

WPCP Upgrade Information

Project Background

The Danbury Water Pollution Control Plant (WPCP) provides wastewater and septage treatment for Danbury, Bethel, Brookfield, Ridgefield, and Newtown, and also accepts septage from New Fairfield, Redding, and Bridgewater, and some out of region towns. The plant also accepts fats, oils and grease (FOG) from local/regional restaurants and commercial establishments.

This plant upgrade is designed to meet mandated Federal and State regulatory requirements that are already set and must be met in accordance with parameters and conditions set forth in the existing NPDES discharge permit for the Danbury facility. The project has undergone extensive engineering study and evaluation. The City has worked closely with CT DEEP during all phases of the work and also with the inter-local communities.

WPCP Upgrade Information

The WPCP upgrade is a significant project that serves to replace and/or rehabilitate numerous plant and equipment systems. The project is required to: comply with new discharge limits for phosphorus, to allow for continued expansion and growth of the service area out to 2040, and to replace equipment systems that are not performing adequately or are in need of replacement/renovation for effective and efficient plant operation. A summary of the core components of the Danbury WPCP upgrade project are provided below.

Phosphorus Treatment Facility

- A new tertiary phosphorus treatment facility will comply with new effluent phosphorus limits as prescribed in Danbury's NPDES permit which governs discharge from the plant. The new facilities need to be installed and in operation by April 2022.

WWTP Upgrade

- The last major plant upgrade was completed in 1993.
- Existing equipment and processes for liquid treatment are beyond their useful life and will be replaced or upgraded to ensure continued compliance with permit requirements and to ensure future plant operations remain reliable. Numerous equipment items have been programmed for replacement. One significant facility that has reached the end of its usefulness is the Headworks building housing the preliminary treatment systems. The upgrade project includes a brand new Headworks building.
- Upgrades are also necessary for Danbury to serve regional FOG (fats, oils and grease) disposal needs. A new FOG facility is also included with this project.

Biological Nutrient Removal (BNR)

- Existing BNR facilities will be modified to increase wet weather capacity and improve performance. Major equipment systems associated with this facility will also be replaced to increase efficiency and as a result of age.

Solids Treatment Upgrade

- Existing equipment and processes for solids treatment are beyond their useful life and must be replaced or upgraded to ensure long term sustainable cost control of solids removal. This work includes significant upgrade to the two anaerobic digester complexes at the plant, the gravity thickeners and the secondary sludge thickening equipment.

Energy Recovery System

- A new combined heat and power (CHP) cogeneration facility will be installed enabling Danbury to be in a position to generate a portion of the plant's electrical power, thus reducing costs of purchased electrical energy.

WPCP Upgrade Construction Cost Information

The estimated total cost of construction and supporting engineering services for the WPCP Upgrade is approximately \$102.6 million.

The Connecticut Clean Water Fund (CWF) allows a 50% grant on eligible phosphorus treatment facilities, a 30% grant on eligible nitrogen treatment facilities, and a 20% grant on all other facilities upgrade work. Remaining projects costs are eligible for a 2% CWF loan.

- As per Connecticut General Statute (CGS) 22a-478(c)(6), in order to receive a 50% phosphorus treatment grant on eligible phosphorus treatment facilities, a construction contract must be entered into before July 1, 2019.

Danbury will pay for 78% of the project loan costs while the remaining 22% of project loan costs will be reimbursed/paid from the participating communities of Bethel, Brookfield, Ridgefield and Newtown.

WPCP Upgrade – Construction Project Bidding Information

The Upgrade project will be bid as a single construction project. Bids will be received based on a “Base Bid” and on “Base Bid plus Additive Alternates.”

The “Base Bid” will include the following work:

- New Phosphorus Treatment Facility
- BNR Facilities Modifications
- New Headworks Facility
- Liquid Stream Treatment Facilities Upgrades
- Solids Treatment Facilities Upgrades
- Upgrades throughout the plant
- New SCADA system
- Upgrades to plant electrical power systems
- Site work, yard piping, storm water system and numerous related systems

We will design the bid documents to maximize the amount of this large project that we can undertake within our budget. This will be accomplished through the use of additive alternates to the Base Bid. Therefore, when the construction bids are opened we will proceed with as many additive alternates as our budget will allow for. Our plan is to obtain bids as follows:

- Base Bid
- Alternate Bid #1 = “Base Bid” plus “Upgrades to Digester Complex 2”
- Alternate Bid #2 = “Base Bid” plus “Upgrades to Digester Complex 2” plus “FOG Facility ”
- Alternate Bid #3 = “Base Bid” plus “Upgrades to Digester Complex 2” plus “FOG Facility ” plus “CHP ”