

Program 8086 – North Area Interceptor (NAI) Rehabilitation



Lining work being performed on the 4-NS-525 Interceptor in Coon Rapids

Description

The interceptor systems in Blaine, Brooklyn Park, Champlin, Circle Pines, Coon Rapids, Forest Lake, Fridley, Hugo, Lexington, Lino Lakes, Maple Grove, Mounds View, Spring Lake Park, and other north-area communities need rehabilitation and/or replacement. The project will rehabilitate existing interceptor facilities, including gravity sewers, forcemains, lift stations, and meter stations.

Purpose and justification

Inspections of the interceptors that serve the North Metro Area have revealed corrosion damage. The corrosion is extensive and has resulted in significant damage to the interior concrete surfaces of the interceptors and maintenance structures.

Program location

The active projects within this program are in the following Council districts: 1, 2, 8, 9, 10, 11, 12, and 13.

Active projects in program

Project Number	Project Title
808600	North Area Interceptor (NAI) Rehabilitation (Parent Project)
808602	CAB Interceptor Improvements
808603	Forest Lake Interceptor 7029 Rehabilitation
808604	Interceptor 7015-C Rehabilitation
808607	Fridley Liquid Waste Receiving Improvements
808609	4-NS-525 Rehabilitation Phase 2

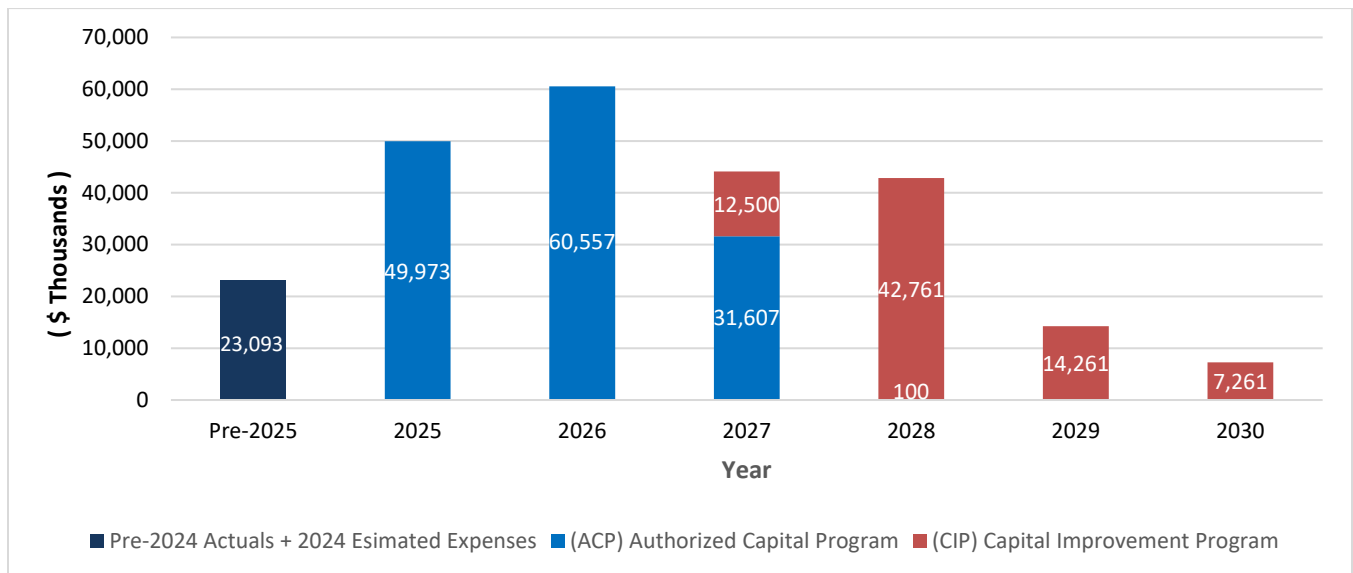
Project Number	Project Title
808611	1-RV-430 Rehabilitation
808612	4-NS-521 Rehabilitation
808613	Northeast Interceptor Hydraulic Modeling
808614	8151 and 7122 Siphon Rehabilitation
808616	Interceptor 1-CL-455 Rehabilitation
808617	9004-1 & 900415 Rehabilitation
808619	Rogers Plant to Plant Sewer
808622	Maple Grove Interceptor Replacement
808624	New Rogers Lift Station
808687	Lake Elmo West Connection
808688	L77 Lift Station Improvements
808689	Blaine Relief Interceptor

Environmental Services 2025 through 2030 Capital Program

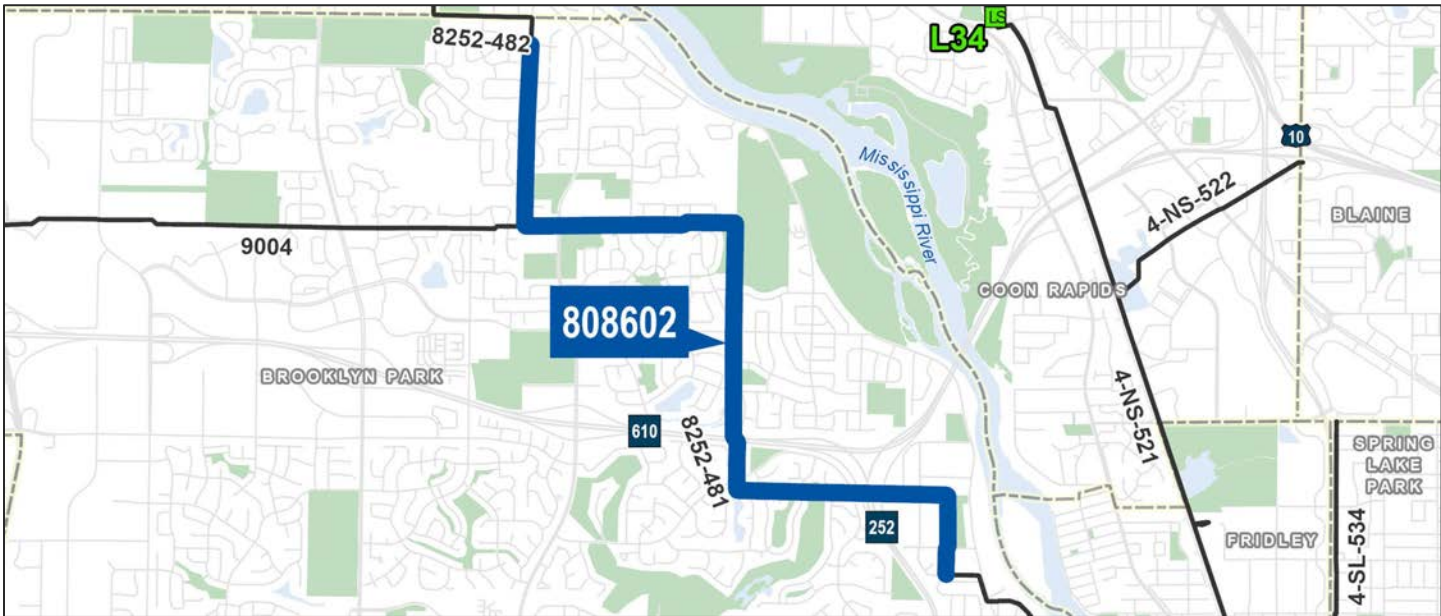
- Authorized Capital Program (ACP): \$165,330,691
- Capital Improvement Plan (CIP): \$ 76,783,000

