A. INTRODUCTION

The proposed project involves upgrades to the North River WWTP's cogeneration facility in the existing engine room, as well as other plant infrastructure and equipment improvements within the WWTP. The cogeneration upgrades include the replacement of ten (10) existing tri-fuel engines with the construction of five (5) new dual-fuel engines. The proposed project is not expected to result in any significant adverse impacts during the construction period. All of the proposed construction work for the cogeneration upgrades would occur within or adjacent to the existing WWTP's engine room. Construction of the additional improvements to the WWTP's electrical infrastructure and other related equipment would all occur within the existing WWTP structure (i.e., the "project site"), and would not affect users of the park above the plant. In addition, the separation of park electrical service from electrical service at the plant would be undertaken, which would occur on DEP property to the east of the WWTP building, as described in detail in Attachment A, "Project Description." The construction activities would be subject to New York City Local Law 77, which would require the use of best available technology (BAT) for equipment at the commencement of the construction. All construction equipment would meet at least EPA Tier 2 emission standards.

B. CONSTRUCTION IMPACTS

LAND USE, OPEN SPACE, AND NEIGHBORHOOD CHARACTER

The anticipated locations for contractor staging and parking areas are between the railroad tracks and the plant along the WWTP access road. These staging and parking areas are all within the DEP WWTP property and would not affect any publicly accessible areas at the WWTP facility. As described above, construction work would occur within the WWTP and would therefore not affect users of the park above the plant.

HAZARDOUS MATERIALS

In terms of hazardous materials, the analysis in Attachment C, "Hazardous Materials," concludes that no soil disturbance would be required during project construction, with the exception of limited soil disturbance associated with the separation of park electrical service from electrical service at the plant, which will require that two (2) new concrete encased ductbanks be installed. The new concrete encased ductbank system could require up to approximately 1,500 feet of trenching on the North River property that will be up to 4 feet wide and 6 feet deep to accommodate each of the two ductbanks. The excavation for the new ductbank may extend from the new substation in a northerly or southerly direction, but not both. This trenching and electrical separation work would occur on DEP property, mostly outside and to the east of the WWTP building; none of this work will occur within Riverbank State Park, and this work would not impact the operation of the Park. A sampling plan will be developed to determine the

presence/absence of hazardous materials, relative to the limited excavation activities associated with the separation of park electrical service. To ensure that the potential for human or environmental exposure to known or unexpectedly encountered contamination during this work is minimized, supplemental testing and, if necessary, a Remedial Action Plan (RAP) and associated Construction Health and Safety Plan (CHASP) would be prepared for implementation during the construction activities associated with this aspect of the project. Any hazardous materials encountered as a result of excavation activities would be handled and disposed of in accordance with applicable federal, state and local requirements. Therefore, with the measures outlined in Attachment C, Hazardous Materials" in place, the proposed project is not anticipated to result in significant adverse impacts with respect to hazardous materials.

TRANSPORTATION

It is estimated that there would be a peak of approximately four (4) trucks per day traveling to and from the site during construction of all of the various WWTP upgrades that are included in this project. The small number of daily trucks anticipated to be traveling to and from the site on these roads and the nearby highway system during the construction period would be insignificant (less than one truck per hour) in comparison to the existing volumes of vehicles (trucks and autos) that are found on these roadways. During the project's construction there would also be an estimated average of approximately 24 construction workers at the site. For this project, it is anticipated that there would be one 8-hour shift per day, typically from 7 AM to 3 PM, during the five weekdays. This shift falls outside the typical peak traffic periods, and would therefore have even less effect on surrounding traffic levels than if it occurred during the local traffic peaks. With the anticipated levels of trucking and worker activity during construction, any potential off-site effects would not be expected to be significant.

