Feasibility Report

for

2018 Street and Utility Improvements
Westedge Boulevard

City of Mound, Minnesota

Prepared by:
Bolton & Menk, Inc.
2638 Shadow Lane, Suite 200
Chaska, MN 55318

June 21, 2017

(Revised October 5,2017)

October 5, 2017

Honorable Mayor and Members of the City Council
City of Mound
2415 Wilshire Boulevard
Mound, MN 55364

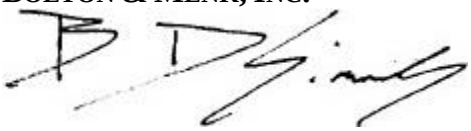
RE: 2018 Street and Utility Improvements
Westedge Boulevard Improvements: City Project No. PW-18-01

Honorable Mayor and City Council Members:

As requested, we have prepared a Revised Feasibility Report for the improvements of various City streets and utilities. The revisions include modifications to eliminate the proposed trail from the project. We have included the proposed method of financing and maps showing the locations of the proposed improvements.

City Engineer, Brian Simmons will be available to discuss this report at the October 10th Council Meeting.

Sincerely,
BOLTON & MENK, INC.



Brian D. Simmons, P.E.
City Engineer

bds

Feasibility Report

for

2018 Street and Utility Improvements

City of Mound, Minnesota

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 the laws of the State of Minnesota.

Brian D. Simmons

Date: October 5, 2017 Registration No. 48766

TABLE OF CONTENTS

I. FORWARD:

This study has been prepared to evaluate the feasibility of the proposed 2018 Street and Utility Improvement Project. The Street Reconstruction Program was established to rate the condition of existing streets in order to establish a plan that would minimize long term roadway replacement costs and preserve the integrity of the City's infrastructure through routine maintenance. The preparation of this report reviews the feasibility of cost effectively meeting the maintenance and preservation goals of the City of Mound for the 2018 portion of the Reconstruction Program.

Various criteria are used to evaluate each roadway section and existing infrastructure to determine the recommended construction required. The criteria used for rehabilitation work includes but is not limited to the following general evaluation considerations:

A. Areas that have been the subject of resident concerns or complaints are reviewed for the feasibility of repairing the problem.

B. Excessive pavement cracking and locations of total pavement failure (potholes, settlements, etc.), which signify subgrade failure and an increased rate of deterioration.

C. Cracked, broken, settled or heaved curb and gutter are noted for replacement to prevent drainage into the subgrade that promotes more extensive deterioration of the pavement.

D. Areas experiencing poor drainage are evaluated to see if pavement and curb drainage patterns can be modified to correct the drainage issues or if storm sewer modifications are required.

E. Sanitary sewer lines are televised and structures are inspected and evaluated to determine if routine maintenance, rehabilitation or replacement is necessary. Additional consideration is given to locations of sanitary sewer that are experiencing high levels of inflow and infiltration (I&I) that lead to increased sewer costs for the City of Mound. Locations that necessitate maintenance are reviewed for repair options.

F. Storm sewer lines are jetted and televised and structures are inspected and evaluated to determine if routine maintenance, rehabilitation or replacement is necessary. Locations that necessitate maintenance are reviewed for repair options.

G. The location and frequency of watermain breaks and repairs are investigated to determine if replacement is necessary to eliminate sudden water disruptions and avoid roadway patches and damage associated with the repairs.

H. Work being performed by other entities within the project limits.

I. Review of Comprehensive Plan goals for desired potential improvements.

After the above evaluation has been completed, the following general practices are followed for the street improvements:

A. Roadways subject to watermain or storm sewer replacement are specified for reconstruction as the trenching operation required for this work would generally remove a majority of the roadway.

B. Roadways that have significant cracking, pavement failures, or subgrade failures observed by roadway heaving and settlements as described above are designated for reconstruction.

The findings from the above evaluations were used in determining the feasibility for the 2018 Street Improvement Project. The following recommendations meet the goals of the Street Rehabilitation Program by preserving and maintaining the infrastructure of the City of Mound in a cost effective manner.

II. CONCLUSIONS AND RECOMMENDATIONS:

Conclusions drawn from studies and investigations are:

A. The proposed street and utility improvements are feasible from an engineering standpoint.

B. If the recommended replacement of watermain is not completed, the potential for watermain breaks under newly improved streets will continue to increase.

C. If the recommended street is not reconstructed at this time, significant maintenance work will be required particularly in areas that have settlement, significant cracking, and poor drainage.

D. If the recommended improvements are not completed concurrently with MCES, costs for improvements at a later date will be substantially higher.

E. Temporary construction easements and/or additional permanent right-of-way may be required in areas where utility replacement is near the right of way.

Based on these conclusions we recommend:

F. The proposed project be constructed at an estimated total cost of ***$2,540,000***, which includes ***$899,000*** of City improvements paid by MCES.

G. The proposed street improvements be constructed at an estimated total street cost of $1,188,000.

1. $268,000 of the street reconstruction costs are directly associated with the construction of the various utilities.

2. $399,000 of the street reconstruction cost is attributed to the pavement cost associated with the Metropolitan Council Environmental Services (MCES) interceptor project.

3. $45,000 of the street reconstruction cost is attributed to extra section depth above and beyond the standard 28-foot city street, necessary due to relatively high traffic volumes.

4. The total estimated assessable street cost (the street area outside of the utility trenches and the extra section depth portion) is $333,000.