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.



Project location: Council district #2, City of Brooklyn Park



Map of project #808602 in Brooklyn Park between 108th Avenue North and 88th Avenue North

Project type
Interceptor Improvements

Objectives
Quality Improvements and System Expansion

Scope
Rehabilitate or replace 4.5 miles of severely corroded 54-inch and 66-inch reinforced concrete pipe (RCP).

Project need
Condition assessments of the CAB Interceptor have identified areas of deteriorated pipe in need of rehabilitation. Additionally, a system evaluation has identified areas of the CAB Interceptor in need of expansion to provide additional capacity to support regional growth.



Planning: 2025 through 2026



Design: 2026 through 2027



Construction: 2027 through 2029

Financial analysis

2025 cash flow:	\$200,000
Current ACP:	\$897,000
2025 through 2030 cash flow:	\$20,000,000
Total project cost:	\$23,584,000

Project location: Council district #11, City of Forest Lake



Map of Project #808603 north of 180th Street North in Forest Lake

Project type
Interceptor Improvements

Objectives
Asset Preservation

Scope
Metropolitan Council Environmental Services (ES) owns and operates the Forest Lake Interceptor from Lift Station L01 to L78 in White Bear Lake. This project scope will include rehabilitation of about 11,000 feet of 36-inch reinforced concrete pipe (RCP) sewer interceptor from 202nd Street to 180th Street and the cleaning-only of about 7,000 ft of 36-inch sewer interceptor north of 202nd Street to Lift Station L01. The project scope also includes the rehabilitation of twenty maintenance holes and the replacement of six maintenance holes.

This project will include a dual barrel temporary conveyance system with temporary easements required for construction staging and access.

Project need
Interceptor 7029 was constructed in 1970 to convey flow from the City of Forest Lake. A condition assessment was completed in 2018 of the 36-inch RCP. The worst condition was between MH-99 and L02, where a 1,000-foot segment was identified as condition 4.5, and the remaining 7,000 feet as condition 4.

Project schedule:



Planning: 2023



Design: 2023 through 2025



Construction: 2026 through 2028

Financial analysis	
2025 cash flow:	\$800,000
Current ACP:	\$2,705,000
2025 through 2030 cash flow: Total	\$18,700,000
project cost:	\$18,938,000

Project location: Council district #2, City of Brooklyn Park, Interceptor 7015-C



Map of Project #808604 east of Bass Creek Park in Brooklyn Park

Project type
 Interceptor Improvements

Objectives
 Asset Preservation

Scope
 Site 3 of the North Area Improvements. This project includes rehabilitation and/or replacement of approximately 10 feet of interceptor that was not lined during the 2007 rehabilitation project and replacement of two structures. An extensive temporary conveyance system will be needed to repair this section.

Project need
 Interceptor 7015-C in Brooklyn Park is a 36-inch reinforced concrete pipe (RCP) constructed in 1970 and lined in 2007. A five-to-ten-foot section of pipe was found unlined on the downstream end of Section 124009 near maintenance hole (MH) 45. Prior to lining, the condition of the pipe was 4.5.

Project schedule:



Planning: 2023



Design: 2023 through 2024



Construction: 2024 through 2025

Financial analysis

2025 cash flow:	\$200,000
Current ACP:	\$717,700
2025 through 2030 cash flow:	\$2,100,000
Total project cost:	\$2,231,000

Project location: Council district #2, City of Fridley, 8296 Hickory Street NE



Fridley Liquid Waste Receiving Facility

Project type
Interceptor Improvements

Objectives
Asset Preservation, Quality Improvements, and System Expansion

Scope
The loadout bay discharge pipe elevation needs to be lowered to allow customers to hook up more efficiently, provide larger rock traps, and allow replacement or recalibration of existing flow meters. Access improvements are necessary to allow large tanker trucks into the bay. The maintenance structure that is used to dump during outages needs to be upgraded to include a grit chamber.

Project need
There are several deficiencies and issues with the receiving, process, and treatment at the Fridley Liquid Waste Receiving Facility. Several upgrades are necessary for this to be successfully used as a regional liquid waste receiving and maintenance facility.

Project schedule:



Planning: 2022 through 2023



Design: 2023 through 2024



Construction: 2024 through 2025

Financial analysis	
2025 cash flow:	\$75,000
Current ACP:	\$1,500,000
2025 through 2030 cash flow:	\$9,775,000
Total project cost:	\$9,970,000

4-NS-525 Rehabilitation Phase 2
Program family 8086

Project #808609

Project location: Council district #9, City of Coon Rapids



Map of Project #808609 in City of Coon Rapids.

Project type
Interceptor Improvements

Objectives
Asset Preservation

Scope
The scope of work on this project will include rehabilitation of 7,800 linear feet of 48-inch reinforced concrete pipe (RCP) and 28 structures.

Project need
Condition assessments revealed poor condition pipe and maintenance structures.



Planning: 2023 through 2024



Design: 2025



Construction: 2026 through 2027

Financial analysis	
2025 cash flow:	\$1,000,000
Current ACP:	\$2,000,000
2025 through 2030 cash flow:	\$1,050,000
Total project cost:	\$1,356,000

Project location: Council district #10, City of Roseville, Dale Street North and Highway 36



Map of project #608611 location near Highway 36 in Roseville.

