

Program 8059 Metro Rehabilitation and Facilities Improvements

View of Metro WWTP

Description:

This program provides funding for planning and implementation of a plant-wide renewal program at the Metropolitan Wastewater Treatment Plant (Metro WWTP).

Purpose and Justification:

The program provides for planning and implementation of projects to address renewal needs for continued, reliable and sustainable wastewater service at the Metro WWTP through the year 2030.

Program Location:

The active projects within this program are in the following Council Districts: 13

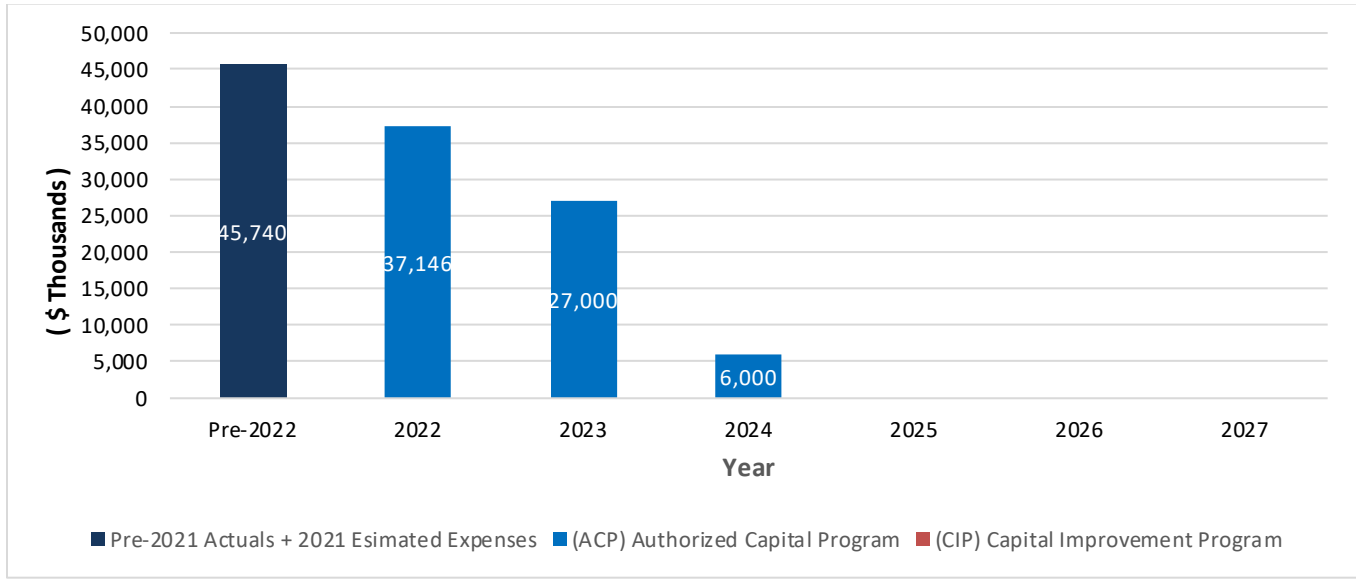
Active Projects in Program:

Project Number	Project Title
805932	Metro WWTP HVAC Improvements Phase 2
805947	Metro WWTP Solids Renewal and Improvements
805963	Metro WWTP Water Systems Renewal and Improvements
805990	Metro WWTP Site Preparation and Improvements
805998	Metro WWTP Services Building

MCES 2022 – 2027 Capital Program:

Authorized Capital Program (ACP) \$115,886,000	Capital Improvement Plan (CIP) \$0
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Estimated Program Cash Flow 2022 - 2027:



Note: The ACP is the total amount of all past and present authorizations including Pre-2022 Expenses.

Program Family: 8059
Project # 805932

Metro WWTP HVAC Improvements – Phase 2

Project Location:
Council District # 13
City of Saint Paul
Metro WWTP



Laboratory Bldg. Air handling unit

PROJECT TYPE:	Plant Improvements
OBJECTIVES:	Preserve and Improvement
CUSTOMER LEVEL OF SERVICE:	Preserve Assets
SCOPE:	This project replaces the main air handling unit at the Laboratory Building, an air handling system for the Maintenance Warehouse Building lunchroom, and other HVAC equipment in the 408 Building.
PROJECT NEED:	HVAC equipment near end-of-service life need to be rehabilitated or replaced based on condition assessment and business case evaluations.

