

Feasibility Report

for

2019 Street and Utility Improvements
Sherwood Drive
Kildare Road
Windsor Road

City of Mound, Minnesota



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

December 11, 2018

December 11, 2018

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

RE: 2019 Street and Utility Improvements
Sherwood Drive: City Project No. PW-19-01
Kildare Road: City Project No. PW-19-02
Windsor Road: City Project No. PW-19-03

Honorable Mayor and City Council Members:

As requested, we have prepared a Feasibility Report for the improvements of various City streets and utilities. We have included the proposed method of financing and maps showing the locations of the proposed improvements.

I will be available to present the findings and discuss this report at the December 11th Council Meeting.

Sincerely,
BOLTON & MENK, INC.

A handwritten signature in black ink, appearing to read "B D Simmons", is written over a faint, light-colored rectangular stamp or watermark.

Brian D Simmons, P.E.
City Engineer

BDS/eh/cp

Feasibility Report
for
2019 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: December 11, 2018

Registration No. 48766

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I. FORWARD:

This study has been prepared to evaluate the feasibility of the proposed 2019 Street and Utility Improvement Project consisting of Project Area I: Sherwood Drive; Project Area II: Kildare Road; and Project Area III: Windsor Road. 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 2019 portion of the Reconstruction Program. This project consists of two roadway areas that were built since the Reconstruction program began, and one that was previously petitioned out of a 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.

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 2019 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 streets are not reconstructed at this time, significant maintenance work will be required particularly in areas that have settlement, significant cracking, poor underlying subgrade conditions, and poor drainage.
- D. 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:

- A. The proposed project be constructed at an estimated total cost of **\$333,010** and each project area be assessed separately. Table 1 provides a breakdown of estimated costs for each project area.

Table 1: Estimated Project Costs

	SHERWOOD DRIVE	KILDARE ROAD	WINDSOR ROAD	TOTAL PROJECT
Street Cost (Standard Section)	\$16,043.94	\$24,243.01	\$15,722.09	\$56,009.04
Curb & Gutter Cost	\$22,822.80	\$0.00	\$0.00	\$22,822.80
Street Cost (Utility)	\$45,504.35	\$0.00	\$0.00	\$45,504.35
Street Cost (Extra Section)	\$14,460.78	\$5,224.29	\$2,130.75	\$21,815.82
Watermain Cost	\$177,623.16	\$0.00	\$0.00	\$177,623.16
Sanitary Sewer Cost	\$0.00	\$1,358.50	\$2,717.00	\$4,075.50
Storm Sewer Cost	\$0.00	\$0.00	\$0.00	\$0.00
Retaining Wall Costs	\$5,159.70	\$0.00	\$0.00	\$5,159.70
TOTAL PROJECT COST:	\$281,614.74	\$30,825.80	\$20,569.84	\$333,010.37

B. *Sherwood Drive:*

1. The proposed street improvements be constructed at an estimated total street cost of \$98,832
 - a. \$45,504 of the street reconstruction costs are directly associated with the construction of the various utilities.
 - b. \$14,461 of the street reconstruction cost is attributed to extra section depth and extra width above and beyond the standard 28-foot city street.
 - c. The total estimated assessable street cost, (the street area outside of the utility trenches and the extra section depth and width portion) is \$38,867.
2. The watermain be constructed at an estimated total cost of \$177,623 (excluding the associated street costs).
3. One small retaining wall be repaired at an estimated total project cost of \$5,160.

C. *Kildare Road*

1. The proposed street improvements be constructed at an estimated total street cost of \$29,467.
 - a. \$5,224 of the street reconstruction cost is attributed to extra section depth and extra width above and beyond the standard 28-foot city street.
 - b. The total estimated assessable street cost, (the street area outside of the utility trenches and the extra section depth and width portion) is \$24,243.

2. Sanitary Sewer minor improvements be constructed at an estimated total cost of \$1,359.

D. ***Windsor Road***

1. The proposed street improvements be constructed at an estimated total street cost of \$17,852.84.
 - a. \$2,131 of the street reconstruction cost is attributed to extra section depth and extra width above and beyond the standard 28-foot city street.
 - b. The total estimated assessable street cost, (the street area outside of the utility trenches and the extra section depth and width portion) is \$15,722.
2. Sanitary Sewer minor improvements be constructed at an estimated total cost of \$2,717.

