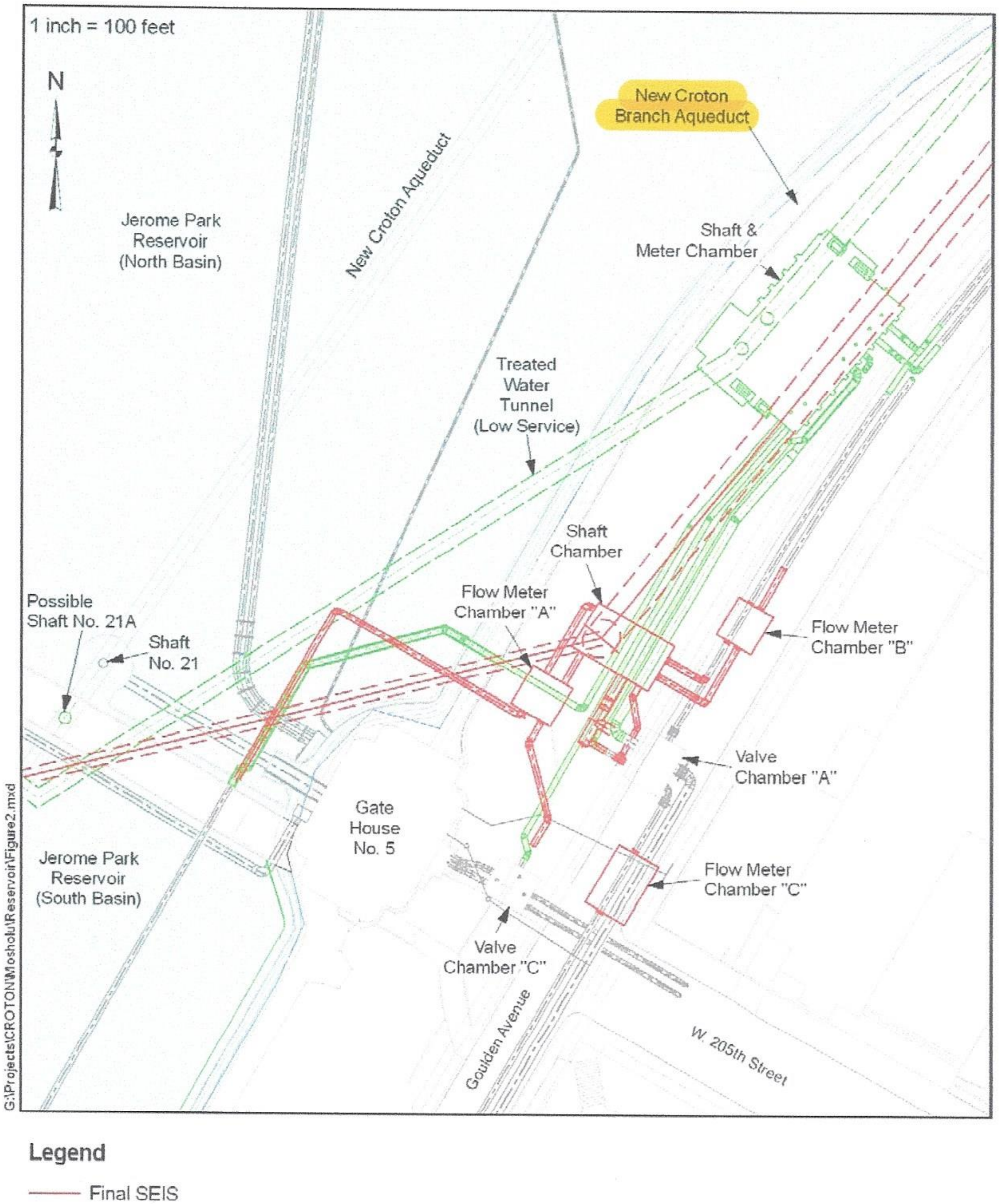

Detailed Layout of Proposed Shaft and Meter Chamber Area Jerome Park Reservoir

Croton Water Treatment Plant

Figure 2

1. INTRODUCTION

This document, a Minor Modification for the Croton Water Treatment Plant (WTP) Final Supplemental Environmental Impact Statement (Final SEIS) CEQR No. 98DEP027, evaluates potential changes in the environmental effects that were presented in the June 2004 Croton WTP Final SEIS due to proposed project revisions. The Final SEIS was prepared by the New York City Department of Environmental Protection (NYCDEP), acting as lead agency, pursuant to the City Environmental Quality Review (CEQR) process as set forth in Executive Order 91 of 1977 and its amendments, and the State Environmental Quality Review Act (SEQRA) and its implementing regulations, as set forth in 6NYCRR Part 617. The subject of the Final SEIS was a proposed project by the NYCDEP to design, construct, and operate a 290 million-gallon-per-day (mgd) WTP to provide filtration and disinfection of the Croton System water supplied to New York City through the New Croton Aqueduct (NCA) and the New Croton Branch Aqueduct (NCBA). The Final SEIS also covered work associated with the construction and operation of the Croton WTP sites remote from the actual water treatment plant site, including locations along the NCA and at the existing and proposed distribution connections in the vicinity of Jerome Park Reservoir (or Reservoir).

