

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

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## **7.8. GROWTH INDUCEMENT**

### **7.8.1. Introduction**

This section examines the potential for the proposed Croton Water Treatment Plant (WTP) at the Harlem River Site, located in the Borough of the Bronx, NY, to increase the rate of growth, including population growth and associated residential development, as well as commercial and other development should the Harlem River Site be selected as the preferred location for the proposed Croton project.

As noted in Section 4.8, Data Collection and Impact Methodologies, Growth Inducement, the growth inducement analysis addresses the potential for the proposed project to increase the rate of growth, including population growth and associated residential development, as well as commercial and other development, primarily as a consequence of four types of actions. Only two of those actions would be applicable if the proposed plant is located at the Harlem River Site: induced employment and other activity due to capital and operating expenditures made in the area, and induced growth due to relaxed watershed controls as a result of filtering the Croton water supply. However, NYCDEP has been and would continue to be committed to implementing a scientifically based watershed protection program directed at achieving contemporary water quality goals. A thorough discussion of NYCDEP's Croton watershed protection efforts is presented in Section 2, Purpose and Need. Therefore, information on baseline characteristics related to these two actions is addressed in this section. The other two actions that might result in induced growth – property taxes the City would pay on its facilities located outside city boundaries and potential changes in water supply service downstream of the water treatment facility – would not be applicable if the water treatment plant were located at the Harlem River Site.

### **7.8.2. Baseline Conditions**

#### **7.8.2.1. Existing Conditions**

##### **7.8.2.1.1. Economic Conditions**

See Section 7.7, Socioeconomic Analysis, for information on the current economic activity and employment at the Harlem River Site and in the study area.

##### **7.8.2.1.2. Watershed Protection Program in the Croton System**

With the signing of the Watershed Memorandum of Agreement (MOA) in January 1997, a comprehensive Watershed Protection Program was initiated. The MOA provides for promulgation of revised Watershed Regulations, implementation of a watershed-wide Land Acquisition Program, and funding of certain watershed protection and partnership programs with watershed communities.

The Watershed Regulations provide for the protection of the New York City water supply and its sources through the regulation of activities in the watershed. These regulated activities include: hazardous substances, petroleum products, wastewater treatment plants, sewage systems, service connections and discharges to sewage systems, subsurface sewage treatment systems, stormwater and impervious surfaces, solid waste, fertilizers, and snow disposal and storage and use of winter highway maintenance materials.

The Watershed Land Acquisition Program is a long-term protection strategy aimed at preserving environmentally sensitive lands in the upstate watershed. The City proposes to purchase, from willing sellers, environmentally sensitive vacant land near water resources such as reservoirs, streams, ponds, lakes, wetlands, and floodplains to protect its water supply.

Finally, the MOA includes a number of protection and partnership programs with upstate watershed communities. The goal of these programs is to ensure that new economic development would take place in a responsible, environmentally sensitive manner and in compliance with the Watershed Regulations. Some of the watershed programs, particularly those available in the East of Hudson watershed region, include: funding upgrades of existing Wastewater Treatment Plants (WWTPs) and future public WWTPs required by the Watershed Regulations; funding future stormwater controls for individual residences, small businesses and low income housing; and the East of Hudson Water Quality Investment Program, which includes funding that can be used for sewage diversion projects, water quality measures identified in the Croton System Water Quality Protection Plan, rehabilitation or replacement of subsurface sewage treatment systems, community septic systems to address existing or anticipated water quality problems, stormwater best management practices to reduce existing erosion and/or pollutant loadings, new or upgraded sand and salt storage facilities, sewage collection systems to serve areas with concentrations of failing or soon to be failing septic systems, streambank stabilization and protection measures to reduce erosion and/or pollutant loadings, septic system pump outs, septic maintenance districts, and other measures designed to alleviate a water quality problem or to protect and improve water quality in the East of Hudson watershed.

#### **7.8.2.2. *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. The anticipated peak year of construction is based on the peak number of workers.

In the Future Without the Project, the Harlem River Site is anticipated to remain largely unchanged from its existing condition, and numerous projects are proposed in the study area. These changes and projects are detailed in Section 7.2, Land Use, Zoning and Public Policy. Anticipated socioeconomic conditions on the site are also anticipated to change somewhat in the Future Without the Project. Details on these changes to the site and possible changes in population and employment in the study area are presented in Section 7.7, Socioeconomic Analysis.

The City is anticipated to continue implementation of the long-term strategy outlined in its watershed control program. The proposed measures are included in the City's Capital Program and thus would be carried out over the planning period.

