

FEASIBILITY REPORT



2026 WATER SERVICE SADDLE REVIEW

Baxter, Minnesota

2025-12111

Council Acceptance Date: _____

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2026 WATER SERVICE SADDLE REVIEW

FEASIBILITY REPORT

Prepared for
City of Baxter

WSN No. 2025-12111

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

	41983	
_____ Aric Welch Professional Engineer	License Number	Date

2026 WATER SERVICE SADDLE REVIEW

FEASIBILITY REPORT

TABLE OF CONTENTS

Certification Sheet.....	CS
Table of Contents.....	TC
Statement of Purpose	1
Methodology	3
Results.....	5
Estimated Project Costs.....	6
Conclusions and Recommendations	8

APPENDIX

Figure 1 – WATER SERVICE SADDLE REVIEW

STATEMENT OF PURPOSE

The purpose of this report is to review past municipal improvement projects to identify the use of non-stainless steel water service saddles, particularly single-strap saddles that were commonly installed prior to the early 1990s. These saddles were discontinued due to a history of deterioration and failure. As these materials age, they are increasingly susceptible to corrosion and structural failure, which can result in significant repair or replacement costs and unaccounted-for water loss.

This report aims to identify locations where non-stainless steel service saddles may still be in use and to estimate the potential costs associated with their replacement. By understanding the extent and distribution of these installations, the City can proactively plan and budget for replacement as part of future municipal improvement projects.

METHODOLOGY

This evaluation was completed through a comprehensive review of available project documentation from past municipal improvement projects. Sources reviewed included specifications, shop drawings, material submittals, , construction observation notes, construction photographs, and record drawings. These materials were analyzed to identify indications of water service saddle types used during construction, with particular focus on the potential presence of non-stainless steel and single-strap saddles. The following sections summarize the specific review efforts and findings associated with each source of information.

- **Specifications:**
Reviewed project specifications to determine the required materials, acceptable products, and installation standards for water service saddles at the time of construction. Emphasis was placed on identifying whether non-stainless steel or single-strap saddles were permitted, as well as tracking changes in material requirements over time. This review found that many earlier specifications did not explicitly require stainless steel saddles, increasing the likelihood that non-stainless steel saddles may have been installed on older projects.
- **Shop Drawings/Material Submittals:**
Reviewed available shop drawings and material submittals to identify specified water service saddle types, materials, and installation details. Particular attention was given to manufacturer information and saddle configurations to determine whether non-stainless steel or single-strap saddles were proposed or approved for use. This method proved to be largely ineffective, as many earlier projects did not include shop drawing or submittal documentation specific to water service saddles.
- **Construction Observation Notes and Photographs:**
Reviewed construction observation records and available construction photographs to verify installed materials and field conditions. Observation notes were generally of limited value, as they did not consistently include specific information regarding water service saddle material types or configurations. Construction photographs were sometimes helpful in visually confirming saddle types, materials, and strap configurations; however, in certain cases they provided conflicting information. For example, on one project, shop drawings indicated single-strap steel saddles, while a construction photograph appeared to show a double-strap

stainless steel saddle. As a result, these sources were used as supplemental information and interpreted with caution.

Record Drawings:

- Record Drawings:

Analyzed record drawings to identify locations and installation timelines of water service connections. These drawings were used to correlate projects with time periods when non-stainless-steel saddles were more likely to have been installed.

RESULTS

The review encompassed municipal improvement projects beginning with the 1977 *Kirkwood Improvements* and concluding with the 1995 *White Sand West Sewer & Water Improvements*. Based on the information available for each project, service saddle installations were categorized according to the level of supporting documentation as follows:

- **Unknown Service Saddle Type:** No documentation or evidence was identified indicating the material type or strap configuration of the installed service saddles.
- **Likely Stainless Steel Service Saddles:** Available documentation suggested that service saddles were likely double strapped stainless-steel installations.

It should be noted that, based on the available information, it was not possible to confirm with complete certainty that any project reviewed prior to 1995 utilized exclusively stainless-steel service saddles. This limitation is due to incomplete documentation and, in some cases, conflicting information between data sources.

Findings are summarized graphically in Figure 1.

ESTIMATED PROJECT COSTS

For planning-level cost estimating, the number of water service saddles per roadway was compiled from the Statement of Estimated Quantities included in the original plan sets. Unit costs were developed based on estimated field labor and material replacement, including approximately \$650 per fitting for exploratory excavation and installation, and approximately \$1,000 for a stainless-steel service saddle.