Since the publication of the Final SEIS, NYCDEP has updated the design and construction plans for activities proposed under Contracts CRO-313 and CRO-312OS. Contract CRO-313 includes construction of two treated water riser shafts in the vicinity of Jerome Park Reservoir to enable flow from the Croton WTP to be conveyed to the water distribution system just east of Jerome Park Reservoir. Contract CRO-312OS includes upgrades and renovations to several gate houses and shafts as well as construction of a Shaft and Meter Chamber (SMC) in the vicinity of Jerome Park Reservoir, which would serve as a central point for distributing treated water from the Croton WTP and measuring flow to the distribution system. The proposed design and construction changes described in this Minor Modification are based on information that was previously not available in earlier stages of design. The proposed revisions would minimize project-related impacts to the area surrounding Jerome Park Reservoir, reduce the project schedule, and enhance regulatory requirements of the design. It is critical that work under Contracts CRO-313 and CRO-312OS be initiated to coincide with the progress of work at the Croton WTP to ensure that these off-site project components are completed and available to convey treated water from the Croton WTP to the City's water distribution system when the plant commences operation by 2012 in accordance with the Second Supplemental Consent Decree between NYCDEP, New York State Department of Health (NYSDOH), and the U.S. Environmental Protection Agency.

The purpose of this environmental analysis is to review the proposed project revisions for their potential to result in significant adverse environmental impacts. This analysis demonstrates that these proposed project revisions would not result in any new or previously undisclosed significant adverse impacts on the environment. Background information on the project and a description of the project design and construction modifications are presented in Section 2. A summary of potential impacts associated with the proposed project design and construction changes is presented in Section 3. A conclusion summarizing the findings of this Minor Modification is presented in Section 4.

would be trucked off site. The alternative approach of installing a plug in the NCA south of Shaft No. 21 would not require any surface excavation or removal of bedrock since access to the NCA would be through Shaft No. 21.

Shaft and Meter Chamber

The Final SEIS stated that construction of the new shaft in the Shaft Chamber (as originally designed) would be done using the raise bore construction method. This method involves drilling of a pilot hole from the surface, assembly of the raise bore at the bottom of the shaft where the new treated water tunnel would terminate, and excavation of the rock by the raise bore moving in an upward direction cutting the rock as it moves. Boring spoils would fall into the tunnel and would be removed at the Croton WTP site via the new treated water tunnel. Although the excavation method was not fully described, the Final SEIS indicated that surface excavation (including soil and bedrock removal) would be necessary for the Shaft Chamber and noted that mechanical construction activity would involve the use of one crane, one backhoe/loader, and trucks. In order to remove bedrock, the mechanical excavation process would require use of hoe-ramming, which involves attaching a hydraulic jack hammer to an excavator or backhoe.

Under CRO-313, both treated water tunnel shafts proposed in the SMC would still be constructed using the raise bore method as described above, and surface excavation for the portion of the SMC area to be excavated under Contract CRO-313 would be conducted using the same type of mechanical excavation method addressed in the Final SEIS. Since there has been no modification to the proposed construction method, impacts associated with construction of the two shafts are not the subject of this Minor Modification. Surface excavation for the remaining portion of the SMC area to be excavated under Contract CRO-312OS would be conducted down to bedrock (approximately 26 feet below ground surface) using the same type of mechanical soil excavation addressed in the Final SEIS.

Under the updated Contract CRO-312OS construction plan, overburden removal would still be done via mechanical means and bedrock removal to an average depth of 10 feet would occur with the use of blasting. Blasting is also proposed for rock removal for the yard piping associated with the SMC. A discussion of the blasting method and anticipated benefits as compared to hoe-ramming (mechanical method) is provided below. This evaluation concluded that from a technical and environmental perspective the blasting rock removal method is the best technique to use for bedrock removal for the consolidated SMC, which is now an area of approximately 95 feet by 135 feet.

Jerome Park Reservoir Walls and Base Slab

Inspection and repair of the Reservoir walls and base slab is currently proposed under Contract CRO-312OS. The Final SEIS did not propose any such work. Although the inspection and repair work to be conducted under Contract CRO-312OS represents a change from the project scope presented in the Final SEIS, any structural repairs to the Reservoir walls and base slab resulting from the proposed inspection are anticipated to be very minor, such as repairing cracks and repointing concrete. Therefore, no potential significant adverse impacts are anticipated to occur based on the nature of this work.

South Basin Ramp

The Final SEIS proposed that an access ramp to the South Basin be constructed in the vicinity of Gate House No. 6. However, the method of bedrock removal for this task was not described.

