

# 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.

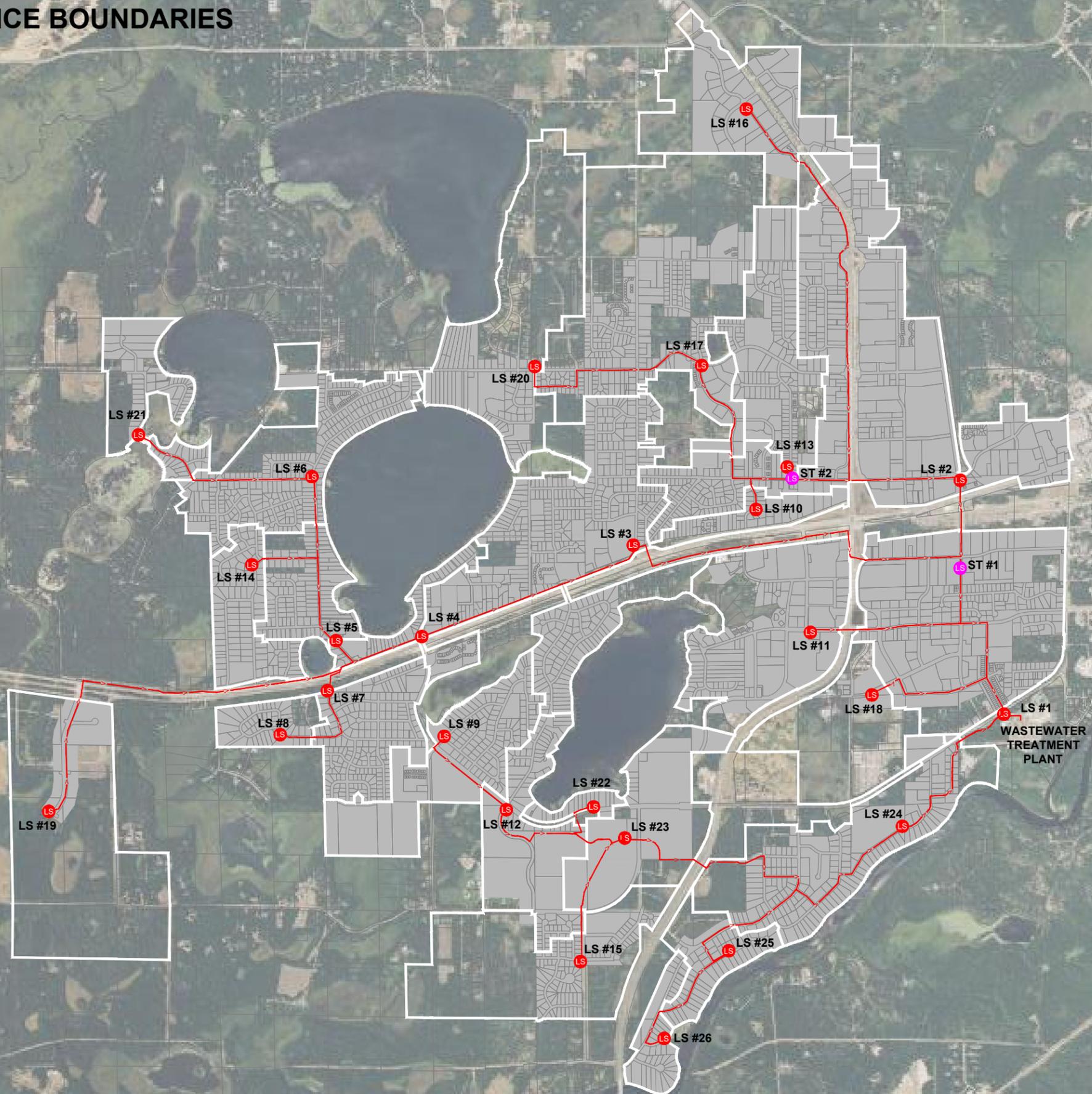
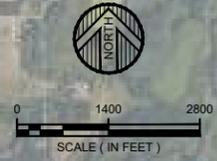
**Attachments:**

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



WHEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
DATE: 6/27/2024 6:41:46 AM  
LIC. NO. 41883  
ARIC WELCH

DATE	REVISION DESCRIPTION	REV#
JUNE 2024 <td>AS SHOWN <td></td> </td>	AS SHOWN <td></td>	
	DRAWN BY: ALW	
	CHECKED BY: ALW	