H. The proposed utility improvements be constructed at an estimated total of ***$1,495,000***.

1. The utilities including watermain, sanitary sewer and storm sewer improvements be constructed at an estimated total project cost of $651,000 (excluding the associated street costs).

2. The total estimated County Road 44 watermain (Westedge Boulevard south of County Road 110 to Sinclair Road) cost is $344,000.

3. $500,000 of City utility improvements is attributed to the Metropolitan Council's Environmental Services (MCES) project.

I. The project be assessed in accordance with the City's Street Construction and Reconstruction Policy (2/3 of the "assessable street cost" is assessed to the benefiting property owners with a cap of $6,600 for one Equivalent Residential Unit).

III. INTRODUCTION:

On March 14, 2017, the Mound City Council ordered the preparation of an engineering Feasibility Report for the proposed 2018 Street Improvement Project. This approval was requested much earlier than previous reconstruction projects, in order to partner with the Metropolitan Council's proposed interceptor sewer improvement project which is scheduled for a fall bid opening. The MCES project will extend from their new L38 lift station on Westedge, south on Westedge/County Road 44 to near the Lake Minnetonka Regional Park near Highway 7 and will replace their existing forcemain with two, new parallel forcemains. The subsequent project will be led and administered by MCES, with the City of Mound joining as a partner.

The purpose of this report is to determine in a preliminary manner, the feasibility of reconstructing existing streets within the proposed project area and improving utility infrastructure in coordination with the street improvement project and do so in partnership with the MCES's project in the most cost effective manner. The proposed City improvement project is included in the City's Capital Improvement Plan and scheduled for 2018 construction.

IV. LOCATION:

City of Mound staff along with Bolton & Menk performed a preliminary evaluation of Westedge Boulevard, which is proposed to be reconstructed between Halstead Lane and Bartlett Boulevard (County Road 110). The method of proposed street improvement is determined from the existing pavement condition and location of proposed utility improvements.

Typically, streets with poor pavement condition or underlying utilities scheduled for improvement are reconstructed from curb to curb. Streets that do not have underlying utilities scheduled for repair and are not in need of full reconstruction may be treated with a pavement rehabilitation consisting of reclaiming and paving or mill and overlay. Westedge Boulevard was determined to be too deteriorated for either rehabilitation method to be a cost effective maintenance solution. There is also forcemain and watermain construction proposed for the length of the project. Therefore complete reconstruction of the street was considered for this report.

The proposed project includes the complete reconstruction of the roadway to its existing width of 28 feet. In addition to the street reconstruction, it is proposed that the watermain from the Halstead Lane to Bartlett Boulevard be replaced. Other proposed utility reconstruction, within the roadway, includes Metropolitan Council forcemain replacement from their L38 station to the south City limits.

Additional improvements, outside of the assessable street project will be completed to upgrade City watermain south of Bartlett Boulevard to Sinclair Road and the MCES will replace the City's forcemain and its own forcemain within this section.

Location maps for all proposed improvements are in Appendix B of this report.

V. EXISTING CONDITIONS:

The existing sub-grade soils around this area of the city are typically clayey loams with moderate to high susceptibility to freeze-thaw and shrink-swell. The existing street and storm sewer were constructed in the 1960s with the street measuring 28 feet, from back-of-curb to back-of-curb. Geotechnical evaluation will be completed to determine existing pavement conditions.

There are no existing retaining walls adjacent to the project.

A majority of the watermain and sanitary sewer were constructed in the 1960s, with the sanitary sewer consisting primarily of vitrified clay pipe and the watermain consisting of cast iron pipe. The watermain in a majority of the project area has experienced numerous breaks as it has aged. The watermain along Westedge Boulevard from Halstead Lane to Bartlett Boulevard and south to Sinclair Road will be replaced as part of this project. The sanitary sewer mains in the project area will be televised by city staff to determine if there are any segments that require complete replacement. No mains or manholes are planned to be reconstructed, but several manholes may require adjustment to accommodate new steet elevations. Inflow and infiltration (I&I) into the

sanitary sewer is also a concern in this area. Any sewer mains that are not being replaced as part of this project will continue to be televised and monitored for both structural deficiency and potential sources of I&I. These problems can be corrected at a later date if necessary by means of installing a cured in place pipe (CIPP) lining in the existing sanitary sewer.

VI. IMPROVEMENTS:

A. Streets:

The proposed reconstruction will include the removal of all existing bituminous and excavating to the sub-grade along with the complete removal and replacement of curb and gutter, except west of Halstead Lane. The sub-grade under the streets will be corrected if needed and the street will be rebuilt with a layer of geo-textile fabric, 9-inches of class 5 aggregate base and 4-inches of bituminous pavement. This deviates from the City's standard section of 8-inches of Class 5 aggregate base, and 3½- inches of bituminous pavement. This section is necessary to meet a 9-ton standard, so that the roadway will support the projected traffic levels.

The concrete curb and gutter will be replaced to accommodate the utility construction, which is most of the project. The replacement curb will be highback curb similar to the curb in the area. The curb west of Halstead Lane is in good shape and will remain in place. Concrete driveway aprons will also be added where none currently exist and will be replaced where necessary due to grade changes or utility and drainage improvements.