Construction of the South Basin Ramp, adjacent to Gate House No. 6 along the western wall of the Reservoir, is proposed for inclusion under Contract CRO-312OS. If removal of bedrock is required, construction would include either mechanical or blasting methods. Currently, the recommended method of bedrock removal has not been determined. Therefore, this Minor Modification includes a potential impact analysis for both bedrock removal options.

Blasting Method

For construction of the SMC and SMC yard piping, blasting would require placement of blasting caps and explosive charges within holes drilled in the bedrock. Blast detonations may occur up to approximately 36 times over approximately three months of construction at the SMC and approximately 20 times over approximately one month for the SMC yard piping. Detonating the explosive charges would last only a few seconds. By comparison, backhoes and hoe-rams would be anticipated to operate nearly continuously during the construction day if rock removal were by mechanical means alone. With blasting, the backhoes and hoe-rams would only be used intermittently (for breaking rock loosened by explosives into smaller pieces). In addition, the explosive charges for the SMC and associated yard piping would be conducted approximately 20 feet below grade. Furthermore, in order to avoid disturbing students in the Bronx High School of Science the blasting would be timed to occur after school hours approximately three to five times a week.

For construction of the South Basin Ramp (if the blasting method is selected), blasting detonations may occur approximately 15 times over approximately one month of construction. Blasting charges for the South Basin Ramp would be conducted almost 30 feet below grade. The majority of work required for construction of the South Basin Ramp would occur within the south basin and would be surrounded by the walls of the Reservoir, which would provide natural noise attenuation. As a result, predicted noise levels at nearby schools and residences for this activity are expected to comply with all applicable noise criteria levels.

Use of blasting is the quickest method to remove bedrock and would conservatively shorten the duration of the rock excavation as compared to mechanical rock removal (approximately three months vs. approximately six months for the SMC; approximately one month vs. approximately two months for the SMC yard piping; approximately one month vs. approximately two months for the South Basin Ramp), thereby minimizing the inconvenience of this work to the surrounding community. The proposed blasting would involve development and implementation of a controlled blasting program that would both control excessive vibration and minimize risk of damage to adjacent aqueducts and to nearby structures. The Contractor would be required to prepare and implement a Blasting Plan to protect workers and the public (including students in the nearby schools and residents in the nearby homes). The Blasting Plan would be subject to approval by the Fire Department of the City of New York (FDNY).

Blasting procedures are developed on a site-specific basis depending on geological conditions as well as traffic and other environmental conditions at the time of blasting. Controlled drilling and blasting involves drilling many small (i.e., 2.5-inch diameter) holes in the rock using rock drills, and then placing small amounts of explosives in each hole. Blast mats are then placed on the rock to control potential flying debris during blasts. Under carefully controlled and monitored conditions, explosives are then detonated sequentially, breaking the rock while spreading the release of energy from individual explosives, lessening the potential ground vibration and air blast effects above.

for planning purposes only. The proposed construction dates were fixed in October 2008 at the time the Minor Modification was being prepared. Actual construction activity dates may change depending on construction conditions; however, minor schedule changes are not anticipated to meaningfully affect the conclusions reached in this document.

Using information contained in the resource loading schedule, "peak years" were identified for the following technical environmental analysis subjects: Traffic, Air Quality, and Noise. The peak year selected for each subject was used to conduct impact analyses for the reasonable worst-case scenario. A brief explanation of the peak year selected for these environmental analysis subjects is provided below. Additional peak year information is presented in the following *Minor Modification Update* sections for these subjects.

- Traffic: A peak construction year of 2011 was selected since the greatest number of vehicle trips would be generated for a peak hour during this year as a result of the construction activities scheduled to occur, and it represents the highest background traffic volumes for the construction period.
- Air Quality: A peak construction year of 2009 was selected since it is anticipated to have the greatest activity (i.e., most pieces of equipment), as well as the highest potential emissions (e.g., exhaust, fugitive dust), as a result of the construction activities scheduled to occur during this year.
- Noise: Rather than selecting a specific peak year for the impact analysis, potential worst-case (i.e., loudest) noise conditions were analyzed to evaluate the potential loudest hour during each month of work during the project duration (2008-2012).

No long-term operational changes are proposed since the project components under Contracts CRO-313 and CRO-312OS would remain below-grade or within existing structures upon completion, would represent an extension of the existing use, and would not substantially expand the capacity of the site. Therefore, only an evaluation of construction impacts is presented in this document.

HISTORIC AND ARCHAEOLOGICAL RESOURCES

CONCLUSIONS FROM THE CROTON WTP FINAL SEIS

As discussed in the Croton WTP Final SEIS, the Jerome Park Reservoir and adjacent associated buildings and structures are listed on both the National and New York State Registers of Historic Places. The Final SEIS concluded that the project, which included mechanical rock removal, would not significantly affect historic structures since none of the proposed work would appreciably affect building facades or the historic context of the Jerome Park Reservoir. Additionally, the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and the Secretary of the Interior's Standards for the Treatment of Historic Properties were consulted to retain the historic character of the structures and ensure that the proposed project would not cause a significant adverse impact to the historic structures.