

FEASIBILITY REPORT WAGNER ADDITION STREET AND WATER IMPROVEMENTS

INTRODUCTION

The purpose of this report is to determine the feasibility of improving the following described streets by necessary grading and base, and by bituminous surfacing:

STERLING AVENUE: the entire length within the proposed plat of Wagner Addition;

and of improving the property described in Exhibit 1, or parts thereof, by extension of the municipal water distribution system.

Such improvements were petitioned for by an adequate number of benefitted property owners for the projects to be considered as petition initiated. This report has been prepared pursuant to Council Resolution of August 26, 2019. See Map A.

The property described in Exhibit 1 is that property proposed to be platted as Wagner Addition. Pursuant to the city's subdivision regulations, public improvements within a new subdivision are to be completed by the developer with certain exceptions. These exceptions include final surfacing of streets and those public improvements (storm sewer in this case) that may need to be sized larger than is necessary to serve only the property being platted. The petition for improvements was submitted as part of platting process.

DESIGN AND CONSTRUCTION

Street

The street within the subdivision, Sterling Avenue, will serve only local residential properties and should therefore be constructed to not less than minimum residential standards by the developer. An exception to the subdivision requirement that street construction be installed by the developer is that surfacing may be petitioned to be completed as an assessable public improvement. The surfacing of Sterling Avenue within Wagner Addition is the improvement addressed in this report.

The standards for street construction are outlined in the City's Assessment Ordinance which provides that residential streets "shall be of '5 ton' design, 36 feet in width, measured between faces of curbs. The recommended width of Sterling Avenue to be installed by the developer is therefore the minimum 36 feet. It is recommended that the type of curb to be used on the streets be a modified design 'D', the drive-over curb currently allowed to be installed in new subdivisions. This type of curb is recommended in developing areas although it does not serve as well to define a barrier to tires or maintenance equipment between driveways nor provide a smooth driveway opening as does the barrier type curb found on established streets within the community. The recommended use of the

'D' curb is based on its substantial advantage of allowing new driveways to be installed without curb modifications. The standard barrier curb will be installed at catch basin locations to allow installation of catch basin intakes with curb openings.

Although the terminology '5 ton' design reflects what may be considered outdated pavement design methodology, the intent of the standard is clear in defining that the pavement of residential streets should reflect the adjacent residential land use rather than being designed to potentially serve a collector or arterial function. A residential street design would therefore typically account for traffic consisting mainly of automobiles and small trucks together with minor quantities of trucks and buses to reflect normal residential services such as garbage hauling and school busing. It is recommended that the street be constructed by the developer utilizing a standard residential street section consisting of 9" of aggregate base with initial grading allowing for the placement of the 2.5" of bituminous surfacing as the assessable public improvement addressed in this report. It is also recommended that the 9" aggregate base to be installed by the developer be a drainable base material. Use of the drainable base material together with proper edge drain tiles will allow for free drainage of that base material, intercept free water rising from below that layer, allow for more rapid drainage of any excess moisture in the material above the drainable base, and provide a base that is less susceptible to loss of strength due to the presence of excess moisture. Geotextile reinforcement fabric would also be installed in conjunction with the aggregate base. The geotextile fabric will reduce the migration of the subgrade clay into the drainable base material and reinforce the subgrade material (clay) during the spring transitional period when frost is melting out of the soil and the subgrade's bearing strength is the weakest.

Street construction is proposed to commence in 2020 following installation of sewer and water mains, and storm sewer piping. Unless otherwise requested by the developer, it is proposed that the surfacing improvement not be undertaken until 2021 to allow for trench stabilization to occur.

Water Distribution

The master plan for meeting water distribution needs in the area of the proposed Wagner Addition does not identify the need for a trunk water main to be constructed within the proposed plat. The developer will therefore be required to install the lateral water main, with services, along that part of Sterling Drive included in the plat. The lateral extension in Sterling Drive will commence at the existing water main in Sutherland Drive and terminate with a fire hydrant on the west side of the cul-de-sac. Given the limited service area, looping the water main to the trunk water main in South Crailsheim Drive is not being required.

As per the City's Assessment Policy, fire hydrants are to be considered as part of the trunk system. The hydrant required within the proposed plat should be supplied to the developer for installation on the lateral line as the trunk improvement required for the plat.

