

City Council Worksession Meeting

Monday, May 18, 2026 5:00 PM

Agenda

General Business

Sanitary Sewer Discussion

Stonebridge Discussion

Adjourn



Item Cover Page

CITY COUNCIL WORKSESSION AGENDA ITEM REPORT

DATE: May 18, 2026

SUBMITTED BY: Shane Nelson, Engineer

ITEM TYPE: Agenda Report

AGENDA SECTION: General Business

SUBJECT: Sanitary Sewer Discussion

BACKGROUND: Continued discussion of sanitary sewer - see attached for Outline for Discussion

SUGGESTED ACTION: discussion only

ATTACHMENTS:
[May 2026 Workshop Sewer Discussion Outline.docx](#)

**Discussion of Action Items
Municipal Sanitary Sewer and Water
City of Credit River
May 18, 2026 Workshop**

1. Investigate the condition of existing septic systems and wells

Staff's recommendation is for individual property owners to complete these investigations on their own.

Scott County offers a well testing kit, link here: [Wells & Drinking Water | Scott County, MN](#)

Private contractors can perform investigations directly for property owners. The MPCA maintains a list of licensed Septic System Inspectors, link here: [Septic systems | Minnesota Pollution Control Agency](#)

The Minnesota Department of Health (MDH) maintains a list of licensed well Contractors, link here: [Licensed Well and Boring Contractor Directory – MN Dept. of Health](#)

2. City policy on cost participation for existing homes on small lots

The City's cost participation on past street reconstruction projects is: 40%. The remaining 60% is assessed to the benefitting property owners. Also note, existing City cost participation on past projects is 50% (increased City cost participation to lower overall life cycles costs)

Sewer Cost Participation:

Water Cost Participation:

Note: the City cost participation for addressing the existing homes on small lots with well & septic is not expected to be the same as new development.

3. Assessment Policy

Staff can prepare a draft Assessment Policy for the City's consideration. Staff will review other cities Assessment Policies and edit per City of Credit River. Staff desires to prepare a draft prior to presenting to the City Council. City Council will provide input on cost participation.

4. Bonding / Financial Cost Analysis – Country Court Reconstruct

Staff's recommendation would be to engage Ehler's to perform this task. Discuss the scope of analysis – staff recommends focusing on Country Court at this time.

After preparation of Comprehensive Plan, an analysis of the trunk sewer / water infrastructure can be performed.

**Discussion of Action Items
Municipal Sanitary Sewer and Water
City of Credit River
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5. Amend Comprehensive Plan

Staff recommends addressing this item with the preparation of the 2050 Comprehensive Plan. Determining future land use is a precursor to setting WAC/SAC/Trunk Area fees.

6. Amend Capital Improvement Plan

Staff recommends inserting a “subject to funding” comment in the CIP for the Country Court reconstruction project.

7. City policy for cost participation for infrastructure to support new development

New sewer and water infrastructure is typically funded by development fees (SAC/WAC charges and trunk area charges). A precursor to establishing development fees is determining future land use. Future land use will be discussed in detail and determined with 2050 Comprehensive Plan. Future land use needs to be determined before advancing the Country Court Reconstruction Feasibility Report to consider adjacent developable property.

8. Refine Cost Estimates

Several steps can be taken to refine the cost estimates.

- A logical next step would be to obtain soil borings
- Based on soil borings, estimates could be refined
- A Feasibility Report can be prepared after steps 5 and 6 are completed
- A Feasibility Report will determine an estimated cost per property
- Preparation of construction plans - allows actual quantities of work to be estimated (highest level of accuracy).
- Actual Construction Bids
- Completed construction costs / Final Close-Out

9. Appraisal

Obtain an appraisal of a sample of properties (3-4 of varying types) just after a Feasibility Report has been prepared.

10. Prepare ordinances regulating Municipal Sanitary Sewer and Water

Staff can prepare draft ordinances for City Council review and adoption.

**Discussion of Action Items
Municipal Sanitary Sewer and Water
City of Credit River
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11. Bonding / Financial Cost Analysis – Trunk Municipal Utilities

Staff's recommendation would be to engage Ehler's to perform this task.

After preparation of Comprehensive Plan, an analysis of the trunk sewer / water infrastructure can be performed based on the future land use; and associated capital investments needed to support that land use through the planning term.

12. Update Fee Schedule to include SAC/WAC/Trunk Area Charges and Utility Rates

After item 7 and 11 are completed, the Fee Schedule can be updated to include SAC/WAC/Trunk Area Charges and Utility Rates

13. Operating Plan Run a Municipal Utility

Staff anticipates that initially a private Contractor will be utilized for the day to day operation of municipal utilities. Staff can perform research to determine companies that are available and pricing structures. Staff can begin to prepare a draft outline of an operating plan. Staff anticipates that the cost for operating the municipal utilities will be included in the utility rates.