III. INTRODUCTION:

On November 13, 2018, the Mound City Council ordered the preparation of an engineering Feasibility Report for the proposed 2019 Street Improvement Project. The purpose of this report is to determine in a preliminary manner, the feasibility of reconstructing existing streets within the proposed project area, reconstructing or repairing existing retaining walls within the project area as necessary, and improving utility infrastructure in coordination with the street improvement project. This project is included in the city's capital improvement plan and scheduled for 2019 construction.

IV. LOCATION:

City of Mound staff along with Bolton & Menk performed a preliminary area wide evaluation of the existing streets and retaining walls in the areas proposed for improvements in the 2019 construction season. 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 with sufficient aggregate base, without underlying utilities scheduled for repair and not in need of full reconstruction may be treated with a pavement rehabilitation consisting of reclaiming and paving or mill and overlay. There is watermain construction proposed for the full length of Sherwood Road, which may be accomplished by trenchless methods. Therefore, mill and overlay of the of the bituminous street and spot repair of the curb and gutter was considered for this report. The retaining walls that are in poor condition will be repaired as part of this project.

The following summarizes the street and utilities proposed as part of the 2019 Street Improvement Project.

1. Improvement Project Area

Project Area I:

- Sherwood Drive Commerce Boulevard to cul-de-sac
 - Patch Utility Trenches/Potholes
 - Mill & Overlay Street Area

Project Area II:

- Kildare Road West of Kerry Lane to the cul-de-sac
 - Reclaim and Pave Street Area

Project Area III:

- Windsor Road Former termini to the cul-de-sac
 - Mill & Overlay Street Area

2. Watermain

Project Area I:

- Sherwood Drive Commerce Boulevard to cul-de-sac
 - Replace Watermain from Commerce to termini
 - Eliminated all 4-inch watermain

3. Sanitary Sewer

Project Area II:

- Kildare Road West of Kerry Lane to the cul-de-sac
 - Replace Rings and Castings

Project Area III:

- Windsor Road Former termini to the cul-de-sac
 - Replace Rings and Castings

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 streets were built at various times, Sherwood in the 60s, Kildare sometime in the 90s and Windsor in the early 2000s.

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 the Sherwood Drive project area has experienced multiple breaks. The sanitary sewer mains in the project area have been televised by city staff to determine if there are any segments that require complete replacement. None of the existing mains require complete replacement. The 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 Inflow and infiltration 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. MUNICIPAL STATE AID:

As previously mentioned, none of the streets in the project area are designated as Municipal State Aid (MSA) routes, and therefore are not eligible to utilize monies from the city's MSA fund balance for reconstruction.

VII. IMPROVEMENTS:

A. Streets:

The proposed reconstruction will vary methodology depending on the condition and existence of sufficient subgrade material.

Sherwood Drive:

Because the underlying soil conditions on Sherwood positively support the street, we are going to trenchlessly renew the watermain in an attempt to keep the pavement in place as much as possible, so that it may be Milled & Overlaid. Concrete Curb and Gutter will be replaced as part of the utility work and street reconstruction.

Kildare Road:

Because Kildare was built fairly recently, but with an insufficient gravel base, we propose to Full Depth reclaim and pave Kildare.

Windsor Road:

Because the pavement on Windsor is fairly new, we propose to mill and overlay Windsor Road

Maps of the improvements are shown on the attached Figure No. 7 in Appendix B.

B. Watermain:

All the watermain on Sherwood Drive is proposed to be replaced. The existing pipe is cast iron pipe (CIP) with 4-inch and 6-inch diameters and will be replaced with 6-inch pipe. There is approximately 230 feet of watermain proposed for replacement. One hydrant and three valves will also be replaced. Eleven (11) Services will also be replaced to the curb stop and reconnected to the city water supply.

All watermain improvements are proposed to be financed by the City's Water Utility Fund and are not included in the street assessment.

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

C. Sanitary Sewer:

Rings and castings for sanitary sewer in both Kildare and Windsor road will be removed and replaced as part of this 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. The locations of the sanitary sewer and forcemain improvements are shown on the attached Figure No. 4 in Appendix B.

D. Storm Sewer:

This project does not include any storm sewer improvements

E. Retaining Wall Replacement:

One small retaining wall adjacent to Sherwood Drive is included in the 2019 Street Improvement Project. It will be reconstructed as needed to accommodate utility construction.

