FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
CROTON WATER TREATMENT PLANT
AT THE EASTVIEW SITE

5.16. INFRASTRUCTURE AND ENERGY

5.16.1. Introduction

This section examines the existing and potential demands upon water, wastewater, stormwater drains, electric systems, and natural gas associated with the proposed Croton Water Treatment Plant (WTP) project at the Eastview Site. The stormwater management facility is also discussed in this section. For the purpose of this analysis, a study area of approximately one-half mile has been established. The following analysis was performed in accordance with the methodology outlined in Section 4.16, Data Collection and Impact Methodologies, Infrastructure and Energy.

5.16.2. Baseline Conditions

5.16.2.1. Existing Conditions

5.16.2.1.1. Water supply

Water Treatment Plant Site. The Eastview Site is currently undeveloped and uninhabited, except for one private residence (the Hammond House) that sits along Grasslands Road/Route 100C, and Shaft No. 19 along the Delaware Aqueduct that is located on the eastern edge of the site. Water demand at the Hammond House is minimal and is supplied by an on-site well. Shaft No. 19 has no permanent employees except for the security post that has two officers per shift. No potable water is available at Shaft No. 19.

Study Area. Westchester County Water District No. 3 (Water District No. 3), which receives its water supply from the Catskill Aqueduct, supplies potable public water to the Grasslands Reservation and the immediate area. The water pressure for Water District No. 3 system is 90 to 100 pounds per square inch (psi), which is well above the minimum acceptable water pressure of 20 to 25 psi for residential uses. This system accommodates average demand of approximately one million gallons per day (mgd). The majority of the supply from Water District No. 3 is provided to the Grasslands Reservation, which uses approximately 700,000 gallons per day.[1]

Westchester County reached an agreement with the City of New York (the City) in 1985 to supply the Water District No. 3 with City water. Determining a capacity to be supplied by the City, a residential population figure of 4,367 people for the purposes of calculating the entitlement was used. The County calculated this figure based upon an artificial population formula using the number of hospital and prison beds and employees at the Grasslands Reservation facilities at the time of the agreement. With developments and expansions of the Reservation facilities over the past years, the facilities currently demand up to their capacity, with most of the supply going to the Penitentiary that is located directly to the east of the Eastview Site. In the event of a water shortage in the Grasslands Reservation, Water District

[1]Information obtained from Mr. Sal Celona, Director of the Westchester Department of Environmental Facilities, on June 29, 2000; and confirmed at the Westchester County meeting with NYCDEP on June 12, 2002.

No. 3 has the ability to purchase additional supply from the Town of Greenburgh Water District No. 2, which is also supplied by the City Water Supply System. Currently, neither of the Towns distribution systems maintains water supply lines in the Eastview Site.

The Grasslands Reservation distribution system consists of a 12-inch pipe that enters the Reservation from Dana Road. The pipe runs along Dana Road and connects to two pipes that run southward, along the east and west sides of the Westchester County Fire Training Center. The pipe east of the Fire Training Center extends to the northeast corner of the Eastview Site. Three gate valves are located in this corner of the water distribution system. From Dana Road, the distribution system on the reservation extends water supply lines to the existing facilities.

Upstate Water Suppliers. Many upstate (i.e., outside of New York City) water suppliers withdraw part or all of their supplies from the City's Water Supply System. These water suppliers and their retail customers are identified in Section 1.4, New York City Water System Users. The siting of the proposed plant at the Eastview Site could potentially alter the availability of the Croton Water supplied to its current upstate customers. The effects that could result from placement of the proposed plant at the Eastview Site would be 1) suppliers would be required to seek an alternative supply to meet their water supply needs, and 2) suppliers would be required to construct treatment facilities that would allow then to continue to withdraw Croton water and meet Federal and State regulations.

Tables 5.16-1 and 5.16-2 list existing upstate water suppliers by those situated upstream and downstream of the proposed plant, respectively. For those suppliers situated upstream of the proposed plant those potential affects mentioned above could apply. For those suppliers situated downstream of the proposed plant, treated water could be available through existing connections depending on the long-term treated water conveyance chosen. Only two suppliers currently rely on Croton water without an existing alternate source that can meet all of their demands: Briarcliff Manor and United Water New Rochelle. Briarcliff Manor is developing alternative supplies in cooperation with other communities. United Water New Rochelle is currently negotiating with the City to develop an alternative supply. If the Kensico-City Tunnel is chosen as the long-term treated water conveyance, all of the suppliers would have alternate water supplies.

TABLE 5.16-1. EXISTING UPSTATE WATER SUPPLIERS UPSTREAM OF THE PROPOSED PLANT

Croton Water Consumers	Connections	Locations	Capacity (MGD)	Year 2002 Usage (Million Gallons) [1]	Other Potable Water Sources [2]
Town of New Castle [3]	Pump House Near NCA Shaft No. 3 Stanwood Consolidated Water District	40 Inningwood Road, Millwood, NY	10.0	19.4	Catskill System
Village of Ossining [4]	Ossining Pumping Station Near NCA Shaft No. 4	Morningside Drive, Ossining, NY	4.0	840	Indian Brook Reservoir
Village of Briarcliff Manor [5]	Briarcliff Pump Station Near NCA Shaft No. 6	Long Hill Road, Briarcliff Manor, NY	4.0	474.5	Village of Ossining and United Water New Rochelle
Village of Sleepy Hollow [6]	Croton Pump Station Near NCA Shaft No. 9	Longwood Road, Sleepy Hollow, NY	2.8	1.8	Catskill System

Notes:

MGD = million gallon per day

1. Information obtained from the Annual Drinking Water Quality Reports, 2002.
2. Other sources of potable water excluding the private wells.
3. Information provided by Gerard Moerschell, Commissioner of Public Works, October 29, 2002.
4. The Village of Ossining has the capacity to withdraw water from the New Croton Aqueduct from its connection to Shaft No. 4 and from the Croton Reservoir trough the Old Croton Aqueduct. Its NCA connection is used as a backup only. Information provided by Frank Sylvester, Chief Operator, Ossining Pumping Station, October 30, 2002.
5. Information provided by George Lackowitz, Water Consultant for the Briarcliff Manor Water District, November 13, 2003. Other potable water sources are used for emergency only during non-summer months.
6. Information provided by John D. Vydareny, WTP Operator, November 19, 2003.

TABLE 5.16-2. EXISTING UPSTATE WATER SUPPLIERS DOWNSTREAM OF THE PROPOSED PLANT

Croton Water Consumers	Connections	Locations	Capacity (MGD)	Year 2002 Usage (Million Gallons) [1]	Other Potable Water Sources [2]
Village of Tarrytown [1]	Near NCA Shaft No. 10	County House Road, Tarrytown, NY	4.0	0	Catskill System
Village of Irvington [3]	Pit connection locates approximately 2,000 ft below grade. Near NCA Shaft No. 12 A	Off Saw Mill Parkway Exit 20, Irvington, NY	2.25	77.1	Catskill and Delaware Systems. Also a small reservoir not in service since 1998.
United Water New Rochelle[4]	Croton Pumping Station Near NCA Shaft No. 14A	American Legion Drive, Ardsley, NY	17	Approx. 365	Catskill and Delaware Systems

Notes:
MGD = million gallon per day

1. Information obtained from the Annual Drinking Water Quality Reports, 2002.
2. Other sources of potable water excluding the private wells.
3. Information provided by Donald Casadone, Irvington Water Department, October 30, 2002.
4. Communities served by United Water New Rochelle (UWNR) include: City of New Rochelle, Town of Eastchester, Town of Greenburgh, Village of Ardsley, Village of Bronxville, Village of Dobbs Ferry, Village of Hasting on Hudson, Village of Pelham, Village of Pelham Manor, Village of Tuckahoe. The New Croton Aqueduct supplies 5% or less of the total water purchased from New York City Water Supply System. Information provided by Chris Graziano, United Water New Rochelle, November 13, 2003. Year 2002 usage was calculated by multiplying 5% times the total amount of water purchased by UWNR presented in their 2002 Annual Drinking Water Quality Report.