PROJECT SCHEDULE



Planning

2016-2019



Design

2019-2020



Construction

2021

FINANCIAL ANALYSIS

2022 Cash Flow \$0	Current ACP \$2,310,00	2022 – 2027 Cash Flow \$0	Total Project Cost \$2,310,000
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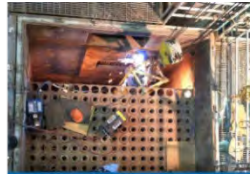
Program Family: 8059
Project # 805947

Metro WWTP Solids Renewal & Improvements

Project Location:
Council District # 13
City of Saint Paul
Metro WWTP



Fluid Bed Incinerator
Air Distribution



Baghouse Stainless
Steel Liner



Waste Heat Boiler Tube
Replacement



Scrubber Modifications



Cake Pumping
Modifications



Alkaline Loadout
Improvements



Auxiliary Condenser
Improvements



Sludge Storage Mixing
Improvements

PROJECT TYPE:	Plant Improvements
OBJECTIVES:	Preservation
CUSTOMER LEVEL OF SERVICE:	Communicate Information and Preserve Assets
SCOPE:	The project includes miscellaneous improvements and renewal of equipment related to processing wastewater solids at the Metropolitan Wastewater Treatment Plant including baghouse rehabilitation, scrubber modifications, waste heat boiler tube replacement, fluid bed incinerator renewal, alkaline loadout modifications, cake pumping modifications, alkaline odor control renewal, ash cleanup improvements, auxiliary condenser improvements, instrumentation & control improvements, BF08 vent reroute, flotation thickener modifications, and sludge storage mixing improvements.
PROJECT NEED:	Components of the solids processing system at the Metro WWTP need to be renewed due to the harsh environment experienced inside the incineration system. Improvements will increase reliability and performance.

PROJECT SCHEDULE



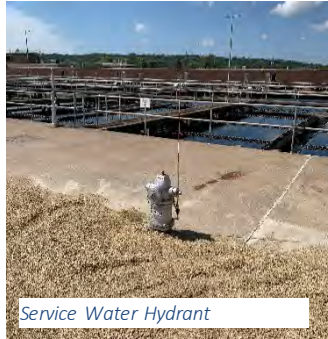
FINANCIAL ANALYSIS

2022 Cash Flow	Current ACP	2022 – 2027 Cash Flow	Total Project Cost
\$8,496,000	\$24,309,440	\$8,496,000	\$24,309,440

Program Family: 8059
Project # 805963

Metro WWTP Water Systems Renewal and Improvements Phase I: Distribution System Renewal

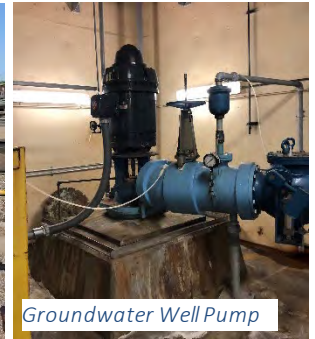
Project Location:
Council District # 13
City of Saint Paul
Metro WWTP



Service Water Hydrant



Portable pump for tank cleaning



Groundwater Well Pump

PROJECT TYPE:	Plant Improvements
OBJECTIVES:	Preservation
CUSTOMER LEVEL OF SERVICE:	Lead by Example and Preserve Assets
SCOPE:	The project replaces the service water piping network throughout the Plant with a new piping network in preparation for a future reclaimed water system.
PROJECT NEED:	Rehabilitate and repurpose the Metro Plant Water Systems and reduce withdrawal of water from the Prairie du Chien aquifer.

PROJECT SCHEDULE



Planning
2019



Design
2020-2021



Construction
2022-2024

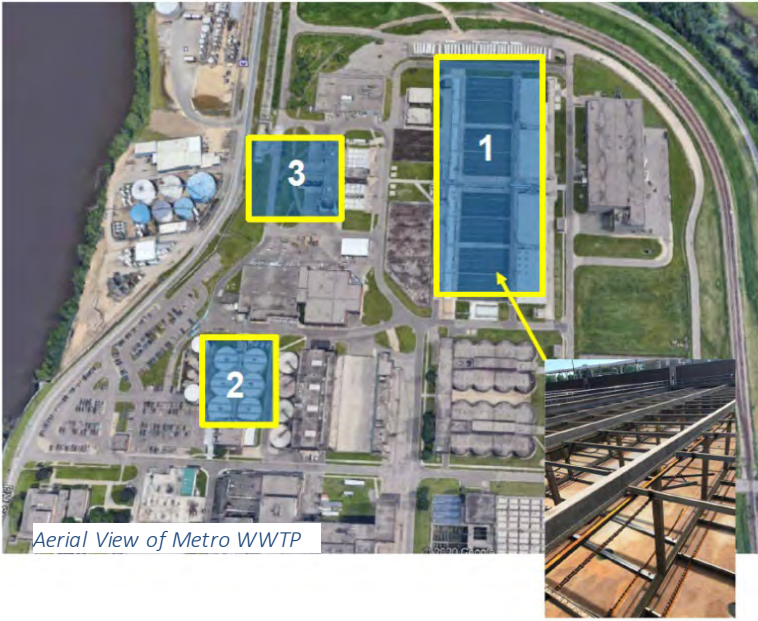
FINANCIAL ANALYSIS

2022 Cash Flow \$7,000,000	Current ACP \$16,732,562	2022 – 2027 Cash Flow \$14,000,000	Total Project Cost \$16,732,562
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Program Family: 8059
Project # 805990