VIII. EASEMENTS:

Easements may be required in locations where there are significant repairs to the street section and 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 2019 Street Improvement Project estimates.

IX. ENGINEER'S ESTIMATES:

The costs associated with the 2019 Street and Utility Improvement Project are outlined below. Cost estimates and maps for the project area are included in appendices of this report.

Project Area I: Sherwood Drive

Total Estimated Assessable Street Cost:	\$38,867
Total Estimated Extra Depth and Width Street Costs:	\$14,461
Total Estimated Utility Street Cost:	\$45,504
Total Estimated Watermain Cost:	\$177,623
Total Estimated Retaining Wall Cost:	\$5,160
<hr/>	
Total Estimated Improvement Project Cost:	\$281,615

Project Area II: Kildare Road

Total Estimated Assessable Street Cost:	\$24,243
Total Estimated Extra Depth and Width Street Costs:	\$5,224
Total Estimated Sanitary Sewer Cost:	\$1,359
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Total Estimated Improvement Project Cost:	\$30,359

Project Area III: Windsor Road

Total Estimated Assessable Street Cost:	\$15,722
Total Estimated Extra Depth and Width Street Costs:	\$2,130
Total Estimated Sanitary Sewer Cost:	\$2,717
<hr/>	
Total Estimated Improvement Project Cost:	\$20,570

All the above project costs include 25% indirect costs for engineering, financing, administration, etc. and 5% construction contingency costs. 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.

X. 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 and the sidewalk. The "assessable" costs 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). Any adjustments in assessment amounts made by the City Council will be financed by the City's annual general levy.

None of the streets in the 2019 project area are eligible for MSA funding, as these are designated local streets and not MSA routes, in accordance with State Aid Rules.

All project costs could be included in public improvement bonds, and paid through the general levy, or the city may choose to finance the project 100% internally without bonds, based on the total construction costs.

Project Area I: Sherwood Drive

Amount Assessed to Benefiting Properties (2/3) =	\$25,911
<u>Amount Paid by the City (1/3) =</u>	<u>\$12,956</u>
Total Estimated Assessable Street Costs =	\$38,887
Extra Section Cost =	\$14,461

Utility Improvements:

Amount Paid from respective Utility Funds =	\$177,623
<u>Associated Street Costs Paid by the City =</u>	<u>\$54,504</u>
Estimated Total Project Costs =	\$281,615

Project Area II: Kildare Road

Amount Assessed to Benefiting Properties (2/3) =	\$16,162
<u>Amount Paid by the City (1/3) =</u>	<u>\$8,081</u>
Total Estimated Assessable Street Costs =	\$24,243
Extra Section Cost =	\$5,225

Utility Improvements (including associated street costs):

Amount Paid from respective Utility Funds =	\$1,359
<u>Associated Street Costs Paid by the City =</u>	<u>\$0</u>
Estimated Total Project Costs =	\$30,826

Project Area III: Windsor Road

Amount Assessed to Benefiting Properties (2/3) =	\$10,481
<u>Amount Paid by the City (1/3) =</u>	<u>\$5,241</u>
Total Estimated Assessable Street Costs =	\$15,722
Extra Section Cost =	\$2,131

Utility Improvements (including associated street costs):

Amount Paid from respective Utility Funds =	\$2,717
<u>Associated Street Costs Paid by the City =</u>	<u>\$0</u>
Estimated Total Project Costs =	\$20,570

XI. 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. Multifamily homes with more than two dwelling units will be assessed three-quarters (3/4) of a typical assessment per unit. 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. 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 will be paid from the special levy instead of the utility fund revenues and is not included in the assessable street cost calculation.

On August 23, 2016 the City council approved revisions to the street construction and reconstruction policy setting a maximum equivalent residential unit assessment cap of \$6,600.

Project Area I: Sherwood Drive

There are no commercial properties in the Sherwood Drive area.

The assessable street costs will be distributed among the benefiting residential properties by the Unit Method.

Using the above methods to determine the assessment breakdown, this project includes a total of 11.00 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) =	\$25,911
<u>Amount Assessed to Commercial Units =</u>	<u>\$0</u>
Amount Assessed to Residential Units =	\$25,911
Total Benefiting ERUs =	11.00
<i>Estimated Per Unit Assessment = \$10,481 / 11.00 =</i>	<i>\$2,356</i>

Project Area II: Kildare

There are no commercial properties in the Kildare area.