5.16.2.1.2. Sanitary Sewage

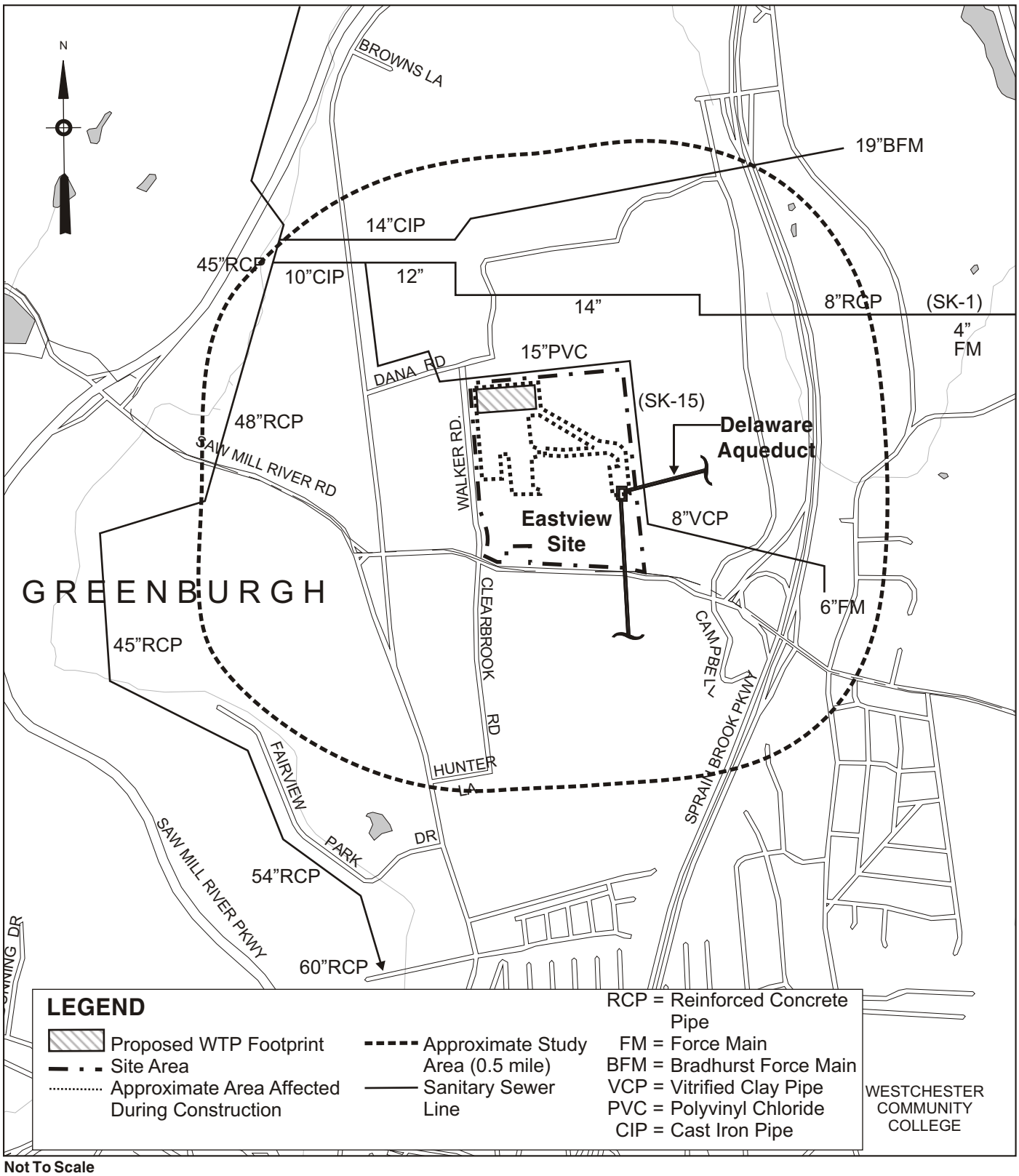
Water Treatment Plant Site. The Eastview Site is not served by public sewers, and except for the Hammond House, no sanitary sewage is currently generated on the site. The residents of the Hammond House are served by a private septic system. No significant problems have been reported from this septic system. The officers stationed at Shaft No. 19 security post are provided with a portable restroom. The sanitary sewage is collected and properly disposed of through a contract with a private hauler. There is no connection or discharge to the existing sanitary sewer system from the Shaft No. 19 security post.

Study Area. Portions of the Towns of Mount Pleasant and Greenburgh are located in the Saw Mill River Basin of the Yonkers Joint Sanitary Sewer District. The Yonkers Joint Sanitary Sewer District comprises approximately 85 square miles of drainage and collects from both combined and sanitary sewer systems.

Flows are collected by local sanitary sewer systems and conveyed to the County trunk line. The flows are then transferred to the Yonkers Joint Treatment Plant, in the City of Yonkers, for treatment. Two sewer subsystems currently serve the Grasslands Reservation (adjacent to the Eastview Site) SK-15 and SK-1; both of which originate east of the Sprain Brook Parkway (Figure 5.16-1). One subsystem (SK-15) originates at Blythedale Children's Hospital and then proceeds west to collect sanitary flows from the Westchester County Penitentiary, east of the Eastview Site. A 15-inch pipe on Dana Road, which is located closest to the water treatment plant site, is a section of the SK-15. The second subsystem (SK-1) collects sanitary flows from the New York Medical College and research facilities, both located within Grasslands Reservation. Currently, the subsystems have experienced problems that include groundwater infiltration and the lack of flow capacity. The County has been working to improve these systems within the past few years. Neither the Town of Mount Pleasant nor the Town of Greenburgh maintains public sanitary sewer utilities within or around the Eastview Site.

The three subsystems connect to the 48-inch diameter Saw Mill Valley Trunk Sewer, which conveys sewage south parallel with the Saw Mill River (approximately 4,000 feet west of the Eastview Site) to the North Yonkers Pumping Station. The Saw Mill Valley Trunk Sewer is owned and maintained by the Westchester County Department of Environmental Facilities (WCDEF). The trunk sewer is approximately 45 miles long and flows by gravity until it reaches the North Yonkers Pumping Station. The North Yonkers Pumping Station pumps the sanitary sewage through a force main to the Yonkers Joint Treatment Plant, near South Yonkers on the Hudson River. The trunk sewer has no reported problems, and operates at a maximum utilization of 65 percent, which is more than sufficient capacity for all of the flows that it handles. The North Yonkers Pumping Station has a design capacity of 70 million gallons per day (mgd). Daily dry weather flow through the pumping station averaged 24.7 in the year 2002[2], indicating sufficient capacity. However, wet weather flows from the combined sewers in the City of Yonkers can exceed its design capacity; during these conditions, the combined sewage is disinfected using chlorine and discharged into the Hudson River.

[2] Per a telephone conversation with John Devany, Westchester County, Department of Environmental Facilities, on December 22, 2003.



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Not To Scale

Eastview Site
Local Sewer Subsystems

Croton Water Treatment Plant

Figure 5.16-1

According to the New York State Department of Environmental Conservation (NYSDEC), the Yonkers Joint Treatment Plant has a State Pollutant Discharge Elimination System (SPDES) permit limit for secondary treatment of 145 mgd. The plant's hydraulic capacity is 330 mgd of flow. This capacity allows it to handle flows from combined sewers during storm events. The plant has met all of its SPDES permit requirements in the 2002. The average daily flow to the Yonkers Joint Treatment Plant of 103 mgd is within its SPDES permit limit. At this flow rate, all sanitary sewage receives secondary sewage treatment. During larger storm events (which occur roughly 10 times a year), the flow rate can increase to over 270 mgd. Under these conditions, the wastewater bypasses the secondary treatment and receives only chlorination treatment before being discharged into the Hudson River.[3]