Project type
Interceptor Improvements

Objectives
Asset Preservation

Scope
1-RV-430 in Roseville will be rehabilitated using cured-in-place pipe (CIPP) lining. Structures along the corridor are also planned to be rehabilitated as needed.

Project need
The section of 1-RV-430 that is planned to be rehabilitated has been identified to be condition-4 pipe during CCTV inspections. Because of this it is critical that the pipe is rehabilitated to avoid potential failure.



Planning: 2024 through 2025



Design: 2025 through 2026



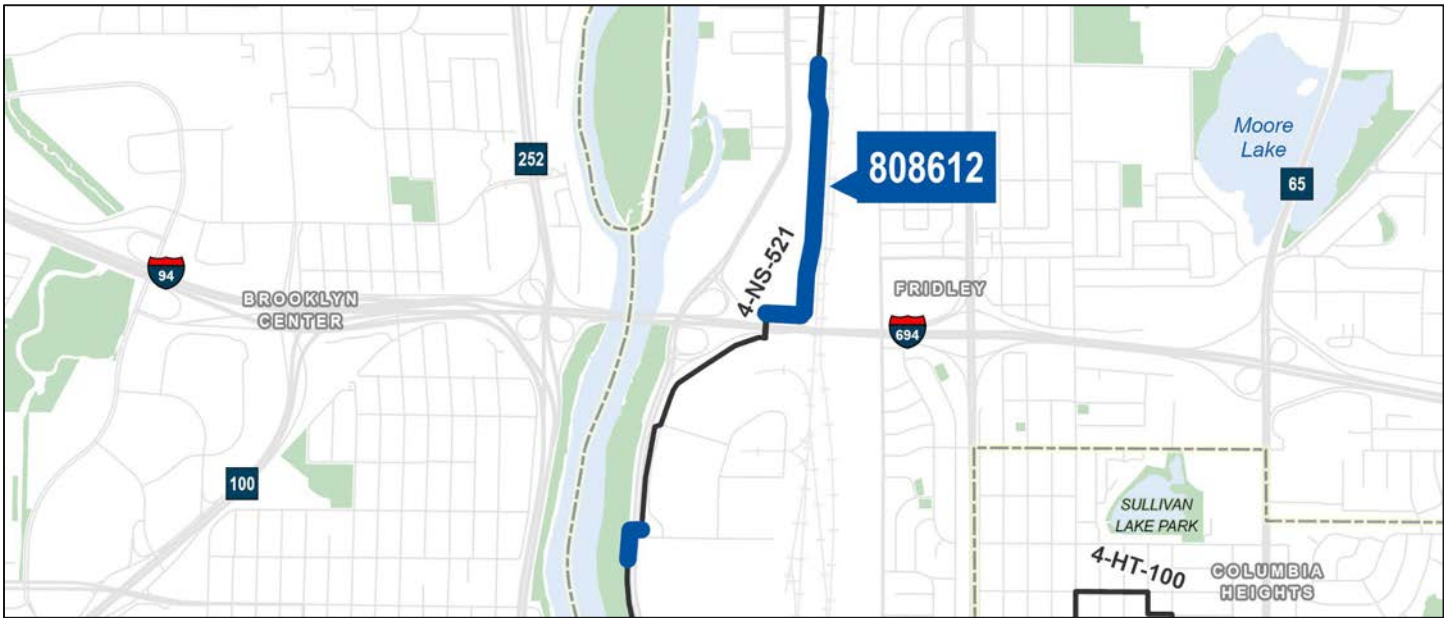
Construction: 2026 through 2027

Financial analysis	
2025 cash flow:	\$200,000
Current ACP:	\$1,160,500
2025 through 2030 cash flow:	\$10,900,000
Total project cost:	\$11,038,000

4-NS-521 Rehabilitation
Program family 8086

Project #808612

Project location: Council district #2, City of Fridley



Map of project #808612 location near Interstate 694 in Fridley.

Project type
Interceptor Improvements

Objectives
Asset Preservation

Scope
Two sections of 4-NS-521 in Fridley will be rehabilitated using cured-in-place pipe (CIPP) lining. Structures along the corridor are also planned to be rehabilitated as needed.

Project need
The two sections of 4-NS-521 that are planned to be rehabilitated have been identified as condition-4 pipe during CCTV inspections. Because of this it is critical that the pipe is rehabilitated to avoid potential failure.



