Memorandum

22 May 2023

To	Vicky Murphy, City of Watertown		
From	Colleen Meehan, PE, GHD		
Project Name	City of Watertown WTP Improvements	**Contact No.**	914-703-4679
Subject	Updated Project Summary and Costs for Funding	**Project no.**	12576729

Funding pursuits are underway through the New York State Water Infrastructure and Investment Act (WIIA) / Intermunicipal Grant (IMG) programs and Drinking Water State Revolving Loan Fund, and the Defense Community Infrastructure Pilot (DCIP) Program through the US Department of Defense. State Environmental Quality Review (SEQR) is underway and expected to be completed in June 2023. Bond resolution and completion of SEQR are required in order to apply for funding assistance from New York State funding programs. Project costs have been developed for funding purposes, the total opinion of probable project cost is $50 million, broken down as noted below.

The City of Watertown NY (City) is under USEPA Administrative Order due to an exceedance of the maximum contaminant levels (MCL) for total trihalomethanes (TTHMs) and haloacetic acids (HAA5s), also known as disinfection by-products (DBPs). Since September 2022, the City has been pilot testing treatment technologies for control of DBPs. Pilot testing will continue through August 2023 to achieve pilot testing over four seasons and demonstrate efficacy of treatment under varying raw water quality conditions, as required by the New York State Department of Health. The following is a summary of the nominated treatment process improvements identified through pilot testing preliminary results to date.

The nominated process improvements consist of 1) a new flocculation/sedimentation basin, 2) ozonation of settled water and 3) deeper, coarser filter media beds of granular activated carbon (GAC) with new filter underdrains and air scour retrofit. The combination of ozonation with GAC filtration will create an ozone enhanced biologically active filtration process. The preliminary pilot testing results indicate this treatment combination is effective in removing precursors to DBP formation.

1. Flocculation/Sedimentation Basin

A conventional flocculation/sedimentation basin will be designed and constructed in accordance with Recommended Standards for Water Works 2018, to replace the existing coagulation/sedimentation basin that is provided by an impounded section of the Black River. The new flocculation sedimentation basin will be located on Huntington Island, adjacent to the City's sludge drying beds, and will consist of a concrete structure for the basins with a superstructure above. Additional related improvements include the relocation of the coagulant chemical storage and feed system to the new flocculation/sedimentation basin, an alkalinity adjustment chemical storage and feed system, sludge collection equipment, modifications to the existing settled water pumping system to pump to the new basins, and improvements to the Huntington Island access road. The total opinion of probable project cost for the flocculation/sedimentation basin is $22.7 million.

2. Pre Ozonation

At the WTP, a new ozone production and injection system will be provided, and the existing coagulant contact basins at the WTP will be converted to ozone contactors. The ozone generation equipment will be housed adjacent to the water treatment plant. The total opinion of probable project cost for the pre ozonation is $16.6 million.

3. GAC Filters

The existing filters will be converted from anthracite media to GAC media with deeper and coarser media beds. To accommodate the deeper filter media bed, the existing filter underdrains will be replaced with gravelless underdrains, the backwash troughs will be raised and auxiliary air scour will be provided to enhance backwash of the deeper beds. The air scour blowers will be located in a new blower room adjacent to the filter wing. The total opinion of probable project cost for the GAC filters is $10.7 million.

These treatment process improvements will require appurtenant work, including structural, architectural, electrical and mechanical upgrades.

Design of the nominated process improvements is expected to begin in 2023, with construction commencing in 2024.

Regards

Colleen Meehan, PE
Project Engineer

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