

# **FEASIBILITY REPORT SOUTH CRAILSHEIM ROAD SANITARY SEWER EXTENSION**

## **INTRODUCTION**

The purpose of this report is to determine the feasibility of improving South Crailsheim Road from the north line of Lot 7, Park View Acres extended easterly to the south line of the north 55 feet of Lot 5, Park View Acres extended easterly by extension of the municipal wastewater collection system. The terms “wastewater collection system” and “sanitary sewer” will be used interchangeably in this report.

Such improvement was petitioned for and the petition was executed by owners of more than 35% of the property abutting on the proposed improvement. This report has been prepared pursuant to Council resolution of December 8, 2014.

## **PROJECT NEED AND DESIGN**

The City received a petition from owners of certain property abutting each side of South Crailsheim Road along the proposed improvement. Specifically, the improvement is being initiated to accommodate development of a proposed adult living and care facility on Lot 6 and the northerly 55 feet of Lot 5, Park View Acres as shown on Map 1. The improvement will also provide an additional tract of land immediately north of the proposed development with access to sanitary sewer service. Properties on the east side of South Crailsheim Road are to be served by extensions as presented in the 2005 Feasibility Report for the West-North Interceptor Phase VI Sanitary Sewer Extension and illustrated on Map 2. Justifications for branching the collection system so as to serve the east and west sides of South Crailsheim Road independently include the cost effectiveness of extending gravity sewers from the lowest lying areas progressively upward to the highest areas rather than extending through hills to reach low areas. Following the terrain minimizes the burial depth of the sewers and therefore initial and long term costs for both the sewer utility and those accessing the sewer. Justifications for branching the collection system also include avoiding the additional expense and certain practical challenges related to crossing highways such as South Crailsheim Road with either sewer mains or, particularly, sewer services.

The proposed sanitary sewer extension should be installed of adequate size and depth to serve properties abutting the proposed and future extension along South Crailsheim Road as well as any potential service area south of First Avenue Southwest. An 8" main at minimum grade will be adequate to serve the properties currently abutting the west side of South Crailsheim Road and the limited service area south of First Avenue Southwest presented later in the report. The limited service area might also be served by continuing one or more of the other future extensions as generally represented on Map 2. Constructing the proposed sanitary sewer extension on a projection of the current main's elevation and grade will maximize the service area and future alignment flexibility although burial depths of up to 18 feet will be reached within the proposed project.

### ***Planned Service District Relationship to Comprehensive Plan***

The sanitary sewer extension presented in this report is reliant on the capacity available in the sanitary sewer trunk main identified as the West-North Interceptor. The planned service district for the West-North Interceptor is that defined in the community's existing master sewer plan. The interceptor extends from north of Oxford Street near Humiston Avenue along the north and westerly portions of the community. The West-North Interceptor includes the lift station located at Fox Farm Road and Crailsheim Road. The current Comprehensive Plan, completed in 2004, depicts the addition of approximately 120 acres of residential growth area south of First Avenue Southwest which is outside the West-North Interceptor's planned service district. Of this total area, approximately 15 acres, including a wetland area, is too low to be served by gravity main extensions. The growth area east of this low area would, if proposed during original design considerations, have been evaluated for potential service within the South Shore area trunk district. The growth area west of the low area would, if proposed during original design considerations, have been evaluated for potential service within the West-North Interceptor's service district.

Preliminary calculations indicate that no more than approximately 20 acres of additional growth area should be added to the West-North Interceptor's service district. This potential to serve the additional 20 acres is based on there being a firm limitation of growth density within the area south of Fox Farm Road, a projected need to replace 450 feet of 12" trunk sewer main immediately upstream of the Fox Farm Road Lift Station, and assumed capacity downstream of the lift station. Provided that the additional 20 acres of growth area is strategically located at the intersection of Crailsheim Road and First Avenue Southwest, it is feasible to serve the area with lateral extensions from the main presented in this report or other future extension as generally depicted on Map 2.

The change in the residential growth area introduced in the Comprehensive Plan has only been addressed to the extent that extensions of the existing trunk system are able to serve the area. Determinations as to the system improvements needed to serve the additional growth area is beyond the scope of this report. It may be beneficial to revisit the need for the additional growth area with consideration of the practical ability to serve the area. Alternately, consideration of the creation of a new district served by a lift station discharging to the system at or above Second Avenue might be evaluated. That portion of the sanitary sewer system previously serving Campbell Soup Company now has a certain amount of reserve capacity.