At some point, it is typical for the operations of the municipal utility to come "in house". Staff can interview cities of varying sizes to determine FTE's and equipment necessary at different population sizes and incorporate the finding into a draft outline of an operating plan.



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CITY COUNCIL WORKSESSION AGENDA ITEM REPORT

DATE: May 18, 2026

SUBMITTED BY: Shane Nelson, Engineer

ITEM TYPE: Agenda Report

AGENDA SECTION: General Business

SUBJECT: Stonebridge Discussion

BACKGROUND: see attached report

Touch on density - all sewerred properties are included in City's density calculations

FINANCIAL IMPACT: see attached report

SUGGESTED ACTION: Staff is requesting a relatively quick council discussion (10 minutes) to discuss the two Stonebridge alternatives.

ALTERNATIVES: see attached report

ATTACHMENTS:

[CT901 Stonebridge Evaluation of Alternatives Report FINAL 11.10.25.pdf](#)

EVALUATION OF ALTERNATIVES
FOR
STONEBRIDGE ESTATES COMMUNITY SEPTIC TREATMENT SYSTEM

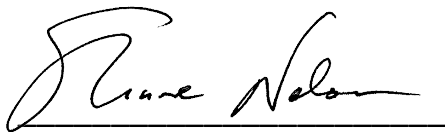
CITY OF CREDIT RIVER, MINNESOTA
OCTOBER 30, 2025
REVISED NOVEMBER 10, 2025

Prepared by:



3601 THURSTON AVENUE
ANOKA, MINNESOTA 55303
TELEPHONE: (763) 427-5860

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 State of Minnesota Statutes 326.02 to 326.16.


Shane Nelson, PE

43381
License No.

November 10, 2025
Date

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TABLE 4.	Estimated Future Replacement Costs: Lakeville Sewer Connection
TABLE 5.	Estimated Construction Costs: CSTS Upgrades
TABLE 6.	Estimated Operation and Maintenance Charges: Proposed CSTS Upgrades
TABLE 7.	Estimated Future Replacement Costs: Proposed CSTS Upgrades

1.0 Introduction

The City of Credit River is considering two options as it relates to complying with the Schedule of Compliance for the Stonebridge Estates neighborhood. **Option 1** consists of decommissioning the existing Community Septic Treatment System (CSTS) and connecting the neighborhood to the City of Lakeville's Sanitary Sewer System. **Option 2** consists of upgrading the existing Community Septic Treatment System (CSTS).

The purpose of this document is to provide an evaluation of alternatives for the City to consider in the decision-making process.

2.0 Background - Existing Community Septic Treatment System (CSTS)

The existing CSTS facility is designed to treat an average wet weather flow of 14,400 gallons per day. At the main treatment system, the wastewater from the homes flows to a 2,000 gallon septic tank followed by two 5,000 gallon recirculation tanks. Wastewater is pumped from the final recirculation tank to one of three AdvanTex AX100 pods. The AdvanTex AX100 pods are recirculating filter units with textile media that provide surface area for microorganisms to grow and treat the wastewater. The wastewater cycles through the pods to maximize treatment. Following the pods, the wastewater goes to a 3,500 gallon denitrification tank with carbon source addition before it enters a 3,000 gallon dosing tank where it is pumped to the drainfield area for final disposal. The drainfield area consists of a three-section system with six mounds in each section (18 mounds total) and a capacity of 800 gpd per mound. The system was initially constructed in 2006, with the exception of the 3,500 gallon denitrification tank, which was constructed in 2017. There are 32 homes that are connected to the Community Septic Treatment System.

The system is not currently meeting the nitrogen limits required by the permit issued by the Minnesota Pollution Control Agency (MPCA). The City of Credit River entered into a Schedule of Compliance with the MPCA to address the nitrogen limit violations. The Schedule of Compliance includes the following key milestones:

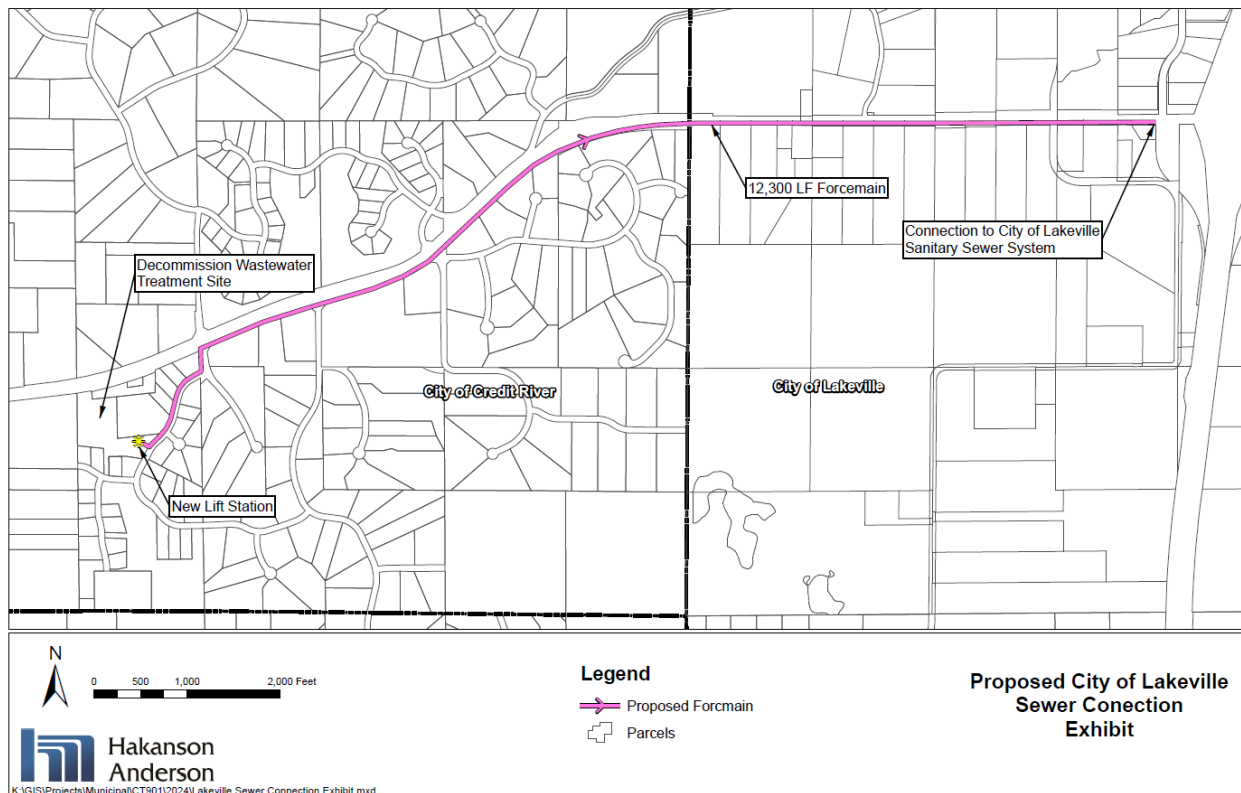
1. By March 1, 2027 submit a Facility Plan for the selected alternative
2. By March 1, 2028, submit Plans and Specifications for the selected alternative
3. By June 1, 2029, begin construction of the selected alternative

3.0 Option 1 - Lakeville Sewer Connection (Regionalization)

This option consists of connecting the 32 homes within the Stonebridge Estates neighborhood to the regional (Metropolitan Council) system and decommissioning the existing community septic treatment system. The existing 2" forcemain that discharges the sanitary sewer from the homes would be modified slightly to discharge into a new

sanitary sewer lift station. The sanitary sewer lift station would contain pumps that would convey the wastewater via a new forcemain into the City of Lakeville’s sanitary sewer system. We assume that the location of the new lift station would be on the current wastewater treatment system property. The lift station would be a duplex unit for redundancy in the event of a pump failure and/or scheduled maintenance. The location of the connection point in the City of Lakeville is assumed to be the sanitary sewer manhole located at the intersection of 210th Street (CR 70) and Keokuk Avenue. The total length of the forcemain would be approximately 12,300 feet (2.33 miles).

Exhibit 1 – Lakeville Sewer Connection



3.1 Permitting/Approvals

At this time, no coordination for permitting or approvals has occurred. If the City desires to further explore this option, a significant amount of effort will be necessary to coordinate with the various jurisdictional agencies, including but not limited to:

3.1.1 Minnesota Pollution Control Agency

It would be necessary for the Minnesota Pollution Control Agency (MPCA) to approve the connection to the City of Lakeville’s sanitary sewer system and decommissioning of the existing system.

3.1.2 City of Lakeville

At this time, we have had only preliminary conversations with City of Lakeville staff and a connection has not been formally considered or approved. It would be necessary for the City of Lakeville to formally approve the connection to their system.

3.1.3 Scott County / Dakota County

For purposes of this evaluation, we assumed that the forcemain would be installed within the existing Lucerne Boulevard (CSAH 8) / 210th Street (CR 70) right-of-way. Therefore, the City would need to obtain approval from both Scott County and Dakota County to install City facilities in County right-of-way.

It is likely that the County right-of-way contains a significant amount of existing utilities such as electric, natural gas, telecommunications, and/or pipeline crossings. At this time, we have not identified potential conflicts but it is assumed that there will be some fairly significant existing utilities to consider in the design if this project moves forward.

Additionally, the connection to the existing sanitary sewer manhole would impact the existing concrete road surface of CR 70, which would be subject to Dakota County review and approval.

3.1.4 Metropolitan Council

It would be necessary for the Metropolitan Council to approve the connection, which may require a Comprehensive Plan Amendment. Furthermore, if this development were to be sewer, it would be included in the City's density calculations (there are currently 32 homes on approximately 68 acres).

