

**TO:** Kate Thunstrom, City Administrator  
**FROM:** Craig Jochum, City Engineer  
**SUBJECT:** Comprehensive Sanitary Sewer and Municipal Water Plan  
**DATE:** December 16, 2024

**OVERVIEW:**

As directed by the Council staff has prepared a Comprehensive Sanitary Sewer and Municipal Water Plan. The purpose of this Report is to create a comprehensive tool for evaluating and expanding the City's sanitary sewer and water systems. The Report provides a preliminary alignment for trunk sanitary sewer and watermains, an analysis of the existing trunk sewer and water facilities, a determination of sewer and water demands based on proposed land use, the size, depth, grades, and invert elevations of proposed sanitary sewer trunk lines, and an opinion of probable construction costs for the proposed improvements. The full report is available on the City's website.

This study provides an estimated distribution of flow within the existing and future sanitary sewer and water systems based on existing and future land use, as well as flow projections within the Urban Service Area and the Urban Reserve Area. Future Land Use maps are attached (Figure 1 and Figure 2).

The Urban Service Area was divided into three development phases. Phases 1 thru 3 corresponded to the *Comp Plan* with Phase 1 representing 2020, Phase 2 representing 2030, and Phase 3 representing 2040. The Phase 4 development area was added to the study and includes the Urban Reserve Area located on the east side of the Urban Service Area. It is anticipated that development will initially occur via extensions from the existing sanitary sewer system and watermains in Phase 1. The Utility Phasing Boundaries are shown on attached Figure 3.

The existing wastewater collection system was analyzed for capacity based on the existing sanitary sewer system. In general, the existing system is adequately sized to convey the existing wastewater flows to the treatment plant. There are three segments of the existing system that are near or at their maximum capacity. These segments are shown on attached Figure 6 and are described as follows:

Segment 1: The gravity line along Trunk Highway 47 from 233<sup>rd</sup> Avenue to Lift Station No. 1.

Segment 2: The forcemain from Lift Station No. 14 to the Manhole at 233<sup>rd</sup> Avenue and Trunk Highway 47.

Segment 3: The gravity line along 227<sup>th</sup> Avenue and Rum River Boulevard from Bridge Street to Trunk Highway 47.

No major upgrades to the existing municipal water system are anticipated. The City has had some issues with service and hydrant connections on the watermains that were installed between 1973 and 1979. It is recommended these segments of watermain and the associated services and hydrants be replaced as the streets are reconstructed. These segments are shown on attached Figure 10.

The future trunk system layout is shown in Figure 12. The layout is general in nature and exact routing will need to be determined at the time of a feasibility study and design. It is important that the general concept and sizing be adhered to for assurance of an economical and adequate system. Trunk sewers were extended from the existing trunk sewer system and sized based on the peak wastewater flow generated from the future sewer districts.

It is anticipated that the development of the future trunk sanitary sewer and water system will be driven by short-term development pressure, existing trunk system capacities, and future trunk system capacities. The Table below summarizes the costs for each segment which is shown on Figure 12. Feasibility studies will be required to determine more detailed, comprehensive costs for each individual project.

### **Estimated Cost Summary**

Segment	Development Phase	Estimated Sewer Trunk Cost	Estimated Water Trunk Cost	Total Estimated Cost
1	1, 2, & 3	\$5,941,875	\$1,156,531	\$7,098,406
2	1	\$1,212,181	\$431,438	\$1,643,619
3	1 & 2	\$3,378,873	\$1,295,125	\$4,673,998
4	1	\$3,176,056	\$893,438	\$4,069,494
5	1	\$989,180	\$457,025	\$1,446,205
6	1	\$460,188	\$0	\$460,188
7	1	\$766,944	\$480,500	\$1,247,444
8	1 & 2	\$887,468	\$647,250	\$1,534,718
9	2	\$1,626,913	\$163,313	\$1,790,226

**ACTION TO BE CONSIDERED:**

Consideration of approval of the Comprehensive Sanitary Sewer and Municipal Water Plan.

**BUDGET IMPLICATION:**

None at this time. Estimated costs for future improvements are presented in the report.

Attachments:

- FIGURE 1 – FUTURE LAND USE
- FIGURE 2 – FUTURE LAND USE IN THE SERVICE AREA
- FIGURE 3 – UTILITY PHASING BOUNDARIES
- FIGURE 6 – EXISTING SANITARY SEWER ISSUES
- FIGURE 10 – WATER REPLACEMENT SEGMENTS
- FIGURE 12 – FUTURE TRUNK LINES