### **7.8.3. Potential Impacts**

This section discusses the potential for growth inducement related to the construction and operation of the proposed project at the Harlem River Site if this site were selected for the proposed Croton project. The methodology used to prepare this analysis is presented in Section 4.8, Data Collection and Impact Methodologies, Growth Inducement.

Some modifications to the manner in which the RIMS II multipliers have been used to estimate spin-off benefits as a result of operation of the proposed project have been made during preparation of the Final SEIS. These changes have been made due to additional consultation with the U.S. Bureau of Economic Analysis (BEA) and public comments received suggesting that the spin-off benefits reported in the Draft SEIS appeared to be too high. Based on discussions with the BEA, it was determined that while use of the RIMS II “final-demand multiplier” for estimating spin-off effects during construction of the proposed plant is accurate, the “direct-effect multiplier” is more appropriate for estimating spin-off effects during operation since some assumptions and associations made for operation of the proposed Croton project (e.g. relationships between earnings and output or employment and output) do not match the assumptions of the RIMS II model for final-demand.<sup>1</sup> Also, it is important to note that the spin-off benefits reflect total effects (for both operation and construction). In other words, the spin-off benefits reported in this section include both the direct impacts from the operation and construction of the plant itself as well as indirect impacts experienced by Bronx County and the region.

In the Draft SEIS, multipliers from Sector 11.0800 (office, industrial, and commercial buildings construction) were used for the RIMS II construction analysis. Subsequently, it was determined that multipliers from Sector 11.0900 (other new construction) were more appropriate to use for the proposed plant since these multipliers are referenced to “other heavy construction,” such as water treatment plant construction, in SIC codes. Thus, Sector 11.0900 multipliers are used for analysis in this Final SEIS. Also, as a means to more reasonably reflect the number of spin-off jobs in response to public comments received on the Draft SEIS, the RIMS II employment multiplier for construction was corrected for inflation in this Final SEIS since the RIMS multipliers reflect 2000 regional data while costs for the proposed plant are in 2003 dollars. Such an adjustment is also recommended by the BEA. Finally, in this Final SEIS, average year employment rather than peak year employment data have been used for the construction analysis. None of these modifications has resulted in changes to any of the results or conclusions.

#### **7.8.3.1. Potential Project Impacts**

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.

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<sup>1</sup> BEA. 2004. Personal communication between BEA and M&E, May 24, 2004.

Growth inducement refers to the potential for the proposed project to increase the rate of development in areas around the water treatment plant site, primarily as a consequence of four types of actions. Only two of those actions would be applicable if the proposed plant is located in the City: induced employment and other activity due to capital and operating expenditures in the area; and induced growth due to relaxed watershed controls as a result of filtering the Croton water supply. However, NYCDEP has been and would continue to be committed to implementing a scientifically based watershed protection program directed at achieving contemporary water quality goals. A thorough discussion of NYCDEP’s Croton watershed protection efforts is presented in Section 2, Purpose and Need. The potential for induced growth due to these two actions is evaluated in this section.

**7.8.3.1.1. Indirect Economic Benefits Due to the Proposed Plant’s Operating Expenditures**

As discussed in Section 7.7, Socioeconomic Analysis, the 53 new workers, their salaries, and the total dollars invested annually by the NYCDEP (\$25 million) for operation and maintenance of the proposed project at the Harlem River Site would create indirect effects in Bronx County’s economy, which are estimated using RIMS II multipliers. (See Section 4.7, Data Collection and Impact Methodologies, Socioeconomic Conditions for details on RIMS II; the sector used was Sector 68.0301, water supply and sewerage systems.) These indirect effects include additional jobs, associated earnings, and increased output. Table 7.8-1 shows the spin-off benefits could add a total of 186 new jobs in Bronx County’s economy (including the 53 employees at the proposed plant). It is likely that the benefits to Bronx County would be less, since some of the benefits would occur in other counties. Multipliers were not available for water supply facilities for Bronx County, so this analysis uses the multipliers for the water supply industry for Westchester County.

**TABLE 7.8-1. INDUCED ECONOMIC BENEFITS DURING OPERATION, BRONX COUNTY**

<b>Economic Factor</b>	<b>Economic Benefits</b>
Total Output to County’s Economy	\$44,202,500
Total Income	\$6,575,985
Total New Jobs	186

**Source:** Bureau of Economic Analysis, U.S. Department of Commerce. 2003. RIMS II for Westchester County, 2003.

The RIMS II employment multipliers indicate that the most pronounced growth would occur in the electric, gas, and sanitary services sector. Although the results apply to all of Bronx County, it is reasonable to conclude that some of the benefits would occur in the immediate area. For example, sales could increase for commercial services including gas stations, convenience stores, and possibly restaurants. If the workers were to frequent businesses during, before, or after their workday, it could result in increased business to area merchants.