The assessable street costs will be distributed among the benefiting residential properties by the Unit Method.

Using the above methods to determine the assessment breakdown, this project includes a total of 7.50 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) =	\$16,162
<u>Amount Assessed to Commercial Units =</u>	<u>\$0</u>
Amount Assessed to Residential Units =	\$16,162
Total Benefiting ERUs =	7.50
<i>Estimated Per Unit Assessment = \$16,162 / 7.50 =</i>	<i>\$2,155</i>

Project Area III: Windsor Road

There are no commercial properties in the Windsor Road area.

The assessable street costs will be distributed among the benefitting residential properties by the Unit Method.

Using the above methods to determine the assessment breakdown, this project includes a total of 6.00 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) =	\$10,481
Amount Assessed to Commercial Units =	\$0
Amount Assessed to Residential Units =	\$10,481
Total Benefiting ERUs =	6.00
<i>Estimated Per Unit Assessment = \$10,481 / 6.00 =</i>	<i>\$1,747</i>

XII. PROJECT SCHEDULE:

December 11, 2018	Council receives Feasibility Report and schedules the Public Improvement Hearing
January 22, 2019	Council holds Public Improvement Hearing and orders Project Plans and Specifications
February 2019	Council approves Final Plans and sets Bid Date
March 2019	Bids are opened
April 2019	Council Awards Contract
June 2019	Construction Begins
October 2019	Substantial Completion of Project
June 2020	Final Completion of Project (Wear Course Delayed due to Utility Construction)
Summer/Fall 2020	Council holds Final Assessment Hearing

Appendix A

Table 6: ENGINEER'S ESTIMATE - SHERWOOD DRIVE (PIPE BURST & OPEN-CUT)

STREET COST (STANDARD SECTION)	SUBTOTAL CONSTRUCTION	\$12,341.50
	ENGINEERING, LEGAL & ADMIN (25%)	\$3,085.37
	CONSTRUCTION CONTINGENCY (5%)	\$617.07
	TOTAL ESTIMATED STREET COST	\$16,043.94
CURB & GUTTER COST	SUBTOTAL CONSTRUCTION	\$17,556.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$4,389.00
	CONSTRUCTION CONTINGENCY (5%)	\$877.80
	TOTAL ESTIMATED SIDEWALK COST	\$22,822.80
STREET COST (UTILITY)	SUBTOTAL CONSTRUCTION	\$35,003.35
	ENGINEERING, LEGAL & ADMIN (25%)	\$8,750.84
	CONSTRUCTION CONTINGENCY (5%)	\$1,750.17
	TOTAL ESTIMATED STREET COST	\$45,504.35
STREET COST (EXTRA SECTION)	SUBTOTAL CONSTRUCTION	\$11,123.68
	ENGINEERING, LEGAL & ADMIN (25%)	\$2,780.92
	CONSTRUCTION CONTINGENCY (5%)	\$556.18
	TOTAL ESTIMATED STREET COST	\$14,460.78
WATERMAIN COST	SUBTOTAL CONSTRUCTION	\$136,633.20
	ENGINEERING, LEGAL & ADMIN (25%)	\$34,158.30
	CONSTRUCTION CONTINGENCY (5%)	\$6,831.66
	TOTAL ESTIMATED WATERMAIN COST	\$177,623.16
SANITARY SEWER COST	SUBTOTAL CONSTRUCTION	\$0.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$0.00
	CONSTRUCTION CONTINGENCY (5%)	\$0.00
	TOTAL ESTIMATED SEWER COST	\$0.00
STORM SEWER COST	SUBTOTAL CONSTRUCTION	\$0.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$0.00
	CONSTRUCTION CONTINGENCY (5%)	\$0.00
	TOTAL ESTIMATED STORM SEWER COST	\$0.00
RETAINING WALL COST	SUBTOTAL CONSTRUCTION	\$3,969.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$992.25
	CONSTRUCTION CONTINGENCY (5%)	\$198.45
	TOTAL ESTIMATED RETAINING WALL COST	\$5,159.70

TOTAL PROJECT COST: \$281,614.74

Table 6: ENGINEER'S ESTIMATE - KILDARE ROAD (FULL DEPTH RECLAMATION)

