

Program 8088 – Saint Paul Interceptor System Rehabilitation



Left: Cured-in-Place (CIP) pipe liner being installed through a maintenance hole. Right: Large-diameter interceptor sewer pipe segments ready for installation.

Description

The interceptors located in St. Paul, Maplewood, Roseville, New Brighton, Shoreview, and Vadnais Heights need rehabilitation and/or replacement due to age and deterioration. The project will rehabilitate existing interceptor facilities to ensure reliable service.

Purpose and justification

The Saint Paul Interceptor System Rehabilitation Program was developed to address areas of severe corrosion in the interceptor sewer system in Saint Paul and surrounding suburbs. Internal corrosion of concrete sewer pipes and structures creates structural weakness that creates a risk for collapse and potential loss of service or wastewater spills. Projects have been identified to rehabilitate the existing sewers using trenchless means, such as cured-in-place pipe or slip lining, where possible.

Program location

The active projects within this program are in the following Council districts: 10, 13, and 14

Active projects in program

Project Number	Project Title
808800	Saint Paul Interceptor System (SPIS) Rehabilitation (Parent Project)
808861	Grass Lake Interceptor Rehabilitation
808881	R02 Site Needs Evaluation
808882	1-MS-100 Rehabilitation Feasibility Study
808883	Riverview Siphon Cleaning
808884	Saint Paul Interceptor System Study

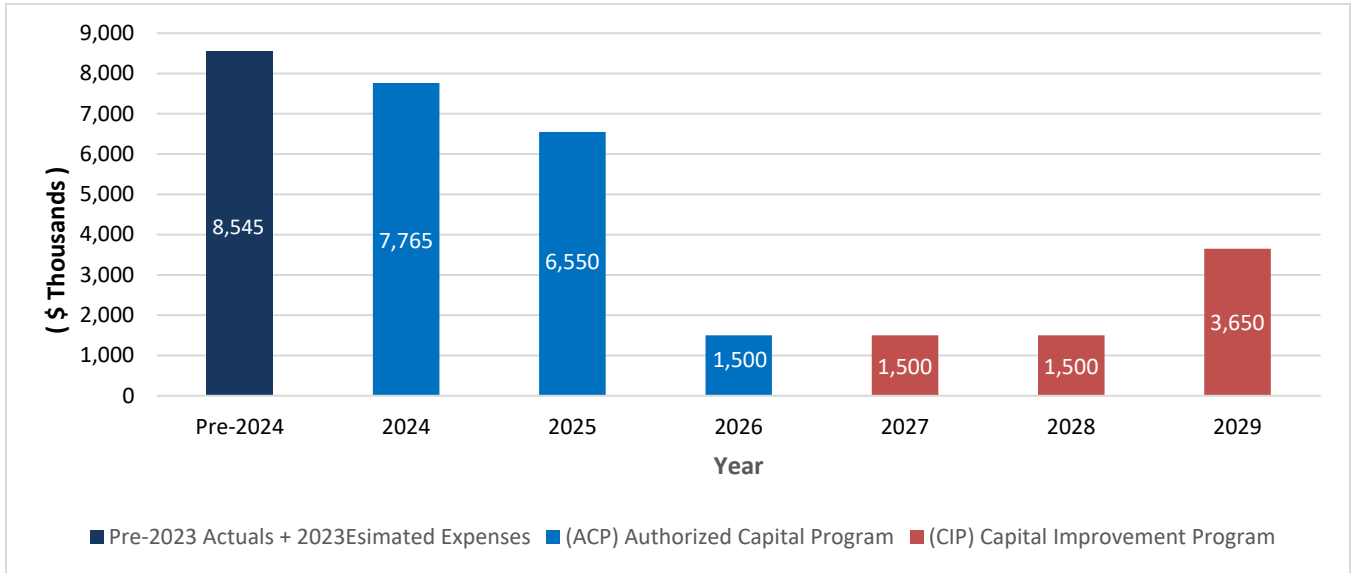
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Environmental Services 2024 through 2029 Capital Program

- Authorized Capital Program (ACP): \$24,359,665
- Capital Improvement Plan (CIP): \$6,650,000

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.



Grass Lake Interceptor Rehabilitation
Program family 8088

Project # 808861

Project location: Council district #10, City of Shoreview



Map of Project #808861 location along the east side of Grass Lake in Shoreview

Project type

Interceptor Improvements

Objectives

Asset Preservation

Scope

Realign MH1 to MH15 to improve access and reduce inflow and infiltration (I/I) along Grass Lake.

Project need

To relocate the interceptor to provide year-round access and prevent flooded structures, prevent I/I as lake levels continue to rise.



