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 Saint 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)
808811	Riverview Siphon 1-SP-230 Improvements
808812	1-SP-216 Rehabilitation
808861	Grass Lake Interceptor Rehabilitation
808863	Snail Lake Rehabilitation Project
808864	West Side Sandstone Tunnel Rehabilitation
808882	1-MS-100 Rehabilitation Feasibility Study
808884	Saint Paul Interceptor System Study

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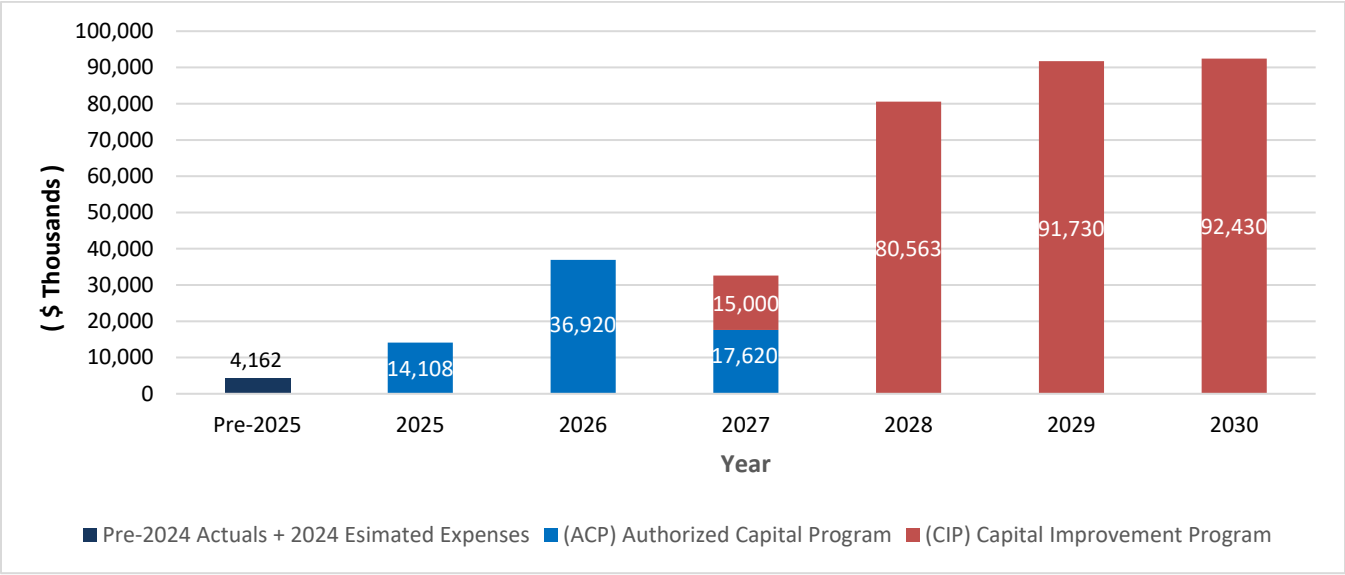
Environmental Services 2025 through 2030 Capital Program

- Authorized Capital Program (ACP): $72,810,570
- Capital Improvement Plan (CIP): $279,723,000

Estimated program cash flow from 2025 through 2030

Note: the ACP is the total amount of all past and present authorizations including pre-2025 expenses.



Riverview Siphon 1-SP-230 Improvements

Program family 8088 **Project #808811**

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

Map of Project #808811 along Wabasha Street in Saint Paul

Project type
Interceptor Improvements

Objectives
Asset Preservation

Scope
Improvements to the headhouse and tailhouse as well as the construction of a fourth pipe across the river.

Project need
Flow monitoring and a system evaluation have determined that the three pipes under the Mississippi River are limited in capacity during peak flows. There is also limited ability to inspect the three pipes, which places the facility under greater risk.

Planning: 2025 through 2026	Design: 2026 through 2028	Construction: 2028 through 2030

Financial analysis

2025 cash flow:	$100,000
Current ACP:	$800,000
2025 through 2030 cash flow:	$17,900,000
Total project cost:	$33,900,000

1-SP-216 Rehabilitation

Program family 8088 **Project #808812**

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

Map of project #808812 just east of Phalen Regional Park in Saint Paul. The project runs along Kennard Street from Larpenteur Avenue East to Hoyt Avenue East. The other section runs east to west along Hoyt Avenue East from White Bear Avenue North to Kennard Street

Project type
Interceptor Rehabilitation

Objectives
Asset Preservation

Scope
The project will line from M010 on Larpenteur Avenue East to MH-3 on Hoyt Avenue East. While there are three areas of condition 4 pipe, the most economical way to line this interceptor is with the least amount of set-up. At the intersection of Hoyt Avenue East, 1-SP-214 intersects with 1-SP-216. Two segments of this pipe are 72-inch reinforced concrete pipe with a 36-inch reinforced concrete pipe in between. These segments will either be replaced or slip-lined depending on design constraints.