Planning: 2023 through 2024



Design: 2026 through 2027



Construction: 2024 through 2025

Financial analysis

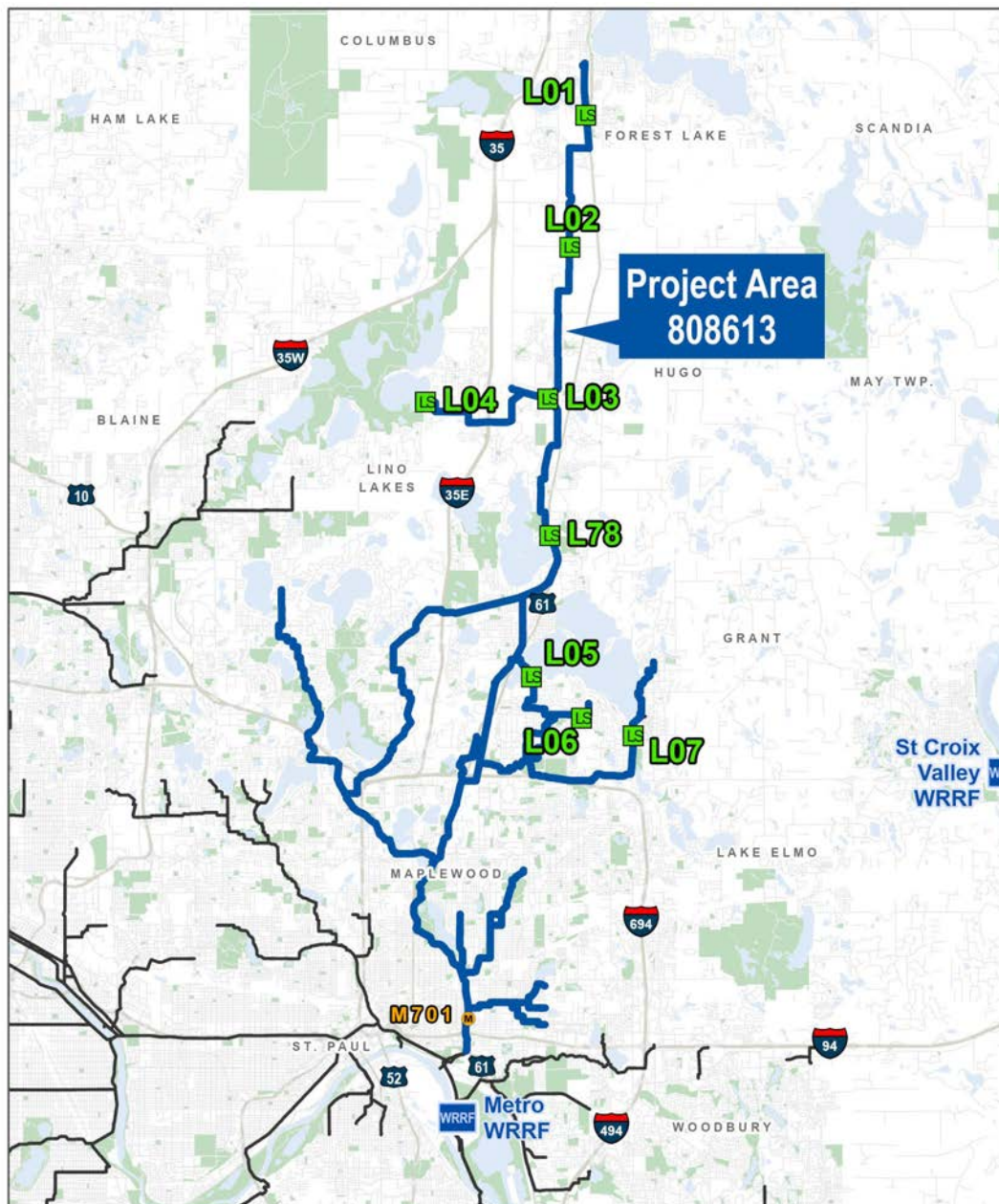
2025 cash flow:	\$500,000
Current ACP:	\$4,374,000
2025 through 2030 cash flow:	\$34,000,000
Total project cost:	\$34,471,000

Northeast Interceptor Hydraulic Modeling

Program family 8086

Project #808613

Project location: Council district #10, 11, and 13, Cities in the vicinity of the Northeast Interceptor Area



Map of the Northeast Interceptor study area

Project type

Interceptor Hydraulic Model - Study

Objectives

Asset Preservation

Scope

This project is to build and calibrate a hydraulic model of the Northeast Interceptor from M-701 in Saint Paul to Forest Lake. The model will be calibrated for dry weather flow and wet weather flow, run future flow scenarios, and summarize findings and recommendations for 20-year and ultimate planning horizons.

Northeast Interceptor Hydraulic Modeling (continued)
Project #808613

Project need

This effort will help meet the overall project goals and outcomes to:

- Better understand capacity constraints, if any, and assess options to improve operations to mitigate those constraints.
- Develop informed decisions for investing, operating, and maintaining the conveyance system.
- Identify and assess areas with high rates of I/I and highest risk of sanitary sewer overflow.
- Develop strategies to reduce I/I contribution to wastewater flows to recover system capacity, maximize conveyance, and utilize storage in the existing ES system.
- Develop feasible alternatives for multiple future scenarios – including evaluation of cost-effectiveness – for capital projects for any of the goals above.



Planning: 2024 through 2026



Design: TBD



Construction: N/A

Financial analysis

2025 cash flow:	\$200,000
Current ACP:	\$865,000
2025 through 2030 cash flow:	\$800,000
Total project cost:	\$870,000

8151 and 7122 Siphon Rehabilitation
Program family 8086

Project #808614

Project location: Council district #3, City of Maplewood



Project #808614 – Site 1 in Maplewood in Keller Park on Interceptor 8151 and Site 2 in Maplewood along Highway 61 and Beam Ave North.

Project type

Interceptor Improvements

Objectives

Asset Preservation

Scope

Site 1 – 8151 - Due to the deterioration of the concrete in the pipe and structures, the project will include rehabilitation of the two 24-inch and one 42-inch DIP pipes using a CIPP liner. The headhouse and tail house structure will include rehabilitation of the deteriorated concrete surface and installing protective coating system. New gates/valves will also be designed to better separate the flows between the siphon pipes and to allow better hydraulic performance.

Site 2 – 7122 – Project will include extension of the air jumper structures to maintain flow in the system and for proper access for cleaning and inspection. The flow control system for isolating pipe will also be added for adequate cleaning and televising.

Project need

Both the 8151 and 7122 sites are aging and require repair due to past pipe failures. 8151 condition assessment indicates that the head house and tail house structures are also in poor condition and should be rehabilitated to address age-related deterioration, improve access, and facilitate easier cleaning and future inspections. 7122 Air Jumper structures lack proper flow control to divert flow from one pipe to another and for isolating pipe for cleaning and inspection. Also, the hydraulics of the flow coming in are not proper and improvements to the structure would be needed to achieve proper self-cleaning velocities.