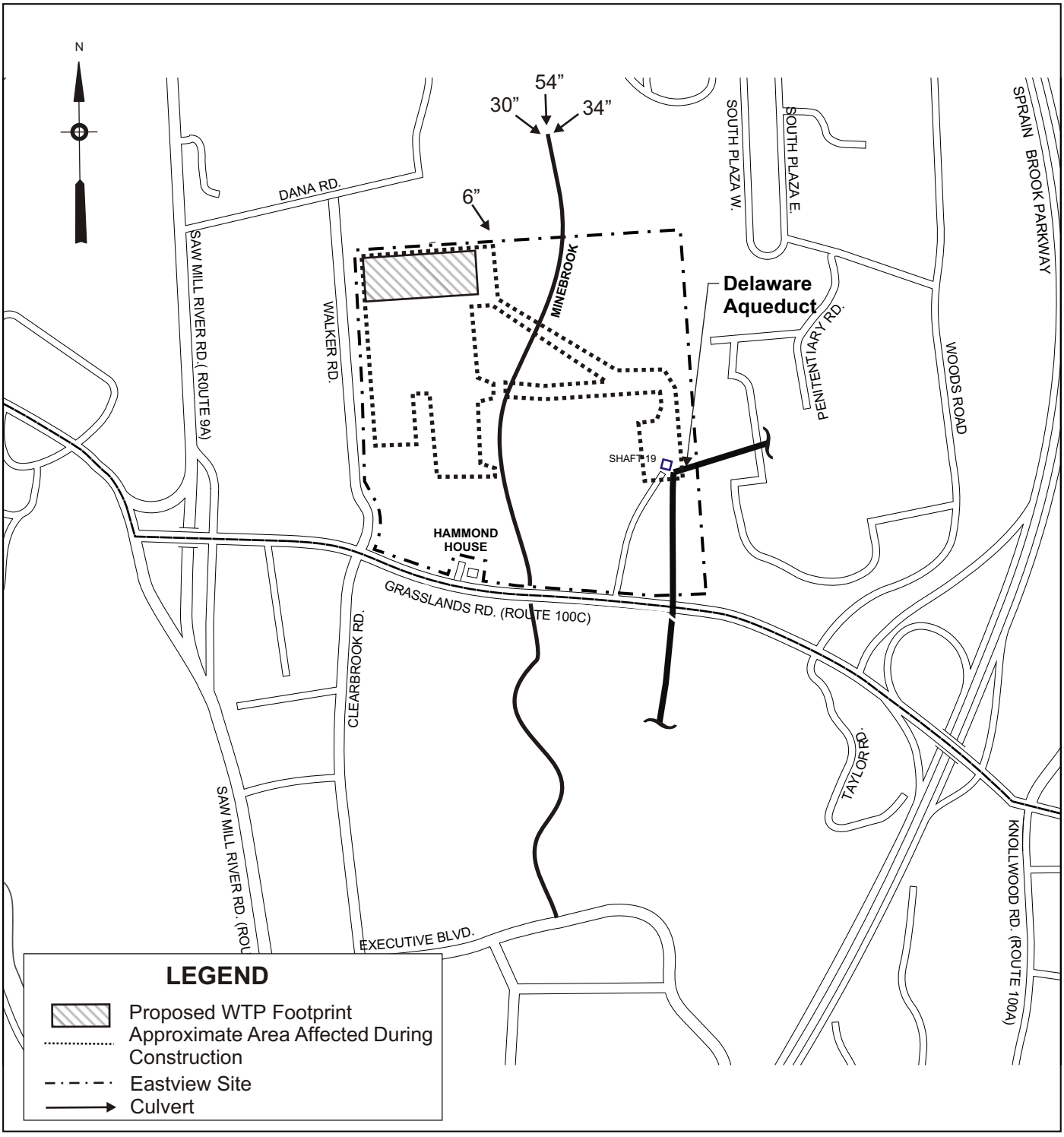
5.16.2.1.3. Stormwater Infrastructure

There is currently no stormwater infrastructure on the Eastview Site, which includes the Hammond House. However, the Eastview Site receives surface stormwater runoff from sections of the Grasslands Reservation. The Grasslands Reservation stormwater drainage utilities include subsurface stormwater drains that collect stormwater throughout the Grasslands Reservation and direct flow towards eight retention basins (around the campus), and the Eastview Site.

Stormwater runoff from development in the Grasslands Reservation enters Mine Brook, which runs through the Eastview Site, via three closely spaced culverts, located approximately 500 ft. north of the Eastview Site. A fourth culvert, located on the west side of Mine Brook delivers storm runoff from the Public Health Laboratory on Dana Road. Mine Brook meanders through the Eastview Site and continues flowing south under Grasslands Road/Route 100C through a 60-inch diameter culvert onto the City-owned property within the Town of Greenburgh (Figure 5.16-2).

For the purpose of this document, the stormwater infrastructure study concentrated on the culverts and surface flow from the Grasslands Reservation that are directly affecting the Eastview Site. The estimated stormwater draining into the Eastview Site from the three-month storm is 1.0 acre-feet. There is no history of flooding or standing water after the storm at the Eastview Site. A visual inspection conducted along the Mine Brook channel in July 2002 revealed evidence of stream bank erosion, most likely from the high runoff during storm events. The brook base flow at the Grasslands Road/Route 100C culvert is approximately 118 gallons per minute (0.3 cubic feet per second (cfs)) and during the three-month storm event the flow reaches approximately 20 cfs. Section 5.15, Water Resources, discusses the surface water sources, water quality, and quantities in detail.

[3] Per a telephone conversation with Charlie Beckit, Department of Environmental Facilities Supervisor of Operations for the Yonkers Joint Sewage Treatment Plant on June 8, 2000.



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Not To Scale

Eastview Site
Storm Drainage Outlets

Croton Water Treatment Plant

Figure 5.16-2

5.16.2.1.4. Energy Demand

The Hammond House and Delaware Shaft No. 19 are the only current users of energy on the Eastview Site for heating (Hammond House only), lighting, and internal power requirements. They have minimal power requirements.

The New York Power Authority (NYPA) sells electricity to Consolidated Edison Company of New York (Con Edison) and government customers. Electric power is distributed and transmitted by Con Edison throughout most of Westchester County and New York City. Con Edison supplies power to the area surrounding the Eastview Site through 13.8-kV underground transmission lines (Figure 5.16-3). The Grasslands Reservation currently uses approximately 37 gigaWatt hours per year. According to the Westchester County Planning Department,[4] the electrical demand within the Grasslands Reservation has currently reached its capacity. Con Edison owns and operates two substations located abutting Grasslands Road just southeast of the Eastview Site. Con Edison currently has an easement with the City for overhead transmission lines that run through the additional City-owned property along the eastern corridor. However, these transmission lines do not service the local area.

5.16.2.1.5. Natural Gas Demand

Con Edison supplies natural gas to all Westchester County municipalities except North Salem, Lewisboro, Pound Ridge, and portions of Bedford and Yorktown. Natural gas is commonly used for heating and non-heating purposes in residential, commercial, and industrial uses. Figure 5.16-4 shows the Con Edison gas main in the study area. No facility on the Eastview Site currently uses natural gas.

5.16.2.2. Future Without the Project

The Future Without the Project conditions were developed for the anticipated peak year of construction (2008) and the anticipated year of operation (2010) for the proposed project. The anticipated peak year of construction is based on the peak number of workers.

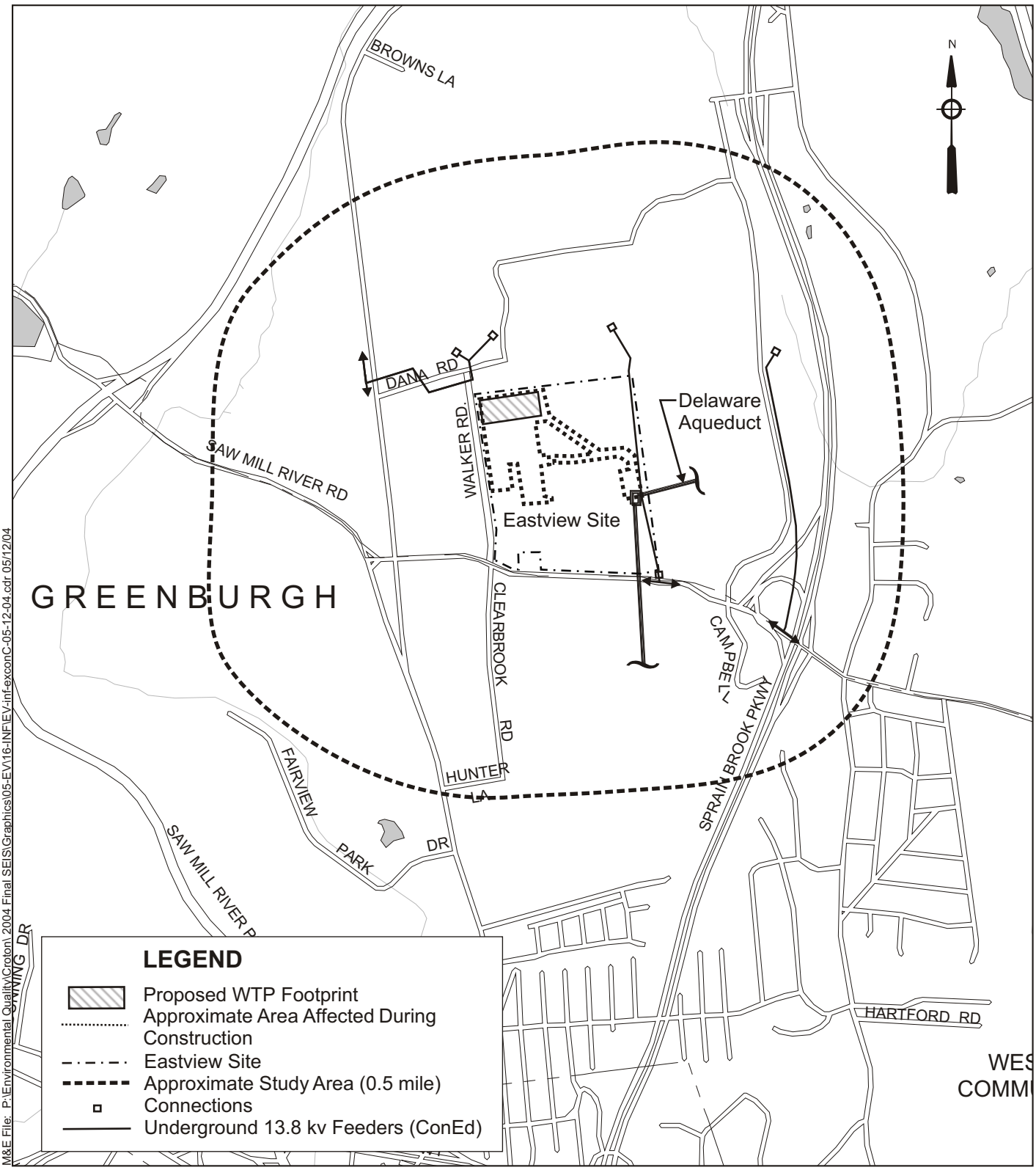
For each year, two scenarios are assessed: one in which the NYCDEP Catskill/Delaware Ultraviolet (UV) Light Disinfection Facility (Cat/Del UV Facility) would not be analyzed on the Eastview Site and another in which the Cat/Del UV Facility is included in the site analysis; specifically the Cat/Del UV Facility would be located in the southeastern area of the Mount Pleasant parcel. It should be noted that the Eastview Site is the only location under consideration for the Cat/Del UV Facility. The scenario without the Cat/Del UV Facility is included because that project has not yet received its necessary approvals and its inclusion or not would reflect major changes to the site. By the peak construction year, two additional NYCDEP projects could be located on the Eastview Site, namely a Police Precinct and possibly an Administration Building[5]. The Police Precinct may be located in the southwest corner of the Mount Pleasant

[4] Meeting Minutes, Westchester County Planning Department, June 13, 2002.

