



Item 7b.

Sunfish Lake Engineer's Report for May 2, 2017

By: Don Sterna, PE, City Engineer

Date: April 28, 2017

1. Engineering Activities Undertaken in the Month of April.

The following Engineer's Report reflects the activities undertaken this past month, along with the anticipated engineering activity for the month of April.

- A. Charlton Road Feasibility Report** – The draft Feasibility Report has been prepared along with detailed preliminary plans to develop cross sections, proposed easements and project cost estimates. At the Council meeting I will provide a brief presentation of the report focusing mainly on the preliminary design and design assumptions. I will have an exhibit at the Council meeting showing the proposed options and locations for curb and gutter and my suggestions for easements for both roadway and drainage. The report will also include options to improve the outlet from Charlton Road.
- B. 2017 Street Improvement Update** – The bids were opened on April 21st at 2:00 PM at WSB's office. Attached to the Engineers Report is the letter of recommendation and bid tabulations for Valley Paving, Inc. in the amount of \$299,954.21. The following is a brief project schedule for Council information:
- June 12, 2017 Construction Could Begin (30 Calendar Days)
 - August 18, 2017, Construction must be completed
 - August 5, 2017, Council calls for Public Assessment Hearing
 - September 2, 2017, Public Assessment Hearing
 - October 2017, Certify Assessments to County
- C. 2018-2022 CIP** – I will be reviewing the draft of the 2018-2022 CIP at the May Council meeting. One of the bigger topics this year will be the potential improvements to Charlton Road and the financial implications to the City budget. I will be presenting two (2) investment summaries with and without improvements to Charlton Road for the Council's information as we work our way through improvements to Charlton Road. As discussed in previous years, this document will outline what infrastructure and maintenance projects we are looking to do in 2018 and plan for the next 5 to 10 years for the Council to consider. The goal is to approve the CIP update at the August Council meeting, which will help establish infrastructure priorities to manage the City's infrastructure investments long term.
- D. Charlton Road Grading** – Pine Bend Paving graded and repair the winter damage to Charlton Road the week of April 17. I will monitor the dust issue and most likely at the June Council meeting I will be requesting a dust treatment to the roadway, which has become more of an annual maintenance activity that has typically averaged around \$1,750.
- E. Salem Church Pot Hole** – This spring a pot hole has developed over an existing storm sewer pipe just west of Salem Lane on the south side of the roadway. This pipe is scheduled to be replaced as part of the improvements to Salem Church Road, however the pot hole maybe a sign that the pipe possibly is plugged further downstream from the section that will be

replaced. I have requested Pine Bend to temporarily bridge the gap and fill the hole until we have the contractor onboard for the street improvements scheduled for this summer. At that time, we will evaluate the cause and make the necessary repairs.

- F. 2017 Street Repair** – The pot holes along city streets were filled this past month by Pine Bend Paving. I requested that the pot holes along the east end of Salem Church Road be filled with material until that section of roadway is reconstructed this summer.
- G. Spring Load Limits** – Spring load limits were lifted on Friday, April 21.
- H. Snow Plowing for April** – Over the past month, the City incurred \$765 in costs for removing the snow and applying deicing material consisting of sand/salt mixture and in several cases, just straight salt to improve the driving conditions. For the season, the City has incurred \$13,517.50 in costs for snow and ice removal up through April 15, which is well below the budgeted \$30,000 for this activity.
- I. Building and Site Reviews** – 1 major site plan review was completed in April.
 - 415 Salem Church Road – New home construction, septic, well, bituminous driveway. Recommending denial from an Engineering standpoint at this time due to lack of information provided in the submittal.

2. Public Works Activities Undertaken in the Month of April.

No other Public Works activities were undertaken in the month of April.

3. Anticipated Engineering Activities for the Month of May.

- A. Charlton Road Improvements** – Schedule a Public Open House in May to review the preliminary design, easements, draft of the Feasibility Report and receive input from the residents and City Council. Findings from this meeting will be discussed at the June Council meeting to determine changes to the preliminary design before a Feasibility Report would be finalized.
- B. 2017 City Improvement Project** – We will be finalizing the contracts with Valley Paving and establishing the schedule for the work on Salem Church Road in May. At the June Council meeting we will have the schedule established for the work to discuss with the council.

