

**FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
CROTON WATER TREATMENT PLANT
METHODOLOGIES**

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4.16. INFRASTRUCTURE AND ENERGY

4.16.1. Introduction

The Infrastructure and Energy analyses address existing and future infrastructure in the vicinity of the three Croton Water Treatment Plant (WTP) sites and the off-site facilities.

Infrastructure is defined as a physical system capable of supporting an area's population. This system includes the water supply, wastewater, sanitation, stormwater drainage, and energy supply within the project area. The construction and operation of the proposed water treatment plant would place an increased demand on the existing infrastructure for water supply, sewage treatment, solid waste disposal, and energy usage. The methodology used to determine the extent of the proposed plant's impact on infrastructure is discussed below.

4.16.2. Baseline Conditions

4.16.2.1. Existing Conditions

4.16.2.1.1. Local Water Supply

In assessing the existing water supply systems at each of the water treatment plant sites, area water main maps were obtained from the relevant agencies of the Town of Mount Pleasant, New York for the Eastview Site and the City of New York for the Mosholu and Harlem River Sites in the Bronx. In addition, previous studies and evaluations by city agencies and development groups were collected, and contact with several city officials was established.

The New York City Department of Environmental Protection (NYCDEP) operates and maintains the water supply system in New York City. Information regarding the existing water supply conditions surrounding the Mosholu and Harlem River Sites was obtained from NYCDEP. Information on the Eastview Site was collected from the published Westchester County documents, and confirmed by the county. The Westchester County Department of Environmental Facilities water supply analysis study area includes areas surrounding the site that are currently served by the water pressure regulator that would be used to serve the Croton WTP. Existing water demands were estimated using generation rates from the *CEQR Technical Manual*.

None of the existing off-site facilities has a potable water supply, except for Gate House No. 5 and Gate House No. 7 at Jerome Park Reservoir. These facilities are supplied from nearby street mains.

4.16.2.1.2. Sanitary Sewage

In assessing the existing sanitary sewer systems at each of the three water treatment plant sites, sanitary sewer maps were collected from the relevant agencies' representatives.

The Town of Mount Pleasant is connected to the Westchester County-owned and operated Saw Mill Valley Trunk Sewer District, which connects to the Yonkers Joint Treatment Plant. This plant is owned and operated by the Westchester County Department of Environmental Facilities

(WCDEF). The Mosholu and Harlem River Sites are located in the Wards Island Water Pollution Control Plant's (WPCP) drainage basin. The NYCDEP Sewer Map No. 16, which encompasses a section of the Bronx, was consulted regarding the details on the sewer system surrounding the Mosholu and Harlem River Site. Sanitary sewage flows were estimated using generation rates from the *CEQR Technical Manual*.

The only off-site facilities with existing sanitary sewage facilities are Gate House Nos. 5 and 7 near the Jerome Park Reservoir. The Gate Houses near the Jerome Park Reservoir have connections to the city sanitary sewer systems on nearby streets.

4.16.2.1.3. Stormwater Infrastructure

The study area for the existing stormwater infrastructure included the existing stormwater collection system within the vicinity of the water treatment plant site and the off-site contributing stormwater collection systems. This analysis was concerned with the physical stormwater drainage that includes existing pipes and detention and retention basins in the study area.

The existing stormwater drainage system was analyzed using available stormwater drainage maps. For the Eastview Site, information on the Storm Drainage Utilities of the Grasslands Reservation obtained from the Westchester County Department of Planning in 2001, was used to evaluate the existing stormwater drains surrounding the site. For the Mosholu and Harlem River Sites, which are located in the collection basin of the Wards Island combined sewer system, information was obtained from the NYCDEP's local Bronx office.

4.16.2.1.4. Gas

Maps were obtained from Con Edison of New York, which supplies natural gas to both the Bronx and Westchester County. The locations of gas mains and connections points surrounding the proposed water treatment plant sites were described, and the amount of usage was discussed.