STREET COST (STANDARD SECTION)	SUBTOTAL CONSTRUCTION	\$18,648.47
	ENGINEERING, LEGAL & ADMIN (25%)	\$4,662.12
	CONSTRUCTION CONTINGENCY (5%)	\$932.42
	TOTAL ESTIMATED STREET COST	\$24,243.01
SIDEWALK COST	SUBTOTAL CONSTRUCTION	\$0.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$0.00
	CONSTRUCTION CONTINGENCY (5%)	\$0.00
	TOTAL ESTIMATED SIDEWALK COST	\$0.00
STREET COST (UTILITY)	SUBTOTAL CONSTRUCTION	\$0.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$0.00
	CONSTRUCTION CONTINGENCY (5%)	\$0.00
	TOTAL ESTIMATED STREET COST	\$0.00
STREET COST (EXTRA SECTION)	SUBTOTAL CONSTRUCTION	\$4,018.68
	ENGINEERING, LEGAL & ADMIN (25%)	\$1,004.67
	CONSTRUCTION CONTINGENCY (5%)	\$200.93
	TOTAL ESTIMATED STREET COST	\$5,224.29
WATERMAIN COST	SUBTOTAL CONSTRUCTION	\$0.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$0.00
	CONSTRUCTION CONTINGENCY (5%)	\$0.00
	TOTAL ESTIMATED WATERMAIN COST	\$0.00
SANITARY SEWER COST	SUBTOTAL CONSTRUCTION	\$1,045.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$261.25
	CONSTRUCTION CONTINGENCY (5%)	\$52.25
	TOTAL ESTIMATED SEWER COST	\$1,358.50
STORM SEWER COST	SUBTOTAL CONSTRUCTION	\$0.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$0.00
	CONSTRUCTION CONTINGENCY (5%)	\$0.00
	TOTAL ESTIMATED STORM SEWER COST	\$0.00
RETAINING WALL COST	SUBTOTAL CONSTRUCTION	\$0.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$0.00
	CONSTRUCTION CONTINGENCY (5%)	\$0.00
	TOTAL ESTIMATED RETAINING WALL COST	\$0.00

TOTAL PROJECT COST: \$30,825.80

Table 6: ENGINEER'S ESTIMATE - WINDSOR ROAD

STREET COST (STANDARD SECTION)	SUBTOTAL CONSTRUCTION	\$12,093.91
	ENGINEERING, LEGAL & ADMIN (25%)	\$3,023.48
	CONSTRUCTION CONTINGENCY (5%)	\$604.70
	TOTAL ESTIMATED STREET COST	\$15,722.09
SIDEWALK COST	SUBTOTAL CONSTRUCTION	\$0.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$0.00
	CONSTRUCTION CONTINGENCY (5%)	\$0.00
	TOTAL ESTIMATED SIDEWALK COST	\$0.00
STREET COST (UTILITY)	SUBTOTAL CONSTRUCTION	\$0.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$0.00
	CONSTRUCTION CONTINGENCY (5%)	\$0.00
	TOTAL ESTIMATED STREET COST	\$0.00
STREET COST (EXTRA SECTION)	SUBTOTAL CONSTRUCTION	\$1,639.04
	ENGINEERING, LEGAL & ADMIN (25%)	\$409.76
	CONSTRUCTION CONTINGENCY (5%)	\$81.95
	TOTAL ESTIMATED STREET COST	\$2,130.75
WATERMAIN COST	SUBTOTAL CONSTRUCTION	\$0.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$0.00
	CONSTRUCTION CONTINGENCY (5%)	\$0.00
	TOTAL ESTIMATED WATERMAIN COST	\$0.00
SANITARY SEWER COST	SUBTOTAL CONSTRUCTION	\$2,090.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$522.50
	CONSTRUCTION CONTINGENCY (5%)	\$104.50
	TOTAL ESTIMATED SEWER COST	\$2,717.00
STORM SEWER COST	SUBTOTAL CONSTRUCTION	\$0.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$0.00
	CONSTRUCTION CONTINGENCY (5%)	\$0.00
	TOTAL ESTIMATED STORM SEWER COST	\$0.00
RETAINING WALL COST	SUBTOTAL CONSTRUCTION	\$0.00
	ENGINEERING, LEGAL & ADMIN (25%)	\$0.00
	CONSTRUCTION CONTINGENCY (5%)	\$0.00
	TOTAL ESTIMATED RETAINING WALL COST	\$0.00

