Program 8097 – Blue Lake WWTP Improvements

Description
This program provides funding for planning and implementation of projects to address renewal, capacity, and future permit needs at the Blue Lake Wastewater Treatment Plant (WWTP).

Purpose and justification
Planning work is based on a condition assessment of liquids and solids facilities conducted in 2019 and anticipated future permit requirements. Planning work is documented in the Blue Lake WWTP Improvements Facility Plan (February 10, 2021).

Program location
The active projects within this program are in the following Council district: 4

Active projects in program

<table>
<thead>
<tr>
<th>Project Number</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>8097xx</td>
<td>Blue Lake WWTP Dryer Renewal</td>
</tr>
<tr>
<td>8097xx</td>
<td>Blue Lake WWTP Digester Expansion</td>
</tr>
<tr>
<td>8097xx</td>
<td>Blue Lake WWTP Liquids Process Upgrades</td>
</tr>
<tr>
<td>8097xx</td>
<td>Blue Lake WWTP Dewatering and Drying</td>
</tr>
</tbody>
</table>

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Environmental Services 2024 through 2029 Capital Program

- Authorized Capital Program (ACP): $83,986,667
- Capital Improvement Plan (CIP): $100,000,000

Estimated program cash flow from 2024 through 2029
Note: the ACP is the total amount of all past and present authorizations including pre-2024 expenses.
Project location: Council district #4, City of Shakopee, Blue Lake WWTP

**Project type**
Plants

**Objectives**
Asset Preservation

**Scope**
Replace existing dryer drum.

**Project need**
The existing dryer drum is near the end of its service life and needs to be replaced to maintain solids processing capability at the plant.

**Project schedule:**
- Planning: 2020 through 2022
- Design: 2023
- Construction: 2024 through 2025

**Financial analysis**
- 2024 cash flow: $0
- Current ACP: $0
- 2024 through 2029 cash flow: $1,000,000
- Total project cost: $1,000,000
Blue Lake WWTP Digester Expansion
Program family 8097

Project location: Council district #4, City of Shakopee, Blue Lake WWTP

Project type
Plants

Objectives
System Expansion

Scope
There are currently three digesters and a sludge storage tank for regulating gas production. This project will add a fourth digester to increase capacity.

Project need
The recommended minimum 15-day solids retention time (SRT) cannot be met at the current flows during digester maintenance or at future flows during normal operation.

Project schedule:
- Planning: 2020 through 2022
- Design: 2024 through 2025
- Construction: 2025 through 2026

Financial analysis
- 2024 cash flow: $0
- Current ACP: $0
- 2024 through 2029 cash flow: $50,000,000
- Total project cost: $50,000,000
Blue Lake WWTP – Liquids Process Upgrades
Program family 8097

Project location: Council district #4, City of Shakopee, Blue Lake WWTP

Project type
Plants

Objectives
System Expansion, Quality Improvements

Scope
The project includes aeration basin improvements for improved DO control and air distribution. The secondary clarification process will also be expanded with two new tanks and improved baffling for flow distribution.

Project need
The aeration system is near the end of its service life and the plant is having difficulty maintaining DO while reducing energy in the system. The secondary clarifiers have reached design capacity, and more tanks are needed to accommodate growth in the region.

Project schedule:

Planning: 2020 through 2022
Design: 2024 through 2025
Construction: 2025 through 2027

Financial analysis
2024 cash flow: $0
Current ACP: $0
2024 through 2029 cash flow: $50,000,000
Total project cost: $50,000,000
Project type
Plants

Objectives
System Expansion

Scope
A second building with a second dryer train and dewatering equipment will be added to provide capacity for regional growth.

Project need
A second dryer will be needed in 2032 and will meet capacity needs through the year 2050.

Project schedule:

| Planning: 2020 through 2022 | Design: 2023 through 2026 | Construction: 2026 through 2030 |

Financial analysis
- 2024 cash flow: $0
- Current ACP: $36,000,000
- 2024 through 2029 cash flow: $36,000,000
- Total project cost: $36,000,000