant site at Mosholu is comprised of the driving range of the Mosholu Golf Course and extends north to include a portion of the Allen Shandler Recreation Area. Existing facilities at the Mosholu Golf Course and Driving Range include a clubhouse, driving range, nine-hole course and a parking lot for approximately 75 cars. Existing facilities within the Allen Shandler Recreation Area portion of the water treatment plant site include asphalt paths, forested area, a comfort station, benches, and a picnic area with grills and picnic tables.

The Mosholu Golf Course and Driving Range is open year-round with a staff ranging from 12 to 35 employees during off-peak and peak seasons, respectively. Seventy-five percent of its business falls within an eight month peak season (April - November), during which time the golf course maintains 35 full-time employees 5-days a week. During peak operation, the employees generate approximately 455 pounds/week of solid waste (based on a 13 lbs/week per employee generation rate<sup>7</sup>).

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<sup>6</sup> New York City Council. 2001. Local Laws of the City of New York for the Year 2002, No. 11 ([http://www.council.nyc.ny.us/pdf\\_files/bills/law02011.pdf](http://www.council.nyc.ny.us/pdf_files/bills/law02011.pdf))

<sup>7</sup> City Environmental Quality Review, CEQR, Manual, Chapter 3M

Mosholu Golf Course and Driving Range patrons are comprised of three groups: those patrons that use the golf course, those that use the driving range, and patrons enrolled in the First Tee program. Each individual patron generates an approximate 1 lb/day of solid waste per person<sup>8</sup>. The golf course hosts approximately 22,500 rounds of golf during the peak season (April - November). Since the numbers of rounds equals the number of tickets sold, the golf course hosts approximately 22,500 golfers per season (approximately 92 golfers per day during the peak season), generating 460 lbs of solid waste per week. The Driving Range hosts approximately 10,000 visitors (41 visitors per day) during the peak season, generating approximately 205 lbs of solid waste per week. An additional 1,000 visitors during the summer months (approximately 100 days) use the Driving Range as part of the First Tee Program (10 visitors per day), generating approximately 50 lbs of solid waste per week.

The First Tee program hosts approximately 2,000 youngsters during the summer months. Approximately 20 young golfers per day attend instructional golf programs, generating 100 lbs of solid waste per week. In addition, the First Tee Program has approximately 12 employees seasonally, generating 156 lbs of solid waste per week (based on 13lbs/day/employee).

The total solid waste generated at the existing recreational facilities at the water treatment plant site is approximately 1,426 lbs per week (see Table 6.18-1). Currently the Mosholu Golf Course and Driving Range does not have an active recycling program.

**TABLE 6.18-1. PEAK EXISTING SOLID WASTE GENERATION AT THE EXISTING FACILITIES AT THE MOSHOLU SITE**

Use	Persons (Per day)	Waste Generation Rate Per Person	Total Waste Generation Rate (lbs per week)
Golf Course Full-Time Employees	35	13 lbs per week / person	455 <sup>(1)</sup>
Golfers	92	1 lbs per week / person	460
Driving Range Visitors	41	1 lbs per week / person	205 <sup>(2)</sup>
First Tee Program (practice)	10	1 lbs per week / person	50 <sup>(2)</sup>
First Tee Program (clinic)	20	1 lbs per week / person	100 <sup>(2)</sup>
First Tee Program Employees	12	13 lbs per week / person	156 <sup>(1)(2)</sup>
<b>Total</b>			<b>1,426</b>

**Notes:**

<sup>1</sup>Calculations based on a 40-hour work week.

<sup>2</sup>Analysis performed for summer months (June through August).

<sup>8</sup> The amount (one pound per person per day) is selected from the City Environmental Quality Review, CEQR Manual, Chapter 3M for solid waste generation rates for an educational facility.

#### ***6.18.2.1.2. Study Area.***

In addition to the residential properties in the one-mile area, several public institutions are included as major employers in the study area, such as the Montefiore Medical Center. Several educational institutions, including public and private schools, are also located within the study area. Additionally, the NYCDEP Jerome Pumping Station is located within the study area. On average, commercial properties can generate approximately 13 lbs/week/employee (based on a 40-hour, 5 day work week). A residential property generates approximately 41 lbs/week of solid waste. Educational facilities can generate approximately 1-2 lbs/week per student and 13 lbs/week per faculty or staff member. Hospitals generate approximately 51 lbs/week of solid per bed.

All residential solid waste and solid waste from educational facilities generated in the City is collected by the NYCDOS. Commercial and industrial properties are responsible for contracting with private haulers. Medical facilities separate their waste into two categories: regulated medical waste and ordinary waste. New York State Department of Health (NYSDOH) and NYSDEC regulate the generation, treatment, storage, transfer and disposal of these medical wastes.

#### ***6.18.2.2. 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 the peak number of workers. In the Future Without the Project, it is anticipated that the solid waste generation rates at the water treatment plant site are anticipated to remain essentially at the current levels.

Future plans for the Mosholu Golf Course includes the construction of a Lew Rudin Youth Golf Center and a range complex that would allow golf instructional programs year around are being considered by The First Tee of Metropolitan New York. These plans are still pending; therefore their impact could not be quantified. No substantial change in the number of people at the water treatment plant site is anticipated; therefore, the amount of solid waste generated is anticipated to remain essentially unchanged.