### **COSTS AND FINANCING**

The total estimated improvement project cost, including engineering and contingencies, is \$96,250. Of the total cost for a sanitary sewer project, that portion which would be incurred in constructing a sewer main of the size and depth adequate for only providing service to abutting properties is to be considered lateral sewer costs. Such lateral costs are based on the installation of an 8" main at up to 10' feet in depth. The remaining costs would be defined as trunk costs or those additional costs associated with providing service to an area larger than that which abuts on the project. These costs of the proposed improvement are estimated as follows:

Lateral Costs:	\$84,500
Trunk Costs:	<u>\$11,750</u>
Total Project:	\$96,250

The cost differential for constructing up to 18 feet deep rather than 10 feet deep would typically be greater than estimated for this project. The reduced differential is a result of limited work area and proximity of adjacent utilities which increases the lateral cost. In other words, the lateral costs are greater than they might be in a less constricted alignment.

Special assessments for wastewater collection projects are levied in two components, trunk assessments and lateral assessments.

***Lateral Assessments***

Lateral assessments are based on the lateral costs as previously defined and the rate determining frontage or Residential Equivalent Connections (RECs) applicable to the project. The lateral costs divided by the rate determining units establishes the assessment rate. The amount of assessments is equal to the assessment rate multiplied by assessable units. Assessable units may be less than rate determining units when a portion or portions of the project abut property that is not benefitted by the project. Properties on the east side of South Crailsheim Road are not found to be benefitted nor proposed to be assessed because it has not been the recent practice of the City to assess lateral benefit across highways such as South Crailsheim Road due to the physical barrier they tend to pose and because the properties have been or will be served by other extensions. Only those properties on the west side of South Crailsheim Road as shown on Map 1 are proposed to be assessed lateral benefit.

The selection of REC or frontage units tends to be based on the status of the abutting property. Frontage is generally used when assessments are to be levied to undeveloped property or properties that may be subdivided or rearranged. The use of frontage units yields a uniformly distributed rate which is beneficial in equitably reapportioning assessments at the time development or changes in property lines occurs. REC units are typically used where the number of individual connections or lots is able to be identified at the time the project is undertaken. In the case of this project, one property is proposed to be rearranged and the other could potentially be subdivided. It is therefore proposed to utilize frontage units.

As per past City practice, the rate determining frontage would be established on the basis of what would be potentially benefitted frontages if not for the separation created by South Crailsheim Road. The determination of lateral rates on such a basis is consistent with previous projects having comparable circumstances such as the West-North Interceptor Phase V and VI projects (along South Crailsheim Road along Olson Park), and the C.S.A.H. #25 Sewer Extension. The lateral assessment rate will therefore be equal to the lateral costs divided by the frontage that would abut each side of the length of the sanitary sewer extension.

The lateral assessment rate would be calculated as the \$84,500 in lateral costs divided by the 950 feet of rate determining frontage or \$88.95/ foot. Due to the unusually high assessments that would result from strict use of the City's Assessment Ordinance, it is believed that these assessments would exceed the benefit derived from the project as defined by the intent of Minnesota Statutes. It is therefore recommended that the lateral assessment be based on the current value of the previous calculated

sewer lateral assessment rates used in similar situations, which is estimated to be \$58.70 per foot at the time the project is undertaken. Final lateral assessments will be determined at the time of project financing or on calculated rates, which ever is less.

***Trunk Assessments***

Trunk assessments are levied on the basis of area benefitted by a water extension and the current trunk assessment rate which is independent of a particular project's cost. The trunk rate is defined by ordinance and originates from a July 1975 determination of estimated costs for all trunk improvements needed at that time and the total area to be served by those improvements. An adjustment using a construction cost index maintains current value of the trunk rate. A trunk fund receives all trunk assessments and is utilized to retire those debt costs attributable to trunk project costs. The trunk fund may receive more or less assessments than trunk costs for each project undertaken. As with lateral assessments, only the areas shown on Map 1 are subject to trunk sanitary sewer assessments as a result of the proposed improvement.