[5] This depends on the results of a siting evaluation which is currently ongoing. The siting decision will be evaluated and discussed as part of a separate independent environmental review.

parcel. The Administration Building is less certain; however, as the Eastview Site is one of several properties currently being evaluated for use as a possible site for that particular building. In addition to these projects, NYCDEP's Kensico-City Tunnel (KCT) may be under construction at the Eastview Site starting in 2009. All of these NYCDEP projects are analyzed in this Final SEIS to the extent to which information is available. They are all separate actions from the proposed project and will undergo their own independent environmental reviews.

The scenario that analyzes the Cat/Del UV Facility at the Eastview Site describes the additional incremental impact of the proposed Croton project if the Cat/Del UV Facility and the other projects planned for the area would be built.

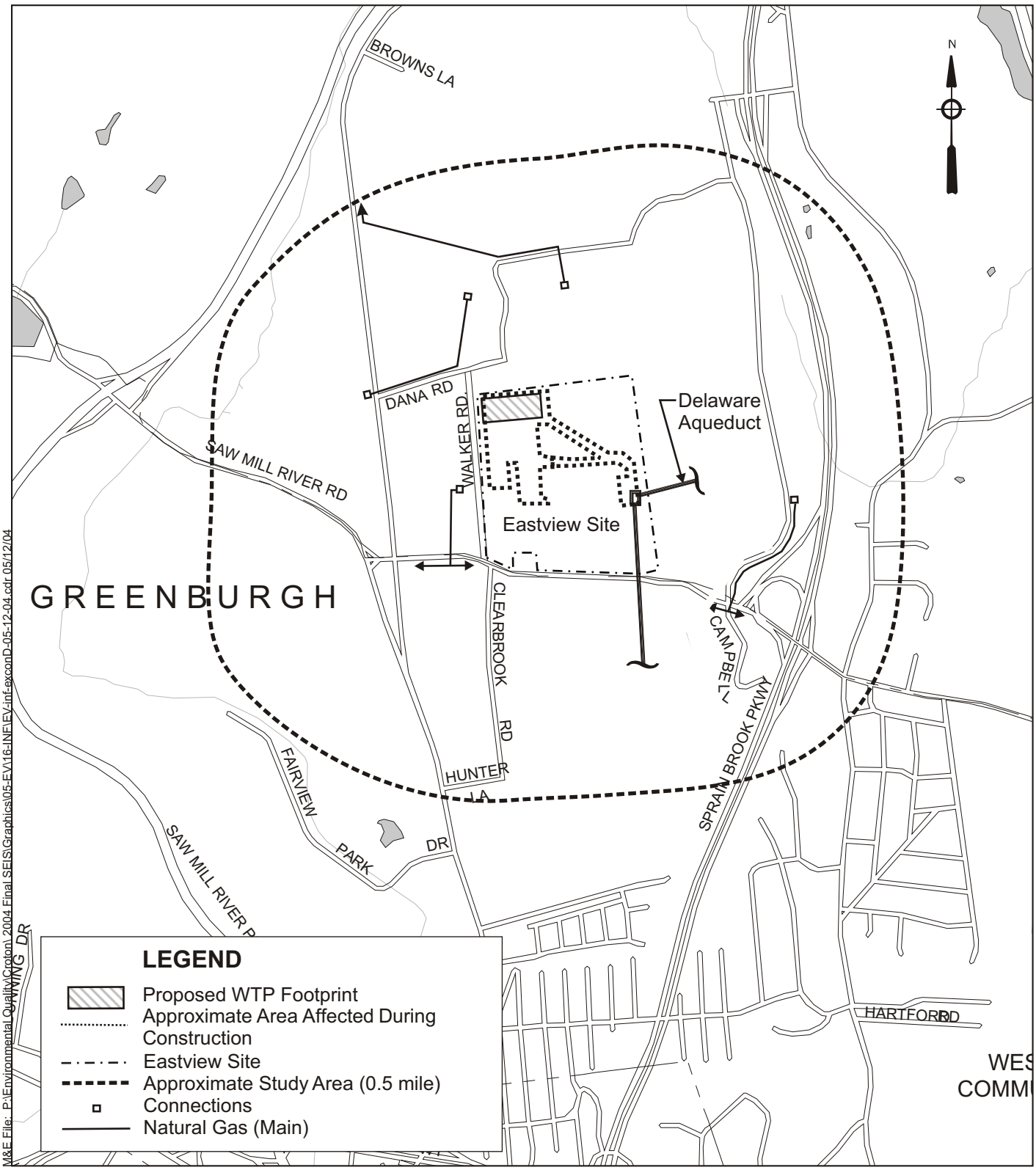


Not To Scale

Eastview Site
Con Edison Underground Transmission Lines

Croton Water Treatment Plant

Figure 5.16-3



Not To Scale

Eastview Site
Underground Gas Mains

Croton Water Treatment Plant

Figure 5.16-4

5.16.2.2.1. Without Cat/Del UV Facility at Eastview Site

In the Future Without the Project, New York City Department of Environmental Protection (NYCDEP) proposes to build a two story NYCDEP Police Precinct, an Administration Building, and the Kensico-City Tunnel (KCT) Project on the Eastview Site. The amount of water consumed, sewage generated, stormwater drainage utilities and energy used at the Eastview Site are anticipated to increase based on these separate projects. Infrastructure services required by these facilities would be made available by independent service connections.

In addition, structures currently located on the site would remain, including the Hammond House and the Delaware Aqueduct Shaft No. 19. In the study area, Westchester County currently has plans for utility upgrades to accommodate their future growth on the Grasslands Reservation. Preliminary discussions with Con Edison report that there would be sufficient energy to meet the needs for these future facilities. Con Edison is currently constructing a substation to the east of the Eastview Site, which would be able to adequately service Grasslands Reservation and any NYCDEP proposed facilities at the Eastview Site. Therefore, the future demands on the infrastructure services at the Eastview Site, the study area, and the service region would be able to be met by Con Edison.

5.16.2.2.2. With Cat/Del UV Facility at Eastview Site

In the Future Without the Project, New York City Department of Environmental Protection (NYCDEP) proposes to build, in addition to the projects presented above, an Ultraviolet (UV) Light Disinfection Facility (Cat/Del UV Facility) for the Catskill/Delaware Water Supply System. In addition, structures currently located on the site would remain, including the Hammond House[6] and the Delaware Aqueduct Shaft No. 19. The amount of water consumed, sewage generated, stormwater drainage utilities and energy used at the Eastview Site are anticipated to increase based on these separate projects. Infrastructure services required by these facilities would be made available by independent service connections. A brief description of the infrastructure demands of the Cat/Del UV Facility for the anticipated year of operation and the anticipated year of peak construction is presented below.

By the anticipated year of operation (2010), the Cat/Del UV Facility would be operational. The total water demand for the Cat/Del UV Facility is estimated to be 200 gallons per minute (gpm) for the peak rate, with a fire protection flow of 2,000 gpm. Water for operational demands, domestic uses, and fire protection supply would be available through two connections to the Delaware Aqueduct at Shaft No. 19. In addition, a back-up fire connection would be made to Westchester County Water District No. 3. The water pressure within the Water District No. 3 would not by affected by the operation of the Cat/Del UV Facility, except possibly for the case of fire emergency.

[6] NYCDEP is considering the possibility of moving the Hammond House as part of the UV Facility project (see Section 5.1). If this were done it would result in a small decrease in sewage generation, water use, and electric use from the site.

As part of the Cat/Del UV Facility, a water connection would be made to the Town of Mount Pleasant water distribution system both during and after construction of the Cat/Del UV Facility. This connection could supply water to all the current users between the Kensico Reservoir and the Eastview Site. Users south of the Eastview Site would continue to receive water through both the Catskill and Delaware Aqueducts during both construction and operation of the Cat/Del UV Facility.