AIR QUALITY

Construction of the cogeneration facility would be performed in stages with existing engines removed and new engines installed in pairs until all five engines are installed in order for there to be enough backup power for the plant to operate in an emergency situation. There are two alternatives under consideration. One alternative is to utilize the two existing emergency turbine generators, the existing 2 MW emergency engine, and the existing pump and blower engines as back-up power during the construction period (same operating scenario as the existing condition). If it is determined that the existing engines and emergency equipment would not be able to provide sufficient back-up power in the event of an emergency, a second alternative is to remove the two existing emergency turbine generators and install four (4), new 2 MW diesel emergency generators. These emergency generators would be installed at the beginning of the construction period and then removed once the cogeneration facility is operational. They would exhaust out the existing turbine generator stacks and would only be used for emergency back-up power in the event the existing engines could not operate; no new emissions would be added. Routine maintenance and testing of the emergency engines would be similar to the removed emergency turbine generators, which are operated for one hour every two weeks, for a total of 26 hours per year per engine. Since the four new emergency generators would be installed and operating during the construction period prior to the operation of the cogeneration facility, an incremental analysis of these emergency generators with operation of the existing facility was performed.

METHODOLOGY

The analysis for the interim emergency generators followed the same methodology as in Attachment D, Air Quality.

Per EPA's guidance[1] an analysis of the 1-hour NO_2 and SO_2 concentrations is not warranted since these sources are considered intermittent sources for these standards, and would therefore not cause a violation of the 1-hour average NO_2 and SO_2 NAAQS. Since $PM_{2.5}$ is considered the limiting pollutant of concern for emergency generators (i.e. if $PM_{2.5}$ concentrations meet the guidance thresholds, concentrations of CO, SO_2, and PM_{10} are expected to be below their respective NAAQS), an analysis of the $PM_{2.5}$ 24-hour average was performed. A reasonable worst case scenario was modeled with the assumption that all four interim emergency generators would operate for one hour each within any 24-hour period. Since the emergency generators would be installed and operating during the construction period prior to the operation of the cogeneration facility, an incremental analysis of the emergency generators with operation of the existing facility was performed as a reasonable worst-case scenario.

Source Parameters

The interim emergency generators would be located on the service road and would exhaust through the existing turbine generator stacks with physical stack parameters such as location, height and diameter remaining unchanged. Stack test data[2] for the existing 2 MW emergency generator was used for the exhaust flowrate and temperature from the new emergency generators.

Table G-1 provides a summary of the stack exhaust parameters for the interim emergency generators.

Table G-1
Stack Exhaust Parameters for the Interim Emergency Generators

Parameter	Interim Emergency Generators
Number of Engines	4
Engine Size	2 MW
Stack Height (above grade) (feet)(1)	161
Stack Diameter (inches)	48
Stack Exhaust Temperature (F)	830
Stack Exhaust Velocity (feet per second)	20

Note:
(1) Exhausting through the existing turbine engine stacks. Grade elevation is 5 feet. The height of the rooftop park is 54 feet above grade and the height of the stack above the park is 107 feet.

Table G-2 provides the $PM_{2.5}$ emission rates for the interim emergency generators.

[1] http://www.epa.gov/ttn/scram/guidance/clarification/Additional_Clarifications_AppendixW_Hourly-NO2-NAAQS_FINAL_03-01-2011.pdf

[2] North River Water Pollution Control Plant (WPCP) 2000 KW Generator Emission Compliance Test Report. April 9, 2010.

Table G-2
Emission Rates for the Interim Emergency Generators

Parameter	Interim Emergency Generators [1] 4- 2000 KW Engines
$PM_{2.5}$ (24-hour) (g/s) [2]	0.014

Notes:
[1] Emissions are per engine.
[2] PM emissions are pro-rated on a 24-hour basis with each engine operating for one hour during the day and assuming they would be tested between 7AM and 3PM.

ANALYSIS RESULTS

The maximum $PM_{2.5}$ 24-hour average increment from the interim emergency generators is 0.59 $\mu g/m^3$, below the interim guidance criteria of 2 $\mu g/m^3$; therefore, no significant adverse air quality impacts are predicted from $PM_{2.5}$ emissions from the construction of the Proposed Project.

Therefore, there would not be a significant adverse air quality impact from construction.

NOISE

As described above, construction of the proposed project would occur within the WWTP itself; therefore, it is not expected that construction-period noise would be perceivable to any sensitive users, such as park users. Furthermore, the small amount of construction worker and truck trips would not result in significant adverse noise impacts. ✷