

# 825521 - WPCP Biosolids Processing

|                                 |         |                      |                |                         |                              |
|---------------------------------|---------|----------------------|----------------|-------------------------|------------------------------|
| <b>Originating Year:</b>        | 2006    | <b>Project Type:</b> | Wastewater     | <b>Department:</b>      | 270 - Environmental Services |
| <b>Planned Completion Year:</b> | 2027/28 | <b>Category:</b>     | Infrastructure | <b>Project Manager:</b> | Xi Jiang                     |

## Project Description/Scope/Purpose

The Water Pollution Control Plant (WPCP) Biosolids Processing project was initiated in 2009 to address the accumulation of biosolids (sediments) on the bottom of the WPCP Secondary Treatment Oxidation Ponds. This project provides funding for the removal, processing, and disposal of accumulated sediments from the Plant's Oxidation Ponds.

The WPCP Biosolids Processing project also provides funding for the dewatering and beneficial reuse of anaerobically digested biosolids from the Plant's solids handling process until new solids dewatering facilities are constructed as part of the ongoing Sunnyside Cleanwater Program (projected completion 2028).

The Biosolids Handling scope of work provides for the removal of pond solids by dredging and preconditioning before sending those biosolids to a centrifuge and belt press for dewatering. The WPCP Biosolids Processing project also provides funding for the dewatering and disposal of biosolids generated by the WPCP Anaerobic Digesters. After dewatering, those concentrated solids are hauled off-site for land application (beneficial reuse).

Funding can also be used to clean digesters when the same contractor provides one or both of the previously mentioned services (pond and/or digester solids processing). This is a cost and logistical advantage for the City as much of the same equipment is used in the cleaning process.

## Project Evaluation and Analysis

The WPCP is a heavily regulated wastewater treatment facility with strict effluent discharge requirements. The ammonia concentration in the WPCP final effluent is one of the plant effluent limits. Reduced volumetric treatment capacity within the Oxidation Ponds due to solids accumulation can directly affect the ammonia removal ability of the ponds and, if not addressed, may increase the concentration of ammonia in the effluent.

Over the last decade, the WPCP held several technical meetings with scientists and engineers to determine the best course of action to minimize the chance of process failure of the Secondary Oxidation Ponds. During those meetings, it was concluded that dredging the ponds at a rate faster than accumulation is the most prudent approach.

The rate of capacity restoration of the ponds is slow and needs to be spread over several years. The anaerobic digestion of wastewater solids provides fuel for power generation and volumetric reductions of plant-generated solids. Both save operating costs associated with purchasing power, handling, and disposal of plant-generated biosolids.

## Fiscal Impact

The project costs are reflected in the agreement with the current contractor providing the handling, processing, and disposal services. \$280,000 impacts in wastewater operation budget have been added to cover the ongoing hauling and disposal costs related to biosolids dewatering and disposal after 2027, once a new Thickening and Dewatering Building has been constructed.

## Funding Sources

Wastewater Management Fund

## Plans and Goals

EM - Environmental Management - EM-7: Effective Wastewater Treatment

## Project Financial Summary

|                      | Project Costs     | Revenues | Operating Costs  |
|----------------------|-------------------|----------|------------------|
| Prior Actual         | 17,640,392        | -        | -                |
| 2024-25              | 1,800,000         | -        | -                |
| 2025-26              | 1,880,000         | -        | -                |
| 2026-27              | 2,165,000         | -        | -                |
| 2027-28              | 2,250,000         | -        | -                |
| 2028-29              | -                 | -        | 280,000          |
| 2029-30              | -                 | -        | 280,000          |
| 2030-31              | -                 | -        | 280,000          |
| 2031-32              | -                 | -        | 280,000          |
| 2032-33              | -                 | -        | 280,000          |
| 2033-34              | -                 | -        | 280,000          |
| 2034-35              | -                 | -        | 280,000          |
| 2035-36              | -                 | -        | 280,000          |
| 2036-37              | -                 | -        | 280,000          |
| 2037-38              | -                 | -        | 280,000          |
| 2038-39              | -                 | -        | 280,000          |
| 2039-40              | -                 | -        | 280,000          |
| 2040-41              | -                 | -        | 280,000          |
| 2041-42              | -                 | -        | 280,000          |
| 2042-43              | -                 | -        | 280,000          |
| 2043-44              | -                 | -        | 280,000          |
| 2044-45              | -                 | -        | 280,000          |
| <b>20 Year Total</b> | <b>6,295,000</b>  | <b>-</b> | <b>4,760,000</b> |
| <b>Grand Total</b>   | <b>25,735,392</b> | <b>-</b> | <b>4,760,000</b> |