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

**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

**LIFT STATION 20-YEAR MAINTENANCE BUDGET**

**BAXTER, MINNESOTA**

WIDSETH 2024-11168  
06/26/24

**SANITARY SEWER**

Lift Station ID	Location	Original Construction / Purchase Date	Pump #1 Install / Rebuild	Pump #2 Install / Rebuild	Pump HP	Control Panel Install / Refit	2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040		2041		2042		2043		2044		20 YEAR TOTAL 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	Cost Code	Cost	
SS-1	CSAH #48 near treatment plant	1980	2011	2011	15	2011	H	\$45,100													I	\$51,100																									\$141,300		
SS-2	Excelsior Road & Cypress Drive	1980	2018	2018	5, 15	2018								F	\$32,750	E	\$17,850																														\$152,300		
	Lift Station 2 Generator																																														\$141,100		
	Lift Station 1 & 2 General Maintenance																																														\$67,200		
SS-3	Inglewood Drive & Fairview Road	1989	2018	2018	15	2011								F	\$32,750																																\$116,600		
SS-4	Fairview Road and Maplewood Drive	1989	2012	2012	5	2012																		G,I	\$68,700																						\$86,300		
SS-5	Memorywood Drive north of City Hall	1989	2012	2012	5	2012																																								\$86,300			
SS-6	Memorywood Drive and Cedar Scenic Road	1989	2009	2009	5	2013									G	\$17,600																														\$86,300			
SS-7	West end of Cedarvale Lane	1991	2015	2015	5	2015			G	\$17,600																																				\$86,300			
SS-8	Brentwood Drive and Briarwood Lane	1991	2016	2016	5	2016					G	\$17,600																																		\$86,300			
SS-9	Mountain Ash Drive near Treatment Plant #2	1992	2014	2014	5	2014	G	\$17,600																																					\$103,900				
SS-10	Flintwood Drive	1998	2017	2017	5	2017							G	\$17,600																															\$86,300				
SS-11	Glory Road and Elder Drive	1998	2020	2020	5	2020										G	\$17,600																													\$86,300			
SS-12	Knottwood Drive and CSAH #48	2001	2020	2020	5	2020											G	\$17,600																												\$86,300			
SS-13	Forest Drive	2001	2024	2024	5	2024																																									\$86,300		
SS-14	Meredith Drive	2003	2021	2021	3.4	2021																																									\$86,300		
SS-15	Jasperwood Drive and Marble Road	2003	2024	2024	3.4	2024	A,C	\$243,600																																						\$329,900			
SS-16	Edgewood Drive and Lake Forest Road	2004	2022	2022	20	2022																																								\$86,300			
SS-17	Grand Oaks Drive and Clearwater Road	2004	2004	2004	5	2004			A,C	\$243,600																																				\$261,200			
SS-18	Hastings Road	2005	2005	2005	5	2005					A,C	\$243,600																																		\$261,200			
SS-19	Timberwood Drive	2006	2006	2006	5	2006							A,C	\$243,600																																\$261,200			
SS-20	Clearwater Road and Kimberlee Drive	2006	2006	2006	5	2006									A,C	\$163,150																														\$180,750			
SS-21	Cedar Scenic Road west of Olivewood Drive	2007	2007	2007	5	2007											A,C	\$243,600																												\$261,200			
SS-22	CSAH #48 between Knollwood Drive and Ironwood Drive	2008	2008	2008	5	2008											A,C	\$243,600																												\$261,200			
SS-23	Mapleton Road and Crow Wing Power Substation	2015	2015	2015	5	2015																																									\$119,800		
SS-24	Camwood Trail	2020	2020	2020	20	2020																																									\$86,300		
SS-25	River Vista Drive	2024	2024	2024	5	2024																																									\$86,300		
SS-26	Riverwood Road	2024	2024	2024	5	2024																																									\$86,300		
	Portable Generators	2005					M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400	M	\$4,400		\$92,400	
	Lift Station 3-22 General Maintenance																																															\$23,500	\$493,500
<b>ANNUAL COST:</b>								\$338,475		\$344,475		\$293,375		\$293,375		\$260,825		\$328,825		\$310,975		\$220,675		\$118,475		\$100,875		\$198,775		\$187,175		\$118,475		\$118,475		\$284,900		\$153,825		\$187,175		\$118,475		\$118,475		\$168,575		\$187,175	\$4,462,950
							<b>AVERAGE YEARLY COST:</b>																												\$212,045														
							<b>MAXIMUM YEARLY COST:</b>																												\$344,475														
							<b>MINIMUM YEARLY COST:</b>																												\$100,875														

**STORM SEWER**

Lift Station ID	Location	Original Construction Date	Pump #1 Install / Rebuild	Pump #2 Install / Rebuild	Control Panel Refit	2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040		2041		2042		2043		20 YEAR TOTAL 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			
ST-1	Cypress Drive	2018	2018	2018	15									A	\$38,400																																\$127,900	
ST-2	Excelsior Road	2018	2018	2018	7.5									B	\$30,150																																\$111,400	
	Lift Station General Maintenance																																															\$35,700
<b>ANNUAL COST:</b>								\$1,700		\$1,700		\$1,700		\$1,700		\$70,250		\$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	\$275,000	
							<b>AVERAGE YEARLY COST:</b>																												\$13,095													
							<b>MAXIMUM YEARLY COST:</b>																												\$1													