Additional Information pertaining to Developer Installed Improvements

Sanitary Sewer

The platting of Wagner Addition will not require the installation of additional sanitary sewers that are to be considered as trunk improvements. The sanitary sewer extension within Sterling Avenue

allows for the area to be served by construction of near normal depth lateral sewer lines. The developer will be required to install an eight inch main, with services, from the existing sanitary sewer at the west edge of South Crailsheim Road to within the proposed extension of Sterling Avenue. Trunk Sanitary Sewer assessments have been levied against the property to be included in the proposed subdivision.

Storm Water Management System

The subdivision is located within an improved storm water district; however, the regional treatment basin was not designed to current National Pollution Discharge Elimination System (NPDES) permitting standards . In addition to an extension of storm sewer from the catch basin to be located on the easterly side of the cul-de-sac to the regional treatment basin, construction of a supplemental treatment basin will also be required. The supplemental treatment basin will be located just northeast of the existing regional basin.

The storm sewer extension and supplemental treatment basin will only receive runoff from the subdivision and therefore will not be sized larger than needed to accommodate the development. Such storm sewer improvements are to be provided as developer installed improvements.

COSTS AND FINANCING

Street Surfacing

The total estimated cost of the proposed street surfacing is \$61,000. In general, the City’s Assessment Ordinance defines that the assessment rate for a street improvement is to equal the cost of the improvement divided by the sum of adjusted frontages abutting the improvement. The width of intersections and similar distances are added to the summation of adjusted frontages to yield assessment rates that are equitable, relatively consistent between similar projects, and best reflect benefit. The assessment as to any property is to be equal to the assessment rate multiplied by the adjusted frontage of that property. An adjusted frontage is defined to be the average width of the lot as it abuts the improvement. Certain lot allowances, which become a city share of the project, are provided for in the ordinance. No lots qualify for an allowance in the proposed addition.

The following provides the estimated costs, city share, assessments receivable, and assessment rates for the street improvement:

City share for non-assessable costs	\$0.00
City share of assessable costs	<u>\$0.00</u>
Total city share	\$0.00
Assessments receivable	<u>\$61,000.00</u>
TOTAL COST	\$61,000.00

The estimated assessment rate is \$63.147/ft

It would be proposed that the surfacing 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 would be utilized for bond repayment.

Water Distribution

The total estimated cost for furnishing the fire hydrant unit (the trunk improvement) is \$3,000. Financing of the hydrant cost would be from the Trunk Fund.

Trunk water assessments are to be levied as additional assessments for prior improvements to each lot in the new subdivision at the current trunk assessment rate independent of the trunk project involved with the subdivision. Trunk assessments are defined by ordinance and are to recover trunk costs that have been or will be incurred throughout the system which allows for properties such as that being platted to be adequately served without redundant improvements. The trunk rates originate 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 a current value of the trunk rate. The 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. The water trunk assessment rate projected to be effective at the time the subdivision is expected to be undertaken is \$2,585.40 per acre.

Trunk water assessments have been levied upon the easterly 200 feet of the property proposed to be platted as Wagner Addition. The additional trunk assessments will be calculated for only the area of lots lying west of the east 200 feet. Unless otherwise requested by the developer, such additional assessments will be distributed to all the lots in the subdivision on an area basis. The prorated rate is estimated to equal \$1,478.35/acre

The estimated trunk assessments and trunk fund costs pertaining to Wagner Addition are as follows:

Hydrant Costs	\$3,000.00
Trunk Assessments	<u>\$5,555.63</u>
Due to Trunk	\$2,444.37

COMBINATION WITH OTHER PROJECTS

It is recommended that the street surfacing be completed in a contract with other street improvements for bidding purposes only.