4. Public Works Activities Planned for in the Month of April.

At this time, there are no planned public work activities for the month of May.

The above constitutes the Engineering Report for the City of Sunfish Lake for May 2, 2017.

Respectfully submitted,

WSB & Associates, Inc.



Donald W. Sterna, PE
City Engineer



April 21, 2017

Honorable Mayor and City Council
City of Sunfish Lake

Re: 2017 Street Improvement Project
City of Sunfish Lake Project No. 2016-02 and 2016-03
WSB Project No. 2182-220

Dear Mayor and Council Members:

Bids were received for the above-referenced project on Friday, April 21, 2017 at 2:00 PM, and were opened and read aloud. A total of five (5) bids were received. The bids were checked for mathematical accuracy and tabulated and there are no errors made on the Proposal Form. The Engineer's Estimate was \$383,238.25. The bid tabulation indicates the low bidder as Valley Paving, Inc., Shakopee, MN, in the amount of \$299,954.21.

We recommend that the City consider these bids and award a contract to Valley Paving, Inc., based on the results of the bids received.

Sincerely,

WSB & Associates, Inc.

A handwritten signature in blue ink, appearing to read "Donald W. Sterna".

Donald W. Sterna, PE
Project Manager

Enclosure

cc: Brent Carron, Valley Paving, Inc.
Richard Williams, City of Sunfish Lake Mayor
Tim Kuntz, City of Sunfish Lake Attorney
Ann Lanoue, City of Sunfish Lake Treasurer

rrh

BID TABULATION SUMMARY

PROJECT:
2017 Street Improvement Project

OWNER:
City of Sunfish Lake, MN
C.P. 2016-02 / 2016-03

WSB PROJECT NO.:
2182-220

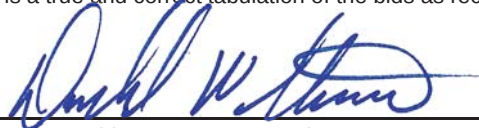
Bids Opened: April 21, 2017 at 2:00 p.m.

		Addendum	Addendum	Addendum	Addendum	Bid	
Contractor		No. 1	No. 2	No. 3	No. 4	Security (5%)	Grand Total Bid
1	Valley Paving, Inc.	X	X	X	X	X	\$299,954.21
2	Danner, Inc.	X	X	X	X	X	\$322,467.10
3	Bituminous Roadways, Inc.	X	X	X	X	X	\$329,974.50
4	Park Construction Company	X	X	X	X	X	\$333,962.85
5	Northwest Asphalt, Inc.	X	X	X	X	X	\$341,358.68

Engineer's Opinion of Cost

\$383,238.25

I hereby certify that this is a true and correct tabulation of the bids as received on April 21, 2017



Donald W. Sterna, PE Project Manager

 Denotes corrected figure



WSB Project Bid Abstract

Project Name: SFLK - 2017 Street Improvement Project
Client: City of Sunfish Lake
Bid Opening: April 21, 2017 at 2:00 PM