TOTAL PROJECT COST: \$20,569.84

Table 7: ESTIMATED ASSESSMENTS - SHERWOOD DRIVE (PIPE BURST & OPEN-CUT)

ASSESSMENT-RESIDENTIAL

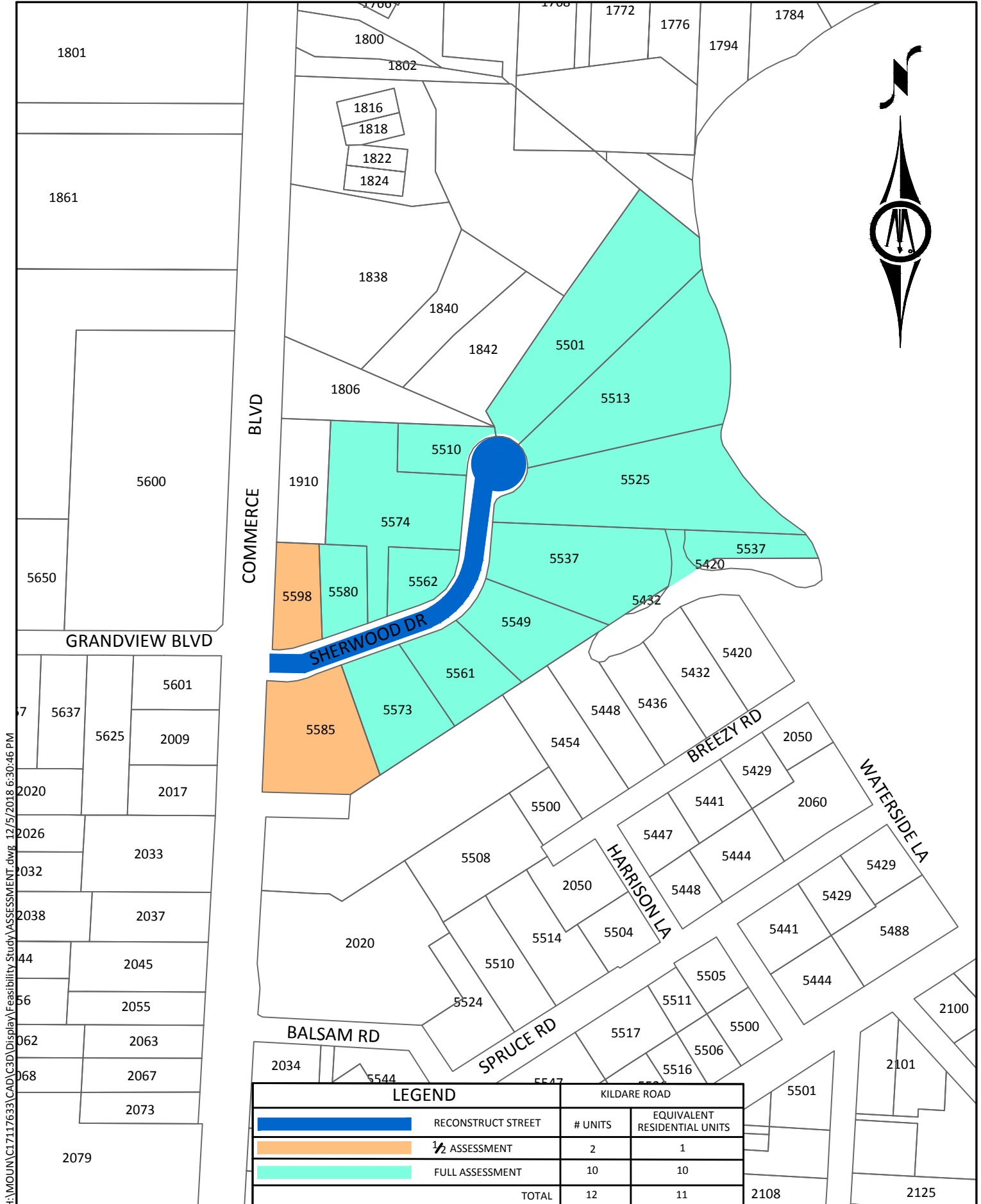
	TOTAL LOTS	EQUIVALENT RES. UNITS
SINGLE FAMILY UNITS RECEIVING FULL ASSESSMENT (1.0)	10	10.00
SINGLE FAMILY UNITS RECEIVING THREE QUARTER ASSESSMENT (0.75)	0	0.00
SINGLE FAMILY UNITS RECEIVING TWO THIRDS ASSESSMENT (0.67)	0	0.00
SINGLE FAMILY UNITS RECEIVING HALF ASSESSMENT (0.50)	2	1.00
SINGLE FAMILY UNITS RECEIVING ONE THIRD ASSESSMENT (0.33)	0	0.00
CITY OWNED UNITS	0	0.00
TOTALS		11.00