The additional street section required above the City's Standard Street Section to accommodate the observed heavy truck traffic that has contributed to the existing condition of Westedge (more than the 8-inches of aggregate base and 3½-inches of bituminous) and additional street width (anything over the City standard of 28-feet from back-of-curb to back-of-curb) are normally funded through the use of the City's Municipal State Aid (MSA) funds. However, since the extra depth is minimal and use of Westedge is not a designated MSA route the costs would be included with the remaining street costs and financed by the City as described in this report.

The locations of the street improvements are shown on the attached Figure No. 2 in Appendix B.

B. Trails:

A proposed 8-foot wide bituminous trail was considered for this area based on the inclusion of this connector in the City's Comprehensive plan. This was removed at the direction of the City Council.

Several options were explored for the construction of the trail. Option 1, is to install the trail with the street project. Option 2 is to grade for the trail now, including retaining walls, and install the trail at a later date. Option 3 is to evaluate cost of constructing the trail wholly with a separate project also at a later date with no preparation work included here.

Trail Option 1 – Construct Trail Now (Recommended)

Total Estimated Trail Costs:	***$143,000***

Trail Option 2 – Grade for Trail Now and Construct Later

Total Estimated Grading Costs:	$58,000
Total Estimated Future Trail Costs:	$162,000
Total Estimated Trail Costs:	***$220,000***

Trail Option 3 – Grade and Construct Trail Independently at Later Date

Total Estimated Future Trail Costs:	***$232,000***

C. Watermain:

Due to fire flows existing in the southern highlands area less than the desired design of 1,000 gallons per minute of available flow, the existing watermain from Ridgewood Road to Sinclair Road is proposed for replacement and upsizing from 6-inch cast iron to 8-inch ductile iron as per the improvements recommended in the Water Study dated 2007. The remaining watermain will be replaced matching the existing size from 6-inch to 10-inch. There is approximately 1,590-feet of watermain proposed for replacement. Hydrants and valves in this section will also be replaced.

City watermain improvements are proposed to be financed by the City's Water Utility Fund and are not included in the street assessment. Watermain improvements necessitated by relocations for Metropolitan Council Environmental Services (MCES) work will be financed by the MCES.

If the City were to replace the watermain on County Road 44 at a later date by pipe bursting, the estimated costs would be $736,000. The cost savings of $392,000 are realized by partnering with the MCES project.

The locations of the watermain improvements are shown on the attached Figure No. 3 in Appendix B.

D. Sanitary Sewer:

Only minimal sanitary sewer improvements are part of the City portion of this project, which include replacement of castings and installation of

chimney seals to reduce inflow and infiltration. Several manholes may also require adjustment to reduce the number of rings.

Approximately 1,600-feet of City forcemain and 650-feet of gravity sewer will be replaced on County Road 44 due to the MCES work.

The sanitary sewer improvements are proposed to be financed by the City's Sewer Utility Fund and are not included in the street assessment. Improvements caused by MCES work will be financed by MCES.

The locations of the sanitary sewer and forcemain improvements are shown on the attached Figure No. 4 in Appendix B.

E. Metropolitan Council Sewer Forcemain

Based on discussions with MCES, they are in final stages of design to replace the dual forcemains that run from their L38 lift station on Westedge Boulevard to a discharge south along County Road 44 in Minnetrista. To accomplish the replacement of the forcemain, they will be participating in the street reconstruction and relocation of City utilities in certain locations within the City portion of Westedge Boulevard and County Road 44. All improvements for the MCES Interceptor sanitary mains will be financed by MCES.

The locations of the sanitary sewer and forcemain improvements are shown on the attached Figure No. 4 in Appendix B.

F. Storm Sewer:

In several locations throughout the project existing pipe sizes may be increased and additional inlets may be added to help drain low spots and overloaded areas. All existing inlet castings in the project areas will be upgraded with high velocity grates and all the catch basins will also be reconstructed to accommodate the new grates. The inlets south of Additional storm sewer is proposed at the low point of the roadway south of Evergreen Road to reroute high flows easterly to the wetland on the Bruce Miller Wildlife Preserve property owned by the Westonka school district. Appropriate storm water treatment methods will also be included.

All storm sewer construction is proposed to be financed by the City's Storm Water Utility Fund and is not included in the street assessments.

The locations of the storm sewer improvements are shown on the attached Figure No. 5 in Appendix B.

G. Retaining Wall Installation:

Retaining walls adjacent to streets included in the 2018 Street Improvement Project will be constructed as needed to accommodate road construction as necessary. New walls will be constructed of

modular block in accordance with current City standards and are proposed to be funded by the Special Levy.

VII. EASEMENTS:

Easements may be required in locations where there are significant repairs to the street section, where utilities scheduled for replacement are close to the existing right of way. The exact locations of the right-of-way and any easements needed will be determined during final design. Easement costs are not included in the 2018 Street Improvement Project estimates.

VIII. ENGINEER'S ESTIMATES:

The costs associated with the 2018 Street and Utility Improvement Project are outlined below. Cost estimates and maps for the project area are included in appendices of this report.

