Program 8059
Metro Rehabilitation and Facilities Improvements

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 Council District: 13

Active Projects in Program:

<table>
<thead>
<tr>
<th>Project Number</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>805932</td>
<td>Metro WWTP HVAC Improvements Phase 2</td>
</tr>
<tr>
<td>805947</td>
<td>Metro WWTP Solids Renewal and Improvements</td>
</tr>
<tr>
<td>805963</td>
<td>Metro WWTP Water Systems Renewal and Improvements</td>
</tr>
<tr>
<td>805981</td>
<td>Metro WWTP Secondary Sludge Collection and Return Activated Sludge (RAS) Flow Meter Replacement</td>
</tr>
<tr>
<td>805990</td>
<td>Metro WWTP Site Preparation and Improvements</td>
</tr>
<tr>
<td>805998</td>
<td>Metro WWTP Services Building</td>
</tr>
<tr>
<td>8059XX</td>
<td>Metro WWTP Landscaping¹</td>
</tr>
<tr>
<td>8059XX</td>
<td>Metro WWTP Roof Replacements²</td>
</tr>
<tr>
<td>8059XX</td>
<td>Metro WWTP Water Systems Renewal and Improvements Phase 2³</td>
</tr>
</tbody>
</table>

¹ Scope for new landscaping projects is pending development of design criteria.
² Roof replacement projects are implemented in phases based on condition assessment.
³ Scope for water systems renewal and improvements Phase 2 is under development.
MCES 2020 – 2025 Capital Program:

<table>
<thead>
<tr>
<th>Authorized Capital Program (ACP)</th>
<th>Capital Improvement Plan (CIP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$112,064,000</td>
<td>$2,000,000</td>
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</table>

Estimated Program Cash Flow 2020 - 2025:

Note: The ACP is the total amount of all past and present authorizations including Pre-2020 Expenses.
**Metro WWTP HVAC Improvements**

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

**Program Family:** 8059  
**Project #** 805932

**Project Type:** Treatment Plant

**Objectives:**
- Preserve and Improve

**Customer Level of Service:**
- Preserve Assets

**Scope:**
Phase 2 includes the main air handling unit at the Laboratory Building, the air handling system for the Maintenance Warehouse Building lunchroom, and other HVAC equipment that become a priority prior to initiation of construction.

**Project Need:**
HVAC equipment near end-of-service life need to be rehabilitated, repaired, or replaced based on condition assessment and business case evaluation.

**Project Schedule**
- **Planning:** 2006-2009
- **Design:** 2019-2020
- **Construction:** 2020-2022

**Financial Analysis**
- **2020 Cash Flow:** $1,000,000
- **Current ACP:** $3,000,343
- **2020 – 2025 Cash Flow:** $3,000,000
- **Total Project Cost:** $3,000,343
# Metro WWTP Solids Renewal & Improvements

**Program Family:** 8059  
**Project #:** 805947

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

## Project Type:
Treatment Plant

## Objectives:
Preserve and Improve

## Customer Level of Service:
Communicate Information, Be a Good Neighbor 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

<table>
<thead>
<tr>
<th>Planning</th>
<th>Design</th>
<th>Construction</th>
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</thead>
</table>

## Financial Analysis

<table>
<thead>
<tr>
<th>2020 Cash Flow</th>
<th>2020 – 2025 Cash Flow</th>
<th>Total Project Cost</th>
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<tr>
<td>$2,000,000</td>
<td>$25,000,000</td>
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**Current ACP:** $19,355,000
Metro WWTP Water Systems Renewal and Improvements

**PROJECT TYPE:** Treatment Plant

**OBJECTIVES:** Preserve

**CUSTOMER LEVEL OF SERVICE:** Lead by Example and Preserve Assets

**SCOPE:** The project rehabilitates, repurposes and expands Metro water systems to meet future service needs, and it constructs a new reclaimed water system to replace the water source for processes which are served by the Plant service 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:** 2021-2022

**FINANCIAL ANALYSIS**

<table>
<thead>
<tr>
<th>2020 Cash Flow</th>
<th>2020 Cash Flow</th>
<th>2019 Total Project Cost</th>
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<tbody>
<tr>
<td>$500,000</td>
<td>Current ACP: $9,928,845</td>
<td>$9,500,000</td>
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</table>
Metro WWTP Secondary Sludge Collection and RAS Flow Meter Replacement

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

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**PROJECT TYPE:**  
Treatment Plant

**OBJECTIVES:**  
Preserve

**CUSTOMER LEVEL OF SERVICE:**  
Preserve Assets

**SCOPE:**  
The project provides funding for the Maintenance Business Unit to purchase and install chains and flights in final settling tanks, and to install flow sensors downstream of each return active sludge pump.

**PROJECT NEED:**  
Inspections by Maintenance staff indicate the chains & flights and flow meters are at the end of service life. Flow meter replacement is prudent to ensure that accurate flow is measured to control the RAS secondary system.

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**PROJECT SCHEDULE**

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<thead>
<tr>
<th>Planning</th>
<th>Design</th>
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<tbody>
<tr>
<td>2016</td>
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**FINANCIAL ANALYSIS**

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<tbody>
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<td>$6,000,000</td>
<td>$7,831,486</td>
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</table>
Metro WWTP Site Preparation and Improvements

PROJECT TYPE: Treatment Plant

OBJECTIVES: Preserve

CUSTOMER LEVEL OF SERVICE: Preserve Assets

SCOPE:
The project will rehabilitate roads and open the North and East Parking Lots, install multiple controlled entrances (in preparation of the new Services Building) and provide repairs for several concrete process tanks. This work is necessary in anticipation of the new Services Building and Analytical Lab expansion.

PROJECT NEED:
There is a need to replace a waterline and rehabilitate parking lots and roads prior to construction of the Services Building.

PROJECT SCHEDULE

<table>
<thead>
<tr>
<th></th>
<th>Planning</th>
<th>Design</th>
<th>Construction</th>
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<tbody>
<tr>
<td>2019</td>
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<tr>
<td>2019-2020</td>
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<tr>
<td>2020-2022</td>
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FINANCIAL ANALYSIS

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<tbody>
<tr>
<td>2020 Cash Flow</td>
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<td>$9,653,878</td>
<td>$9,500,000</td>
<td>$9,653,878</td>
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Metro WWTP Services Building

**PROJECT TYPE:** Treatment Plant

**OBJECTIVES:** Improve

**CUSTOMER LEVEL OF SERVICE:** Engage Customers and Lead by Example

**SCOPE:** The Services Building will utilize the foundation remaining after the demolition of the Filtration and Incineration (F&I) Building #1 and will be a single-story facility designed to be expandable to accommodate additional staff.

**PROJECT NEED:** The F&I No. 1 building has been demolished to the first floor providing an opportunity to construct a new building from the boundaries of the old structure. 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**

**FINANCIAL ANALYSIS**

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<tr>
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<tbody>
<tr>
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