3.2 Decommissioning of Existing Wastewater Treatment System

The City would want to ensure that abandoned tanks and appurtenances do not pose a health and safety risk, both now and as they age over time. At a minimum, we assume that it will be necessary to remove the appurtenances and remove all sanitary sewer from the tanks located at the treatment site. We assume that the tanks will either be removed or filled with sand (abandoned in place) or a combination thereof. There are currently five (5) monitoring wells which would have to be sealed and abandoned. It will also be necessary to remove the control panel and power supply as well as the existing bituminous driveway.

3.3 Conceptual Project Cost

Based on our preliminary assumptions, we have estimated a total (conceptual) project cost of \$2,330,000, including estimated construction costs, engineering costs, financing costs, and contingency costs.

No costs have been assumed for easements or right-of-way.

**Table 1 - Preliminary Construction Cost Estimate
Lakeville Sewer Connection**

ITEM NO.	DESCRIPTION OF ITEM	QTY. (EST)	UNIT	EST. UNIT COST	EXTENDED COST
	GENERAL				
100	MOBILIZATION	1	LS	\$50,000.00	\$50,000.00
101	TRAFFIC CONTROL	1	LS	\$75,000.00	\$75,000.00
					\$125,000.00
	LIFT STATION SITE IMPROVEMENTS				
200	BITUMINOUS PAVEMENT	26	TONS	\$300.00	\$7,800.00
201	AGGREGATE BASE COURSE	48	TONS	\$30.00	\$1,440.00
202	4" GRAVEL SURFACING	93	TONS	\$30.00	\$2,790.00
203	CONCRETE SIDEWALK	59	SY	\$85.00	\$5,015.00
					\$17,045.00
	LIFT STATION				
300	FURNISH WET WELL, CONCRETE MANHOLE WITH PRECAST LID & ACCESS HATCH	1	EA	\$50,000.00	\$50,000.00
301	INSTALL WET WELL	1	LS	\$35,000.00	\$35,000.00
302	FURNISH VALVE MANHOLE, CONCRETE MANHOLE WITH PRECAST LID & ACCESS HATCH	1	EA	\$10,000.00	\$10,000.00
303	INSTALL VALVE MANHOLE	1	LS	\$12,000.00	\$12,000.00
304	FURNISH (2) PULL-UP SUBMERSIBLE PUMPS, RAIL SYSTEMS, CABLES, AND APPURTENANCES	1	LS	\$45,000.00	\$45,000.00
305	TELEMETRY - CONTROLS, (2) MAGNETIC FLOW METERS & INSTRUMENTATION	1	LS	\$50,000.00	\$50,000.00
306	WET WELL AND VALVE MANHOLE ELECTRICAL	1	LS	\$32,000.00	\$32,000.00
307	PRESSURE GAUGES	2	EA	\$800.00	\$1,600.00
308	INSTALL PUMP AND CONTROL PANEL	1	LS	\$5,000.00	\$5,000.00
309	DI PIPE, BENDS, WYE, AND APPURTENANCES	1	LS	\$5,000.00	\$5,000.00
310	SWING CHECK VALVE	2	EA	\$2,000.00	\$4,000.00
311	GATE VALVE W/ HANDWHEEL	2	EA	\$2,000.00	\$4,000.00
312	SCH 40 PVC DRAIN PIPE & 3" FLOOR DRAIN	1	EA	\$1,000.00	\$1,000.00
313	DAVIT CRANE & 3 SEPARATE BASES	1	EA	\$5,500.00	\$5,500.00
314	PORTABLE GAS GENERATOR	1	EA	\$3,500.00	\$3,500.00
					\$263,600.00