While the proposed project would result in a small increase in jobs and outputs to the Bronx County economy when compared with the total number of jobs in the county (estimated to be

284,660 jobs according to the 2000 U.S. Census) and total budget of the NYC economy (2004 executive budget of \$44.5 billion, of which Bronx County is a portion<sup>2</sup>), the effects of the proposed project represent a relatively small change.

#### ***7.8.3.1.2. Continuing Implementation of the Watershed Protection Program in the Croton System***

Throughout the planning efforts for the development of a water treatment plant in the Croton watershed, questions were raised regarding how the construction of a water treatment plant might affect the NYCDEP's regulatory authority in the watershed (i.e., would NYCDEP relax its controls within the watershed on the assumption that a high level of protection would no longer be needed once filtration is available). The argument was made that if these controls were relaxed with filtration, more development would take place in the watershed, resulting in the potential for the proposed plant to induce growth.

The City intends to fully implement the Watershed Protection Programs described above, and to enforce the regulations in the Croton watershed even with the development of the proposed plant. When the MOA was being developed, New York City was planning for filtration of the Croton water supply. Despite this fact, NYCDEP did not choose to relax the regulations in the Croton watershed. In fact, the MOA includes a number of programs specifically designed for the Croton watershed and substantial sums of money earmarked to fund these programs.

The reason for maintaining a strong watershed protection program even with filtration is that filtration alone does not address all of the goals of the watershed protection program. A number of the contaminants associated with activities regulated under the Watershed Regulations and addressed under the partnership programs cannot be eliminated or completely controlled through filtration (i.e. petroleum products and hazardous substances). In addition, certain programs under the MOA, including provisions of the Watershed Regulations, would reduce phosphorus and turbidity in the reservoirs, which would increase the effectiveness and efficiency of the proposed plant. Finally, filtration facilities are, although the probability is very low, subject to operational failures; therefore, it is important to continue to protect the watershed and water quality.

The efficiency and effectiveness of a water treatment plant is affected by raw water quality. Some reported outbreaks of *Cryptosporidiosis* in filtered systems are believed to have been partially caused by deterioration in raw water quality. High algae and turbidity levels in raw water entering a water treatment plant can adversely affect its efficiency and increase maintenance requirements. Phosphorus loads into reservoirs can result in excessive algal growth.

Excessive algal growth has many effects, one of which is the formation of disinfection by-products (DBP) when the algal breakdown matter combines with chlorine during the disinfection process. Filtration is partially, but not fully, effective in removing DBP precursors. A conventional plant can partially remove DBP precursors via optimized coagulation. Minimizing the loading of phosphorus in reservoirs would further reduce DBP precursors. Elements of the Watershed Protection Program, particularly the WWTP upgrades, would reduce phosphorus

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<sup>2</sup> The City of New York Executive Budget, Fiscal Year 2004. City of New York, Office of Management and Business. April 15, 2003.

loads and would minimize future degradation of the reservoirs. Filtration, on the other hand, can only attempt to remove precursors after they have already formed.

As presented above, watershed protection can raise the efficiency of filtration and provide an additional barrier to pollutants. In particular, a filtration plant does not effectively remove some pollutants. In addition, raw water quality entering a water treatment plant affects its efficiency. Finally, plants are, although the probability is very low, subject to disruptions, which could put the public at risk. All of these reasons argue for continuing the implementation of a strong watershed protection program.

A review of NYCDEP's recent regulatory activity in the Croton watershed clearly shows that the agency fully intends to implement the Watershed Protection Program in the Croton system, despite planning for a water treatment plant. Since the implementation of the MOA, NYCDEP has expanded the exercise of its regulatory review powers with regard to review of development proposals in the watershed. For example, in the five years between January 1, 1997 and December 31, 2002, NYCDEP received and reviewed a total of 3,627 applications for development in the Croton watershed.

For these reasons, the construction of the proposed plant would not be anticipated to result in potential significant induced growth in the Croton watershed.

#### **7.8.3.2. *Potential Construction Impacts***

The anticipated year of peak construction for the proposed project is 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.

Capital costs spent during the construction period and the 634 construction jobs created would have a short-term beneficial effect on the local economy. There is also a possibility of some potential for growth inducement. As noted in the Socioeconomic Analysis (Section 7.7), the dollar investment that NYCDEP would make for construction of the proposed plant, including capital costs, could add an average of 448 new jobs per year of construction and increased output to the county's economy, according to the RIMS II multipliers for Bronx County (Appendix A). However, the actual benefit would be less since the benefits would likely spill over to other counties, and these indirect effects would be limited to the duration of the construction period and thus would not likely result in significant relocation of workers to the area. Thus temporary positive effects are anticipated.