The estimated sewage generation for this facility is anticipated to be 455 gallons per day (gpd). The key components of the stormwater management plan for the Cat/Del UV Facility are stormwater collection and detention. These were designed for the 10-year, 24-hour storm event (5.0 inches), and for the 100-year, 24-hour event (7.2 inches), respectively.

Energy consumption, average operating load (1,310 mgd), by the Cat/Del UV Facility is estimated to be 4,450 kilowatts (kW) or 6,150 kilovolt amperes (kVA). Electric supply for the Cat/Del UV Facility would be provided by the Con Edison Grassland Substation, located adjacent to the Eastview Site, south of the Correctional Facility and north of Grasslands Road. The feeder from the Grassland Substation to the proposed facility would be independent of the electrical distribution grid within the Grassland Reservation. The Cat/Del UV Facility would utilize natural gas or fuel oil for their dual fuel hot water boilers heating system. Fuel oil would only be utilized during the months of December through March (heating season), while natural gas would be used throughout the rest of the year.

By the anticipated year of peak construction (2008), the Cat/Del UV Facility would be under construction as well. Water for construction activities would be supplied by water tankers and a connection to Water District No. 3 along Dana Road. Construction activities would require 5,000 gallons of water to be delivered by water tankers every day. Estimated construction related water usage would be in the order of 500,000 gallons over 38 months of site preparation activities. During the latter part of construction a connection to the Delaware Aqueduct through Shaft No. 19 would be made.

The estimated sewage generation during construction activities is anticipated to be 12,000 gpd. Portable restrooms would be provided for the needs of construction personnel. Sanitary sewage would be collected and disposed of by a private hauler. During construction stormwater management, and erosion and sedimentation control measures would be implemented in a phased approach to ensure dissipation of peak flows and prevent onsite erosion.

Power for construction activities would be provided by an existing Grassland Reservation Substation, adjacent to Grasslands Road, southeast of the Eastview Site. A 4,160 volt feeder would run from the Substation to the vicinity of the construction trailer area. Additional power could be provided by the use of portable generators as necessary. Natural gas would not be utilized during construction activities of the Cat/Del UV Facility.

5.16.3. Potential Impacts

5.16.3.1. Potential Project Impacts

The anticipated year of operation for the proposed plant is 2010. Therefore, potential project impacts have been assessed by comparing the Future With the Project conditions against the Future Without the Project conditions Without the Cat/Del UV Facility Project at the Eastview Site Scenario, and the Future Without the Project conditions With the Cat/Del UV Facility at the Eastview Site Scenario for the anticipated year of operation (2010). The With the Cat/Del UV Facility at the Eastview Site Scenario would only disclose the incremental impacts of the proposed Croton project compared to the background conditions.

5.16.3.1.1. Without Cat/Del UV Facility at Eastview Site

Water Supply. The proposed plant would require water for all plumbing services including fire protection, plant operational demands, and domestic uses. Operational demands include wash down service water, laboratory and workshop, centrifuge flushing, seal water, and make-up water boiler/chiller. Domestic usage would include all of the employee amenities such as the bathrooms, kitchen, and locker room facilities. Table 5.16-3 shows the water requirement(s) at the proposed plant.

TABLE 5.16-3. INFRASTRUCTURE NEEDS FOR POTABLE WATER AND SEWAGE

Usage	Operations	
	Average Rate (gpd)	Peak Rate (gpm)
Operational demand:		
Wash Down Service Water	21,600	120
Laboratory and workshop	1,000	10
Centrifuge Flushing	10,800	60
Seal Water [1]	28,800	20
Make-Up Water Boiler/Chiller	15,000	25
Domestic Uses	1,325	185
Total Demand	78,525	420
Fire Protection Flow		1,250

Notes:
gpd = gallon per day; gpm = gallon per minute
1. Seal water is required for the lubrication system of the pumps.

The proposed plant would be staffed 24 hours a day and 7 days a week. NYCDEP would employ approximately 53 people to operate the proposed plant. There would be a maximum of 41 employees working Monday to Friday (8AM to 4 PM); Monday to Friday would also have two off-shifts (4 PM to 12 AM & 12 AM to 8 AM). On Saturday and Sunday, three off-shifts (8 AM to 4 PM, 4 PM to 12 AM, & 12 AM to 8 AM) would operate the proposed plant. Each off-

shift would require a total of 12 employees. The average consumption of water by these employees is estimated to be 1,325 gallons per day (gpd) based on a consumption rate of 25 gpd per person and the maximum number of employees (53 persons) that could be present at the proposed water treatment plant. This estimate is conservative and accounts for the presence of visitors at the proposed water treatment plant. The peak rate for domestic use and the plant laboratory are based on the number of water outlets such as sinks, showers, and toilets in the proposed plant, and is incompliance with the *Plumbing Code, Mechanical Code and Fuel Gas Code of New York State (2002)* and the *Building Code of the City of New York (1998)*. The water demand estimates for the wash down service and boiler/chiller were calculated using the best engineering estimates, while seal water calculations was based on the pumping requirements.

In order to provide the proposed plant with potable water, a new connection to the Delaware Aqueduct at Shaft No. 19 would be constructed. Two 12-inch pipes would be designed to draw water from the Delaware Aqueduct; one pipe would serve fire protection supply, operational demands, and domestic uses, and the second pipe would serve as a backup. Each of these pipes could draw 750 gpm under peak flow conditions. In addition, the plant fire protection backup system would be provided by a connection to the 12-inch pipe (Water District No.3) that runs along Dana Road; this connection would require agreements with the County. The latter connection would be sized (8 to 12 inches) for a maximum capacity of 1,250 gpm. The non-potable domestic water, operation water and fire protection water would be supplied directly to the needed services while, a storage tank would be provided to increase the chlorine contact time for the potable water uses. The potable and the non-potable users would share the same mains entering the proposed plant. Once inside the water treatment plant, supplies would be split.

The proposed system would allow the water supplied to the proposed plant to be independent of the existing local water supply system that serves the Grasslands Reservation (Westchester County Water District No. 3). Therefore, Water District No. 3 would not be affected by the operation of the proposed plant. Except possibly for the case of a fire emergency, the water pressure within the Water District No. 3 would not be affected by the operation of the proposed plant. It is anticipated that the NYCDEP Police Precinct, the Administration Building, and the Kensico-City Tunnel (KCT) Project would also be independent of the existing local water supply system that serves the Grasslands Reservation and thus would not affect Water District No. 3.

Upstate Water Suppliers. The location of the proposed plant would affect the availability of Croton water supplied to the current upstate suppliers. Existing upstate Croton water suppliers are listed in Tables 5.16-1 and 5.16-2 in the existing conditions. None of the upstate connections have been granted filtration avoidance and only the Town of New Castle and the Village of Ossining have built a filtration plant[7]. Only the connections to the New Croton Aqueduct (NCA) south of NCA Shaft No. 10 would have an option of using treated water from the NCA after the completion of the proposed project (see Table 5.16-2) if the NCA pressurization conveyance alternative is selected. However, if the Kensico-City Tunnel is selected as the mechanism for long-term conveyance, none of the connections to the NCA south of NCA Shaft No. 10 would receive treated water from the NCA. These connections would

[7] Information gathered from the Annual Drinking Water Quality Report, 2002.

continue to receive raw water from the NCA, or an alternative connection would be provided to meet these water supply needs.

The Village of Sleepy Hollow, the Village of Tarrytown, and the Village of Irvington already have installed connections to other sources, and their NCA connections (raw water) would only be used as an emergency backup. The Village of Briarcliff Manor is completing negotiations to obtain water from other supplies that would serve as their primary source. Only United Water New Rochelle would continue to use the NCA as a primary supply to meet peak demands that exceed the capacity of its two Catskill Aqueduct connections.

Although United Water New Rochelle (UWNR) could be served by Croton treated water, their connection to the NCA would require an upgrade to service a new pressurized system. The NCA would be pressurized up to approximately 92 psig. United Water New Rochelle is pursuing City approval to develop a new connection to Delaware Aqueduct Shaft No. 21 to replace its NCA connection.

The contingency plans that have already been put in place with the individual upstate suppliers to provide alternate sources of water to the Croton System avoids a significant adverse impact to the upstate water suppliers from the proposed project.

In the interim before the long-term treated water conveyance is completed (either the pressurization of the NCA or the potential KCT Project), treated water from the proposed plant would be discharged to Shaft No. 19 of the Delaware Aqueduct. The following communities south of the Eastview Site that currently receive Delaware Water from the Delaware Aqueduct would receive mixed Croton (treated) and Delaware water.