Project need
1-SP-216 is a 42-inch reinforced concrete pipe that is showing signs of deterioration such as ribbing and cracks in the pipe. There are three areas of deteriorated pipe totaling approximately 750 feet of pipe. Two 72-inch sections of pipe along 1-SP-214 are oversized, increasing the risk for sedimentation build up.

Planning: 2025	Design: 2025 through 2026	Construction: 2026 through 2027

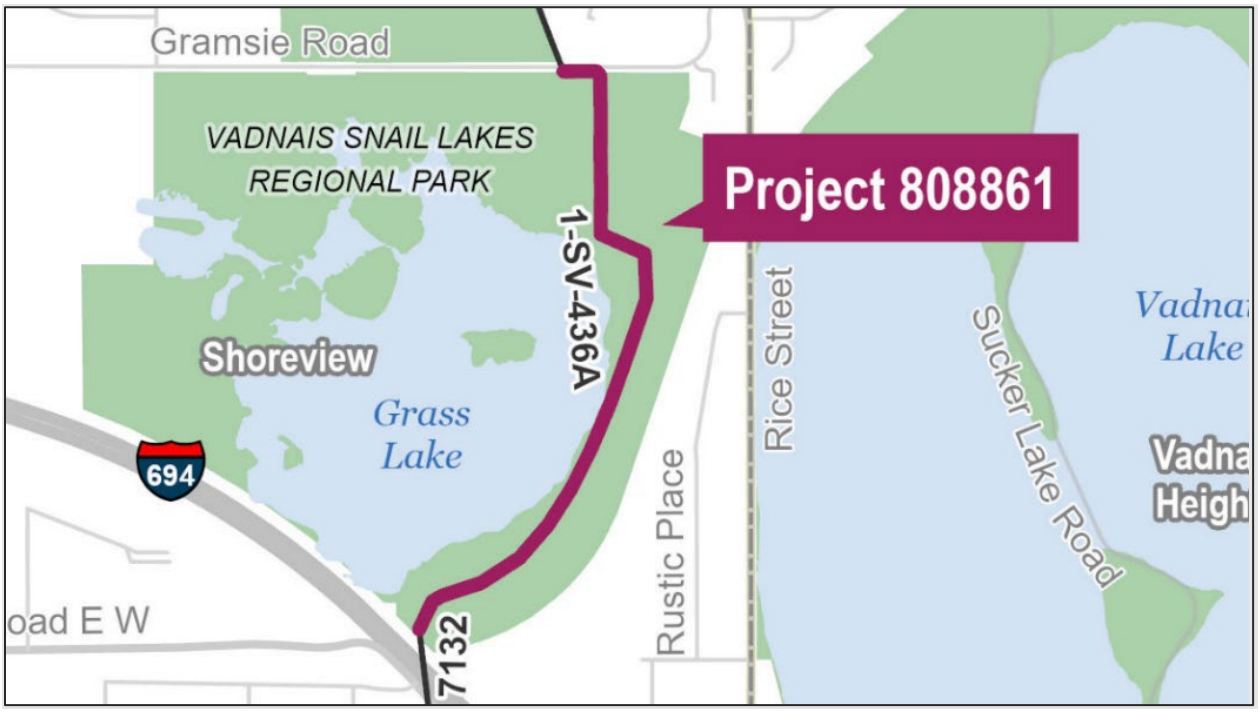
Financial analysis

2025 cash flow:	$50,000
Current ACP:	$1,133,000
2025 through 2030 cash flow:	$9,500,000
Total project cost:	$9,500,000

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 MH-1 to MH-15 to improve access and reduce inflow and infiltration (I/I) along Grass Lake.