Planning: 2019



Design: 2020 through 2023



Construction: 2024 through 2025

Financial analysis

2024 cash flow:	\$5,000,000
Current ACP:	\$11,023,000
2024 through 2029 cash flow:	\$10,000,000
Total project cost:	\$11,023,000

Project location: Council District #13, City of Saint Paul, Interceptor 1-MS-100 Third and Commercial LWR



Map of Project #808881 on the east side of Bruce Vento Nature Park in Saint Paul

Project type

Interceptor Improvements

Objectives

Asset Preservation

Scope

The site needs evaluation to examine current and future needs at the Third and Commercial (R02) site to ensure that critical assets can be operated and maintained for the region into the future.

Project need

ES maintains critical infrastructure at its Third and Commercial site, including the largest sewer tunnel in the Twin Cities metro area. ES needs to reserve the space needed to maintain operations and to allow access for future rehabilitation of Interceptor Sewer 1-MS-100, an emergency relief structure, and a liquid waste receiving facility.



Planning: 2024 through 2029



Design: N/A



Construction: N/A

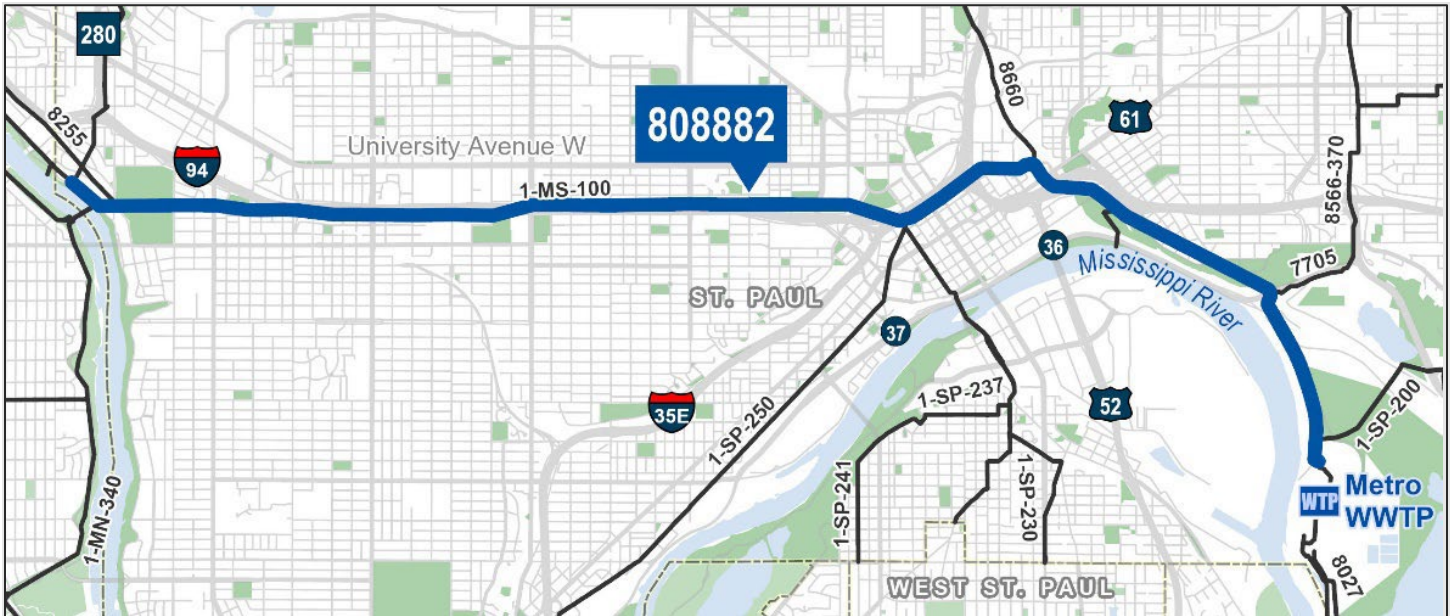
Financial analysis

2024 cash flow:	\$415,000
Current ACP:	\$2,061,000
2024 through 2029 cash flow:	\$415,000
Total project cost:	\$2,061,000

1-MS-100 Rehabilitation Feasibility Study
Program family 8088

Project # 808882

Project location: Council Districts #13 and 14, City of Saint Paul



Map of Project #80882 location from south of Highway 280 and I-94 to the Metro Plant in Saint Paul

Project type
 Study

Objectives
 Asset Preservation

Scope

A feasibility study is being conducted to evaluate condition assessment data for the 1-MS-100 interceptor, to understand alternative technologies for rehabilitation of this unique deep tunnel interceptor, to refine budgetary costs estimates and timelines for future inspections and eventual rehabilitation projects.

Project need

Past inspections have indicated corrosion and other structural concerns with this large and deep sewer tunnel constructed in the 1930s. Due to the size and difficulty of this work, and expected costs of construction, it will require extensive planning and multiple stages of work in advance of future construction.