Planning: 2022 through 2023



Design: 2024 through 2025



Construction: 2025 through 2027

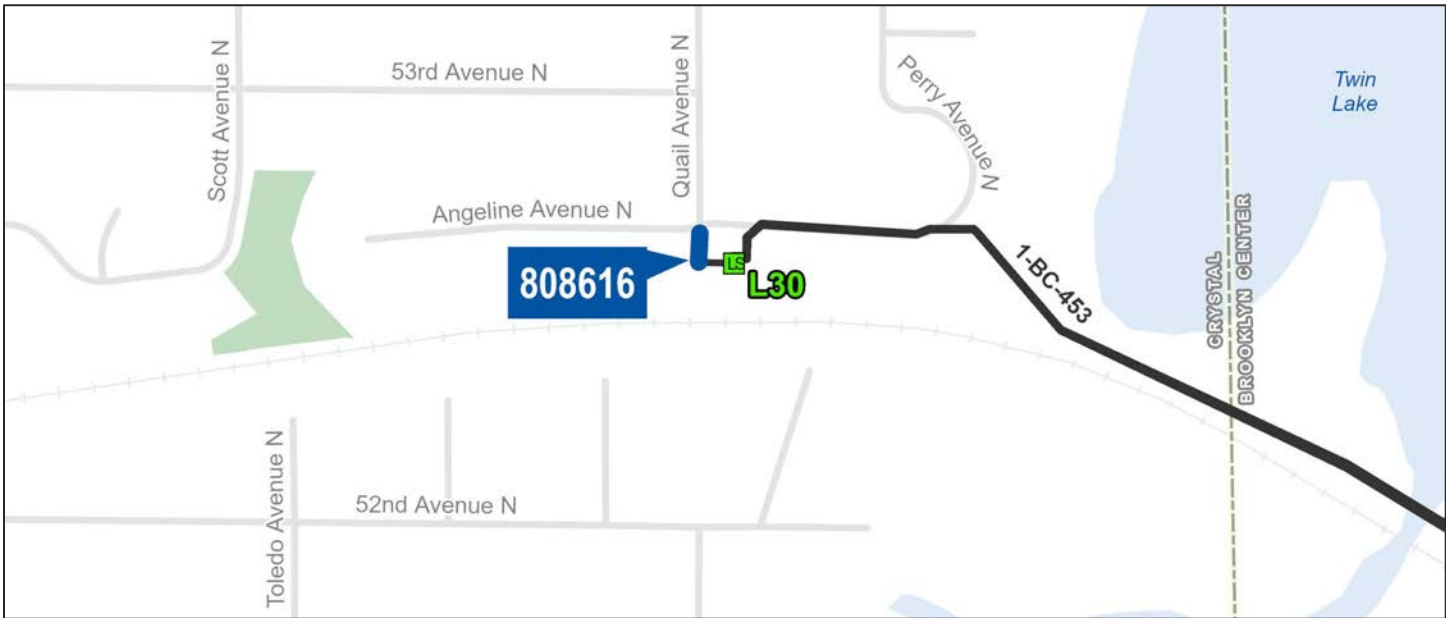
Financial analysis

2025 cash flow:	\$200,000
Current ACP:	\$575,000
2025 through 2030 cash flow:	\$8,000,000
Total project cost:	\$8,210,000

Interceptor 1-CL-455 Rehabilitation
 Program family 8086

Project #808616

Project location: Council district #8, City of Crystal, Interceptor 1-CL-455



Map of Project #808616 near Angeline Avenue North and Quail Avenue North in Crystal

Project type
 Interceptor Improvements

Objectives
 Asset Preservation

Scope
 Rehabilitate a section of pipe between Shaft 1 and MH-100 by abandoning the existing pipe and installing a new pipe in the new location. Two maintenance hole structures will also be rehabilitated, and one structure will be added.

Project need
 Condition assessment of pipe shows the pipe in this section as poor condition and a sag in the pipe. There is severe grease build-up from the city pipe coming in, and a need for frequent cleaning.

Project schedule:



Planning: 2023



Design: 2024 through 2025



Construction: 2025 through 2026

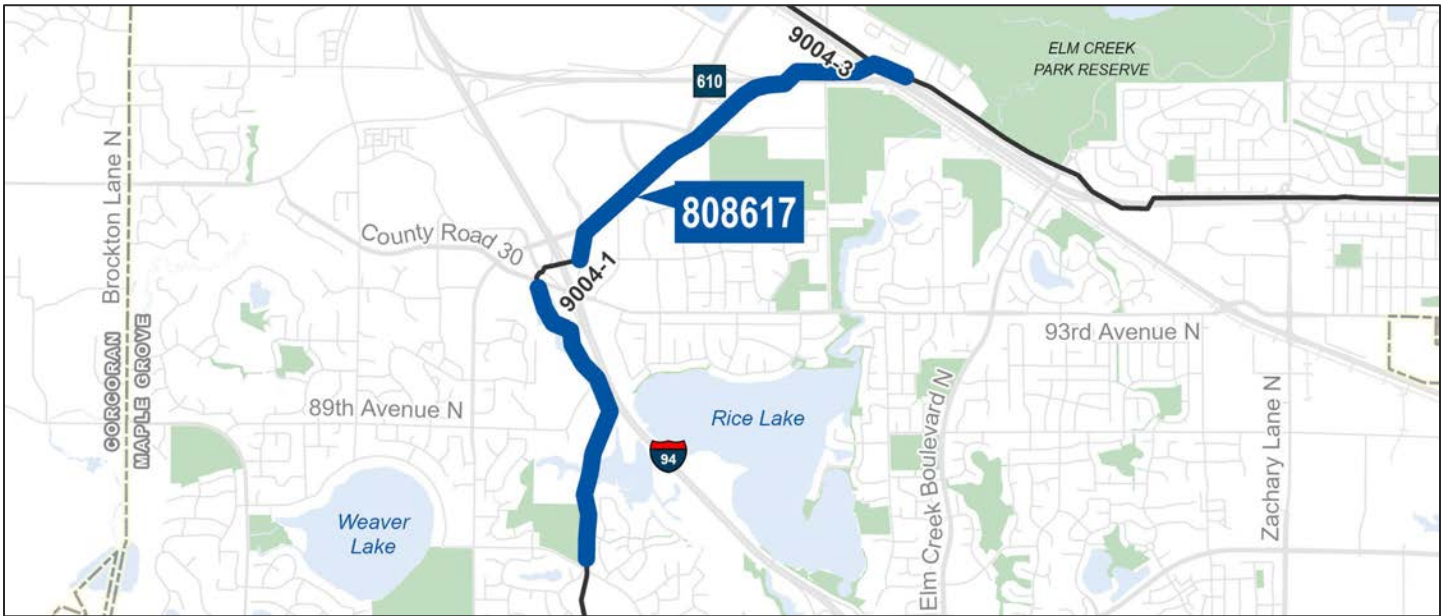
Financial analysis

2025 cash flow:	\$200,000
Current ACP:	\$2,100,000
2025 through 2030 cash flow:	\$1,499,000
Total project cost:	\$2,108,000

9004-1 & 900415 Rehabilitation
Program family 8086

Project #808617

Project location: Council district #1, City of Maple Grove



Map of Project #808617 along Maple Grove Parkway North in Maple Grove

Project type
Interceptor Improvements

Objectives
Asset Preservation

Scope
Rehabilitate 410 feet of severely corroded 48-inch reinforced concrete pipe (RCP).

