

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

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4.20. PUBLIC HEALTH

4.20.1. Introduction

Public Health is defined by the *CEQR Technical Manual* as “the activities that society undertakes to create and maintain conditions in which people can be healthy.” The potential effects of the proposed Croton Water Treatment Plant project on public health was considered with regard to direct effects on the project sites and surrounding communities, and the indirect effects pertaining to the Croton water users and the quality of the water provided.

The public health at the Eastview, Mosholu, and Harlem River Sites were potentially affected by the operation and/or construction of the proposed project. These potential effects were influenced by air quality, noise, traffic and transportation, hazardous materials, natural resources, solid waste, and electric and magnetic fields and extremely low frequency fields (EMF/ELF) within the proposed project site or study areas. Direct effects resulted from proximity to the project site. These effects were a result from chemical storage, vehicular emissions, and waste production. Croton water users and the quality of water provided were indirectly affected by the construction of the proposed project. Issues that need to be addressed included provision of filtered water, the quality of the distribution system, and future handling of the City’s Water Supply System.

Indirect effects included, but were not limited to, determining the increased risk from exposure to environmental pollutants together with an estimate of the severity of the impact, studying the distribution and determinants of diseases and injuries in human populations, and a determination of potential for human diseases and injuries. These assessments would include the following areas of concern: vehicular traffic and emissions, air quality, exposure to hazardous materials, solid waste disposal, exposure to mosquito-borne diseases, asthma conditions, rodent populations, and noise and odor emissions. The assessments were made based on criteria in the *CEQR Technical Manual* and all analysis was conducted in accordance with public and human health standards and guidelines set forth by local, state, and federal agencies.

4.20.2. Baseline Conditions

4.20.2.1. Existing Conditions

Urban public health issues require special attention with regard to the construction of a WTP at the Harlem River, Mosholu, or Eastview Sites. In general, these concerns are closely related to air quality, noise, traffic, hazardous materials, natural resources, solid waste, and EMF/ELF alterations or disruptions. However, in some areas there are specific public health concerns. For instance, consideration was given to public concern over elevated incidences of asthma in the vicinity of the Mosholu and Harlem River Sites.

Potential impacts on public health were analyzed to ensure that the construction of the proposed project would cause the smallest possible impact on the human populations near the project sites. To make these determinations, exposure levels were compared to relevant local, state, and federal regulations, guidelines, and action levels. For example, completed traffic studies were

used to compare safety conditions surrounding the project sites to conditions at the city, state, and national level. Additionally, for the Bronx sites, a rodent control monitoring plan was developed to alleviate concerns regarding rodent populations associated with construction in these areas.

The analysis of Existing Conditions at the proposed project sites includes the identification of special local populations that are sensitive to environmentally induced stresses. These include populations in the nearby medical facilities and extremely young, old, and immune-compromised people.

4.20.2.2. Risk Assessment

4.20.2.2.1. Air Quality

Air quality is based on the analysis of air emissions coming from two types of sources: mobile and stationary. Each factor contributes to causing significant adverse air quality impacts. The concentration of each certain pollutant emissions can be compared to the National Ambient Air Standards (NAAQS) to determine risk potential. Incidences of asthma and odor problems are both potential risks from the proposed project.

4.20.2.2.2. Noise

The noise levels were monitored and measured against known thresholds to determine how the proposed project would affect populations. Potential risks were determined by comparing the noise increment from the project to nationally established noise levels

4.20.2.2.3. Traffic

To assess the risks associated with the traffic conditions at the Eastview, Mosholu, and Harlem River Sites, the following conditions would be analyzed: the effects of construction and operation of the proposed project on the levels of service (LOS) of traffic; the accident history of the affected roadways and intersections; and the effects of increased air pollution from traffic, congestion, and delays around the proposed construction areas.

4.20.2.2.4. Hazardous Materials

Hazardous materials present a cause for concern due to their harmful nature. The handling and transportation methods of chemicals to be used at the potential plant sites along with hazardous waste produced onsite were evaluated in accordance with federal, state, and local regulations that are intended to protect public safety and health. Mitigation plans and worker health and safety plans would be developed to minimize risks.

4.20.2.2.5. Water and Natural Resources

Efforts to conserve water resources could include the construction of stormwater detention basins. Additional surface water resources could be created to compensate for impacts to existing wetlands. These new surface waters could provide new habitat for insects such as mosquitoes, which could transmit disease to human populations nearby. The potential health impacts of these pests were evaluated, and mitigation strategies were developed, where necessary, to ameliorate these potential impacts.

4.20.2.2.6. Solid Waste

The potential risks associated with solid waste include the potential for these wastes to be hazardous. Specifically, risks related to the transport and disposal of solid wastes were evaluated.

4.20.2.2.7. Electric and Magnetic Fields and Extremely Low Frequency Fields (EMF/ELF)

The proposed project could result in additional electrical or magnetic disturbances and/or concerns to the human population. To assess risks associated with EMF/ELF at the Eastview, Mosholu, and Harlem River sites, the conditions associated with increased electrical demand within each study area were evaluated.