Contract No.:
Project No.: 02182-22
Owner: Minneapolis

Denotes corrected figure

Project: 02182-22 - SFLK - 2017 Street Improvement Project					Engineers Estimate		Valley Paving		Danner, Inc.		Bituminous Roadways, Inc.	
Line No.	Item	Units	Quantity		Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
BASE BID												
1	2021.501 MOBILIZATION	LS	1		\$15,000.00	\$15,000.00	\$10,800.00	\$10,800.00	\$14,000.00	\$14,000.00	\$14,675.00	\$14,675.00
2	2104.501 REMOVE PIPE CULVERTS	L F	45		\$10.00	\$450.00	\$8.24	\$370.80	\$10.00	\$450.00	\$9.40	\$423.00
3	2104.501 REMOVE CABLE GUARDRAIL	L F	650		\$8.00	\$5,200.00	\$4.68	\$3,042.00	\$6.00	\$3,900.00	\$2.40	\$1,560.00
4	2104.509 REMOVE SIGN TYPE C	EACH	24		\$35.00	\$840.00	\$25.75	\$618.00	\$22.00	\$528.00	\$21.00	\$504.00
5	2104.509 REMOVE MARKER	EACH	8		\$35.00	\$280.00	\$25.75	\$206.00	\$22.00	\$176.00	\$21.00	\$168.00
6	2104.523 SALVAGE SIGN TYPE C	EACH	4		\$100.00	\$400.00	\$25.75	\$103.00	\$22.00	\$88.00	\$21.00	\$84.00
7	2104.523 SALVAGE SIGN TYPE SPECIAL	EACH	1		\$250.00	\$250.00	\$25.75	\$25.75	\$22.00	\$22.00	\$21.00	\$21.00
8	2105.501 COMMON EXCAVATION (P)	C Y	1000		\$12.50	\$12,500.00	\$22.45	\$22,450.00	\$41.00	\$41,000.00	\$18.00	\$18,000.00
9	2118.607 AGGREGATE SURFACING (CV) CLASS 2	C Y	234		\$32.00	\$7,488.00	\$26.04	\$6,093.36	\$37.00	\$8,658.00	\$59.00	\$13,806.00
10	2118.609 AGGREGATE SURFACING SPECIAL	TON	267		\$20.00	\$5,340.00	\$24.79	\$6,618.93	\$38.00	\$10,146.00	\$23.00	\$6,141.00
11	2211.501 AGGREGATE BASE CLASS 5	TON	250		\$20.00	\$5,000.00	\$17.09	\$4,272.50	\$25.00	\$6,250.00	\$19.50	\$4,875.00
12	2215.501 FULL DEPTH RECLAMATION (P)	S Y	8760		\$3.85	\$33,726.00	\$1.05	\$9,198.00	\$3.20	\$28,032.00	\$1.90	\$16,644.00
13	2232.501 MILL BITUMINOUS SURFACE (1.5")	S Y	505		\$10.00	\$5,050.00	\$4.30	\$2,171.50	\$5.00	\$2,525.00	\$6.20	\$3,131.00
14	2357.502 BITUMINOUS MATERIAL FOR TACK COAT	GAL	884		\$3.25	\$2,873.00	\$1.28	\$1,131.52	\$1.00	\$884.00	\$3.40	\$3,005.60
15	2360.501 TYPE SP 12.5 WEARING COURSE MIX (2,C)	TON	2625		\$68.00	\$178,500.00	\$54.77	\$143,771.25	\$42.00	\$110,250.00	\$57.00	\$149,625.00
16	2501.515 24" GS PIPE APRON	EACH	1		\$450.00	\$450.00	\$1,184.50	\$1,184.50	\$250.00	\$250.00	\$1,352.00	\$1,352.00
17	2501.603 CLEAN PIPE CULVERT	L F	210		\$15.00	\$3,150.00	\$10.30	\$2,163.00	\$6.00	\$1,260.00	\$12.00	\$2,520.00
18	2503.603 15" HDPE PIPE SEWER (SMOOTH WALL)	L F	128		\$35.00	\$4,480.00	\$43.26	\$5,537.28	\$40.00	\$5,120.00	\$49.50	\$6,336.00
19	2503.603 24" HDPE PIPE SEWER (SMOOTH)	L F	50		\$39.00	\$1,950.00	\$46.35	\$2,317.50	\$47.00	\$2,350.00	\$53.00	\$2,650.00
20	2506.501 CONST DRAINAGE STRUCTURE DESIGN SPECIAL (2X3 BOX)	EACH	3		\$400.00	\$1,200.00	\$2,573.99	\$7,721.97	\$2,900.00	\$8,700.00	\$2,293.00	\$6,879.00
21	2506.501 CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	L F	6.7		\$325.00	\$2,177.50	\$767.35	\$5,141.25	\$448.00	\$3,001.60	\$876.00	\$5,869.20
22	2506.516 CASTING ASSEMBLY	EACH	1		\$800.00	\$800.00	\$742.40	\$742.40	\$1,000.00	\$1,000.00	\$913.00	\$913.00
23	2506.602 CONNECT INTO EXISTING STORM SEWER	EACH	1		\$500.00	\$500.00	\$875.50	\$875.50	\$1,500.00	\$1,500.00	\$999.00	\$999.00
24	2511.501 RANDOM RIPRAP CLASS III (FIELDSTONE)	C Y	5		\$100.00	\$500.00	\$144.20	\$721.00	\$200.00	\$1,000.00	\$165.00	\$825.00