Based on these assumptions and to account for variability in field conditions, a conservative unit cost of \$2,000 per service saddle replacement was applied. This value is intended for budgeting purposes and reflects potential uncertainties associated with access, excavation conditions, and replacement complexity. The estimated costs represent replacement of the service saddles only and do not include removals, surface restoration or soft costs such as engineering, legal or administration. It is assumed that this work would be completed in conjunction with a roadway reconstruction project.

Roadway	Number of Services	Unit Cost	Total Cost
Circle Pines Road	23	\$2,000.00	\$46,000.00
Fairview Road	2	\$2,000.00	\$4,000.00
Fox Road	14	\$2,000.00	\$28,000.00
Forest Drive	7	\$2,000.00	\$14,000.00
Fox Place	2	\$2,000.00	\$4,000.00
Jepson Road	9	\$2,000.00	\$18,000.00
Knollwood Drive	23	\$2,000.00	\$46,000.00
Interlacken Road	5	\$2,000.00	\$10,000.00
Kingwood Drive	17	\$2,000.00	\$34,000.00
Dellwood Drive	4	\$2,000.00	\$8,000.00
Ashdale Drive	1	\$2,000.00	\$2,000.00
Cypress Drive	10	\$2,000.00	\$20,000.00
Industrial Park Road	18	\$2,000.00	\$36,000.00
Greenwood Road	16	\$2,000.00	\$32,000.00
Brentwood Drive	29	\$2,000.00	\$58,000.00
Excelsior Road	4	\$2,000.00	\$8,000.00
Highland Scenic Drive	6	\$2,000.00	\$12,000.00
Marohn Drive	21	\$2,000.00	\$42,000.00
Edgewood Drive	9	\$2,000.00	\$18,000.00
Wedgewood Drive	26	\$2,000.00	\$52,000.00
Oak Street	23	\$2,000.00	\$46,000.00
Golf Course Drive	30	\$2,000.00	\$60,000.00

College Road	19	\$2,000.00	\$38,000.00
Geodderz Road	11	\$2,000.00	\$22,000.00
Dogwood Drive	9	\$2,000.00	\$18,000.00
Lakewood Lane	12	\$2,000.00	\$24,000.00
Kenwood Court	19	\$2,000.00	\$38,000.00
Kenwood Drive	11	\$2,000.00	\$22,000.00
Donald Street	23	\$2,000.00	\$46,000.00
Charles Street	6	\$2,000.00	\$12,000.00
Maplewood Drive	17	\$2,000.00	\$34,000.00
TOTAL			\$852,000.00

Dewatering may significantly impact service saddle replacement costs. The extent of dewatering required will vary based on project location, number of services, and groundwater conditions. The need for and extent of dewatering should be evaluated on a project-by-project basis, with cost estimates adjusted accordingly for each roadway where service saddle replacements are anticipated.

CONCLUSIONS AND RECOMMENDATIONS

This report identifies locations where non-stainless-steel service saddles may exist and provides planning-level cost estimates for their replacement. The total estimated construction cost to replace all potential non-stainless-steel service saddles is approximately \$852,000. This estimate **excludes** surface removal and restoration, soft costs, and potential dewatering, all of which may significantly affect actual project costs. Accordingly, these estimates should only be applied in conjunction with projects where roadway or utility improvements are already planned.