ESTIMATED 2019 STREET IMPROVEMENT COST (ASSESSABLE PORTION)	\$38,866.74
ASSESSABLE PROJECT COSTS (2/3 OF ASSESSABLE STREETS)	\$25,911.16
TOTAL AMOUNT ASSESSED TO RESIDENTIAL	\$25,911.16

ESTIMATED ASSESSMENT PER RESIDENTIAL UNIT	\$2,355.56
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ASSESSMENT-RESIDENTIAL CAPPED

MAXIMUM ASSESSMENT PER RESIDENTIAL UNIT	\$6,600.00
DEDUCTED ASSESSMENT PER RESIDENTIAL UNIT	(\$4,244.44)
TOTAL DEDUCTION PAID BY CITY	(\$46,688.84)



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Table 7: ESTIMATED ASSESSMENTS - KILDARE ROAD (FULL DEPTH RECLAMATION)

ASSESSMENT-RESIDENTIAL

	TOTAL LOTS	EQUIVALENT RES. UNITS
SINGLE FAMILY UNITS RECEIVING FULL ASSESSMENT (1.0)	7	7.00
SINGLE FAMILY UNITS RECEIVING THREE QUARTER ASSESSMENT (0.75)	0	0.00
SINGLE FAMILY UNITS RECEIVING TWO THIRDS ASSESSMENT (0.67)	0	0.00
SINGLE FAMILY UNITS RECEIVING HALF ASSESSMENT (0.50)	1	0.50
SINGLE FAMILY UNITS RECEIVING ONE THIRD ASSESSMENT (0.33)	0	0.00
CITY OWNED UNITS	0	0.00
TOTALS		7.50

ESTIMATED 2019 STREET IMPROVEMENT COST (ASSESSABLE PORTION)	\$24,243.01
ASSESSABLE PROJECT COSTS (2/3 OF ASSESSABLE STREETS)	\$16,162.00
TOTAL AMOUNT ASSESSED TO RESIDENTIAL	\$16,162.00

ESTIMATED ASSESSMENT PER RESIDENTIAL UNIT	\$2,154.93
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ASSESSMENT-RESIDENTIAL CAPPED

MAXIMUM ASSESSMENT PER RESIDENTIAL UNIT	\$6,600.00
DEDUCTED ASSESSMENT PER RESIDENTIAL UNIT	(\$4,445.07)
TOTAL DEDUCTION PAID BY CITY	(\$33,338.00)






LEGEND		KILDARE ROAD	
	RECONSTRUCT STREET	# UNITS	EQUIVALENT RESIDENTIAL UNITS
	1/2 ASSESSMENT	1	0.5
	FULL ASSESSMENT	7	7
TOTAL		8	7.5