- The Town of Greenburgh
- Westchester Joint Water Works (Low Service Zone)
- Town of Mamaroneck
- Village of Mamaroneck
- Larchmont
- Town of Harrison (partial)
- Town of Rye
- City of Rye (partial)
- Westchester County Water District No. 1

The City is responsible for providing a water supply for upstream users. During an NCA shutdown, the Town of New Castle, the Village of Irvington, the Village of Ossining, the Village of Sleepy Hollow, and the Village of Tarrytown would draw on their already existing alternate source for potable water supply.

The Village of Briarcliff Manor would obtain water from other suppliers; these arrangements are currently being negotiated and are anticipated to be online prior to the fall of 2006. If the Village of Briarcliff Manor is unable to obtain a connection to other sources, the Bureau of Water Supply could place a temporary impoundment in the NCA just below the connection used by Briarcliff

Manor (to prevent flow further down the NCA from this connection) and supply water to meet the Briarcliff Manor demand.

During an NCA shutdown, UWNR would be provided with water from the Catskill/Delaware System. UWNR's Catskill connection would only be operationally affected in the event the Catskill Aqueduct needed to be shut down from Kensico Reservoir. In that situation, UWNR's Catskill connection would be supplied by backfeeding into the Catskill Aqueduct from Hillview Reservoir, which would be supplied by the Delaware Aqueduct. The elevation in Hillview Reservoir must remain above 291 feet for the UWNR connection to function. During diurnal peak demand periods in the City's distribution system, this elevation has, on occasion, not been able to be maintained, causing UWNR to temporarily lose this supply. When the flow control structure now being constructed at Shaft 18 in Mount Pleasant is complete and in service (scheduled to be completed in summer 2004), it would facilitate the maintenance of the minimum elevation at Hillview to assure the UWNR supply through this connection.

There is adequate supply from the Catskill/Delaware System in the event of a shutdown of the New Croton Aqueduct. No significant adverse impact to the Catskill/Delaware water users by the communities downstream of the Eastview Site is anticipated. Furthermore, it is not anticipated that other water supply projects proposed for the Eastview Site would have a significant adverse impact on downstream water user communities downstream.

Sanitary Sewage. Three wastewater sources would be collected and discharged from the proposed plant through a new sanitary connection line to the County sewer line (Saw Mill Valley Trunk Sewer). From the County trunk sewer, flows would be conveyed to the Yonkers Joint Treatment Plant. The three wastewater sources include process wastewater and wash-down water throughout the proposed plant, sanitary waste from employee facilities, and process wastewater from the residuals handling facility. In addition, liquid waste from cleaning the Ultraviolet (UV) disinfection units would be discharged to the sanitary sewer system; however, due to the intermittent discharges it is not accounted as a regular source of sewage. A summary of the anticipated flows is presented in Table 5.16-3.

A drainage system would be provided to collect process wastewater and wash-down water from the Roof Level, the Operating Level, and the Lower Level. Also, at the Foundation Level flows would be pumped and discharged into the main sanitary drainage system. The estimated amounts of flows collected are as follows: wash-down service water (21,600 gpd), seal water (28,800 gpd), and make-up water boiler/chiller (15,000). In addition, wastewater from the laboratory would be drained to chemical waste neutralizing tanks, while the chemical sumps and chemical waste drainage system would be directed to the centrate tanks from each drip sump, and then discharged to the proposed sanitary sewer. These uses make up the rest of the 78,525 gpd water demand. The neutralized waste would be discharged to the plant sanitary drainage system.

Cleaning of UV lamps is a significant operation and maintenance issue, and its frequency is dependent on the fouling of the quartz sleeves. Fouling of sleeves is a result of water quality effects such as precipitation of iron, calcium, aluminum, and manganese salts along with other inorganic and organic constituents. Phosphoric acid would be used as the cleaning solution for

the Ultraviolet (UV) disinfection units. Phosphoric acid is a non-hazardous acid that can be discharged to the sewer or hauled off-site for disposal. Currently this phosphoric acid is added to the water supply for corrosion control. Approximately, 200 gallons per month of phosphoric acid would be used to clean the UV disinfection units. Disposal of spent acid and related liquid waste would be intermittent and is estimated to be 16,000 gallons per month.

Sanitary sewage would be generated from the domestic uses. Domestic usage would include all of the employee use of bathrooms, kitchen, and locker room facilities. The total amount of sewage generated by employees is estimated to be 1,325 gallons per day, which is assumed to be equivalent to the amount of domestic water consumed.

The residual handling facility would recover a substantial amount of the generated process wastewater. The residual handling facility would serve to reclaim filter-to-waste water (e.g. water wasted during the start-up of a filter after backwashing) and waste backwash water. The reclaimed wastewater would be recycled to the head of the plant for treatment. The floated coagulated material from the DAF (Dissolved Air Floatation) process used by the proposed plant would flow to the floated solid storage tanks. Floated solids and sedimentation from the filter-to-waste and waste backwash water would also be directed to the floated solid storage tanks. The floated solids would receive additional polymers before flowing to the centrifuges where a dewatering process would take place. The dewatered "cake" would be hauled off-site for disposal (refer to Section 5.1, Introduction and Project Description, and Section 5.18, Solid Waste). The centrate from the centrifuges would be discharged to the plant main drainage system. This discharge would add an additional 0.12 to 0.28 mgd of centrate with a solid loading of 17,300 to 44,500 lbs/day to the sewer system.

The main drainage system would leave the proposed plant via a new pipe from the north side of the main treatment building. The new 15-inch force main would be constructed to direct flows from the proposed plant to the Saw Mill Valley Trunk Sewer. The connection would be made north of Cottage Road where the other two existing subsystems from Grasslands Reservation are connected to the Saw Mill Valley Trunk Sewer. An improvement to the existing connection point would be necessary for the proposed force main connection.

The sanitary sewage generated at the proposed plant would be treated at the Yonkers Joint Treatment Plant, located in the City of Yonkers, NY. The existing average daily flow to the Yonkers Joint Treatment Plant is approximately 103 mgd and the SPDES permit limit is 145 mgd. The maximum possible sewage to be generated by the proposed plant is approximately 486,000 gallons per day, which is equivalent to approximately 20 percent of the total current sewage generated by the Grasslands Reservation (2.5 mgd). The sewage flowing to the Yonkers Joint Treatment Plant from the proposed plant would be less than 0.34 percent of the Yonkers Joint Treatment Plant SPDES permit limit. This would be an insignificant increase in the amount of sewage to be handled by the Yonkers Joint Treatment Plant. In addition, the 48-inch diameter Saw Mill Valley Trunk Sewer has a maximum capacity of 32 mgd, which is sufficient to handle the proposed plant generated sewage. Since the increase in sewage is within the capacity of the Saw Mill Valley Trunk Sewer and the Yonkers Joint Treatment Plant SPDES permit limit, no significant adverse impacts from sanitary sewage are anticipated. Furthermore, it is anticipated that no significant adverse impacts from sanitary sewage would result from the

siting of other NYCDEP facilities at the Eastview Site. It is anticipated that the sewage flowing to the Yonkers Joint Treatment Plant from the facilities at the Eastview Site would still present an insignificant increase in the amount of sewage to be handled by the Yonkers Joint Treatment Plant.

Stormwater Infrastructure. A storm sewer network of storm pipes and catch basins would be designed and sized according to the amount of flow that they would be required to convey. The flow rate to each individual catch basin would accommodate the 10-year, 24-hour storm (5 inches)[8] except "Critical path" pipes, which would be designed for the 25-year storm[9]. Critical path pipes are the main collector pipes of the storm sewer network, which would convey off-site flows through the site as well as on-site runoff. These pipes would be designed for a larger design storm to account for any unanticipated flows that may drain to the associated catch basins from off-site. With the storm sewer network in place, the runoff would be directed to a stormwater detention basin (see below).

Stabilization and structural best management practices (BMPs) would be implemented during the operation phases of the proposed project in order to ensure that peak flows would be dissipated to avoid on-site erosion and that the pre-construction stormwater runoff volumes would be maintained to avoid impacts on surface water and wetland hydrology. A complete description of the BMPs proposed for stormwater management at the proposed plant is included in the Stormwater Pollution Prevention Plan (SWPPP) (Appendix G). The SWPPP for the proposed Croton project was prepared in accordance with the requirements stipulated in the New York State Department of Environmental Conservation (DEC) Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activity, and includes each of the components listed in Part III.D.2a [and] 2b of GP-02-01. The pollution prevention plan conforms with the New York technical standards referenced in the general permit for construction activities, including standards and specifications for erosion and sediment control[10] and the design manual[11], as well as Westchester County stormwater management plan standards[12].

The permanent above ground structures include the main treatment building and the stormwater detention basin. The building would have drainage pipes at two levels. First, a roof drainage system would convey water by gravity via piping to the stormwater detention basin. Second, an underdrain would collect water at an elevation of approximately 315.5 to 317 feet Mean Sea Level. This water would also be conveyed by gravity to the stormwater detention basin. Figure 5.15-6 of Section 5.15, Water Resources, shows the water treatment plant site stormwater drainage system and the detention basin.