***Estimated Assessments***

Estimated assessments, trunk fund obligations, and "City Share" costs of the project are as follows:

	<u>LATERAL</u>	<u>TRUNK</u>	<u>TOTAL</u>
Assessments	\$27,882.50	\$17,62.12	\$45,494.62 (47%)
Trunk Fund (due to)		(\$5,862.12)	(\$5,862.12)
City Share	<u>\$56,617.50</u>	<u>0.00</u>	<u>\$56,617.50</u>
TOTAL	\$84,500.00	\$11,750.00	\$96,250.00

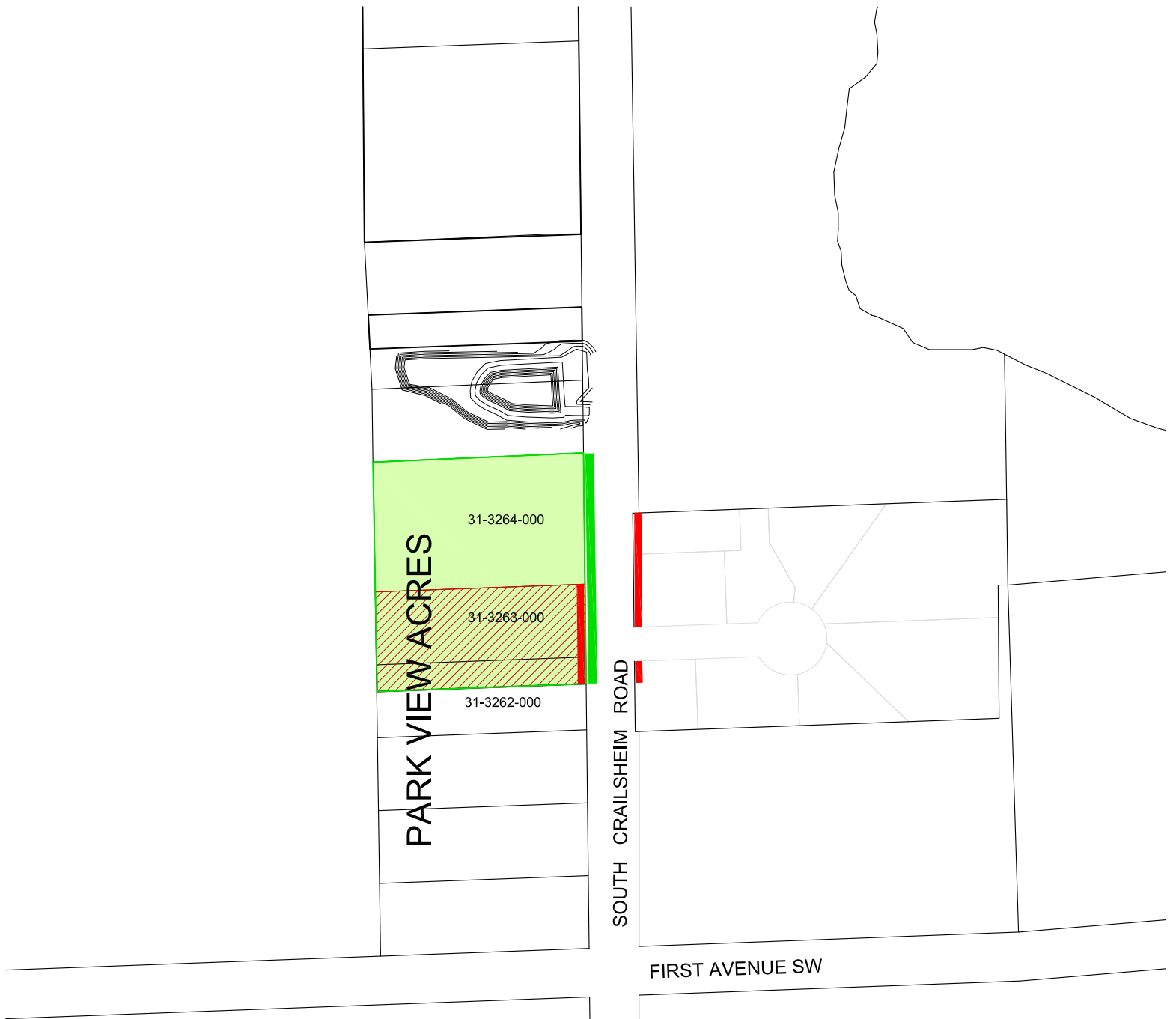
It is proposed that the project be initially financed by PIR bonding. Temporary use of 401 Construction Fund reserves may be needed until bond proceeds are received. Revenues from special assessments levied as a result of the project along with the annual special tax levy required to recover the city share of the project would be utilized for bond repayment.



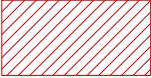

**COMBINATION WITH OTHER PROJECTS**

The proposed improvement should be combined with any sanitary sewer, storm sewer and water main extension projects ordered to be completed in 2015.