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

Planning: 2019	Design: 2020 through 2025	Construction: 2026 through 2028

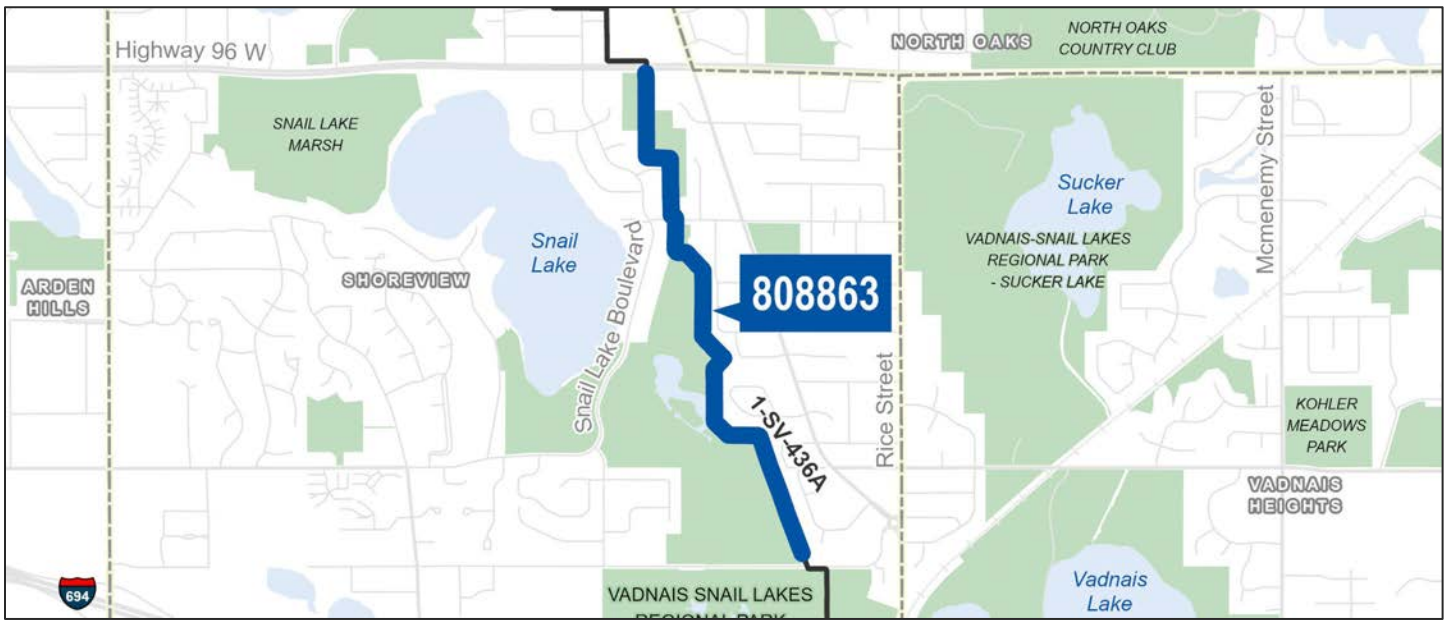
Financial analysis

2025 cash flow:	$500,000
Current ACP:	$23,411,000
2025 through 2030 cash flow:	$21,000,000
Total project cost:	$22,534,000

Snail Lake Rehabilitation Project

Program family 8088 **Project #808863**

Project location: Council district #10, City of Shoreview, between Highway 96W and Gramsie Road



Map of project #808863 location near Snail Lake in Shoreview.

Project type
Interceptor Improvements

Objectives
Asset Preservation, Quality Improvements

Scope
Rehabilitation of 26 maintenance hole structures on Interceptor 1-SV-436A.

Project need
Condition assessments identified damaged maintenance hole structures that required repairs to reduce system inflow and infiltration (I/I).