Westedge Boulevard Impovements

Total Estimated Assessable Street Cost:	$333,000
Total Estimated Extra Depth and Width Street Costs:	$45,000
Total Estimated Utility Street Costs:	$268,000
Total Estimated MCES Street Costs:	$399,000
Total Estimated Watermain Cost:	$506,000
Total Estimated Sanitary Sewer Cost:	$45,000
Total Estimated Storm Cost:	$100,000
Total Estimated Improvement Project Cost:	***$1,696,000***

County Road 44 Watermain Improvements

Total Estimated Watermain Cost:	$344,000
Total Estimated Improvement Project Cost paid by the City:	***$344,000***

City Improvements Funded by MCES

Total Estimated MCES Street Costs:	$399,000
Total Estimated Watermain Costs:	$136,000
Total Estimated City Sanitary Sewer and Forcemain Costs:	$364,000
Total Estimated Improvement Project Cost paid by MCES:	***$899,000***

All the above project costs include 25% soft costs for engineering, financing, administration, etc. and 5% costs for construction contingencies. The street costs are split into the assessable portion of the street cost and the non-assessable portion of the street cost. These above stated estimates do not include the costs for any easements that may be required for construction.

IX. PROJECT FINANCING:

The street project will be assessed according to the City's Street Construction and Reconstruction Policy. This policy states that two-thirds (2/3) of the assessable street costs for the project will be assessed to benefiting properties and the remaining one-third (1/3) shall be paid by the City. The "assessable" street costs include the street areas outside the utility trench areas. The "assessable" costs also do not include the costs for the extra width and depth above and beyond a standard 28-foot city street. Street reconstruction costs directly associated with the utility construction have been deducted and will be paid from the special levy instead of utility revenues.

Public improvement bonds will finance all project elements with the associated street assessments levied over a period of time, which will be determined by the City Council (typically a 15 year period).

Street Reconstruction:

Amount Assessed to Benefiting Properties (2/3) =	$222,000
Amount Paid by the City (1/3) =	$111,000
Total Estimated Assessable Street Costs =	$333,000
Extra Section Costs (Paid by the City) =	$45,000
*MCES Street Cost=	$399,000

Watermain Improvements – County Road 44 (Westedge, Bartlett to Sinclair):

Amount Paid from Watermain Fund =	$344,000

*MCES contributions to Street Costs will be negotiated during final design.

Utility Improvements (including associated street costs):	
Amount Paid from respective Utility Funds =	$651,000
Amount Paid from MCES Funds for City WM =	$136,000
Amount Paid from MCES Funds for City Sanitary =	$364,000
Associated Street Costs Paid by the City =	$268,000
Estimated Total Project Costs =	$2,540,000

X. TYPICAL ASSESSMENT:

The assessments for commercial lots will be determined by the Combination Method and assessments for residential lots will be determined by the Unit Method as described in the City of Mound's Street Construction and Reconstruction Policies. The total amount assessed to the benefiting properties will also be reduced by the Utility Street Cost. The Utility Street Cost is determined by estimating the cost of repairing a street back to the standard city section due to the utility replacement if the street was not to be fully reconstructed for this project. The Street Utility Cost is paid from the special levy instead of utility fund revenues and is not included in the assessable street cost calculation.

The commercial portion of the assessment amount will be distributed between the commercial property according to the Combination Method, as specified in the City's Street Construction and Reconstruction Assessment Policies. The assessable project cost for the commercial area is the proportional amount of the total assessable street improvement costs as follows:

Total Street Cost Assessed to Benefitting Property Owners:	$222,250
Total Length of all Streets Improved:	3,910 LF
Cost Per Lineal Foot of Streets Improved:	$67.14
Cost Per Frontage Foot ($68.02/2):	$33.57
Total Commercial Front Footage:	913 LF
Approximate Commercial Assessment:	***$30,650***
($33.57 x 913 LF)	

The total assessable commercial project cost is then divided between the commercial properties based on each parcels front footage, area, and number of commercial properties as itemized on Table 3 in Appendix A. Since only one property is commercial on this project, they will receive all of the commercial assessment.

The remaining assessable street costs will be distributed among the benefitting residential properties by the Unit Method. Corner lots with multiple City streets that only have improvements on one or two sides of the lot will only be charged one-half (1/2), one-third (1/3), or two-thirds (2/3) of a typical assessment depending on how many streets the lot fronts. Also, new concrete driveway aprons are to be fully assessed to the individual benefiting property, if there is not an existing standard concrete apron.

Using the above methods to determine the assessment breakdown, this project includes a total of 32.50 equivalent residential units (ERUs). The assessable portion divided by the number of ERUs determines the assessment as follows:

Total Amount to be Assessed (2/3) =	$222,250
Amount Assessed to Commercial Units =	$30,650
Amount Assessed to Residential Units =	$191,600
Total Benefiting ERUs =	32.50
Estimated Per Unit Assessment = $191,600 / 32.50 =	***$5,895***

XI. PROPOSED PROJECT SCHEDULE:

June 27, 2017	Council receives Feasibility Report and schedules the Public Improvement Hearing
July 25, 2017	Council holds Public Improvement Hearing and orders Project Plans and Specifications
September 2017	Council approves Final Plans and sets Bid Date in accordance with MCES schedule
November 2017	Bids are opened
December 2017	Council Awards Contract
December 2017-April 2018	Met Council Awards Contract and completes their due diligence
April 2018	Construction Begins
October 2018	Substantial Completion of Project
June 2019	Final Completion of Project
Summer/Fall 2019	Council holds Assessment Hearing