Planning: 2024 through 2027



Design: 2028 through 2031

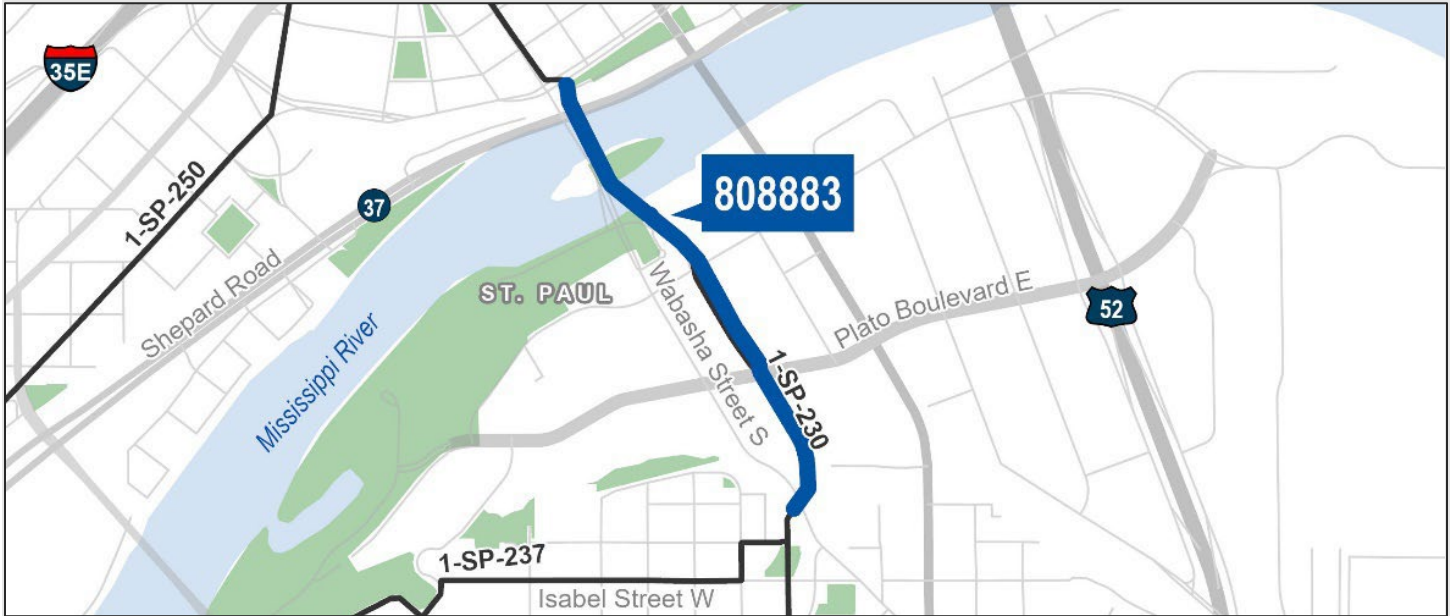


Construction: 2032 through 2036

Financial analysis

2024 cash flow:	\$50,000
Current ACP:	\$585,000
2024 through 2029 cash flow:	\$100,000
Total project cost:	\$585,000

Project location: Council district #13, City of Saint Paul



Map of Project #808883 location from north of Shepard Road to south of Plant Boulevard East in Saint Paul

Project type

Interceptor Improvements

Objectives

Asset Preservation

Scope

Flow in the siphons (up to four parallel pipes) will be isolated one pipe at a time for cleaning. Flow performance will be tested after the cleaning to re-establish the siphon system capacity and the need for additional capacity.

Project need

Growth in the West Side Flats area of Saint Paul, combined with evidence of past wastewater spills at the siphon headhouse as well as concerns raised by the City of Saint Paul about the ability of the siphon to serve rapid redevelopment in the area, have driven an analysis to better understand siphon capacity and improvement needs.



Planning: 2020 through 2021



Design: 2022 through 2023



Construction: 2023 through 2024

Financial analysis

2024 cash flow:	\$1,500,000
Current ACP:	\$3,763,000
2024 through 2029 cash flow:	\$1,500,000
Total project cost:	\$3,763,000

Project location: Council district #13 and 14, City of Saint Paul



Photo of a LaserFlow flow monitor inside ES interceptor pipe

Project type
Study

Objectives
Asset Preservation

Scope

Provide a long-term study (approximately 5 years) of the regional wastewater system in the City of Saint Paul. The consultant will install and maintain temporary flow meters across the city for two years and use that data to build a hydraulic model of the ES system. Other tasks include identification of areas with high inflow and infiltration (I/I), potential for sewer overflow, and limited hydraulic capacity. Project will also replace the M700 series planning meters which no longer function.

Project need

To assist in developing a quantitative understanding of flow conditions, define existing and future system limitation, and outline improvements that may be necessary for long-term reliability of the regional system.



Planning: 2023 through 2027



Design: N/A



Construction: N/A

Financial analysis

2024 cash flow:	\$500,000
Current ACP:	\$2,301,000
2024 through 2029 cash flow:	\$2,500,000
Total project cost:	\$3,301,000