Table 7: ESTIMATED ASSESSMENTS - WINDSOR ROAD
ASSESSMENT-RESIDENTIAL

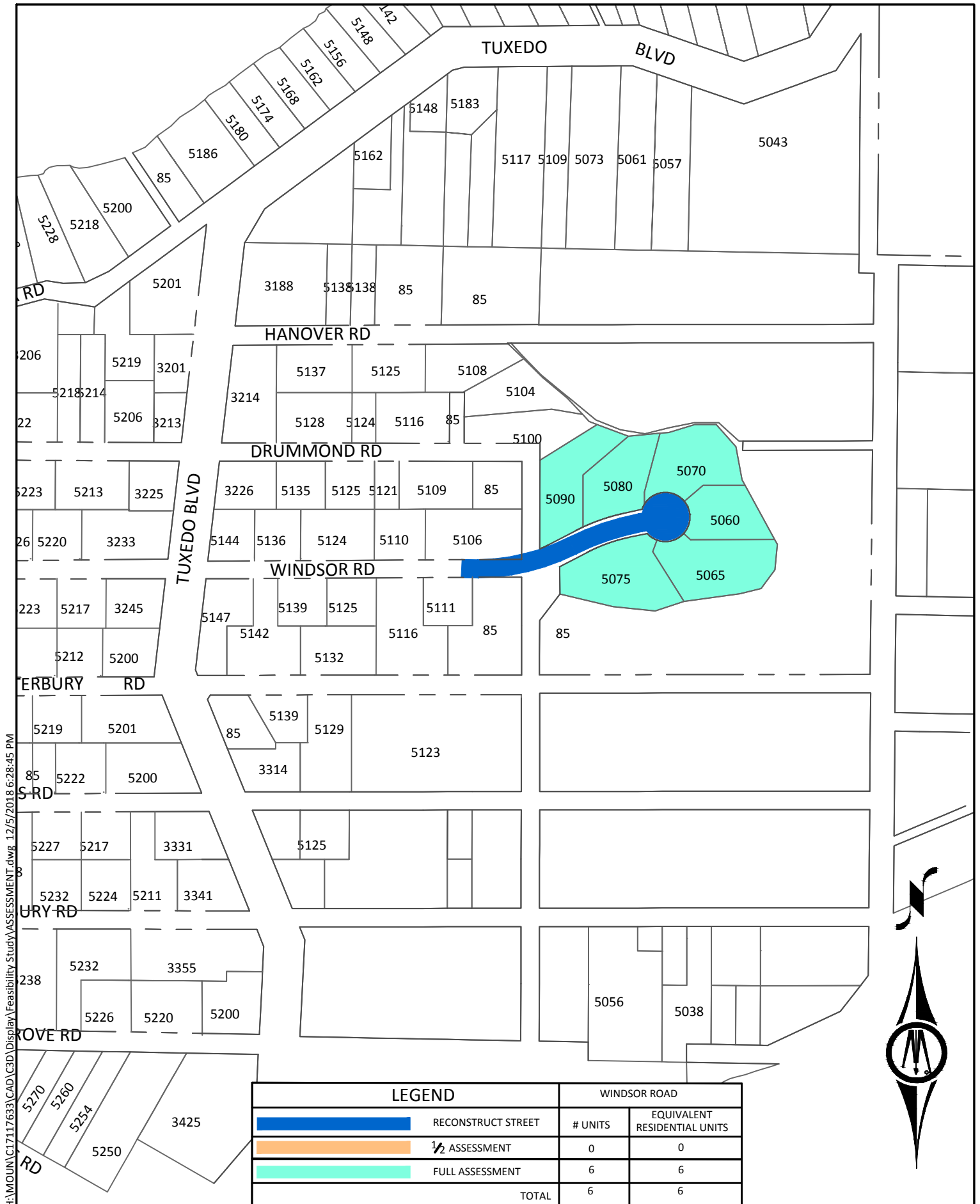
	TOTAL LOTS	EQUIVALENT RES. UNITS
SINGLE FAMILY UNITS RECEIVING FULL ASSESSMENT (1.0)	6	6.00
SINGLE FAMILY UNITS RECEIVING THREE QUARTER ASSESSMENT (0.75)	0	0.00
SINGLE FAMILY UNITS RECEIVING TWO THIRDS ASSESSMENT (0.67)	0	0.00
SINGLE FAMILY UNITS RECEIVING HALF ASSESSMENT (0.50)	0	0.00
SINGLE FAMILY UNITS RECEIVING ONE THIRD ASSESSMENT (0.33)	0	0.00
CITY OWNED UNITS	0	0.00
TOTALS		6.00

ESTIMATED 2019 STREET IMPROVEMENT COST (ASSESSABLE PORTION)	\$15,722.09
ASSESSABLE PROJECT COSTS (2/3 OF ASSESSABLE STREETS)	\$10,481.39
TOTAL AMOUNT ASSESSED TO RESIDENTIAL	\$10,481.39

ESTIMATED ASSESSMENT PER RESIDENTIAL UNIT	\$1,746.90
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ASSESSMENT-RESIDENTIAL CAPPED

MAXIMUM ASSESSMENT PER RESIDENTIAL UNIT	\$6,600.00
DEDUCTED ASSESSMENT PER RESIDENTIAL UNIT	(\$4,853.10)
TOTAL DEDUCTION PAID BY CITY	(\$29,118.61)



Appendix B