Project need
Condition assessment of the interceptor has identified it as being severely corroded. Rehabilitation of the interceptor is needed to prevent further deterioration and potential failure.

Project schedule:



Planning: 2023



Design: 2023 through 2024

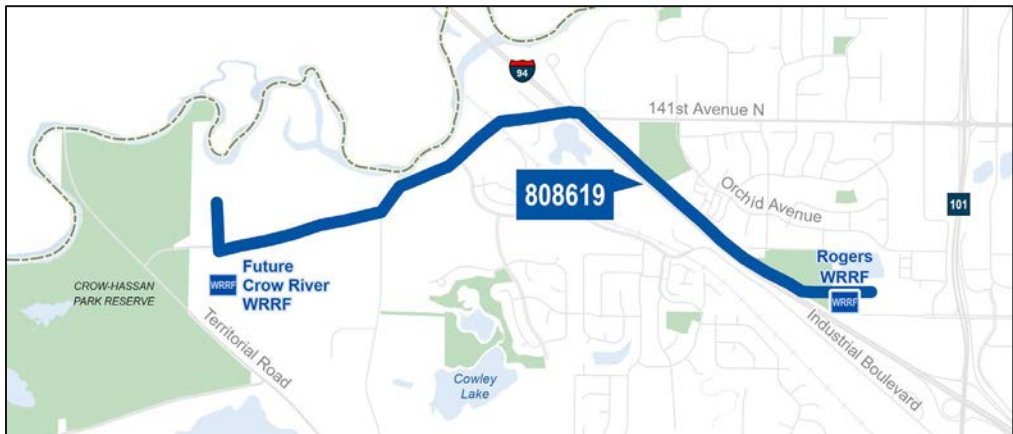


Construction: 2024 through 2025

Financial analysis

2025 cash flow:	\$100,000
Current ACP:	\$0
2025 through 2030 cash flow:	\$2,500,000
Total project cost:	\$2,500,000

Project location: Council district #1, City of Rogers



Map of project #808624 location near Interstate 94 and Highway 101 in Rogers

Project type
Interceptor Improvements

Objectives
System Expansion

Scope
The scope of the project is to build a new sanitary sewer to convey flow from the lift station at the existing Rogers Wastewater Treatment Facility (WWTF) site to the Crow River Water Resource Recovery Facility (WRRF). The new sewer must be completed by 2029, as the Crow River WRRF will be ready by 2030.

Project need
Environmental Services purchased the existing Rogers WWTF in 2016. The site was purchased because the plant cannot be expanded as needed to meet future expected capacity and anticipated changes in regulatory requirements.



Planning: 2025



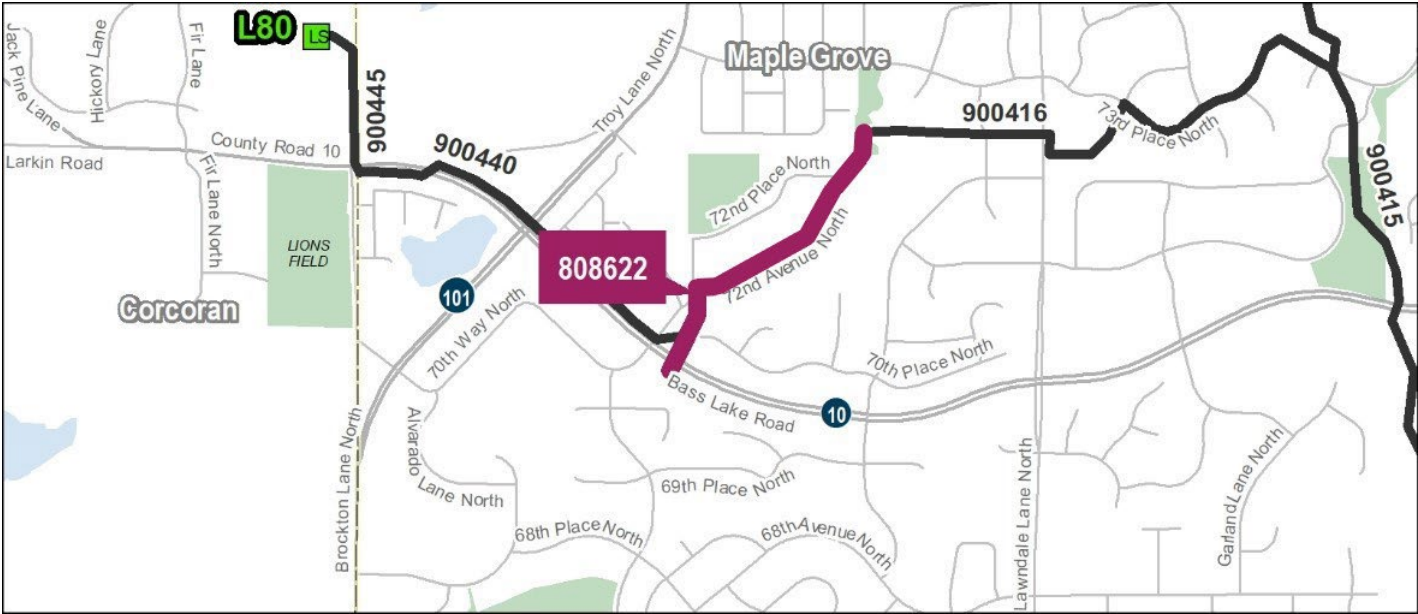
Design: 2025 through 2027



Construction: 2027 through 2029

Financial analysis	
2025 cash flow:	\$600,000
Current ACP:	\$2,539,000
2025 through 2030 cash flow:	\$10,200,000
Total project cost:	\$10,200,000

Project location: Council district #1, City of Maple Grove



Map of Project #808622 location east of Highway 101 and north of Highway 10 in Maple Grove

Project type
Interceptor Improvements

Objectives
Asset Preservation

Scope
Areas of Interceptor 900416 have been identified with varies degrees of deflection. The interceptor will be evaluated to determine which sections require rehabilitation or replacement.

Project need
To maintain the integrity of the system and to prevent potential damage to the environment due to pipe failure, sections of the interceptor must be repaired or replaced.