Appendix A

Table 1: ENGINEER'S ESTIMATE - WESTEDGE BOULEVARD CITY COSTS - REVISED

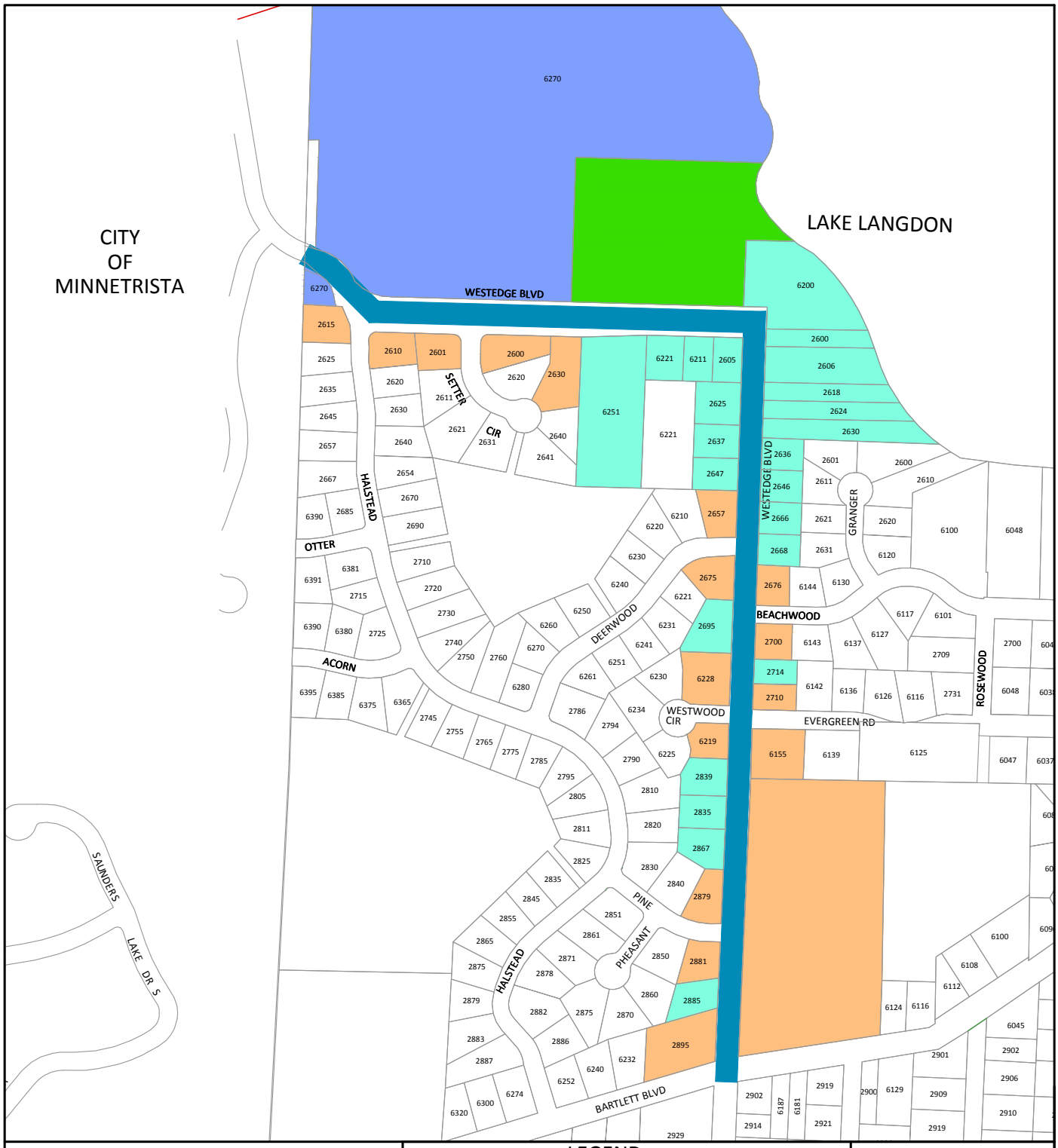
STREET COST (CITY)	SUBTOTAL CONSTRUCTION	$256,438.26
	ENGINEERING, LEGAL & ADMIN (25%)	$64,109.57
	CONSTRUCTION CONTINGENCY (5%)	$12,821.91
	TOTAL ESTIMATED STREET COST	**$333,369.74**
STREET COST (UTILITY)	TOTAL UTILITY ASSOCIATED COST	$205,803.45
	ENGINEERING, LEGAL & ADMIN (25%)	$51,450.86
	CONSTRUCTION CONTINGENCY (5%)	$10,290.17
	TOTAL ESTIMATED STREET COST	**$267,544.48**
STREET COST (EXTRA SECTION)	SUBTOTAL CONSTRUCTION	$34,960.91
	ENGINEERING, LEGAL & ADMIN (25%)	$8,740.23
	CONSTRUCTION CONTINGENCY (5%)	$1,748.05
	TOTAL ESTIMATED STREET COST	**$45,449.18**
WATERMAIN COST	SUBTOTAL CONSTRUCTION	$389,263.11
	ENGINEERING, LEGAL & ADMIN (25%)	$97,315.78
	CONSTRUCTION CONTINGENCY (5%)	$19,463.16
	TOTAL ESTIMATED WATERMAIN COST	**$506,042.04**
SANITARY SEWER COST	SUBTOTAL CONSTRUCTION	$34,760.00
	ENGINEERING, LEGAL & ADMIN (25%)	$8,690.00
	CONSTRUCTION CONTINGENCY (5%)	$1,738.00
	TOTAL ESTIMATED SEWER COST	**$45,188.00**
STORM SEWER COST	SUBTOTAL CONSTRUCTION	$76,703.00
	ENGINEERING, LEGAL & ADMIN (25%)	$19,175.75
	CONSTRUCTION CONTINGENCY (5%)	$3,835.15
	TOTAL ESTIMATED STORM SEWER COST	**$99,713.90**
WATERMAIN COST (COUNTY ROAD 44)	SUBTOTAL CONSTRUCTION	$264,408.67
	ENGINEERING, LEGAL & ADMIN (25%)	$66,102.17
	CONSTRUCTION CONTINGENCY (5%)	$13,220.43
	TOTAL ESTIMATED WATERMAIN COST	**$343,731.27**
	TOTAL PROJECT COST:	**$1,641,038.61**

