

# 20-YEAR MAINTENANCE PLAN UPDATE (2024 – 2044)



## SANITARY SEWER AND STORMWATER LIFT STATIONS

Baxter, Minnesota

2024-11168

Council Approval Date: \_\_\_\_\_

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## **Introduction**

By the end of 2024, the City of Baxter will operate and maintain 26 sanitary sewer lift stations and 2 stormwater lift stations. In 2008 the City Council approved and adopted a first 20-Year Sanitary Sewer Lift Station Maintenance Plan. Lift station components wear out or become aged and are difficult to replace due to the continual changes and advancements in electronics and controls. The maintenance plan provides the City with a tool to plan, budget, and prioritize future improvements.

Implementation of the plan began in 2011. A summary of the projects completed include the following:

- Lift Station No. 3: 2011 Reconstruction
- Lift Station No. 1: 2011 Reconstruction
- Lift Station No. 4: 2012 Reconstruction
- Lift Station No. 5: 2012 Reconstruction
- Lift Station No. 6: 2013 Reconstruction
- Lift Station No. 9: 2014 Reconstruction
- Lift Station No. 7: 2015 Reconstruction
- Lift Station No. 8: 2016 Reconstruction
- Lift Station No. 10: 2017 Reconstruction
- Lift Station No. 2: 2018 Added Generator
- Lift Station No. 3: 2018 Re-Route Project, Only Pumps Upgraded
- Lift Station No. 11: 2020 Reconstruction
- Lift Station No. 12: 2020 Reconstruction
- Lift Station No. 14: 2021 Reconstruction
- Lift Station No. 16: 2022 Reconstruction
- Lift Station No. 13: 2024 Reconstruction
- Lift Station No. 15: 2024 Reconstruction

The attached information represents an update to the original maintenance plan including anticipated costs from 2024 through 2044.

## **Unit Costs**

Reconstruction costs at each lift station location will vary depending on field conditions and arrangement of components. Improvements and unit costs A through M are for sanitary sewer lift stations and A through C for storm sewer lift stations on the attached Cost Summary Worksheet were identified as work that will likely need to be addressed at lift stations over the next 20 years. Costs for each lift station can be customized by selecting appropriate improvements from the provided unit cost list.

Original unit prices associated with sanitary sewer were set based on lift station maintenance history and information provided by Quality Flow. Unit costs have since been updated to reflect historic costs from the previous reconstruction projects and maintenance activities. All costs have been updated to reflect 2024 estimated costs.

## **Maintenance Budget**

The Maintenance Budget estimates maintenance and replacement costs over the next twenty-year period from 2024 to 2044. Yearly costs vary depending on planned lift station replacement and maintenance items.

Estimated sanitary sewer lift station costs for the next five-year period are as follows:

- 2024           \$338,475 (does not include LS 13)
- 2025           \$344,475
- 2026           \$293,375
- 2027           \$293,375
- 2028           \$328,825

The average yearly sanitary sewer lift station maintenance cost over the next twenty-year period is estimated at \$212,045. The maximum and minimum estimated yearly costs are \$344,475 (2025) and \$100,875 (2033), respectively.

Estimated storm water lift station costs for the next five-year period includes only the \$1,700 per year general maintenance cost. The average yearly maintenance cost over the next twenty-year period is estimated at \$13,095. The maximum and minimum estimated yearly costs are \$172,450 (2038) and \$1,650, respectively.

**Attachments:**

1. Lift Station Service Boundary Location and Map
2. Lift Station Cost Code Summary Worksheet
3. Lift Station 20-Year Maintenance Budget