Project schedule:



Planning: 2019 through 2021



Design: 2021 through 2022



Construction: 2023 through 2026

Financial analysis

2025 cash flow:	\$150,000
Current ACP:	\$900,000
2025 through 2030 cash flow:	\$13,350,000
Total project cost:	\$14,005,000

New Rogers Lift Station
Program family 8086

Project #808624

Project location: Council district #1, City of Rogers, to be located at the existing Rogers Wastewater Treatment Facility, 22200 South Diamond Lake Road, Rogers, MN 55374



Map of project #808624 location near Interstate 94 and Highway 101 in Rogers

Project type
New Lift Station

Objectives
System Expansion

Scope
The scope of the project is to build a 1.5 MGD submersible lift station to convey flow from the lift station to the new gravity trunk sewer, which ultimately flows to the Crow River Water Resource Recovery Facility (WRRF). The new lift station must be completed by 2029, as the Crow River WRRF will be ready by 2030.

Project need
Environmental Services purchased the existing Rogers Wastewater Treatment Facility in 2016. The site was purchased because the plant cannot be expanded as needed to meet future expected capacity and anticipated changes in regulatory requirements.



Planning: 2025



Design: 2025 through 2027

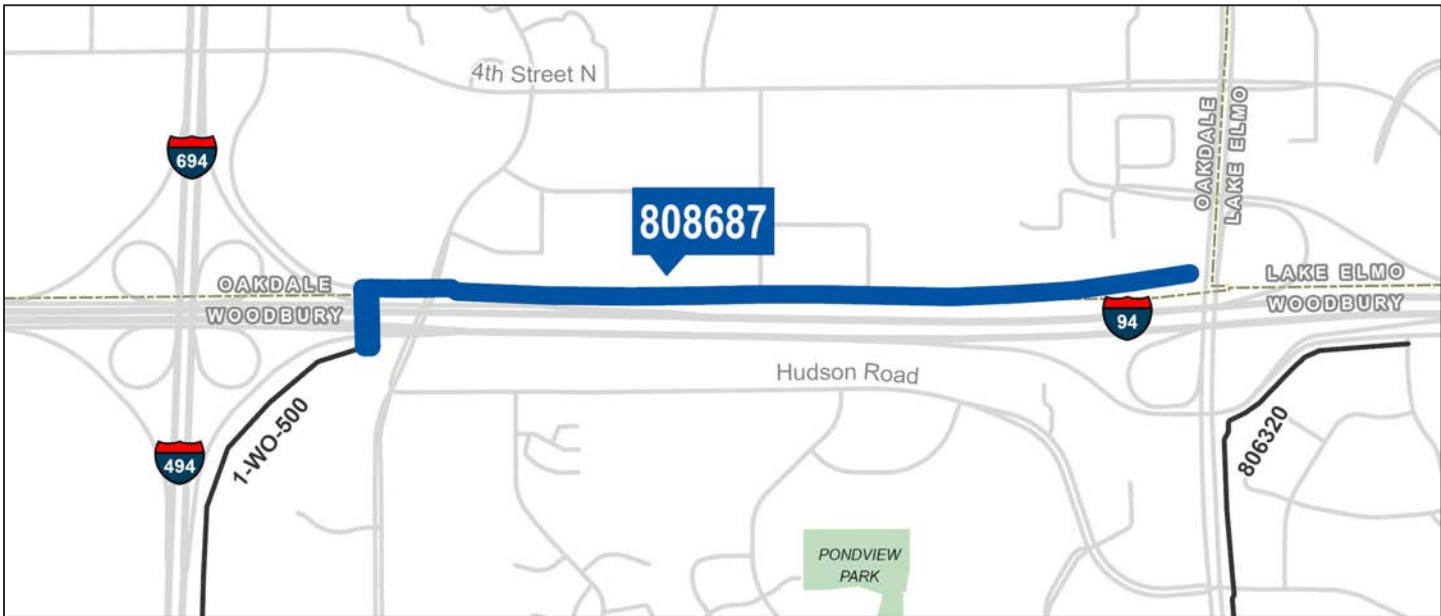


Construction: 2027 through 2029

Financial analysis

2025 cash flow:	\$100,000
Current ACP:	\$2,300,000
2025 through 2030 cash flow:	\$10,050,000
Total project cost:	\$10,050,000

Project location: Council Districts #12 and 13; Cities of Lake Elmo, Oakdale, and Woodbury



Project #808687 location along Hudson Road between I-694 and I-94

Project type

Interceptor Improvements

Objectives

System Expansion

Scope

Provide regional sewer service to southwestern Lake Elmo through a gravity interceptor extension from 1-WO-500. Includes the upgrade of an existing interceptor sewer crossing Interstate 94 to accommodate current and future growth in the service area.

Project need

This project will provide interceptor facilities to convey wastewater from southwestern Lake Elmo and eastern Oakdale to the Metro WRRF in Saint Paul. The project is needed to support growth in this eastern portion of the metropolitan area.