	FORCE MAIN				
400	FORCE MAIN PIPE, DIRECTIONALLY DRILLED	12300	LF	\$75.00	\$922,500.00
401	AIR RELEASE VALVE WITH CONCRETE MANHOLE	1	EA	\$6,500.00	\$6,500.00
402	11.25 DEGREE BEND	4	EA	\$600.00	\$2,400.00
403	22.5 DEGREE BEND	4	EA	\$600.00	\$2,400.00
404	45 DEGREE BEND	4	EA	\$600.00	\$2,400.00
405	CONCRETE ENCASEMENT	100	LF	\$70.00	\$7,000.00
					\$943,200.00
	STREET WORK				
500	CONNECT TO EXISTING SANITARY MANHOLE	1	EA	\$28,000.00	\$28,000.00
501	REMOVE CONCRETE PAVEMENT	3200	SF	\$5.00	\$16,000.00
502	REMOVE CURB AND GUTTER	40	LF	\$5.00	\$200.00
503	REMOVE BITUMINOUS PAVEMENT (TRAIL)	40	SY	\$5.00	\$200.00
504	AGGREGATE BASE COURSE	330	TONS	\$28.00	\$9,240.00
505	CONCRETE PAVEMENT	3200	SF	\$22.00	\$70,400.00
506	CURB AND GUTTER	40	LF	\$50.00	\$2,000.00
507	TRUNCATED DOMES	20	SF	\$50.00	\$1,000.00
508	PAVEMENT MARKINGS	1	LS	\$2,000.00	\$2,000.00
509	BITUMINOUS PAVEMENT (TRAIL)	40	SY	\$50.00	\$2,000.00
					\$131,040.00
	LIFT STATION GRADING & MISCELLANEOUS				
600	COMMON EXCAVATION	1	LS	\$15,000.00	\$15,000.00
601	DEWATERING	1	LS	\$25,000.00	\$25,000.00
602	GRANULAR BACKFILL	79	TONS	\$30.00	\$2,370.00
603	FOUNDATION MATERIAL	41	TONS	\$40.00	\$1,640.00
604	TOPSOIL, STRIP/STOCKPILE & REPLACE (4")	1	LS	\$6,000.00	\$6,000.00
605	SEEDING, FERTILIZING & MULCHING	1	LS	\$20,000.00	\$20,000.00
606	EROSION CONTROL	1	LS	\$8,105.00	\$8,105.00
607	REMOVE EXISTING ASPHALT PAVEMENT AT TREATMENT SITE	500	SY	\$4.00	\$2,000.00
608	DECOMMISSION EXISTING TREATMENT FACILITY	1	LS	\$60,000.00	\$60,000.00
609	UPGRADE ELECTRICAL SUPPLY TO SITE	1	LS	\$40,000.00	\$40,000.00
					\$180,115.00
CONSTRUCTION SUBTOTAL					\$1,660,000.00
CONSTRUCTION CONTINGENCY					\$250,000.00
ESTIMATED CONSTRUCTION COSTS					\$1,910,000.00
ENGINEERING AND ADMINISTRATION COSTS					\$380,000.00
FINANCING COSTS					\$40,000.00
ESTIMATED (CONCEPTUAL) TOTAL PROJECT COST					\$2,330,000.00

3.4 Connection Charges – Lakeville Sewer Connection

In addition to construction costs, we also anticipate that access/connection charges will be applicable. The Metropolitan Council Environmental Services (MCES) Sewer Access Charge (SAC) is a charge that covers a pro-rata share of the cost of Metropolitan Council infrastructure investment for the conveyance of and treatment of the sanitary sewer within the Metropolitan Council system. The City of Lakeville Sewer availability charge and connection charge covers the pro-rata share of the cost of the City of Lakeville conveyance system infrastructure investment. The estimated connection charges are shown in the table below.

**Table 2 – Estimated Connection Charges
Lakeville Sewer Connection**

DESCRIPTION OF ITEM	QTY. (EST)	UNIT	EST. UNIT COST	EXTENDED COST
MET COUNCIL SEWER ACCESS CHARGE	32	EACH	\$2,485	\$79,520
LAKEVILLE SANITARY SEWER AVAILABILITY CHARGE	32	EACH	\$327	\$10,464
LAKEVILLE SANITARY SEWER CONNECTION CHARGE	32	EACH	\$825	\$26,400
ESTIMATED CONNECTION CHARGES				\$116,384

3.5 Operation and Maintenance Costs

After the system is constructed and operational, there will be ongoing operation and maintenance costs associated with the system. In general, this option requires minimal maintenance as all treatment will occur at a regional facility. A major component of the operation and maintenance charge is the sanitary sewer usage charge. The sanitary sewer usage charge below is based on the City of Lakeville’s 2025 Fee Schedule and includes the City’s charges for ongoing maintenance of its conveyance system as well as the MCES charges for its ongoing expenses associated with conveyance and treatment of the wastewater. Additionally, the City will have recurring administrative charges for utility billings and ongoing operation and maintenance costs for electricity and maintenance. The estimated operation and maintenance charges are shown in the table below.

**Table 3 – Estimated Operation and Maintenance Charges
Lakeville Sewer Connection**

DESCRIPTION OF ITEM	QTY. (EST)	UNIT	EST. UNIT COST	EXTENDED COST
SANITARY SEWER USAGE CHARGE *	3200	1000 GAL	\$5.62	\$17,984
CITY ADMINISTRATIVE COSTS	1	EACH	\$6,500	\$6,500
OPERATION COSTS (ELECTRICITY, PUMP MAINTENANCE)	1	EACH	\$6,000	\$6,000
ESTIMATED OPERATION AND MAINTENANCE CHARGES				\$30,484

* The sanitary sewer usage charge will vary depending upon flow. For this evaluation, 274 gallons per day per house was assumed.