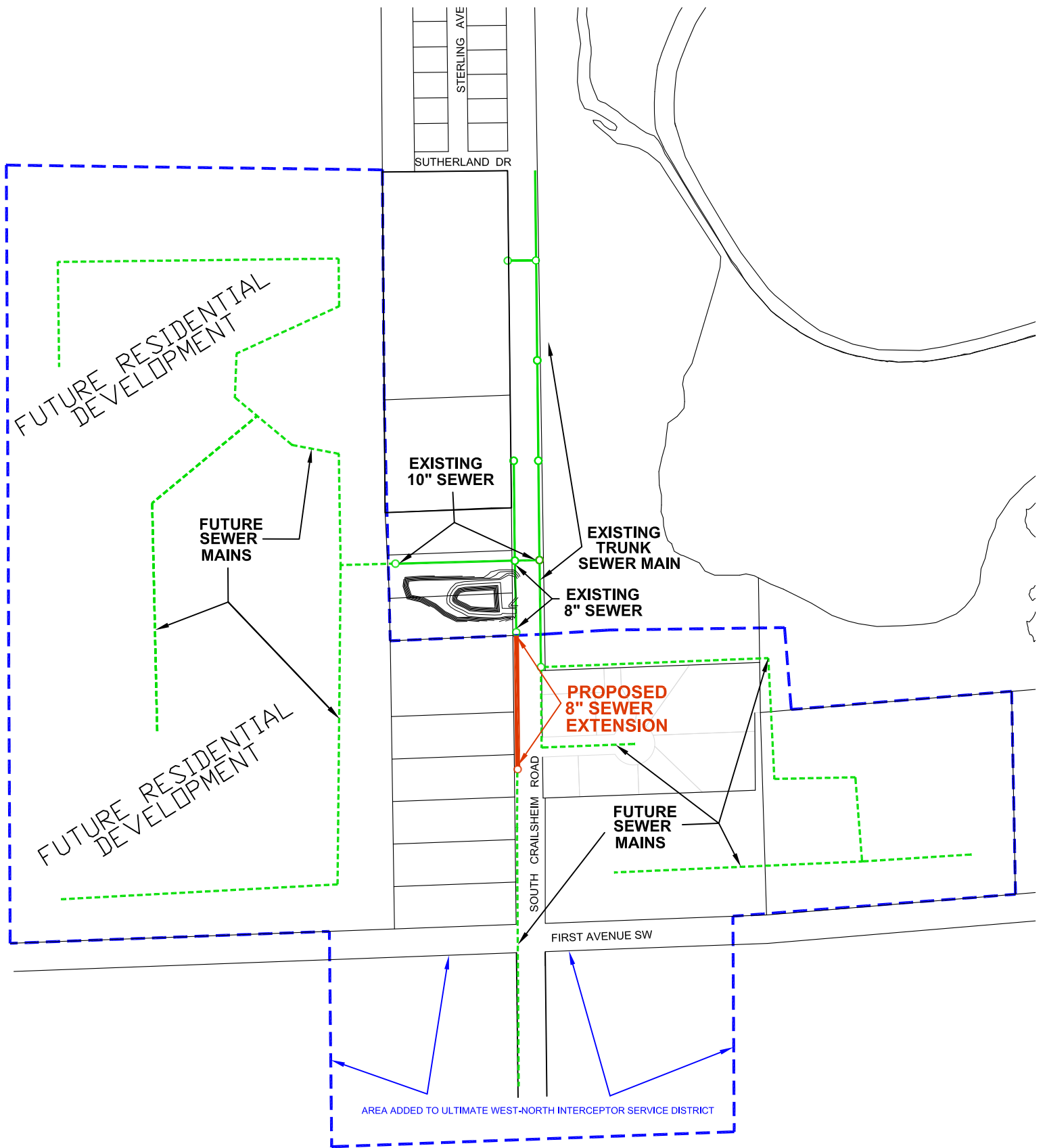
**CONCLUSION**

The proposed project is a feasible and cost effective way to provide wastewater collection service to the properties abutting the west side of South Crailsheim Road from the north line of Lot 7, Park View Acres extended easterly to the south line of the north 55 feet of Lot 5, Park View Acres extended easterly.



-  PROPERTY TO BE ASSESSED TRUNK AND LATERAL
-  PROPOSED SEWER EXTENSION
-  PROPOSED DEVELOPMENT
-  FRONTAGE ON PETITION

MAP 1



MAP 2