LIFT STATION SERVICE BOUNDARIES  
CITY OF BAXTER

LEGEND

LIFT STATION SERVICE BOUNDARY

CURRENT SERVICE AREA

LS

SANITARY SEWER LIFT STATION

→

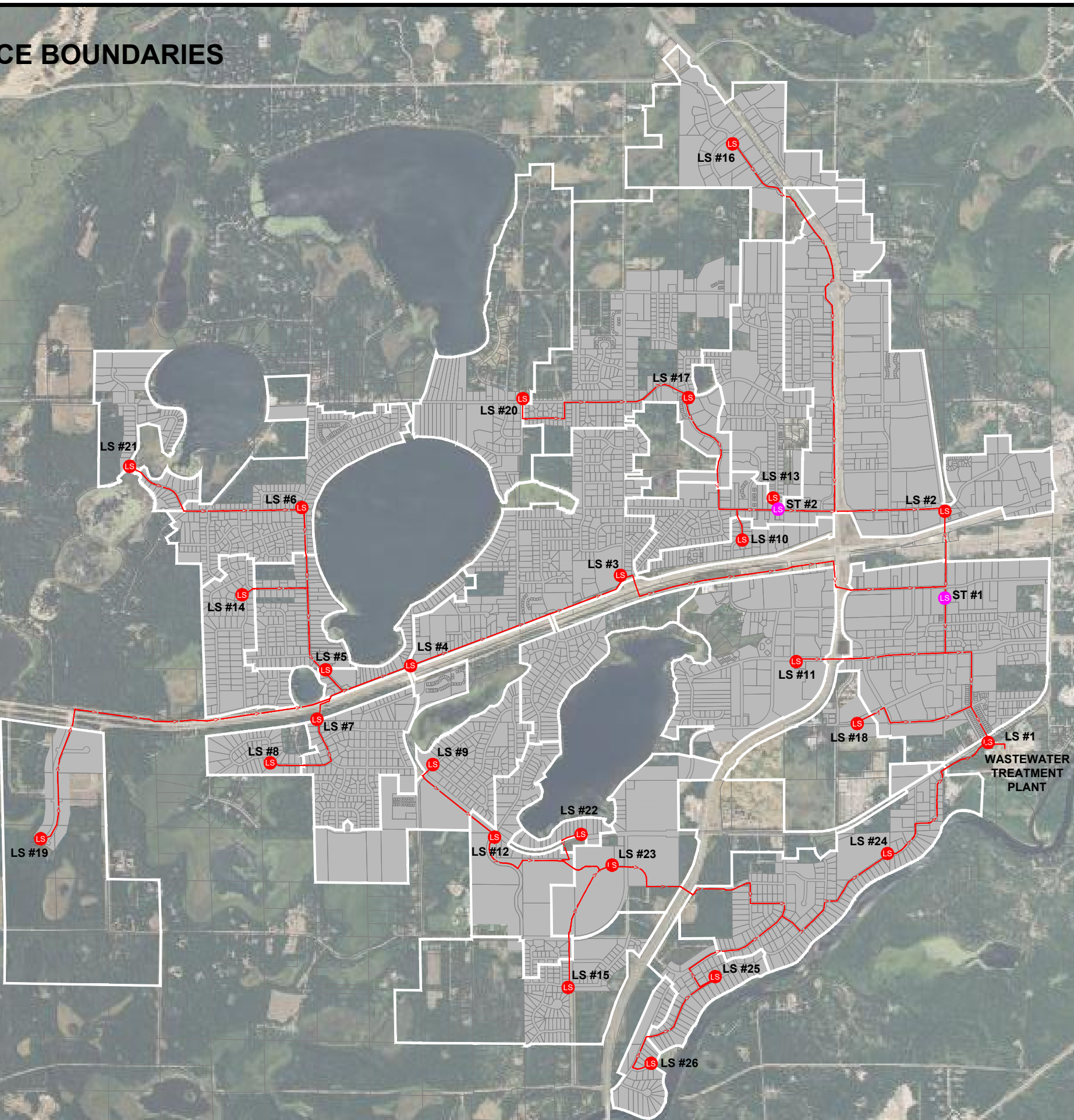
WASTEWATER FLOW DIRECTION

LS

STORMWATER LIFT STATION



0 1400 2800  
SCALE ( IN FEET )



20-YEAR LIFT STATION MAINTENANCE PLAN (2024 - 2044)  
CITY OF BAXTER  
BAXTER, MINNESOTA  
LIFT STATION BOUNDARIES

DATE: JUNE 2024  
SCALE: AS SHOWN  
DRAWN BY: ALW  
CHECKED BY: ALW  
JOB NUMBER: 2024-11168

DATE	REV#	REVISIONS DESCRIPTION	BY

WHEREIN I HAVE PREPARED THIS PLAN, SPECIFICATION, OR REPORT  
I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE  
STATE OF MINNESOTA.  
DATE: 6/27/2024  
LIC. NO. 41883  
ARIC WELCH

**WIDSETH**  
ARCHITECTS • ENGINEERS • SCIENTISTS • SURVEYORS

SHEET NO.