3.6 Future Replacement Costs

If the City chooses this option, they must consider future replacement costs as there is a finite life to the infrastructure. In general, the components associated with this option have a relatively long life. The following timelines and costs are assumed for future replacement:

**Table 4 – Estimated Future Replacement Costs
Lakeville Sewer Connection**

DESCRIPTION OF ITEM	EXPECTED LIFE	ESTIMATED (2025) COST
PUMPS - REPLACEMENT (2)	25 YEARS	\$24,000
DRIVEWAY PAVEMENT - REPLACE	25 YEARS	\$15,000
REPLACE CONTROL PANEL / ELECTRICAL COMPONENTS	25 YEARS	\$120,000
LIFT STATION WET WELL - REHABILITATE	50 YEARS	\$150,000
FORCEMAIN	> 50 YEARS	N/A

As shown in the table above, no future replacements are anticipated in the next 20 years. The first replacement costs are anticipated at year 25.

3.7 20 Year Life Cycle Cost Analysis

For purposes of this evaluation, a comparison of an initial time horizon of 20 years has been prepared. The initial cost for this option includes estimated construction costs and connection charges. The operation and maintenance costs include the expected annual costs for operation and maintenance, including: sanitary sewer usages charges, City administrative expenses, and City maintenance expenses. Since no replacement costs are anticipated in the 20-year time horizon, the replacement cost is \$0 in this option.

In order to directly compare this option with the other option discussed within this report, it is necessary to utilize a constant time horizon. Therefore, we chose an initial time horizon of 20 years as it is typical to finance infrastructure over a 20-year term. We assume that the City will finance the initial costs by bonding and assume a 5% interest rate for a 20-year term with equal annual payments.

Initial Costs = \$2,330,000 + \$116,384	\$2,446,384
Estimated Annual Cost of Bond	\$196,304 (equal annual payments)
Estimated Operation and Maintenance Cost	\$30,484
Estimated Capitalized Future Replacement Costs	\$0
Total Estimated Annual Cost	\$226,788

3.8 Alternative Comparison – Capitalized Future Replacement Costs (50 Year)

In the 50-year time horizon, the City can anticipate \$309,000 (unadjusted for inflation) in replacement and/or rehabilitation costs.

In order to compare infrastructure replacement costs with varying lifespans, we have utilized the annual (capitalized) cost method. For consistency, a 5% discount rate is assumed.

Pumps (\$24,000, 25 years)	\$1,704
Driveway (\$15,000, 25 years)	\$1,065
Replace Control Panel / Electrical (\$120,000, 25 years)	\$8,520
Lift Station Wet Well – Rehabilitate (\$150,000, 50 years)	\$8,220
Total Future Replacement Costs (capitalized)	\$19,509

As stated above, an initial timeframe of 20 years was chosen as a financing period for the initial improvements. Therefore, the costs during the first 20 years are as follows:

Estimated Annual Cost of Bond	\$196,304 (equal annual payments)
Estimated O & M Costs	\$30,484
Capitalized Future Replacement Costs	\$19,509
Total Capitalized Cost (Years 0-20)	\$246,297

After 20 years, this analysis assumes that the bond will be paid off from the initial improvements. Therefore, the costs after 20 years are as follows:

Estimated O & M Costs	\$30,484
Capitalized Future Replacement Costs	\$19,509
Total Capitalized Cost (Years 21 and beyond)	\$49,993

4.0 Option 2 - Proposed CSTS Upgrades

The proposed CSTS Upgrades option consists of upgrading the existing community septic treatment system to lower the effluent nitrogen levels. The CSTS Upgrades consist of a 3,400 gallon stilling chamber, a 4,600 gallon denitrification chamber, a 4,800 gallon settling chamber, a 3,300 gallon polishing MBBR Chamber, and an Advantex AX100 pod. Construction plans and specifications were prepared in 2024 and bids were received. The total estimated project cost based on the bids received is \$877,000.

4.1 Estimated Project Cost

The City received bids on this project in 2024. The estimated project cost including estimated construction costs, engineering costs, and contingency costs is \$877,000. See table below:

**Table 5 – Estimated Construction Costs
CSTS Upgrades**

ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	EXTENSION
1	AX100	EACH	1	\$ 90,609.77	\$ 90,609.77
2	VENT FAN WITH HEATER	EACH	1	\$ 33,248.94	\$ 33,248.94
3	EXISTING RECIRCULATION TANK 2 MODIFICATIONS	LS	1	\$ 16,364.32	\$ 16,364.32
4	NEW 16,000 GALLON TANK	LS	1	\$ 104,495.44	\$ 104,495.44
5	FLOW INDUCER TOWER - SIMPLEX	EACH	1	\$ 8,814.18	\$ 8,814.18
6	AIR DISTRIBUTION SYSTEM	LS	1	\$ 13,440.45	\$ 13,440.45
7	SEPTIC FILTERS	EACH	4	\$ 16,414.33	\$ 65,657.32
8	SIEVE SCREENS	EACH	5	\$ 3,495.24	\$ 17,476.20
9	BLOWER AND ENCLOSURE	LS	1	\$ 6,043.52	\$ 6,043.52
10	PUMPS, INTERIOR PIPING AND VALVES	EACH	4	\$ 14,123.54	\$ 56,494.16
11	MM VALVE	EACH	1	\$ 20,368.15	\$ 20,368.15
12	FLOAT ASSEMBLY	EACH	7	\$ 5,689.21	\$ 39,824.47
13	1.25" SCH 40 PVC	LF	220	\$ 22.34	\$ 4,914.80
14	2" SCH 40 PVC	LF	350	\$ 24.47	\$ 8,564.50
15	3" SCH 40 PVC - AIR LINE	LF	60	\$ 38.30	\$ 2,298.00
16	4" SCH 40 PVC	LF	60	\$ 40.43	\$ 2,425.80
17	SITE ELECTRICAL	LS	1	\$ 41,437.48	\$ 41,437.48
18	CONTROL PANEL	LS	1	\$ 119,336.11	\$ 119,336.11
19	SEEDING	LS	1	\$ 3,724.00	\$ 3,724.00
20	DEMOLITION WORK	LS	1	\$ 14,279.94	\$ 14,279.94
21	MOBILIZATION	LS	1	\$ 28,728.00	\$ 28,728.00
22	TEMPORARY CONVEYANCE OF WASTEWATER	LS	1	\$ 10,640.00	\$ 10,640.00
23	HEATING UNIT, RECIRCULATION PUMP, INTERIOR PIPING AND VALVES	LS	1	\$ 23,814.45	\$ 23,814.45
CONSTRUCTION SUBTOTAL					\$ 733,000.00
ELECTRICAL WORK					\$ 40,000.00
ENGINEERING					\$ 65,000.00
CONTINGENCY					\$ 35,000.00
TANK INTEGRITY					\$ 4,000.00
ESTIMATED TOTAL PROJECT COST					\$ 877,000.00

4.2 Operation and Maintenance Costs

After the upgrades to the CSTS system are constructed and operational, there will be ongoing operation and maintenance costs associated with the system. The MPCA Permit for the system requires a licensed Operator to operate the system. The estimated operation and maintenance charges are shown in the table below.

**Table 6 – Estimated Operation and Maintenance Charges (Annual)
Proposed CSTS Upgrades**

DESCRIPTION OF ITEM	QTY. (EST)	UNIT	EST. UNIT COST	EXTENDED COST
OPERATOR/SERVICE PROVIDER COSTS	1	EACH	\$19,000	\$19,000
CITY ADMINISTRATIVE COSTS	1	EACH	\$8,237	\$8,237
REPAIRS AND MAINTENANCE	1	EACH	\$18,940	\$18,940
SEPTIC PUMPING	1	EACH	\$5,275	\$5,275
OPERATION COSTS (ELECTRICITY)	1	EACH	\$3,600	\$3,600
ESTIMATED OPERATION AND MAINTENANCE CHARGES				\$55,052

4.3 Future Replacement Costs

There is a finite life to the major components of the CSTS. Minor repairs are included in the estimated operation and maintenance costs above; however, major replacement costs are not. The following is assumed for major replacements:

**Table 7 – Estimated Future Replacement Costs (2025)
Proposed CSTS Upgrades**

DESCRIPTION OF ITEM	EXPECTED LIFE	ESTIMATED (2025) COST
REPLACE TEXTILES (PER AX100)	20 YEARS	\$18,000
REPLACE AX100 LIDS	25 YEARS	\$68,000
REPLACE DRIVEWAY	25 YEARS	\$15,000
REPLACE CONTROL PANEL	25 YEARS	\$120,000
REPLACE AX100'S INSTALLED IN 2006 (3)	40 YEARS	\$345,000
REPLACE NEW AX100 (1)	40 YEARS	\$115,000
REPLACE MOUNDS (18)	40 YEARS	\$540,000
REHAB CONCRETE TANKS	50 YEARS	\$150,000

The textiles, which were originally installed in 2006, will be due for replacement in 2026. The annualized (capitalized) cost for the textiles is \$1,443. The driveway, which was originally constructed in 2006, will be due for replacement in the year 2031. The annualized (capitalized) cost for driveway replacement is \$1,065.

4.4 20 Year Life Cycle Cost Analysis

For purposes of this evaluation, a comparison of an initial time horizon of 20 years has been prepared. The initial cost for this option includes estimated construction costs, engineering costs and administrative costs to complete the project. There are no connection charges for this option since this option consists of an upgrade to the existing system. The operation and maintenance costs include the expected annual costs for operation and maintenance.

In order to directly compare this option with the other option discussed within this report, it is necessary to utilize a constant time horizon. Therefore, we chose an initial time horizon of 20 years as it is typical to finance infrastructure over a 20-year term. We assume that the City will finance the initial costs by bonding and assume a 5% interest rate for a 20-year term with equal annual payments.