Project: 02182-22 - SFLK - 2017 Street Improvement Project				Engineers Estimate		Valley Paving		Danner, Inc.		Bituminous Roadways, Inc.		
Line No.	Item	Units	Quantity	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	
25	2511.515	GEOTEXTILE FILTER TYPE IV	S Y	21	\$12.00	\$252.00	\$4.12	\$86.52	\$5.00	\$105.00	\$4.70	\$98.70
26	2531.501	CONCRETE CURB & GUTTER DESIGN D412	L F	455	\$21.00	\$9,555.00	\$19.36	\$8,808.80	\$17.80	\$8,099.00	\$22.00	\$10,010.00
27	2554.501	TRAFFIC BARRIER DESIGN TYPE 31	L F	537.5	\$28.00	\$15,050.00	\$21.58	\$11,599.25	\$28.00	\$15,050.00	\$28.50	\$15,318.75
28	2554.523	END TREATMENT-TANGENT TERMINAL	EACH	2	\$4,500.00	\$9,000.00	\$2,880.88	\$5,761.76	\$3,300.00	\$6,600.00	\$3,056.00	\$6,112.00
29	2554.509	GUIDE POST TYPE B	EACH	8	\$75.00	\$600.00	\$41.20	\$329.60	\$55.00	\$440.00	\$52.50	\$420.00
30	2563.601	TRAFFIC CONTROL	LS	1	\$2,000.00	\$2,000.00	\$5,410.21	\$5,410.21	\$6,350.00	\$6,350.00	\$6,591.00	\$6,591.00
31	2564.531	SIGN PANELS TYPE C	S F	171.5	\$55.00	\$9,432.50	\$30.90	\$5,299.35	\$34.00	\$5,831.00	\$32.50	\$5,573.75
32	2564.531	SIGN PANELS TYPE SPECIAL	S F	21.5	\$125.00	\$2,687.50	\$41.20	\$885.80	\$48.00	\$1,032.00	\$47.50	\$1,021.25
33	2564.537	INSTALL SIGN TYPE C	EACH	4	\$150.00	\$600.00	\$103.00	\$412.00	\$140.00	\$560.00	\$132.00	\$528.00
34	2564.537	INSTALL SIGN TYPE SPECIAL	EACH	1	\$300.00	\$300.00	\$128.75	\$128.75	\$150.00	\$150.00	\$132.00	\$132.00
35	2573.502	SILT FENCE, TYPE MS	L F	500	\$3.85	\$1,925.00	\$2.06	\$1,030.00	\$3.00	\$1,500.00	\$2.10	\$1,050.00
36	2573.530	STORM DRAIN INLET PROTECTION	EACH	4	\$250.00	\$1,000.00	\$100.00	\$400.00	\$250.00	\$1,000.00	\$95.00	\$380.00
37	2573.535	STABILIZED CONSTRUCTION EXIT	LS	1	\$1,500.00	\$1,500.00	\$0.01	\$0.01	\$1,500.00	\$1,500.00	\$994.00	\$994.00
38	2574.525	COMMON TOPSOIL BORROW	C Y	170	\$25.00	\$4,250.00	\$30.74	\$5,225.80	\$10.00	\$1,700.00	\$18.00	\$3,060.00
39	2575.605	HYDROSEEDING	S Y	6000	\$2.85	\$17,100.00	\$1.49	\$8,940.00	\$1.30	\$7,800.00	\$1.50	\$9,000.00
40	2575.523	EROSION CONTROL BLANKETS CATEGORY 3N	S Y	5000	\$1.85	\$9,250.00	\$1.03	\$5,150.00	\$1.40	\$7,000.00	\$1.10	\$5,500.00
41	2582.502	4" SOLID LINE EPOXY	L F	6975	\$0.70	\$4,882.50	\$0.21	\$1,464.75	\$0.50	\$3,487.50	\$0.20	\$1,395.00
42	2582.502	4" DOUBLE SOLID LINE EPOXY	L F	3965	\$1.45	\$5,749.25	\$0.44	\$1,744.60	\$0.80	\$3,172.00	\$0.45	\$1,784.25
Total BASE BID:						\$383,238.25		\$299,954.21		\$322,467.10		\$329,974.50
	Total BASE BID:					\$383,238.25		\$299,954.21		\$322,467.10		\$329,974.50
	Totals for Project 02182-22					\$383,238.25		\$299,954.21		\$322,467.10		\$329,974.50
	% of Estimate for Project 02182-22							-21.73%		-15.86%		-13.90%