4.16.2.1.5. Electricity

Con Edison would supply the electricity to the three proposed water treatment plant sites. Maps that revealed area cable and transformer locations for each of the sites were obtained from Con Edison. These locations were described and the existing electrical rates and usages were discussed. In addition, meetings were held with the utility company to discuss the availability of power for the proposed plant.

4.16.2.2. *Future Without the Project*

The three water treatment plant sites were evaluated for their water consumption, sewage generation, stormwater drainage system, and natural gas and electrical utilization for both the peak construction and operation year assuming the proposed project would not be built. This evaluation forms the Future Without the Project baseline conditions against which the proposed project was evaluated. A substantial amount of the information needed for this analysis was ascertained through discussions with the New York State Department of Environmental Conservation (NYSDEC), NYCDEP, the Town of Mount Pleasant, and the WCDEF.

4.16.3. Potential Impacts

4.16.3.1. *Potential Project Impacts*

The potential impacts on water supply, sanitary systems, and energy were analyzed using guidelines presented in the *CEQR Technical Manual* (released in October 2001). The total demand on the systems generated by employees of the proposed plant and expected visitors was estimated and compared to the Future Without the Project condition.

Connections to the existing water supply system were evaluated to determine whether water pressure would be impacted. The ability of Westchester County's Saw Mill Valley Trunk Sewer District and the Joint Yonkers Sanitary Sewer District to convey and process wastewater flows from the Eastview Site was assessed. The ability of the Wards Island drainage basin sewage collection systems to convey and process wastewater flows from the Mosholu and Harlem River Sites were also assessed. The volume of process wastewater that has the potential to enter the sewer was estimated. Sanitary sewage flows were also estimated using generation rates from the *CEQR Technical Manual*. The projected demand for electric and gas utilities and potential impacts as a result of the proposed project were also developed given process options and site layouts.

The proposed stormwater drainage plan for each site was described and the impact of this system was analyzed against the existing stormwater drainage system. The existing stormwater drainage system that may contribute to the water treatment plant sites' stormwater flow was added to the flows generated from the site. The stormwater collected at the water treatment plant sites was isolated from the existing systems and a Stormwater Plan for each site was developed. The characteristics of stormwater flow at each site are described and discussed in Sections 5.15, 6.15 and 7.15, of the Eastview, Mosholu and Harlem River Sites, Water Resources Sections, respectively.

4.16.3.2. *Potential Construction Impacts*

Similar to the operating analyses described above, the ability of the existing infrastructure to handle additional loads attributable to construction workers on-site was assessed. The characteristic of the predicted stormwater flow based on the construction plan of each site is described in Sections 5.15, 6.15, and 7.15, of the Eastview, Mosholu and Harlem River Site Water Resources sections, respectively. The proposed stormwater drainage system for the construction period was discussed in this section. In New York City, the storm and sanitary systems are combined, so the potential impact of stormwater discharges to sanitary sewer lines was also considered. Construction plans for the water treatment plant sites were developed in accordance with applicable state and local regulations including the NYSDEC General Permit GP 02-01 for Construction Activity.

Since dewatering of below grade structures would be required at the NCA access points for the NCA pressurization alternative at the Eastview Site, the potential impact on storm water systems was investigated.

4.16.4. Mitigation

Mitigation measures were identified wherever significant adverse impacts to infrastructure could occur from the proposed project. The appropriate mitigation measures were identified and discussed regarding any potential significant adverse impacts to water demand, sewage generation, stormwater infrastructure, and energy uses that were determined when comparing baseline conditions to potential project demands.

The mitigation of stormwater infrastructure included the potential diversion of contributing off-site stormwater collection systems and the proposed plant stormwater infrastructure. These mitigation efforts are summarized in the Project Descriptions for the Eastview, Mosholu and Harlem River Sites (Sections 5.1, 6.1, and 7.1, respectively).