Initial Costs	\$877,000
Estimated Annual Cost of Bond	\$70,373 (equal annual payments)
Estimated Operation and Maintenance Cost	\$55,052
Estimated Future Replacement Costs	\$2,508 (capitalized)
Total 20-Year Estimated Annual Cost	\$127,993

4.5 Alternative Comparison – Capitalized Future Replacement Costs (50 Year)

In the 50-year time horizon, the City can anticipate \$1,371,000 (unadjusted for inflation) in future replacement and/or rehabilitation costs with the CSTS System Upgrades option.

In order to compare infrastructure replacement costs with varying lifespans, we will utilize the annual (capitalized) cost method. For consistency, a 5% discount rate is assumed.

Replace Textiles (\$18,000, 20 years)	\$1,444
Replace Lids (\$68,000, 25 years)	\$4,828
Replace Driveway (\$15,000, 25 years)	\$1,065
Replace AX100s (\$460,000, 40 years)	\$26,818
Replace Mounds (\$540,000, 40 years)	\$31,482
Replace Control Panel (\$120,000, 25 years)	\$8,520
Rehab Concrete Tanks (\$150,000, 50 years)	\$8,220
Total Future Replacement Costs (capitalized)	\$82,337

As stated above, an initial timeframe of 20 years was chosen as a financing period for the initial improvements. Therefore, the costs during the first 20 years are as follows:

Estimated Annual Cost of Bond	\$70,373 (equal annual payments)
Estimated O & M Costs	\$55,052
Capitalized Future Replacement Costs	\$82,337
Total Capitalized Cost (Years 0-20)	\$207,762

After 20 years, this analysis assumes that the bond for the initial improvements will be repaid. Therefore, the costs after 20 years are as follows:

Estimated O & M Costs	\$55,052
Capitalized Future Replacement Costs	\$82,337
Total Capitalized Cost (Years 21 and beyond)	\$137,889

5.0 Summary

As shown herein, the estimated annual cost for Option 1 – Lakeville Sewer Connection (\$226,788) is higher than Option 2 – Upgrades to CSTS (\$127,993) **when limiting the time horizon to a 20 year time period**. This is due to the higher initial construction cost of Option 1.

However, when a longer time period of 50 Years is analyzed, savings begin to be recognized for Option 1 – Lakeville Sewer Connection over Option 2 – Upgrades to CSTS after 20 years. This is due to the lower operating costs of Option 1.

When analyzing the **50-Year Time Horizon**, during the first 20 years the capitalized cost of Option 1 – Lakeville Sewer Connection is \$246,297 vs. the capitalized cost of Option 2 – Upgrades to CSTS is \$207,762.

After the 20-Year bond is repaid, the recurring capitalized cost of Option 1 – Lakeville Sewer Connection (\$49,993) is lower than Option 2 – Upgrades to CSTS (\$137,889).

Although **Option 1 – Lakeville Sewer Connection** has a higher initial cost, several advantages are recognized for Option 1. After construction, Option 1 requires minimal maintenance and/or replacements. There is less uncertainty in the future, as all of the wastewater treatment is performed at the Metropolitan Council regional facility. With this option, the existing CSTS treatment site (7 acres) could be utilized for another purpose if desired. The following summarizes Option 1:

- Higher initial costs
- Lower operation and maintenance costs
- Future replacement limited to replacement of pumps and minor repairs
- Reduces uncertainty of future
- Ability to use current treatment site (7 acres) for different use

Although removal of individual septic tanks at each homesite is not included in the cost estimates, it should be noted that homeowners would have the option of replacing their individual septic tanks with small grinder pump stations at their own expense if desired.

Option 2 – Proposed CSTS Upgrades has lower initial costs but also has more uncertainty in the future. The CSTS is permitted through the MPCA, and permit requirements could be revised in the future to become more stringent. Also, the on-site wastewater treatment is subject to several environmental factors and biological processes, which poses another degree of uncertainty. The composition of the wastewater could change over time as new household chemicals are introduced, which may result in the need for additional system upgrades.

Over time, the disposal mounds may fail. For this analysis, we assumed a useful life of 40 years per disposal mound. At such time that the disposal mounds initially fail, it is presumed that new mounds will be constructed at alternate sites on the wastewater treatment site property. However, if the replacement mounds fail there may not be sufficient land area in the future to replace the disposal mounds a third time within the existing treatment site property. The following summarizes Option 2:

- Lower initial costs
- Higher operation and maintenance costs
- Significant major replacement costs as the system ages
- Higher uncertainty of future

As stated herein, an initial 20-year term was assumed for a financing period for both options such that they could be directly compared. The City may wish to engage its financial consultant to consider different financing periods and/or financial analysis for both of the options.

We recommend that the City discuss and analyze the information herein and provide direction to staff on its preferred option such that a Facility Plan can be prepared prior to March 1, 2027.