Planning: 2024	Design: 2024 through 2025	Construction: 2025

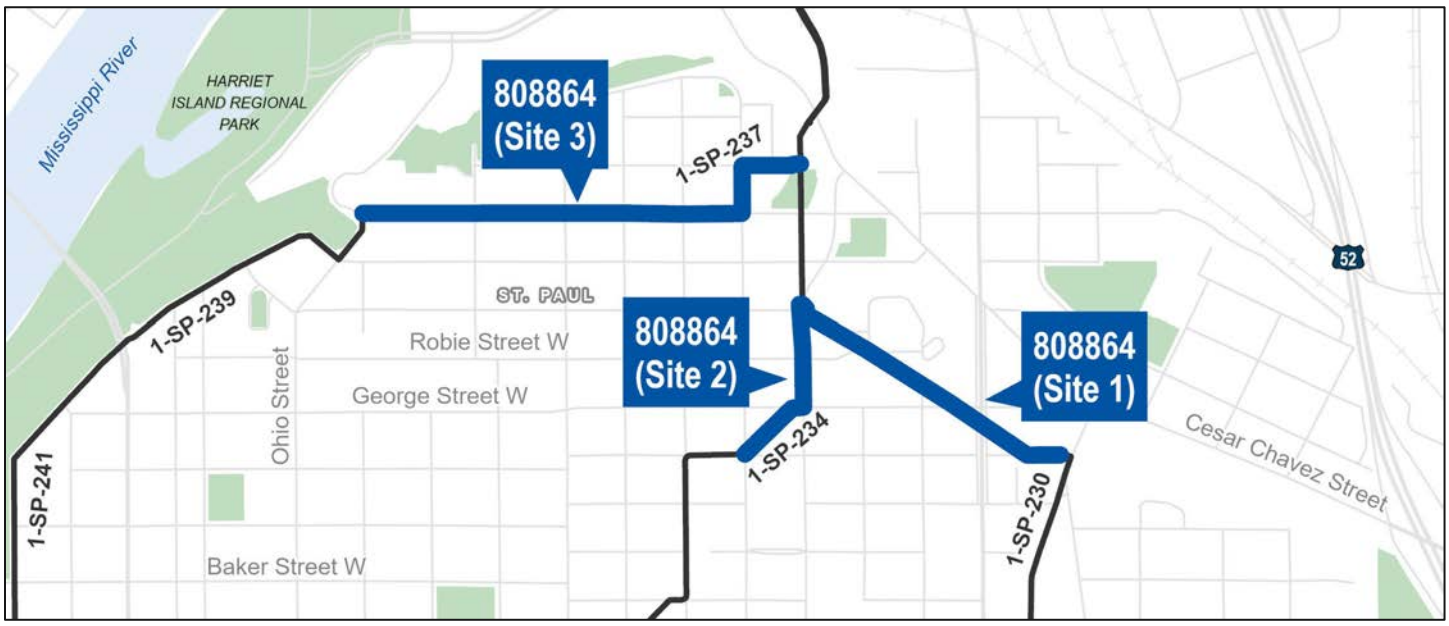
Financial analysis

2025 cash flow:	$1,200,000
Current ACP:	$2,030,000
2025 through 2030 cash flow: Total project cost:	$1,550,000 $1,697,000

West Side Sandstone Tunnel Rehabilitation

Program family 8088 **Project #808864**

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



Map of project #808864 locations near City of Saint Paul's West Side.

Project type
Interceptor Improvements

Objectives
Asset Preservation

Scope
This project consists of rehabilitating interceptor sandstone tunnels and maintenance structures.

Project need
Condition assessments completed by confined space entries in these tunnels revealed varied erosion in shoulders and crowns of unlined sandstone tunnels, fractures and missing bricks in brick lined portions, and failed connections.

Planning: 2024 through 2025	Design: 2025	Construction: 2026

Financial analysis

2025 cash flow:	$150,000
Current ACP:	$3,300,000
2025 through 2030 cash flow:	$0,000,000
Total project cost:	$3,350,000

1-MS-100 Rehabilitation Feasibility Study

Program family 8088 **Project #808882**

Project location: Council districts #13 and 14; City of Saint Paul

1-MN-100 project extent

Project type
Interceptor Rehabilitation

Objectives
Asset Preservation

Scope
Evaluation of the 1-MS-100 interceptor and rehabilitation of identified interceptor sections. System evaluation includes a review of temporary conveyance options and resiliency improvements.

Project need
1-MS-100 is a deep tunnel interceptor sewer collecting flows from parts of Saint Paul, Minneapolis, and over 40 communities upstream of Minneapolis. Previous inspections and evaluations have identified segments of 1-MS-100 that are experiencing concrete corrosion, large-scale infiltration points, possible exposed reinforcing steel, and void space above the concrete pipe. The condition of 1-MS-100 combined with its criticality to daily operations make rehabilitation of 1-MS-100 a high priority.

Planning: 2025	Design: N/A	Construction: N/A

Financial analysis

2025 cash flow:	$500,000
Current ACP:	$5,111,000
2025 through 2030 cash flow: Total project cost:	$35,500,000 $206,000,000

Saint Paul Interceptor System Study

Program family 8088 **Project # 808884**

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 are reaching the end of their useful life.

Project need
To assist in developing a quantitative understanding of flow conditions, define existing and future system limitations, 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

2025 cash flow:	$500,000
Current ACP:	$1,980,000
2025 through 2030 cash flow:	$2,000,000
Total project cost:	$3,300,000