4.20.2.3. Federal, State, & Local Regulations

Regulations promulgated by the Federal, State, local, or local government serve as a basis for the identification and classification of potential public health issues. The following regulations apply:

4.20.2.3.1. Federal

1. Environmental Protection Agency (EPA) – The EPA’s Federal Clean Air Act - This Federal Act regulates the National Ambient Air Quality Standards (NAAQS), and Section 304(a) of the Clean Water Act (CWA) regulates water quality (www.epa.gov).
2. Resource Conservation and Recovery Act (RCRA) - This Federal act regulates the generation, treatment, storage, disposal, and transport of hazardous wastes. Under RCRA, hazardous wastes are substances that are chemically reactive, ignitable, corrosive, or toxic as measured by the Toxicity Characteristic Leaching Procedure.
3. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – More commonly known as Superfund, this Federal act established prohibitions and requirements concerning closed and abandoned hazardous waste sites. The act provided for liability of persons responsible for releases of hazardous

waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. The law authorizes two kinds of response actions: (1) short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response; and (2) long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. These actions can be conducted only at sites listed on EPA's National Priorities List (NPL).

4. Occupational Safety and Health Administration (OSHA) Regulations - This agency was created by Congress in 1970 and promulgates regulations and standards to ensure worker safety in the workplace.
5. U.S. Department of Transportation (DOT) – The Department of Transportation relates to public health through its mission of ensuring that various modes of transportation operate safely on an individual basis and together as an interlinked transportation system. The DOT provides numerous transportation safety organizations and programs to protect public health (<http://www.dot.gov/safety.html>).

4.20.2.3.2. State

6. New York State Department of Transportation (NYSDOT) - The NYSDOT provides an Environmental Procedure Manual (<http://www.dot.state.ny.us/eab/epm.html>) with the mission that those who live, work and travel in New York State are entitled to a safe, efficient, balanced and environmentally sound transportation system. They can provide important environmental enhancements through close coordination with municipalities and State and Federal resource agencies (i.e. NYSDEC & USEPA). However, their initiative is to encourage construction and maintain practices above and beyond permit and mitigation requirements.
7. New York State Department of Health (NYSDOH) - The NYSDOH maintains public and human health standards (www.health.state.ny.us/home.html). The NYSDOH provides mosquito surveillance and laboratory specimen preparation (to control West Nile Virus). Requested aid for municipalities comes under Article 6, Section 611 of the Public Health Law. NYSDOH also regulates drinking water. While the EPA distinguishes between health-based (primary) and aesthetic (secondary) water standards, the NYSDOH considers them equally. Since the NYSDOH holds Croton water to higher standards than does the EPA, the construction of a water treatment plant would have to adhere to the higher standards of the NYSDOH.
8. New York State Department of Environmental Conservation (NYSDEC) - The NYSDEC is the lead New York State agency in regulating pesticides. The Division of Solid & Hazardous Materials regulates the application of pesticides in New York State and is responsible for compliance assistance and public outreach activities to

ensure enforcement of State pesticide laws (Article 33 and parts of Article 15 of the Environmental Conservation Law (ECL)), and regulations (Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York Parts 320-329).

4.20.2.3.3. County

9. Westchester County Department of Health (WCDOH) – The WCDOH is dedicated to protecting the health of the Westchester community. Some health-related topics they address include: controlling the spread of disease; enforcing safety and sanitary codes; promoting healthy choices; providing timely health information; and assisting with medical services (<http://www.westchestergov.com/health>). The WCDOH assists in the control of West Nile Virus by identifying surveillance sites and providing the personnel, either internally or contractually, necessary to conduct the baseline mosquito surveillance and control program.
10. Westchester County Department of Environmental Facilities (WCDEF) - The mission of the WCDEF is to protect, preserve and conserve the water supply and the quality of watercourses within or on the borders of Westchester County and provide proper solid waste management practices, including waste stream reduction and recycling, to protect the health, safety and welfare of the public. The Department is responsible for planning, operating and maintaining wastewater treatment facilities, wastewater collection systems, water filtration facilities, water distribution systems and solid waste facilities in compliance with state and federal rules and regulations (www.westchestergov.com/envfacil).
11. Westchester County Department of Transportation (WCDOT) - The mission of the WCDOT is to facilitate the efficient and economical movement of people and good through a balanced, integrated, and environmentally sensitive transportation system consistent with federal, state, and local transportation-related mandates and to foster services and the necessary infrastructure to increase people’s mobility while in Westchester County (<http://www.westchestergov.com/transportation>).

4.20.2.3.4. Local

12. New York City Department of Health and Mental Hygiene (NYCDOHMH) - NYCDOHMH would conduct a coordinated review with the NYSDEC pursuant to 6 NYCRR Part 617.6. The review would result in an environmental assessment on state actions, including but not limited to those within the scope of Article 15 of the NYS Environmental Conservation Law (ECL) and the following permits: 6 NYCRR Part 329 permit; NYSDEC Freshwater Wetlands permit, ECL Article 24; NYSDEC Tidal Wetlands permit, ECL Article 25. The NYCDOHMH assists in the control of West Nile Virus by identifying surveillance sites and providing the personnel, either internally or contractually, necessary to conduct the baseline mosquito surveillance and control program.