TABLE 2: ENGINEER'S ESTIMATE - CITY IMPROVEMENTS FUNDED BY OTHERS - REVISED

WATERMAIN COST (MCES PAID)	SUBTOTAL CONSTRUCTION	$104,591.17
	ENGINEERING, LEGAL & ADMIN (25%)	$26,147.79
	CONSTRUCTION CONTINGENCY (5%)	$5,229.56
	TOTAL ESTIMATED WATERMAIN COST	**$135,968.52**
SANITARY COST (MCES PAID)	SUBTOTAL CONSTRUCTION	$280,300.00
	ENGINEERING, LEGAL & ADMIN (25%)	$70,075.00
	CONSTRUCTION CONTINGENCY (5%)	$14,015.00
	TOTAL ESTIMATED WATERMAIN COST	**$364,390.00**
STREET COST (MCES UTILITIES)	TOTAL UTILITY ASSOCIATED COST	$306,873.04
	ENGINEERING, LEGAL & ADMIN (25%)	$76,718.26
	CONSTRUCTION CONTINGENCY (5%)	$15,343.65
	TOTAL ESTIMATED STREET COST	**$398,934.95**

TOTAL PROJECT COST INCLUDING CITY IMPROVEMENTS FUNDED BY OTHERS: $2,540,332.08

Appendix B



LEGEND		WESTEDGE BLVD.	
		# UNITS	EQUIVALENT RESIDENTIAL UNITS
	RECONSTRUCT STREET		
	COMMERCIAL = 1 LOTS	1	
	½ ASSESSMENT = 17 LOTS	17	8.5
	FULL ASSESSMENT = 23 LOTS	23	23
	CITY LOT = 1 LOTS	1	1
	TOTAL	42	32.5

HORZ. SCALE 0 200 400 FEET

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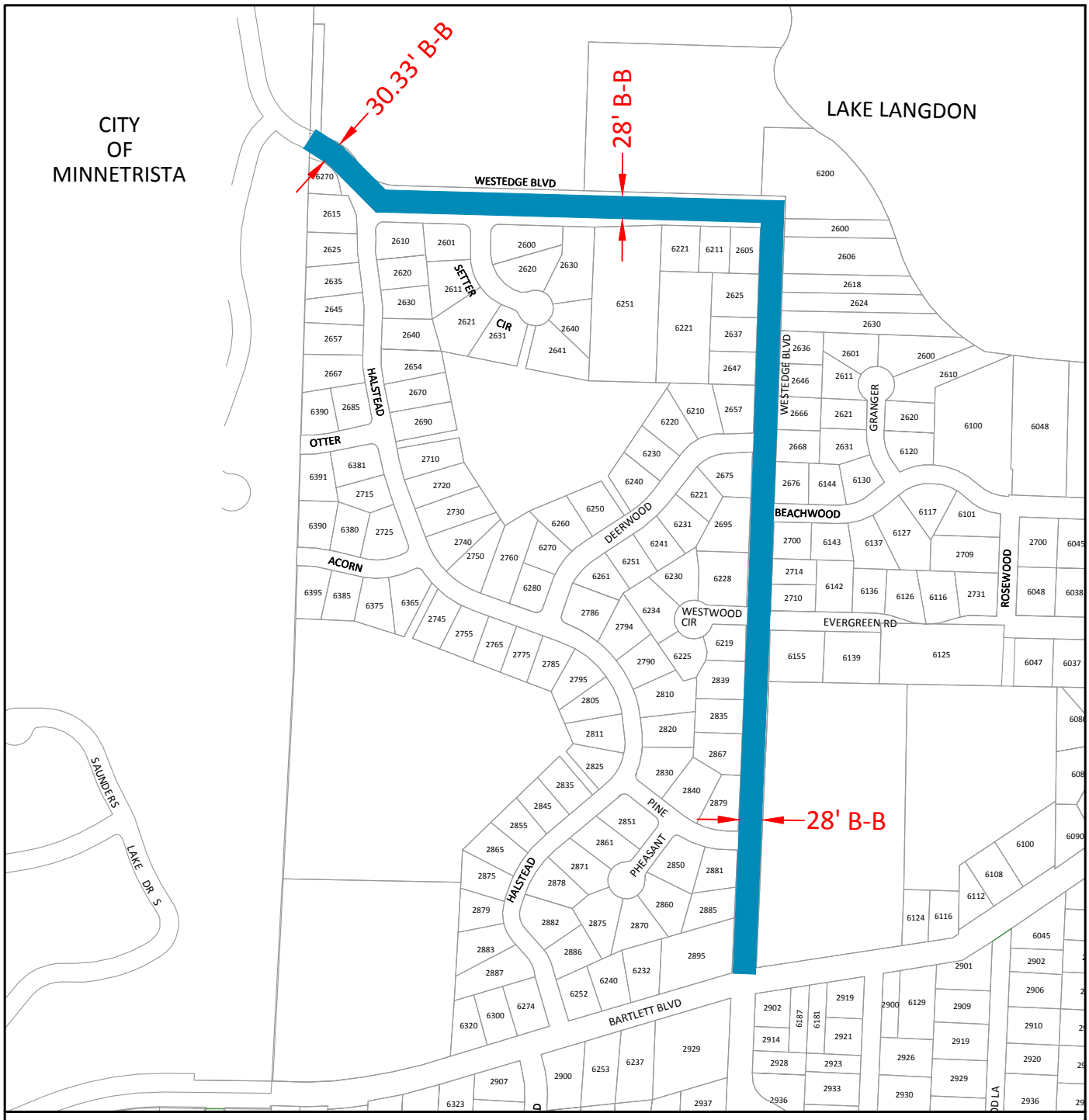
CITY OF MOUND, MINNESOTA
2018 STREET & UTILITY IMPROVEMENTS
ASSESSMENT AREA