Planning: 2020



Design: 2021 through 2023



Construction: 2024 through 2026

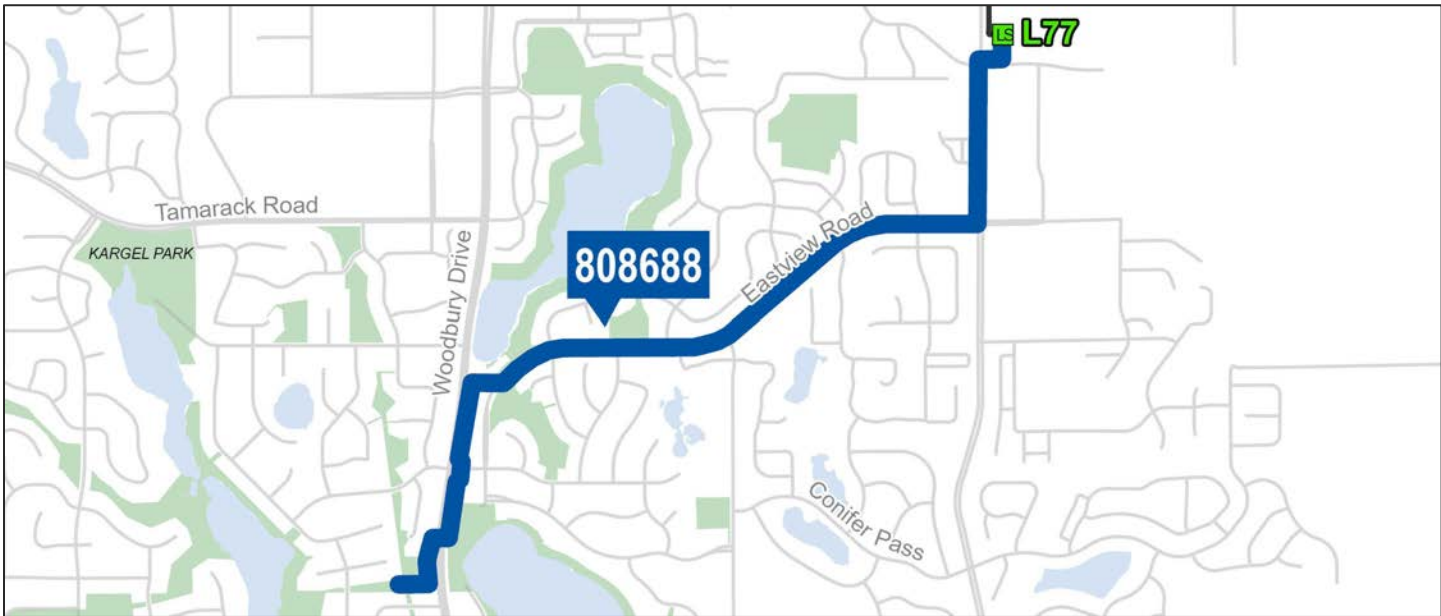
Financial analysis

2025 cash flow:	\$8,000,000
Current ACP:	\$35,527,000
2025 through 2030 cash flow: Total	\$27,500,000
project cost:	\$35,527,000

L77 Lift Station Improvements
Program family 8086

Project #808688

Project location: Council Districts #11 and 12, City of Woodbury



Project #808688 location along Eastview Road in Woodbury.

Project type
Lift Station and Interceptor Improvements

Objectives
System Expansion and Quality Improvements

Scope
Expand L77 lift station and connect to larger forcemain. Work includes the addition of an emergency generator for the lift station.

Project need
Growth in northeastern Woodbury and southeastern Lake Elmo necessitates an expansion of pumping capacity at the L77 lift station. The forcemain was constructed earlier by the City of Woodbury during road improvements to serve flows from the L77 lift station, and an agreement entered into with the city for purchase of the infrastructure for regional use.



Planning: 2020 through 2021



Design: 2022 through 2023

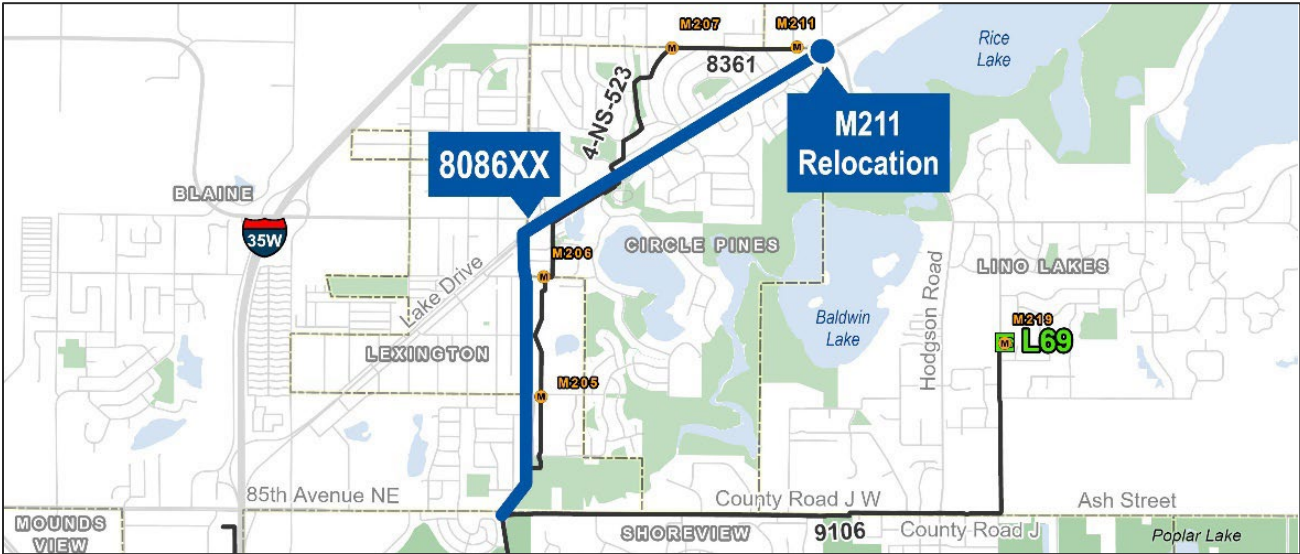


Construction: 2024 through 2026

Financial analysis

2025 cash flow:	\$1,000,000
Current ACP:	\$5,200,000
2025 through 2030 cash flow:	\$9,300,000
Total project cost:	\$5,322,000

Project location: Council district #10, City of Circle Pines, Lexington Avenue and Lake Drive



Map of Project #8086xx, Blaine Relief Interceptor project and M211 Relocation along Lake Drive in Circle Pines

Project type

Interceptor Improvements

Objectives

System Expansion

Scope
Construction of a new 14,000+ feet, 36-inch (approximate) interceptor in Circle Pines along Lexington Avenue between County Road J, north to Lake Drive then east, along Lake Drive to approximately the Lino Lakes corporate border. Project would include the relocation of M-211 to allow for the measurement of flow from the western portion of Lino Lakes.

Project need
The project need was first identified in 2005 to accommodate projected growth in western Lino Lakes. Existing capacity within interceptor 4-NS-523 was insufficient to accommodate the expected increase in flow generated by the growth. An engineering report completed in 2006 recommended the above-referenced project out of four identified alternatives. In response to the economic downturn in 2007-08, Lino Lakes revised its growth forecasts to no longer reflect the need for additional capacity. The project was then placed on hold. The city, in its 2018 Comprehensive Sewer Plan, added growth within its western area that once again reflects the need for additional wastewater conveyance capacity. The Council committed to having additional capacity available for the city by the end of 2030.

Project schedule:

Planning: 2023	Design: 2024 through 2027	Construction: 2028 through 2030

Financial analysis	
2025 cash flow:	\$10,000
Current ACP:	\$1,405,000
2025 through 2030 cash flow:	\$26,460,000
Total project cost:	\$26,460,000