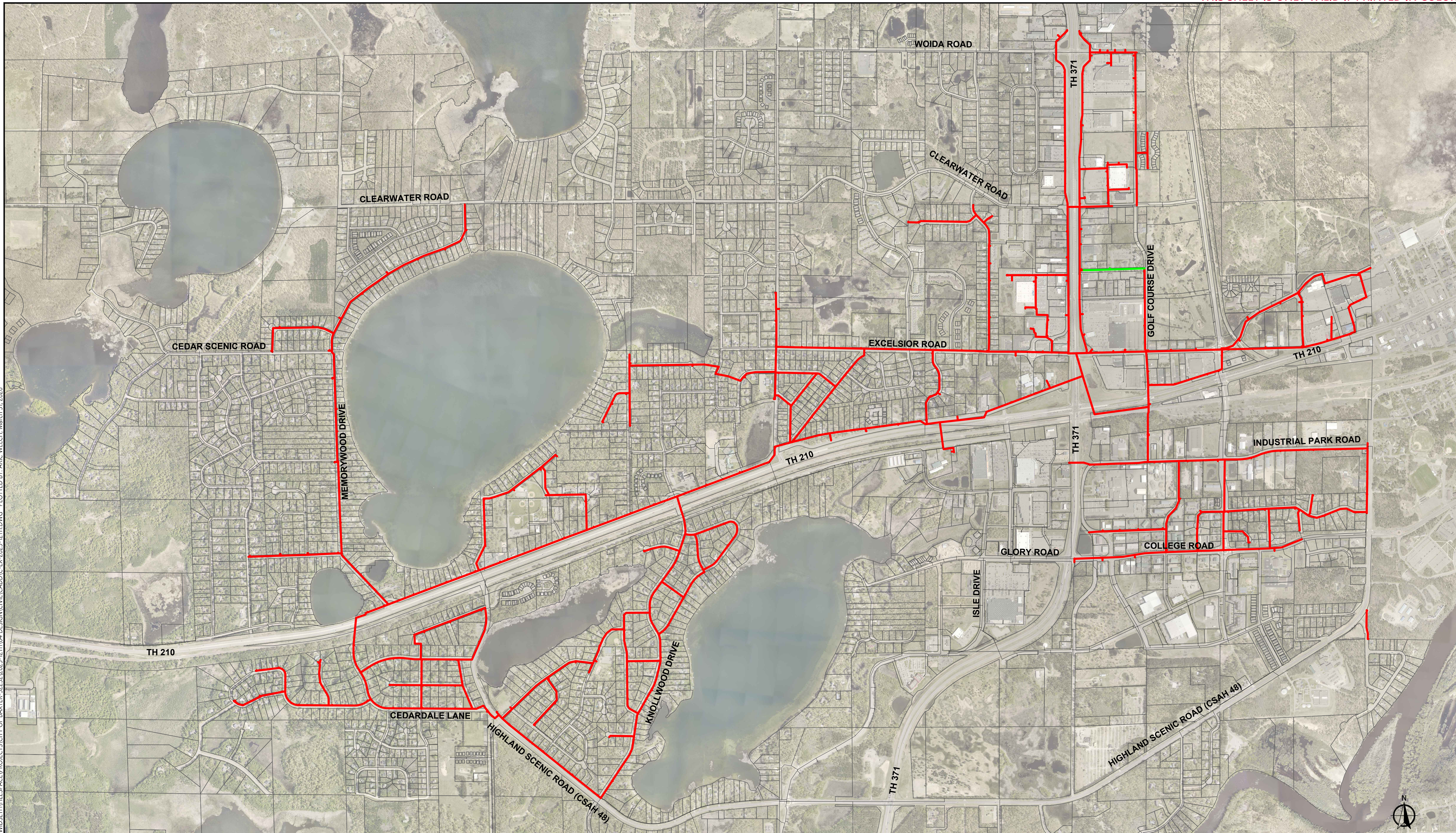
The identified locations are based on available project documentation and should be considered approximate. Due to incomplete and, in some cases, conflicting information, the presence, material type, and strap configuration of service saddles could not be verified with certainty. Additionally, service saddles of concern may exist in other project areas constructed during this time period that were not identified through this review.

Based on these findings, it is not recommended that the City undertake a standalone project solely for the replacement of service saddles due to the high cost and the additional expenses associated with surface restoration. Instead, the City should utilize this report as a planning tool in advance of future roadway or utility projects. For projects located in areas where non-stainless-steel service saddles may exist, exploratory excavation should be performed to confirm existing conditions. Where non-stainless-steel-service saddles are identified, replacement should be completed as part of the planned construction project.

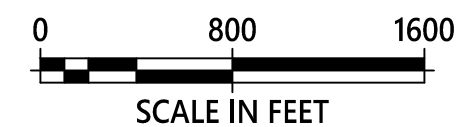
APPENDIX

FIGURE 1

© 2026 WIDSETH, FILE: \DATA\WIDSETH\FILES\SPACE\PROJECTS\CITY OF BAXTER-32232\2025-12\11\04_DESIGN\CIVIL\CADD\C-EX-2025-12\111.DWG, PLOTTED BY: ARIC WELCH, March 31, 2026



LEGEND
█ LIKELY STAINLESS STEEL SADDLES
█ UNKNOWN SADDLE TYPE



DRAWN BY:
JAM
CHECKED BY:

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 LIC. NO.: DATE:

DATE	REV#	REVISIONS DESCRIPTION

WATER SERVICE SADDLE REVIEW
 CITY OF BAXTER