JUNE, 2017 FIGURE NO. 1



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0 200 400
HORZ. SCALE FEET

LEGEND

PROPOSED STREET RECONSTRUCTION

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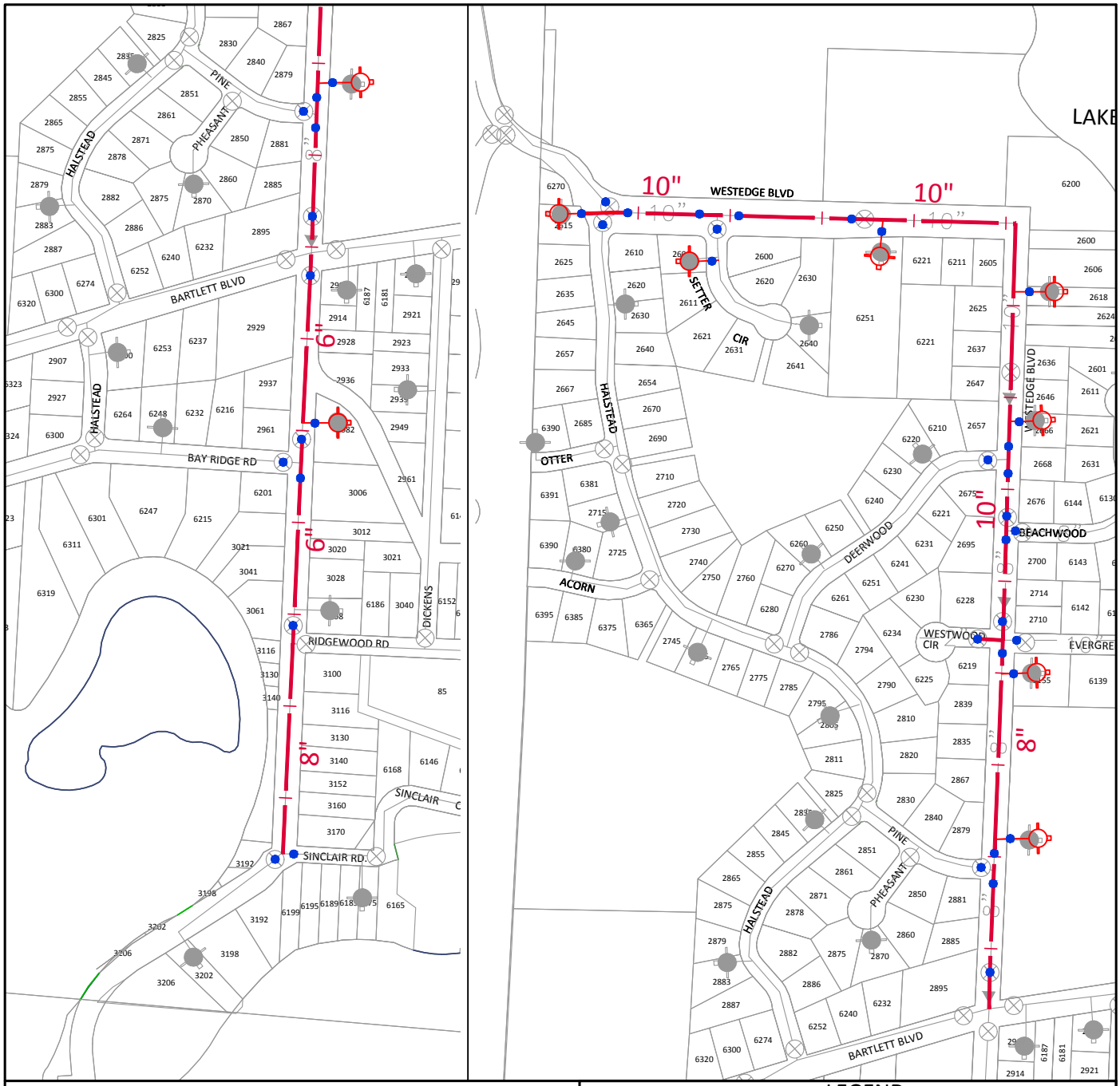
CITY OF MOUND, MINNESOTA
2018 STREET & UTILITY IMPROVEMENTS
EXISTING STREET CONDITIONS