	Project: 02182-22 - SFLK - 2017 Street Improvement Project				Engineers Estimate		Park Construction Company - Mpls		Northwest Asphalt, Inc.	
Line No.	Item		Units	Quantity	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
BASE BID										
1	2021.501	MOBILIZATION	LS	1	\$15,000.00	\$15,000.00	\$16,000.00	\$16,000.00	\$24,200.00	\$24,200.00
2	2104.501	REMOVE PIPE CULVERTS	L F	45	\$10.00	\$450.00	\$11.10	\$499.50	\$14.00	\$630.00
3	2104.501	REMOVE CABLE GUARDRAIL	L F	650	\$8.00	\$5,200.00	\$4.60	\$2,990.00	\$3.90	\$2,535.00
4	2104.509	REMOVE SIGN TYPE C	EACH	24	\$35.00	\$840.00	\$20.40	\$489.60	\$20.00	\$480.00
5	2104.509	REMOVE MARKER	EACH	8	\$35.00	\$280.00	\$20.40	\$163.20	\$20.00	\$160.00
6	2104.523	SALVAGE SIGN TYPE C	EACH	4	\$100.00	\$400.00	\$20.40	\$81.60	\$20.00	\$80.00
7	2104.523	SALVAGE SIGN TYPE SPECIAL	EACH	1	\$250.00	\$250.00	\$20.40	\$20.40	\$20.00	\$20.00
8	2105.501	COMMON EXCAVATION (P)	C Y	1000	\$12.50	\$12,500.00	\$32.90	\$32,900.00	\$19.25	\$19,250.00
9	2118.607	AGGREGATE SURFACING (CV) CLASS 2	C Y	234	\$32.00	\$7,488.00	\$43.50	\$10,179.00	\$4.50	\$1,053.00
10	2118.609	AGGREGATE SURFACING SPECIAL	TON	267	\$20.00	\$5,340.00	\$36.70	\$9,798.90	\$24.50	\$6,541.50
11	2211.501	AGGREGATE BASE CLASS 5	TON	250	\$20.00	\$5,000.00	\$20.50	\$5,125.00	\$19.50	\$4,875.00
12	2215.501	FULL DEPTH RECLAMATION (P)	S Y	8760	\$3.85	\$33,726.00	\$1.80	\$15,768.00	\$5.50	\$48,180.00
13	2232.501	MILL BITUMINOUS SURFACE (1.5")	S Y	505	\$10.00	\$5,050.00	\$11.20	\$5,656.00	\$8.00	\$4,040.00
14	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	884	\$3.25	\$2,873.00	\$2.25	\$1,989.00	\$2.60	\$2,298.40
15	2360.501	TYPE SP 12.5 WEARING COURSE MIX (2,C)	TON	2625	\$68.00	\$178,500.00	\$55.50	\$145,687.50	\$56.65	\$148,706.25
16	2501.515	24" GS PIPE APRON	EACH	1	\$450.00	\$450.00	\$291.00	\$291.00	\$700.00	\$700.00
17	2501.603	CLEAN PIPE CULVERT	L F	210	\$15.00	\$3,150.00	\$3.55	\$745.50	\$6.00	\$1,260.00
18	2503.603	15" HDPE PIPE SEWER (SMOOTH WALL)	L F	128	\$35.00	\$4,480.00	\$36.30	\$4,646.40	\$38.70	\$4,953.60
19	2503.603	24" HDPE PIPE SEWER (SMOOTH)	L F	50	\$39.00	\$1,950.00	\$44.00	\$2,200.00	\$49.20	\$2,460.00
20	2506.501	CONST DRAINAGE STRUCTURE DESIGN SPECIAL (2X3 BOX)	EACH	3	\$400.00	\$1,200.00	\$1,950.00	\$5,850.00	\$2,000.00	\$6,000.00
21	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	L F	6.7	\$325.00	\$2,177.50	\$328.00	\$2,197.60	\$425.00	\$2,847.50
22	2506.516	CASTING ASSEMBLY	EACH	1	\$800.00	\$800.00	\$811.00	\$811.00	\$675.00	\$675.00
23	2506.602	CONNECT INTO EXISTING STORM SEWER	EACH	1	\$500.00	\$500.00	\$752.00	\$752.00	\$1,000.00	\$1,000.00
24	2511.501	RANDOM RIPRAP CLASS III (FIELDSTONE)	C Y	5	\$100.00	\$500.00	\$449.00	\$2,245.00	\$72.00	\$360.00
25	2511.515	GEOTEXTILE FILTER TYPE IV	S Y	21	\$12.00	\$252.00	\$4.45	\$93.45	\$14.00	\$294.00
26	2531.501	CONCRETE CURB & GUTTER DESIGN D412	L F	455	\$21.00	\$9,555.00	\$19.20	\$8,736.00	\$22.00	\$10,010.00
27	2554.501	TRAFFIC BARRIER DESIGN TYPE 31	L F	537.5	\$28.00	\$15,050.00	\$21.20	\$11,395.00	\$18.17	\$9,766.38
28	2554.523	END TREATMENT-TANGENT TERMINAL	EACH	2	\$4,500.00	\$9,000.00	\$2,820.00	\$5,640.00	\$2,342.05	\$4,684.10
29	2554.509	GUIDE POST TYPE B	EACH	8	\$75.00	\$600.00	\$51.00	\$408.00	\$50.00	\$400.00
30	2563.601	TRAFFIC CONTROL	LS	1	\$2,000.00	\$2,000.00	\$6,000.00	\$6,000.00	\$1,000.00	\$1,000.00
31	2564.531	SIGN PANELS TYPE C	S F	171.5	\$55.00	\$9,432.50	\$31.60	\$5,419.40	\$31.00	\$5,316.50
32	2564.531	SIGN PANELS TYPE SPECIAL	S F	21.5	\$125.00	\$2,687.50	\$45.90	\$986.85	\$45.00	\$967.50
33	2564.537	INSTALL SIGN TYPE C	EACH	4	\$150.00	\$600.00	\$128.00	\$512.00	\$125.00	\$500.00
34	2564.537	INSTALL SIGN TYPE SPECIAL	EACH	1	\$300.00	\$300.00	\$128.00	\$128.00	\$150.00	\$150.00