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[8] Rainfall data from the U.S. Weather Bureau. 1961. Technical Paper No. 40-Rainfall Frequency Atlas of the United States (TP 40).

[9] Stormwater Management, Best Management Practices, Westchester County Department of Planning. (Westchester, 1984) and updated with New York State Stormwater Management Design Manual, New York City DEC, (NY, 2001).

[10] New York Guidelines for Urban Erosion and Sediment Control, (NY, 1997).

[11] New York State Stormwater Management Design Manual, New York City DEC, (NY, 2001)

[12] Stormwater Management, Best Management Practices, Westchester County Department of Planning. (Westchester, 1984).

The detention basin would be located south of the main building and would be designed to temporarily hold stormwater for an extended period of time. This type of detention basin is effective in removing particulate pollutants from runoff as well as reducing peak discharges. The overall long-term objective of the detention basin design for the water treatment plant site would be to provide attenuation of the stormwater runoff from the facility roof and the foundation underdrain system, so that the existing surface and groundwater flows are maintained. This approach also ensures no significant adverse impacts are created downstream due to peak stormwater runoff from the water treatment plant site.

The structural pollution prevention BMPs would also be provided as localized treatment for runoff from impervious areas such as access roadways and parking areas. These BMPs would be designed to remove oil and sediment from stormwater during frequent wet weather events. They would be sized to treat the peak flow from the 2-year 24-hour storm, and would provide removal of approximately 80 percent of total suspended solids. The basin would have an outlet structure consisting of a riser primary spillway and a weir-type secondary spillway. The primary spillway configuration would be designed to pass up to a pre-developed 50-year storm event. The primary spillway with the secondary spillway configurations would be designed to safely pass the 25-, 50-, and 100-year stormwater flows without overtopping the basin containment berm, while maintaining the pre-developed outflow levels at all times. The controlled release of water from the detention basin would be discharged to Mine Brook, which is situated adjacent to the detention basin to the east, and flow from north to south through the Eastview Site.

No significant adverse impact on the existing stormwater conditions is anticipated during the operation of the proposed plant. Existing runoff discharging to Mine Brook during the operation would be maintained. There would be no connection between the stormwater drainage from the water treatment plant site and the Westchester County maintained stormwater sewer. Therefore, no significant adverse impact is anticipated to the Westchester County-maintained stormwater infrastructure surrounding the Eastview Site by the proposed BMPs and the site drainage systems.

Energy Demand. The electrical power distribution system for the proposed plant would comply with all Federal, State, City, and Local codes. The design would consider safety, reliability, flexibility, ease of operation and maintenance, life cycle costs, and energy conservation, which would be in accordance with *Energy Policy Act* of 1992, and *New York State Energy Conservation Construction Code, 2002*.

Electric power for the proposed plant would be furnished by the New York Power Authority (NYPA), which has a contract to supply electricity to New York City government facilities. NYPA generates, buys, and transmits electrical power on a wholesale basis. NYPA would supply electrical power through the Consolidated Edison (Con Edison) distribution system. The distribution of electricity to the proposed plant would be the responsibility of Con Edison. Electric supply for the proposed plant would be provided from the proposed Con Edison Grasslands Substation, located adjacent to the Eastview Site, south of the Correctional Facility and north of the Grasslands Road.

From the Con Edison Grasslands Substation, feeders would run west along Grasslands Road/Route 100C, turn north onto Walker Road, and then east to the electrical substation within the proposed plant. Up to six feeders would enter the water treatment plant site underground and would be connected to a step-down electrical substation located to within the main process building. The proposed plant would require four underground service feeders, each at 13.2-kV.

The feeders supplying the proposed plant would be independent of the electric distribution grid within the Grasslands Reservation and therefore would not pose a significant adverse impact on the facilities within the Reservation. Table 5.16-4 shows the total electrical loads for the proposed plant. The electrical demands of the proposed plant were calculated for the following three scenarios: connected load, maximum capacity and normal capacity. The connected load is the energy demand that would result if all equipment, including standby units, were operating simultaneously, and represents the amount of power that must be made instantaneously available to the facilities by the power generator/supplier (NYPA/Con Edison). Maximum demand represents the total load of all electrical equipment operating simultaneously at the short-term maximum plant capacity flow of 290 mgd. Average demand reflects the total load of all normally operating equipment during the long-term maximum treatment capacity (144 mgd). Emergency demand would supply emergency equipment, the security system, communication systems, the lightning protection system, the plant control system and other safety equipment.

TABLE 5.16-4. TOTAL ELECTRICAL LOADS

Total Croton Demand	Estimated Load	
	kW	kVA[1]
Connected load	40,504	43,661
Maximum Operating Load (290 mgd)	25,964	27,358
Average Operating Load (144 mgd)	17,515	18,428
Emergency Load (0 mgd)	1,484	1,577

Note:
1. kW = kVA x pf, where pf is the power factor (a measure of electrical efficiency)

The proposed plant would be provided with an emergency power system. The emergency power system would be available for smoke purging, emergency elevators, alarms, fire pumps, communications, and other emergency equipment in case of fire or emergency conditions; the water treatment process would not be powered. Emergency power would also be provided at all times for the security system, communications system, lighting protection system, plant control system, and other safety related equipment. In case all Con Edison feeders are out of service, approximately 1,484 kW of electrical power would be generated on-site using two emergency diesel generators. Each generator is rated at 1,500 kW, 480 volts, one operating and the other as a backup. A 3,000-gallon underground fuel storage tank would be provided near the generator room, at least 20 feet away from any means of egress.

It is not anticipated that the NYCDEP Police Precinct, the Administration Building, and the Kensico-City Tunnel (KCT) Project would have significant adverse impacts on the surrounding community power systems.

Gas Demand. Con Edison would deliver natural gas to the gas meter room within the proposed plant. Natural gas would supply the hot water heaters, HVAC boilers, and laboratory use. Table 5.16-5 shows natural gas loads at the proposed plant during normal operation.

TABLE 5.16-5. NATURAL GAS DEMANDS AT THE PROPOSED PLANT

Demands	Loads (cfh)
Hot Water Heaters and Laboratory Use	1,600
Boilers	40,830
Total Demands	**42,430**

Note:
cfh = cubic feet per hour

Con Edison maintains two natural gas mains that could potentially be used to supply the proposed plant, a high-pressure 8-inch main gas line that runs along Saw Mill River Road and a low-pressure 8-inch gas line along Dana Road. Con Edison would meet consumption of the additional natural gas demand by the proposed plant, and no significant impact on the Con Edison supply system is anticipated.

It is not anticipated that other NYCDEP proposed projects would have significant adverse impacts on the surrounding community natural gas supply.

Fuel Oil Demand. Current preliminary design for the heating system utilizes only natural gas. However, the boiler system for space heating could be designed to utilize either natural gas or fuel oil. Providing the option of using an alternative fuel could lower the cost of the natural gas because the gas supplier would not have to guarantee an uninterruptible fuel supply. If dual fuel boilers are added to the final design, fuel oil would only be utilized during the months of December through March (heating season) during periods when natural gas supplies are regionally constrained. The fuel oil would be used intermittently and well within the capacity of local suppliers to meet the demand. Natural gas would be used throughout the rest of the year.

5.16.3.1.2. With Cat/Del UV Facility at Eastview Site

As noted above, the Cat/Del UV Facility may be located at the Eastview Site in the Future Without the Project. The incremental effects on the study area infrastructure from the operation of the proposed Croton project would be the same in the Future With the Project regardless of whether the Cat/Del UV Facility is operating on the Eastview Site. Therefore no significant infrastructure adverse impact is anticipated.

5.16.3.2. Potential Construction Impacts

The anticipated year of peak construction for the proposed project is 2008. Therefore, potential construction impacts have been assessed by comparing the Future With the Project conditions against the Future Without the Project conditions Without the Cat/Del UV Facility at

the Eastview Site, and the Future Without the Project conditions With the Cat/Del UV Facility at the Eastview Site for the anticipated year of peak construction (2008).

5.16.3.2.1. Without Cat/Del UV Facility at Eastview Site

Early construction activities at the water treatment plant site would include clearing and grubbing and developing site haul roads. Perimeter fencing would be installed, and the residential engineer's field office complex would be constructed. Temporary site utilities for electrical power, telephones, site lighting, water, and sewer would be installed at this initial stage.

During construction of the proposed Croton project, any underground activities entail the potential interruption of utility services. Locating and preserving the safety of any electric and natural gas lines would be responsibility of Con Edison, while water and sanitary sewer utility safety would be the responsibility of the contractor and construction manager.