JUNE, 2017

FIGURE NO. 2



LEGEND

- EXISTING HYDRANT
- EXISTING VALVE
- EXISTING WATERMAIN
- REPLACE/NEW WATERMAIN
- HYDRANT TO BE REPLACED
- VALVE REPLACEMENT
- NEW HYDRANT

N

HORZ. SCALE 0 200 400 FEET

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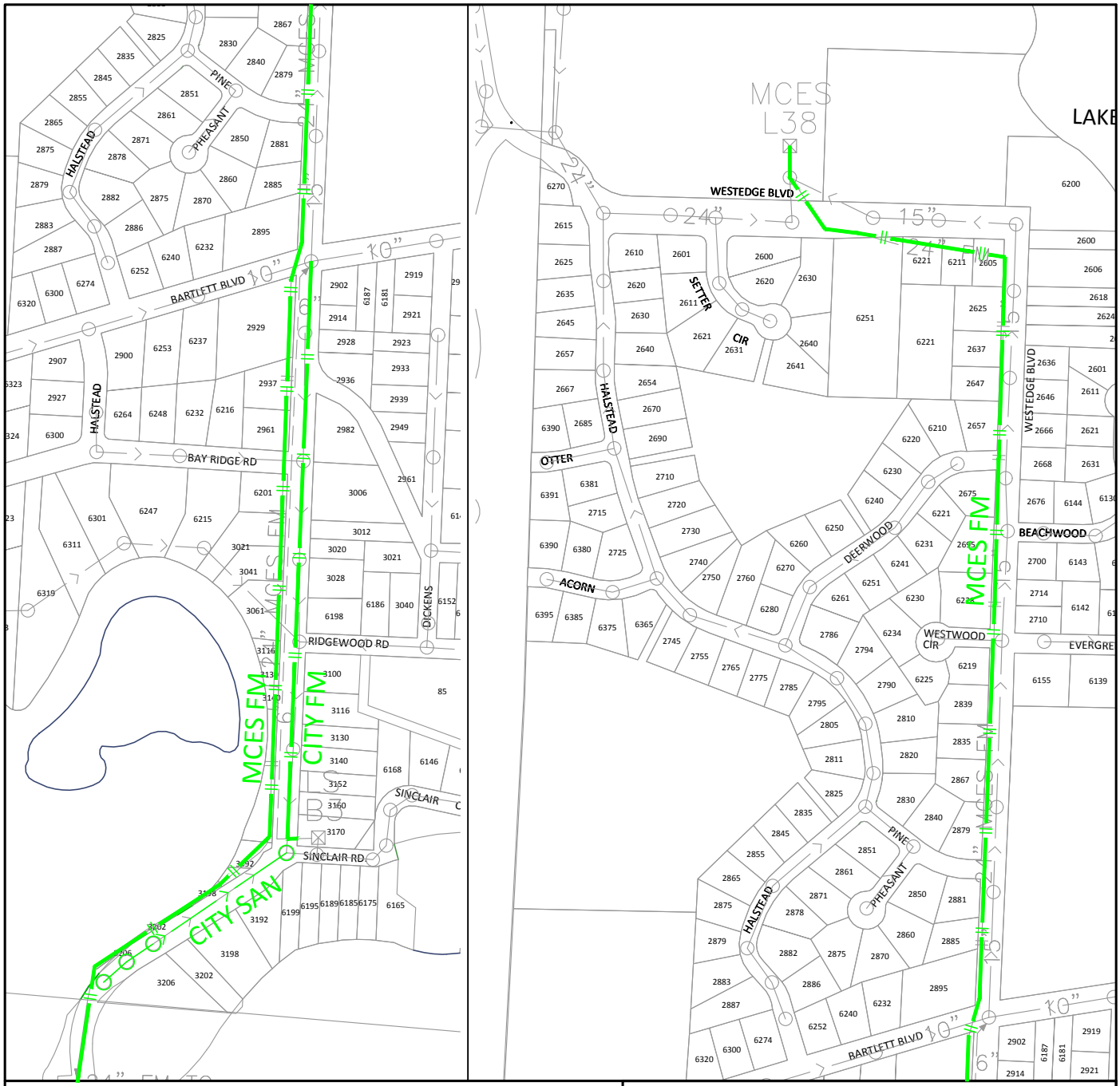
CITY OF MOUND, MINNESOTA
2018 STREET & UTILITY IMPROVEMENTS
WATERMAIN IMPROVEMENTS

JUNE, 2017

FIGURE NO. 3



LEGEND

- EXISTING MH
- EXISTING LIFT STATION
- EXISTING FORCEMAIN
- EXISTING SANITARY SEWER
- PROPOSED MH
- PROPOSED FORCEMAIN
- PROPOSED GRAVITY SEWER

HORZ. SCALE 0 200 400 FEET

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CITY OF MOUND, MINNESOTA

2018 STREET & UTILITY IMPROVEMENTS

SANITARY SEWER IMPROVEMENTS

JUNE, 2017

FIGURE NO. 4

HORZ. SCALE 0 200 400 FEET

LEGEND

- EXISTING STORM SEWER
- EXISTING CATCHBASIN
- PROPOSED STORM SEWER
- PROPOSED CATCHBASIN

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CITY OF MOUND, MINNESOTA
2018 STREET & UTILITY IMPROVEMENTS
STORM SEWER IMPROVEMENTS

JUNE, 2017

FIGURE NO. 5