Project: 02182-22 - SFLK - 2017 Street Improvement Project				Engineers Estimate		Park Construction Company - Mpls		Northwest Asphalt, Inc.	
Line No.	Item	Units	Quantity	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
35	2573.502 SILT FENCE, TYPE MS	L F	500	\$3.85	\$1,925.00	\$2.05	\$1,025.00	\$2.00	\$1,000.00
36	2573.530 STORM DRAIN INLET PROTECTION	EACH	4	\$250.00	\$1,000.00	\$159.00	\$636.00	\$125.00	\$500.00
37	2573.535 STABILIZED CONSTRUCTION EXIT	LS	1	\$1,500.00	\$1,500.00	\$352.00	\$352.00	\$2,500.00	\$2,500.00
38	2574.525 COMMON TOPSOIL BORROW	C Y	170	\$25.00	\$4,250.00	\$33.50	\$5,695.00	\$24.50	\$4,165.00
39	2575.605 HYDROSEEDING	S Y	6000	\$2.85	\$17,100.00	\$1.50	\$9,000.00	\$1.45	\$8,700.00
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Total BASE BID:					\$383,238.25		\$333,962.85		\$341,358.68
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Totals for Project 02182-22					\$383,238.25		\$333,962.85		\$341,358.68
% of Estimate for Project 02182-22							-12.86%		-10.93%

I hereby certify that this is an exact reproduction of bids received.