## LIFT STATION COST CODE SUMMARY (2024 ESTIMATED COSTS)

### Sanitary Sewer Lift Stations

<u>Item</u>	<u>Description</u>	
A	Base Lift Station Upgrade Stainless Steel control panel with LC 150 controller with pressure transducer and floats 5HP KSB 80-200 pumps with Type F impeller Pump rail and base elbow replacement By-pass pumping, mobilization, clean-up Wet well water blast, vacuum, spot repairs Precast cover replacement with aluminum hatch Discharge piping replacement Total - Item A	\$163,150.00
B	Base Lift Station Upgrade Stainless Steel control panel with LC 150 controller with pressure transducer and floats 20HP KSB 80-251 pumps with Type F impeller Pump rail and base elbow replacement By-pass pumping, mobilization, clean-up Wet well water blast, vacuum, spot repairs Precast cover replacement with aluminum hatch Discharge piping replacement Total - Item A	\$171,150.00
C	Base Valve Vault Upgrade Replace piping, check valves, valves and fittings Precast cover replacement with aluminum hatch Total - Item A	\$80,450.00
D	Complete valve vault replacement with by-pass piping system	\$96,850.00
E	Replacement of low flow pumps (2 pumps) (LS 2)	\$17,850.00
F	Replacement of high flow pumps (2 pumps) (LS 1, LS 2 and LS 3)	\$32,750.00
G	Duplex pump replacement (2 pumps)	\$17,600.00
H	Duplex pump replacement (2 pumps) (LS 1)	\$45,100.00
I	Control Panel Replacement	\$51,100.00
J	LS 2 Generator Replacement	\$119,600.00
K	LS 2 Generator Maintenance	\$1,075.00
L	Portable Generator Replacement	\$41,500.00
M	Portable Generator Maintenance	\$4,400.00
	Unit #2206	\$1,100.00
	Unit #2230	\$1,100.00
	Unit #2231	\$1,100.00
	Unit #2232	\$1,100.00

### Storm Sewer Lift Stations

<u>Item</u>	<u>Description</u>	
A	Duplex 15 HP pump replacement (2 pumps)	\$38,400.00
B	Duplex 7.5 HP pump replacement (2 pumps)	\$30,150.00
C	Control Panel Replacement	\$51,100.00

**BAXTER, MINNESOTA**

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06/26/24

Lift Station ID	Location	Original Construction / Purchase Date	Pump #1 Install / Rebuild	Pump #2 Install / Rebuild	Pump HP	Control Panel Install / Refit
SS-1	CSAH #48 near treatment plant	1980	2011	2011	15	2011
SS-2	Excelsior Road & Cypress Drive	1980	2018	2018	5, 15	2018
	Lift Station 2 Generator					
	Lift Station 1 & 2 General Maintenance					
SS-3	Inglewood Drive & Fairview Road	1989	2018	2018	15	2011
SS-4	Fairview Road & Maplewood Drive	1989	2012	2012	5	2012
SS-5	Memorywood Drive north of City Hall	1989	2012	2012	5	2012
SS-6	Memorywood Drive and Cedar Scenic Road	1989	2009	2009	5	2013
SS-7	West end of Cedardale Lane	1991	2015	2015	5	2015
SS-8	Brentwood Drive and Briarwood Lane	1991	2016	2016	5	2016
SS-9	Mountain Ash Drive near Treatment Plant #2	1992	2014	2014	5	2014
SS-10	Flintwood Drive	1998	2017	2017	5	2017
SS-11	Glory Road and Elder Drive	1998	2020	2020	5	2020
SS-12	Knollwood Drive and CSAH #48	2001	2020	2020	5	2020
SS-13	Forest Drive	2001	2024	2024	5	2024
SS-14	Meredith Drive	2003	2021	2021	3.4	2021
SS-15	Jasperwood Drive and Marble Road	2003	2024	2024	3.4	2024
SS-16	Edgewood Drive and Lake Forest Road	2004	2022	2022	20	2022
SS-17	Grand Oaks Drive and Clearwater Road	2004	2004	2004	5	2004
SS-18	Hastings Road	2005	2005	2005	5	2005
SS-19	Timberwood Drive	2006	2006	2006		2006
SS-20	Clearwater Road and Kimberlee Drive	2006	2006	2006	5	2006
SS-21	Cedar Scenic Road west of Olivewood Drive	2007	2007	2007	5	2007
SS-22	CSAH #48 between Knollwood Drive and Ironwood Drive	2008	2008	2008	5	2008
SS-23	Mapleton Road and Crow Wing Power Substation	2015	2015	2015	5	2015
SS-24	Camwood Trail	2020	2020	2020	20	2020
SS-25	River Vista Drive	2024	2024	2024	5	2024
SS-26	Riverwood Road	2024	2024	2024	5	2024
	Portable Generators	2005				
	Lift Station 3-22 General Maintenance					

[illegible]

**AVERAGE YEARLY COST:**

**MAXIMUM YEARLY COST:**

**MINIMUM YEARLY COST:**

**\$212,045**

**\$344,475**

**\$100,875**

LIR Station ID	Location	Original Construction Date	Pump #1 Install / Rebuild	Pump #2 Install / Rebuild		Control Panel Refit
ST-1	Cypress Drive	2018	2018	2018	15	
ST-2	Excelsior Road	2018	2018	2018	7.5	
	LIR Station General Maintenance					

2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040		2041		2042		2043		2043		20 YEAR TOTAL	
Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost	Cost Code	Cost		
								A	\$38,400																			A,C	\$89,500														
								B	\$30,150																			B,C	\$81,250														
	\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$1,700		\$35,700

**AVERAGE YEARLY COST:**

**MAXIMUM YEARLY COST:**

**MINIMUM YEARLY COST:**

**\$13,095**

\$172,450

**\$1,700**