

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

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7.18. SOLID WASTE

7.18.1. Introduction

This section discusses the production, management, and collection of solid wastes currently and potentially generated at the proposed Croton Water Treatment Plant (WTP) at the Harlem River 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*¹ and its amendments. The methodology used to prepare this analysis is presented in Section 4.18, Data Collection and Impact Methodologies, Solid Waste.

7.18.2. Baseline Conditions

The New York State Solid Waste Management Act of 1988 (updated in 1999-2000)² 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)³ 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 1997.⁴ 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,⁵ 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

¹ 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>.

² 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>

³ 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>.

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

⁵ 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 2004.⁶

Currently, the NYCDOS serves 59 districts within the City. 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.

7.18.2.1. Existing Conditions

The proposed water treatment plant site, if it were built at the Harlem River Site, would be located in Bronx County between the Harlem River and the Major Deegan Expressway. As described in Section 7.2, Land Use, Zoning and Public Policy, the study area includes sections of Marble Hill, Spuyten Duyvil, Kingsbridge, Van Cortlandt Village, Kingsbridge Heights, and University Heights residential neighborhoods in the Bronx, and across the Harlem River, the neighborhood of Inwood in northern Manhattan.

7.18.2.1.1. Water Treatment Plant Site

The water treatment plant site at Harlem River consists of seven separate parcels, each owned by separate individuals and/or agencies. Currently XCEL Ready Mix Concrete has structures on the proposed site with employees, while the Storage Post self-storage facility (replacing Butler Lumber) is constructing a private storage facility. The XCEL Ready Mix Concrete employs approximately 14 individuals. Therefore, based on a 40-hour five-day workweek, the 14 employees generate approximately 182 lbs/week of solid waste (based on a 13lbs/week per employee generation rate⁷). Collection from this business is done by a private hauler. Currently, this facility does not have an active recycling program. The remaining five parcels do not have existing structures or employees on the proposed site; therefore, no solid waste is generated by these parcels.

7.18.2.1.2. Study Area

In addition to the residential properties in the area, several public institutions are included as major employers in the one-mile study area. Hospital facilities include the Jewish Hospital Home for the Aged, Columbia Presbyterian Hospital Allen Pavilion, and the US Veterans Hospital. Several educational institutions, including public and private schools, and the Bronx Community College, are also located within the study area. Additionally, the NYCDEP Marble Hill Pumping Station is located within the study area.

⁶ 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)

⁷ City Environmental Quality Review, CEQR, Manual, Chapter 3M

On average, commercial properties can generate approximately 13lbs/week/employee (based on a 40-hour, five-day work week). A residential property generates approximately 41 lbs/week of solid waste. Educational facilities can generate approximately 1-2lbs/week per student and 13lbs/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.

7.18.2.2. Future Without the Project

The Future Without the Project conditions were developed for the anticipated peak year of construction (2009) and the anticipated year of operation (2011) for the proposed plant at the Harlem River Site. The anticipated peak year of construction is based on peak truck traffic and the peak number of workers. In the Future Without the Project, it is anticipated that the water treatment plant site would experience some changes from its existing condition. The Storage Post self-storage facility is scheduled to be complete by summer 2004. This business would add up to three employees at the water treatment plant site, for a total of 17 employees in the Future Without the Project. Other businesses and vacant lots located at the Harlem River Site would be staffed and maintained in the same manner as they are currently. Therefore, the amount of solid waste is anticipated to increase by 39 lbs/week for a total of 221 lbs/week of solid waste generated at the Harlem River Site.

In the Future Without the Project, solid waste would continue to be collected and disposed of by the NYCDOS. There is anticipated to be no increase in solid waste production on the Harlem River Site through 2011 under the conditions stated above.

7.18.3. Potential Impacts

7.18.3.1. Potential Project Impacts

If the proposed project were to be built at the Harlem River Site, the anticipated year of operation for the proposed plant would be 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 waste⁸ 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

⁸ Worker generated solid waste was calculated by using CEQR generation rates. City Environmental Quality Review, CEQR, Manual, Chapter 3M

shift). Weekday employees, who work 40 hours in a five-day workweek, 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/employee⁹. Therefore, the anticipated worker-generated solid waste would be approximately 533 lbs/week Monday through Friday (8AM-4PM) and approximately 62.4 lbs/week¹⁰ during the off-shifts Saturday and Sunday (8AM-4PM), totaling to approximately 595.4 lbs/ in a seven day week. Employees at this facility 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 WTP 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 7.13).

In comparison, the Future Without the Project conditions indicates that there would be 17 employees at the Harlem River Site, collectively generating approximately 221 lbs/week of solid waste. This is an increase of 374.4 lbs/week of solid waste generated on site without the implementation of a recycling program. Solid waste generated, except waste related to the disposal of the UV lamps, on site would be collected by the NYCDOS and disposed of in the New York City's solid waste system. This additional volume of solid waste could easily be handled by the NYC Department of Sanitation and is not anticipated to result in a significant impact to the current system.

7.18.3.2. Potential Construction Impacts

If the proposed project were to be built at the Harlem River Site, the anticipated year of peak construction would be 2009. 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 2009.

Construction of the proposed project would generate both excavation solids (soil, crushed rock), worker generated solid waste, and miscellaneous construction debris. The greatest number of employees needed on-site during the peak year of construction in 2009 has been determined to

⁹ 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.

¹⁰ (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.

be 634, each generating approximately 13 lbs/week of solid waste. These construction employees would cumulatively generate a total 8,242 lbs/week of solid waste. This volume of solid waste would be collected and transported off-site by a private hauler. The solid waste would be handled by the existing solid waste system and would not result in a significant increase of solid 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 proposed plant, which includes all structures for the main water treatment building and the pump station, would have a footprint of approximately 272,000 sq. ft. Excavation for these structures would generate approximately 121,000 cubic yards of excavated earth and rock solid waste. Additionally, excavation of the two shafts and raw and treated water tunnels would generate approximately 32,200 cubic yards of solid waste. 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 impact on local or regional solid waste streams.