Metro WWTP Site Preparation and Improvements

Project Location:
Council District # 13
City of Saint Paul
Metro WWTP



Aerial View of Metro WWTP

Primary Settling Tank Collector System

PROJECT TYPE:	Plant Improvements
OBJECTIVES:	Preservation
CUSTOMER LEVEL OF SERVICE:	Preserve Assets
SCOPE:	The project rehabilitates roads; rehabilitates concrete in Primary Settling tanks (#1 in photo above), Gravity Thickening tanks (2) and parts of the influent channel (3); installs a waterline; rehabilitates the Solids storage pad and installs a closed loop colling system for instrument air compressors.
PROJECT NEED:	There is a need to replace or rehabilitate assets throughout the Metro Plant to extend service life.

PROJECT SCHEDULE



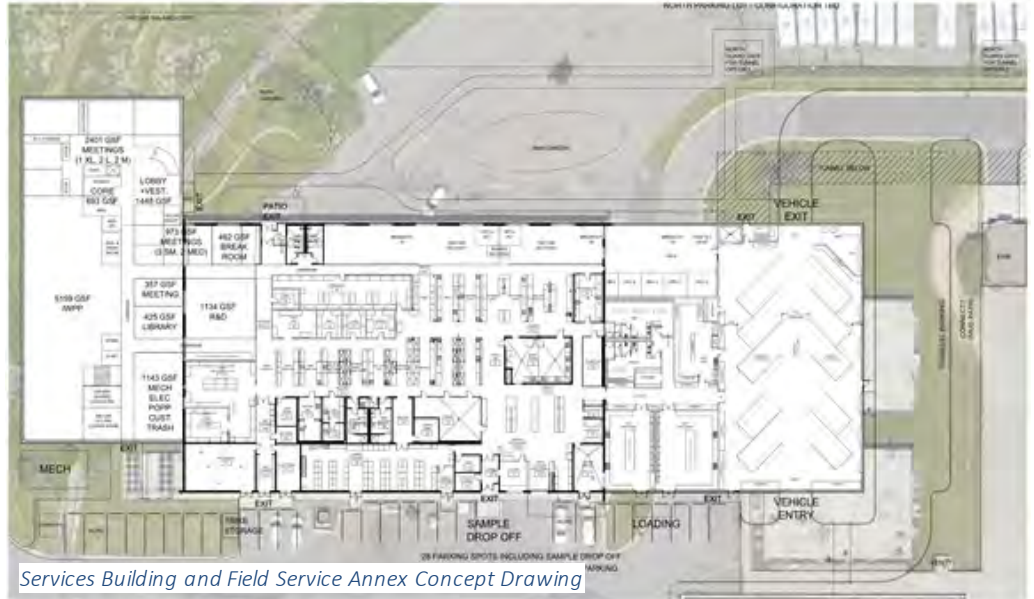
FINANCIAL ANALYSIS

2022 Cash Flow \$4,000,000	Current ACP \$13,900,000	2022 – 2027 Cash Flow \$8,000,000	Total Project Cost \$13,900,000
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Program Family: 8059
Project # 805998

Metro WWTP Services Buildings

Project Location:
Council District # 13
City of Saint Paul
Metro WWTP



Services Building and Field Service Annex Concept Drawing

SITE PLAN DIAGRAM WITH EXISTING AERIAL
WORKSHOP SERIES 3C OFFICES, LAB & ADDITIONS

03/16/2021
1/16" = 1'-0"

PROJECT TYPE:	Plant Improvements
OBJECTIVES:	Improvement
CUSTOMER LEVEL OF SERVICE:	Engage Customers, Lead by Example and comply with permits
SCOPE:	The Services Building and Field Service Annex will be constructed adjacent to the Laboratory Building and will office the Construction Services, Water Resources, Industrial Waste Pollution Prevention and Process Engineering R&D.
PROJECT NEED:	Other departmental offices or laboratories currently reside within deteriorating buildings at the Metro Plant or in rental facilities away from Council property. There is a need to consolidate similar functions in common spaces to increase efficiency.

PROJECT SCHEDULE



Planning
2006-2009



Design
2020-2022



Construction
2022-2024

FINANCIAL ANALYSIS

2022 Cash Flow \$12,000,000	Current ACP \$34,899,930	2022 – 2027 Cash Flow \$30,000,000	Total Project Cost \$34,899,930
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