

Program 8074 Empire WWTP Solids Improvements

 Solids Improvements



Description:

This program provides funding for planning and implementation of improvements to wastewater solids processing facilities at the Empire Wastewater Treatment Plant (WWTP).

Purpose and Justification:

The program provides for planning and implementation of projects to address capacity constraints and improve performance for wastewater solids processing at the Empire WWTP.

Program Location:

The active projects within this program are in the following Council Districts: 16

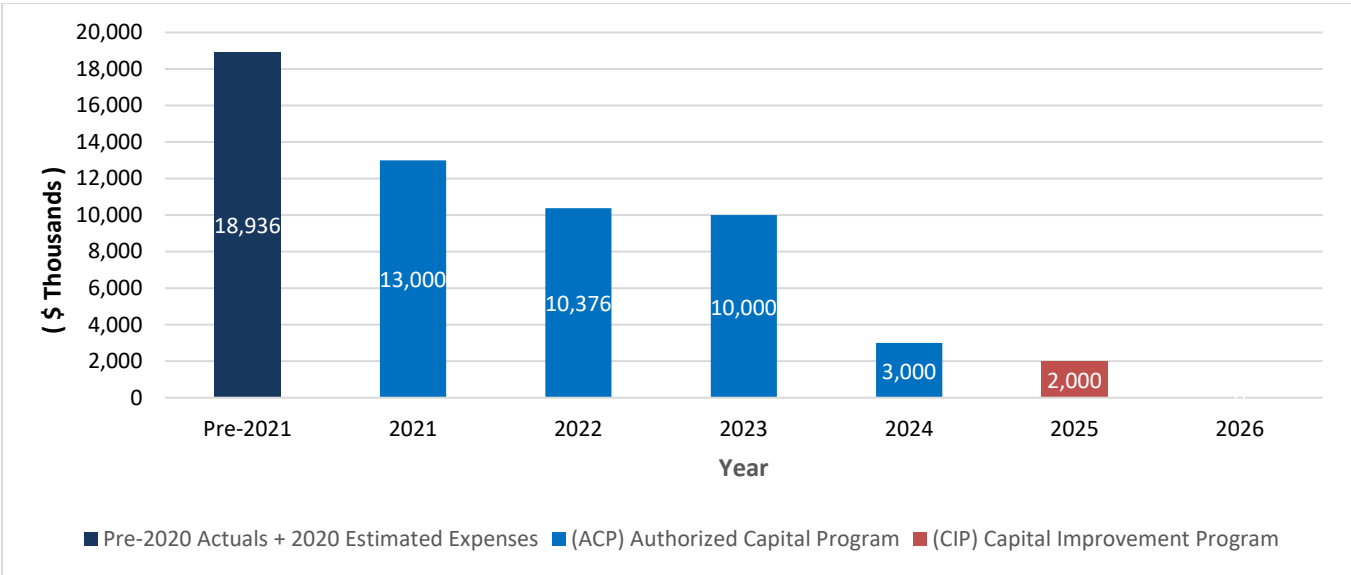
Active Projects in Program:

Project Number	Project Title
807400	Empire WWTP Solids Improvements Phase I
807401	Empire WWTP Solids Improvements Phase II
807415	Empire WWTP High Strength Waste Receiving Pilot

MCES 2021 – 2026 Capital Program:

Authorized Capital Program (ACP) \$56,642,000	Capital Improvement Plan (CIP) \$0
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Estimated Program Cash Flow 2021 - 2026:

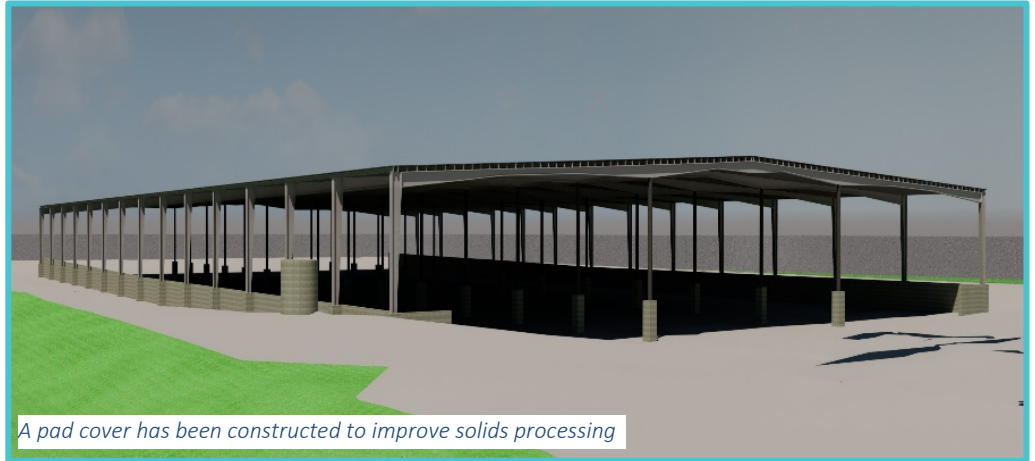


Note: The ACP is the total amount of all past and present authorizations including Pre-2021 Expenses.