13. New York City Department of Environmental Protection (NYCDEP) - NYCDEP protects New York City's water supply through rules and regulations. The Rules and Regulations are designed to protect the water from contamination, degradation, and pollution (<http://nyc.gov/html/dep/html/ruleregs/finalrandr.html>).

4.20.2.4. Future Without the Project

The potential for changes in exposure to environmental pollutants that may have an effect on public health was evaluated in light of any land use changes proposed for the study area. Improvements in environmental conditions resulting from regulatory enforcement of air and water quality regulations were evaluated.

4.20.3. Potential Project Impacts

4.20.3.1. Project Impacts

A thorough assessment of potential public health issues was undertaken to determine the potential impacts from the proposed project at the Eastview, Mosholu, and Harlem River Sites and the Off-Site Facilities. The assessment would include potential direct and indirect effects of the proposed project. All potential significant adverse impacts were evaluated based on their likelihood adversely affecting public health. The factors considered include: the characteristics of the affected population; the time frame of the impact and its latency; the seriousness of a potential health effect and its duration; the number of people involved; and the reversibility of the impact. A clear distinction was made concerning risks resulting from construction activities and those resulting from operation.

4.20.3.2. Identifying Risks

The risks associated with the proposed project were identified and evaluated with an estimate of the severity of impact. Each area concerning public health was broken down into specific risks and described what is necessary to show that they qualify as a significant risk. The risks were further evaluated based on governmental regulations to determine which regulations, if any, would be violated.

4.20.3.2.1. Air Quality

Air pollutants emitted by mobile (vehicles), stationary (plant operation), and fugitive (construction) sources pose public health risks especially when combined with congested traffic conditions. The pollutants that could have the greatest effect on public health are Sulfur dioxide (SO₂), Carbon monoxide (CO), Ozone (O₃), Nitrogen dioxide (NO₂), and small particulates. These pollutants only become a risk when at levels that exceed the NAAQS. Incidences of asthma were evaluated separately because air quality standards alone do not explain the epidemiology of asthma. Interim methods that have been approved by NYSDEC for the analysis of PM_{2.5} were utilized. Risks associated with the emergence of an odor problem were examined using an odor control system after a need was established.

4.20.3.2.2. Noise

Details of noise monitoring and modeling are described in Section 4.10, Data Collection and Impact Methodologies, Noise. The potential for increases in ambient noise levels that could cause health impacts were considered in this section.

4.20.3.2.3. Traffic

Public health risks associated with vehicular traffic include the potential for a higher frequency of accidents, congestion during peak hours of transit, and pollution from vehicle emissions. With the proposed project, the potential for accidents could increase during the construction period. The rise should be mainly during peak hours from (7am-10am and 2pm-6pm). The potential for increased numbers of pedestrian accidents was also considered.

4.20.3.2.4. Hazardous Materials

The risk from hazardous materials would be evaluated based on prepared Emergency Response and Contingency plans that are designed to prevent accidents. Pipelines and buried utilities along with potential soil disturbances associated with the proposed project were identified. Also, any above-ground and below-ground storage tanks where hazardous materials were previously located were identified for risks. All chemicals being used would have safety and handling issues evaluated before use, and Right-To-Know regulations would be followed that identify hazardous wastes and would inform the public of hazardous waste being produced in the vicinity of their residences as well as identifying such waste. Compliance with other Federal and State regulations would help protect local citizens and reduce risks to the public.

The risk to the public from the use and transport of hazardous materials was assessed by investigating accidents involving the use of similar chemicals in other comparable facilities. The low incidence of accidents at other locations required a qualitative assessment, as quantitative risk data are not available.

4.20.3.2.5. Natural and Water Resources

The public health impact from the proposed project was considered and where necessary, recommendations for the control of project-generated insect pests were offered.

4.20.3.2.6. Solid Waste

The amounts of expected solid waste at the proposed plant were determined using the *CEQR Technical Manual*. The predominant source for solid waste that could potentially affect public health is residual waste from the treatment process. Contributing to the total solid waste stream is employee waste. The amount of solid waste and residual waste from this process was calculated. A Toxic Characteristic Leaching Procedure (TCLP) was then used to determine if harmful chemicals are present in the residual waste. This determination helps establish the disposal method(s) to be employed.

4.20.3.2.7. Electric and Magnetic Fields and Extremely Low Frequency Fields (EMF/ELF)

The public health impact(s) from the proposed project with respect to EMF/ELF were considered and where necessary, recommendations for the reduction of any measurable increase in public exposure was offered.

4.20.4. Mitigation

To minimize exposure to environmental pollutants, mitigation measures, wherever possible, were developed and evaluated to minimize potential impacts on public health. These measures incorporate similar approaches outlined in the Air Quality, Noise, Hazardous Materials, Water Resources, and Construction Impacts sections of this Final SEIS, along with the guidelines for the local, State, and Federal agencies as mentioned within this section. As noted above, a rodent control-monitoring plan was developed for the Bronx sites to alleviate concerns regarding rodent populations associated with construction.