CONCLUSION

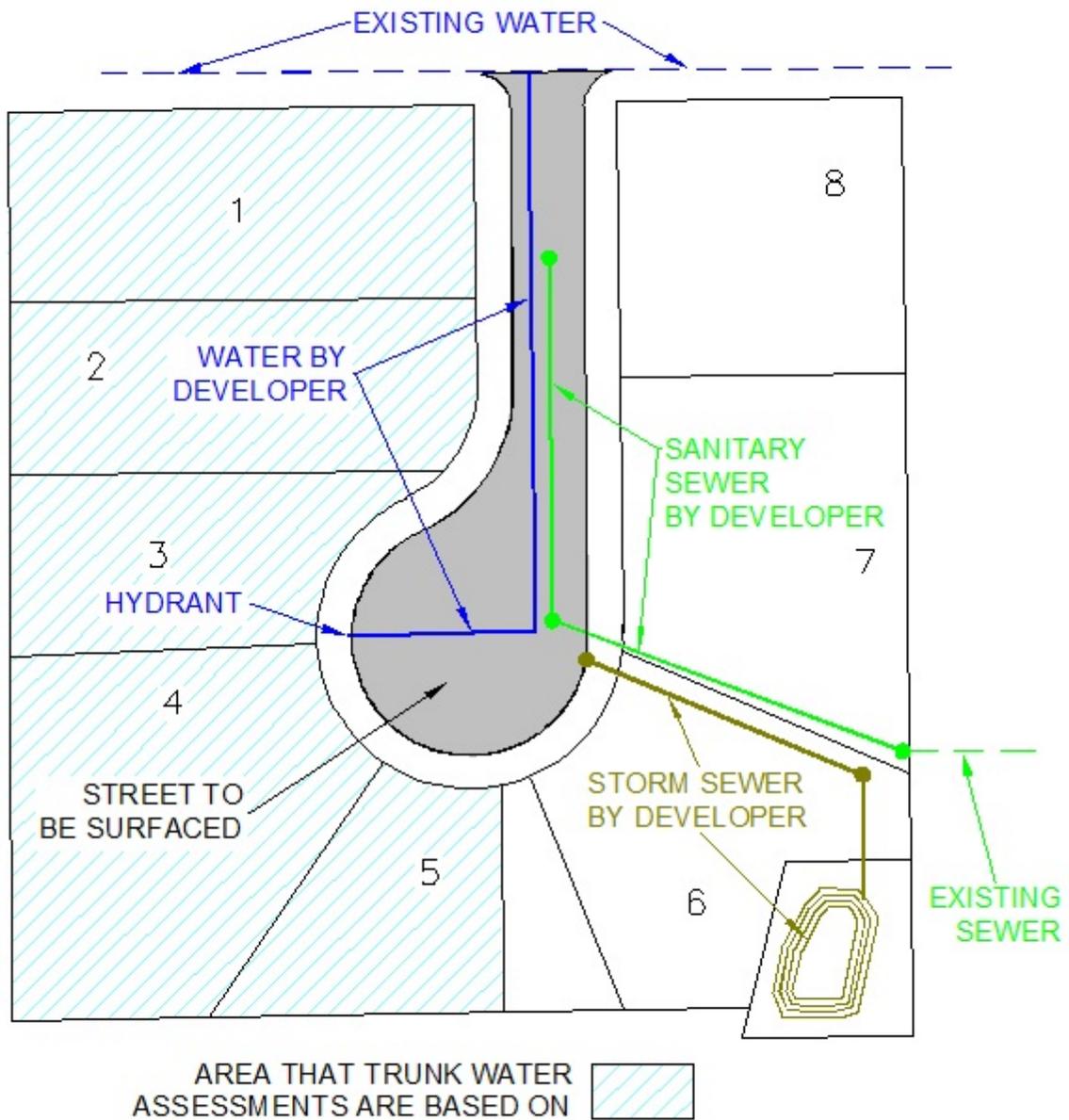
The proposed street improvement is a feasible and cost effective means of improving that part of Sterling Avenue included in the plat of Wagner Addition as petitioned for.

The proposed water distribution improvement is a feasible and cost effective means to improve the property described in Exhibit 1.

DESCRIPTION OF PROPERTY TO BE IMPROVED

That part of the South Half of the Northeast Quarter and the North Half of the Southeast Quarter of Section 28, Township 102 North, Range 40 West, City of Worthington, Nobles County, Minnesota, described as follows:

Beginning at the southeast corner of Glenwood Heights First Addition, according to the recorded plat thereof; thence on an assumed bearing of South 89 degrees 37 minutes 02 seconds West, along the south line of said Glenwood Heights First Addition, a distance of 330.01 feet to the southwest corner of said Glenwood Heights First Addition; thence continuing South 89 degrees 37 minutes 02 seconds West a distance of 107.17 feet to an iron monument; thence South 0 degrees 24 minutes West a distance of 120.01 feet to a stone monument; thence continuing South 0 degrees 24 minutes West a distance of 671.74 feet to an iron monument; thence North 89 degrees 37 minutes 02 seconds East a distance of 443.18 feet to an iron monument located on the west right of way line of County State Aid Highway No. 10; thence North 0 degrees 02 minutes 04 seconds West, along said west right of way line, a distance of 791.70 feet to the point of beginning.



MAP A