Water Supply. Initially, the water supply utility on the construction site would be provided by water tankers and a connection to the 12-inch pipe that runs along Dana Road (see existing conditions). An estimated 5,000 gallons would be delivered by the water tankers every other day. A sufficient number of storage tanks would be provided on-site for an uninterrupted water supply service. The Westchester County Water District No. 3 system (existing system) would be monitored for water pressure fluctuation during construction by the contractor. In the event that the water pressure in the existing 12-inch pipe on Dana Road is reduced from the normal operation pressure or close to 20 pounds per square inch (psi) the contractor would discontinue the service from the existing system. Consequently, the contractor would select a method of supplying water from alternate sources to best suite their method of working.

Estimated construction related water use would be on the order of 500,000 gallons over the 5½ years of construction. Water from the water tanks would be used for wetting exposed soil and roadways during excavation, washing down concrete trucks during pouring operations and general clean up. The wetting operation would be required to prevent fugitive dust from entering the air during construction. The proposed two 12-inch pipes would be able to adequately supply the construction site with 100 percent redundancy.

The water would be supplied in this fashion until the completion of the two 12-inch pipes that would be installed to connect the proposed plant water supply system to the Delaware Aqueduct at Shaft No. 19. This Delaware Aqueduct connection would be completed prior to the peak construction month (June 2008). Prior to completion of the new connection approximately 11,950 gpd per day is anticipated to be supplied by the existing system. This volume was equated from the product of 25 gpd per person and a maximum estimated number of workers per day (maximum 478 workers per day on the first year of construction). The peak construction year is anticipated to be reached well after the completion of the Delaware Aqueduct connection. Therefore during the peak construction month (June 2008), construction activities would no longer require water from the Westchester District No. 3 and instead would receive water from the Delaware Aqueduct. During the peak construction year, an estimated 652 construction

personnel would consume an estimated 16,300 gpd of potable water, based on an estimated rate of 25 gpd per person in a 5-day work week.

There would be no potentially significant adverse impact on the Delaware System, which has a total storage capacity of 326 billion gallons and a safe yield approximately 580 mgd. The supply drawn to the construction site would equate to less than 0.0035 percent of the total flow in the Delaware Aqueduct.

It is anticipated that other proposed NYCDEP projects would not utilize water from the Westchester County Water District No. 3 system during construction. Therefore, potential significant construction impacts to this system as a result of construction of other NYCDEP proposed projects are not anticipated.

Temporary shutdowns of the NCA during construction are necessary to connect the proposed water treatment plant to the NCA and activities related to this action. Portions of the Bronx and Manhattan obtain potable water from the Croton Water Supply System through the NCA (refer to section 1.4.3 Existing Croton Water Supply Users, Introduction and History). The existing water regulators and boundary valves in the City's Water Supply System would supply water to the low level service (typical Croton service area) from the high level service (typical Catskill/Delaware service area) in the event of a Croton System shutdown or loss of pressure in the low service area. No special action other than adjusting the existing water regulators and valves is required to provide normal New York City Croton users with water when the Croton System is not operational. No significant adverse impact to the New York City Croton users is anticipated from temporary shutdown of the NCA.

Upstate Water Supplies. The pressurization of the NCA would commence in 2010, lasting for approximately five years (see Section 5.1, Introduction and Project Description, and Section 8.1, Off Site Facilities). All of the upstate water suppliers routinely manage without the Croton Supply when the system is shut down for water quality reasons. The upstate suppliers would implement existing backup plans during the few months it would take to complete the connection of the raw water tunnel to the NCA.

During the periodic shutdown for construction, the Town of New Castle, the Village of Irvington, the Village of Ossining, the Village of Sleepy Hollow and the Village of Tarrytown would draw on their already existing alternate source for potable water supply (see Existing Conditions above for the available alternate sources). The Village of Briarcliff Manor would obtain water from other suppliers; these arrangements are currently being negotiated and are anticipated to be online prior to the fall of 2006. If the Village of Briarcliff Manor is unable to obtain connection to other sources, the Bureau of Water Supply could place a temporary impoundment in the aqueduct just below the connection used by Briarcliff Manor (to prevent flow further down the NCA from this connection) and supply water to meet the Briarcliff Manor demand.

During an NCA shutdown, the UWNR would be provided with water from the Catskill/Delaware System. UWNR's Catskill connection would only be operationally affected in the event the Catskill Aqueduct needed to be shut down from Kensico Reservoir. In that situation, UWNR's

Catskill connection would be supplied by backfeeding into the Catskill Aqueduct from Hillview Reservoir, which would be supplied by the Delaware Aqueduct (see discussion in potential project impacts above). Therefore, no significant adverse impacts during construction are anticipated to affect upstate water suppliers. It is not anticipated that the construction of other NYCDEP proposed projects would significantly affect upstate water users.

Sanitary Sewage. Throughout the 5½ years construction period, portable rest rooms would be made available for the construction personnel. The total amount of sewage generated (16,300 gpd) by employees during the peak construction period at the project site is assumed to be equivalent to the amount of water consumed by the construction workers. The sanitary sewage would be collected and properly disposed of through a contract with a private hauler. A temporary connection would be made to the existing sanitary sewer on Dana Road to service the engineer's field office, which would include a toilet and sink. This impact would be minor and temporary and would not be considered a significant adverse impact upon the existing sewer system from the proposed construction activities. Similar connections could be made for the engineer's field offices for other NYCDEP projects proposed for the Eastview Site; these impacts would also be minor and temporary and would not be considered a significant adverse impact upon the existing sewer system during the construction phase of these projects.

Stormwater Infrastructure. The project contractor would be responsible for developing and implementing a Sedimentation and Stormwater Control Plan (SSCP). The SSCP would be consistent with the level of stormwater, and erosion and sediment control to be described in the SWPPP.

Stormwater management, erosion and sedimentation control measures would be implemented in a phased approach during construction. Phase I, which is relatively short-term, would include installation of the construction area perimeter fencing, preliminary erosion control measures (silt fencing and temporary sedimentation basins), and concrete jersey barriers to protect designated trees within the construction area. This initial phase would also include construction of the site access/haul roads, and temporary facilities for construction management and site security. Finally, Phase I would include the clearing and grubbing of trees within the proposed building footprint. Phase II would include excavation of the building footprint, cut and cover excavation for the finished water connections to the Delaware Aqueduct, and excavation associated with the raw water tunnel. Early on in Phase II, the stormwater detention basin would be constructed to both capture runoff from the site and maintain wet weather flows to Mine Brook at pre-construction levels. Phase III would include construction of the water treatment facility and the permanent site road system, installation of water, sewer and remaining stormwater lines, and final landscaping. Section 5.14, Natural Resources and Section 5.15, Water Resources present the anticipated protections measures and Stormwater flow measurements during construction.

The stormwater BMPs would be developed and implemented independent of the existing stormwater infrastructure surrounding the site. The BMPs would be in compliance with the state and local requirements cited previously. There is no potentially significant adverse impact anticipated to occur from the stormwater runoff from the construction site to the existing infrastructures. Stormwater BMPs designs would be coordinated with designs developed for other NYCDEP proposed projects at the Eastview Site. These BMPs would also be in

compliance with the requirements cited above. The BMPs that would be developed for other NYCDEP proposed project are not anticipated to significantly impact the existing infrastructure.

Energy Demand. Four temporary feeders each supplying 2,500 kVA would be provided by Con Edison to transmit power during the construction period at the water treatment plant site. The temporary feeders would originate from the Grasslands Substation southeast of the construction site. The 5,000 kVA of the total temporary demand would transmit the tunnel work that includes the tunnel boring machine (TBM) and welding. An additional 2,500 kVA would supply electricity to other construction equipment, site lighting, and field offices for contractors, resident engineers and the NYCDEP personnel. The outstanding 2,500 kVA feeder would serve as a back up. These feeders would be provided independent of the existing grid in the Grasslands Reservation. Therefore, this source of power would be sufficient for all construction activities without impact to the existing electrical utilities.

In addition to the feeders, a number of 1,500 kVA diesel generators would be available on a temporary basis during construction for uses in a localized construction area such as for providing power to an emergency escape elevator and dewatering of water from deep excavation. These generators would be sufficient for any emergency uses on the construction site; therefore, no significant adverse impact is anticipated to occur to the existing electrical utilities. Section 5.10, Air Quality, and Section 5.11, Noise, present the potential construction impacts from the use of these electrical equipment. It is anticipated that generators would be available on a temporary basis during construction as part of other NYCDEP proposed projects at the Eastview Site. Therefore, no significant adverse impacts are anticipated to occur to the existing electrical utilities during the construction period of other NYCDEP proposed projects.

Gas Demand. Natural gas would not be utilized during the construction activities of the proposed plant. No connection to the existing gas main would be made; therefore, no significant adverse impact is anticipated.

5.16.3.2.2. With Cat/Del UV Facility at Eastview Site

As noted above, the Cat/Del UV Facility may be located on the Eastview Site in the Future Without the Project. The incremental effects on the study area infrastructure from construction of the proposed Croton project would be the same in the Future With the Project regardless of whether the Cat/Del UV Facility is under construction on the Eastview Site. Therefore, no significant adverse impact on the study area infrastructure is anticipated.