Program Family: 8074
Project # 807400

Empire WWTP Solids Improvements Phase I

Project Location:
Council District # 16
Empire Township
Empire WWTP



PROJECT TYPE:	Plant Expansion
OBJECTIVES:	Preservation, Expansion and Improvement
CUSTOMER LEVEL OF SERVICE:	Lead by Example, Meet Capacity Needs, and Preserve Assets
SCOPE:	Increase biosolids storage capacity by covering existing storage area. Improve pad drainage and recover stormwater for on-site infiltration. Provide biogas moisture removal for use as boiler fuel. Renew boiler system to replace aging equipment and meet future plant-wide heating needs.
PROJECT NEED:	Solids treatment capacity at the Empire Plant must be increased to accommodate future growth in the service area. The existing boiler system is near end of service life and requires renewal. Biogas improves fuel quality in preparation for a future combined heat and power system (See Empire WWTP Solids Improvements Phase II, Project # 807401).

PROJECT SCHEDULE



Planning
2011-2013



Design
2014-2019



Construction
2020-2023

FINANCIAL ANALYSIS

2021 Cash Flow \$11,000,000	Current ACP \$31,147,000	2021 – 2026 Cash Flow \$11,326,000	Total Project Cost \$31,147,000
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Program Family: 8074
Project # 807401

Empire WWTP Solids Improvements Phase II

Project Location:
Council District # 16
Empire Township
Empire WWTP



Image of biogas flare and Digesters 4 & 5 at Empire WWTP

PROJECT TYPE:	Plant Expansion
OBJECTIVES:	Expansion and Improvement
CUSTOMER LEVEL OF SERVICE:	Lead by Example and Meet Capacity Needs
SCOPE:	Modify existing digesters to increase capacity and meet future capacity needs. Add advanced biogas treatment to remove hydrogen sulfide and siloxanes from biogas prior to use as fuel in a combined heat and power engine generator (CHP). CHP will generate heat and electricity for on-site use.
PROJECT NEED:	Solids treatment capacity at the Empire Plant must be increased to accommodate future growth in the service area. CHP will generate approximately 1/3 of the plant's heat and power demand utilizing biogas generated on-site as fuel.

PROJECT SCHEDULE



FINANCIAL ANALYSIS

2021 Cash Flow \$2,000,000	Current ACP \$25,000,000	2021 – 2026 Cash Flow \$25,000,000	Total Project Cost \$25,000,000
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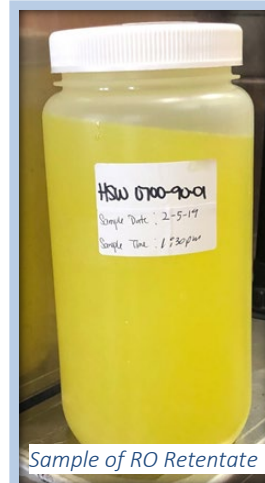
Program Family: 8074
Project # 807415

Empire WWTP High Strength Waste Receiving Pilot

Project Location:
Council District # 16
Empire Township
Empire WWTP



Temporary HSW Receiving Tank



Sample of RO Retentate

PROJECT TYPE:	Plant Expansion
OBJECTIVES:	Improvement
CUSTOMER LEVEL OF SERVICE:	Lead by Example
SCOPE:	Install a 27,000-gallon high strength waste receiving station complete with storage and pumping systems.
PROJECT NEED:	This project pilot's digestion of an industrial high strength waste to increase biogas production for use as fuel in a combined heat and power engine generator system (See Empire WWTP Solids Improvements Phase II, Project #807401).

PROJECT SCHEDULE



Planning
2016



Design
2018-2019



Construction
2020-2021

FINANCIAL ANALYSIS

2021 Cash Flow \$0	Current ACP \$495,000	2021 – 2026 Cash Flow \$50,000	Total Project Cost \$495,000
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