### **6.18.3. Potential Impacts**

#### ***6.18.3.1. Potential Project Impacts***

If the proposed project were to be built at the Mosholu Site, the anticipated year of operation for 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.

Potential impacts associated with the proposed project include worker-generated solid waste<sup>9</sup> and waste related to the disposal of Ultraviolet Light (UV) lamps. The total number of employees has been estimated to be approximately 53. Of the 53 employees, a maximum of 41 would be weekday employees and 12 would be weekend (e.g. off-shift) employees (during a 8AM-4PM shift). Weekday employees, who work 40 hours in a five-day work week, would each generate approximately 13 lbs/week of solid waste. For the off-shift employees, this 13 lbs/week generation rate has been modified to 2.6 lbs/day/employee<sup>10</sup>. Therefore, the anticipated worker-generated solid waste would be approximately 533 lbs/week Monday through Friday (8AM-4PM) and approximately 62.4 lbs/week<sup>11</sup> during the off-shifts Saturday and Sunday (8AM-4PM), totaling to approximately 595.4 lbs/ in a seven day week. Employees at the proposed plant would be required to comply with New York City's local recycling law. With an effective recycling program implemented, the solid waste stream could be reduced by an estimated 25 to 40 percent.

The estimated total number of UV lamps to be contained in the proposed plant is estimated to be 960 lamps (48 lamps per unit times 20 units). As the useful life of a lamp diminishes, it would need to be replaced. According to the manufacturer's recommendations, the lamp life expectancy ranges between 10,000 and 12,000 hours. According to engineering estimates, each lamp should be changed roughly every 840 days (2.3 years). Approximately 1.14 lamps per day would be changed and generated as waste at the proposed facility (960 lamps/840 days). The lamps would contain a small amount of mercury, about 0.15 grams each. The weekly quantity of mercury generated would be 0.00264 lbs/week (1.14 lamps/day x 0.15 grams Hg x 7 days/week equals 1.2 grams/week). Lamps containing mercury would be removed to a US Environmental Protection Agency Licensed Recycling Facility. This would be done under contract between the City and the private hauler. Potential impacts of the mercury in the waste stream are described in the Hazardous Materials Section (Section 6.13).

Solid waste generated on-site, except waste related to the disposal of UV lamps, would be collected by the NYCDOS and disposed of in the New York City solid waste system. This volume of solid waste could easily be handled by the NYCDOS and is not anticipated to result in a significant adverse impact to the current system. The Mosholu Golf Course would be staffed and maintained in the same manner as it is currently; therefore, no change in solid waste generation is anticipated at the Mosholu Golf Course and Driving Range during operation of the proposed plant.

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<sup>9</sup> Worker generated solid waste was calculated by using CEQR generation rates. City Environmental Quality Review, CEQR, Manual, Chapter 3M

<sup>10</sup> 13 lbs/week/employee ÷ 5 days-8 hr shift/week = 2.6 lbs/day-8 hr shift/ employee; where 1 day equals an 8-hour shift.

<sup>11</sup> (2.6 lbs/day-8 hr shift/ employee x 12 employees x 2 days-8hr shift) = 62.4 lbs for the 8AM-4PM Saturday and Sunday shifts.

### **6.18.3.2. Potential Construction Impacts**

If the proposed project were to be built at the Mosholu Site, the anticipated year of peak construction for the proposed plant would be 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.

The Mosholu Golf Course would remain in operation during the construction of the proposed project through the use of a temporary clubhouse and driving range, and the reconfiguration of the golf course. Therefore, the waste generated at the Mosholu Golf Course and Driving Range during construction would remain the same. Construction of the proposed project would generate construction-worker generated solid waste, excavation solids (soil, crushed rock), and miscellaneous construction debris. The maximum number of construction employees needed on-site has been determined to be 660, each generating approximately 13 lbs/week of solid waste. This volume of solid waste would be collected and transported off-site by a private hauler. The waste would be handled by the existing solid waste system and would not result in a significant increase of waste to be handled by the existing system. Therefore, no significant adverse impacts on the solid waste system would occur as a result of the employee-generated waste during construction activities.

The main treatment building, including the raw water pumping station, would have a footprint area of approximately 350,280 sq. ft. Constructing these structures would require the excavation of approximately 1,250,000 cubic yards (cy) of earth and solid rock. Additionally, excavation of the raw and treated water shafts at the Jerome Park Reservoir and the connecting tunnels to the proposed plant would generate 85,000 cubic yards of earth and solid rock. The earth and rock solid waste would be collected and transported off-site by a private hauler, who could put the remainder of the material to a variety of uses, such as clean fill.

Additional solid waste would be generated as a byproduct of construction. This material would be highly variable in nature; it would include concrete forms, packaging, scraps of pipe, ductwork, sheetrock, electrical materials, and concrete block used for some interior walls. This amount of waste would be added to the worker-generated waste described above. The increase in solid waste generated from construction activities would be minimal. It is anticipated that the solid waste produced by construction workers would not result in a significant adverse impact on local or regional solid waste streams.

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