Certified By:  License No. 19103

Date: April 21, 2017



2018 – 2022 CAPITAL IMPROVEMENTS PLAN

DRAFT

May 2, 2017

Prepared for:
City of Sunfish Lake
Dakota County, MN

WSB PROJECT NO. 01011-99



**2018 to 2022
CAPITAL IMPROVEMENT PLAN**

CITY OF SUNFISH LAKE, MN

DRAFT

May 2, 2017

Prepared By:

WSB & Associates, Inc.



CERTIFICATION

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.

Donald W. Sterna, PE

Date: May 2, 2017

Lic. No. 19103

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TITLE SHEET
CERTIFICATION SHEET
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APPENDIX A

Exhibits:

- Exhibit A – Pavement History
- Exhibit B – City Map – Maintenance History
- Exhibit C – Proposed 2018 to 2022 CIP Map (Pavement Rehabilitation)
- Exhibit D – Proposed 2018 to 2022 CIP Map (Roadway Maintenance)
- Exhibit E – Anticipated 2023 to 2027 CIP Map

APPENDIX B

Capital Improvement Plan Summary

APPENDIX C

2015 Pavement Condition Index Map

APPENDIX D

Assessment Policy

2018 to 2022 CAPITAL IMPROVEMENT PLAN

1. INTRODUCTION

The Capital Improvement Plan (CIP) is a multi-year planning tool utilized by City officials to plan, finance, and maintain City infrastructure, usually based on a five to ten-year period. The City's Capital Improvement Plan identifies street and drainage improvements and major street maintenance items to sustain and maintain the City's infrastructure to obtain the most useful life. The CIP process allows for a systematic evaluation of all potential projects at the same time.

As with all plans, the Capital Improvement Plan is not a legally binding document and is subject to change due to unforeseen pavement deterioration or failures, available funding, and scheduling. The plan is intended to be updated on an annual basis as part of the City's budgeting process.

2. CAPITAL IMPROVEMENT PLAN

The Capital Improvement Plan is based on the condition of the City's existing infrastructure and anticipated Capital Improvements and the typical maintenance requirements for the stated condition. What is defined as a capital project is a tangible improvement that has a life expectancy greater than one year. Improvements are then identified to maintain or reconstruct streets, drainage systems, and other infrastructure facilities. The CIP identifies an estimated project cost and determines a schedule utilizing anticipated budget availability and maintenance priority. The CIP should be reviewed annually every spring to reassess the City's infrastructure needs prior to establishing the next year's City budget. The identified costs are our early assessment of anticipated costs that will be refined along with funding options prior to authorization by the City Council.

2.1 Scheduled Maintenance

A majority of the City's current infrastructure, with the exception of Charlton Road, was constructed between 1989 to present. **Appendix A, Exhibit A** shows a map of the City streets and what year they were constructed. Bituminous roadway maintenance crack sealing and sealcoat every seven to ten-year cycle with an overlay around 10 to 20 years followed by a seal coating cycle to extend the life cycle of the City's paved roadways. The methodology of the City's pavement management is outlined in the 2007 Pavement Management Report which discusses pavement life cycle, maintenance strategies, and how pavements are evaluated. Copies of this 2007 report are available upon request.

Appendix B is the 2015 Pavement Condition Index Map that indicates the most currently evaluated pavement conditions. This Capital Improvement Plan identifies pavement and infrastructure management strategies and the City's street condition evaluated in 2015. The City should re-evaluate its infrastructure on a three-year cycle to track pavement, culvert, and street-sign conditions to better manage our infrastructure maintenance. The next pavement evaluation year is recommended in 2018.

The maintenance items indicated in the Capital Improvement Plan are:

Crack Sealing – The repair of longitudinal and transverse cracks to impede moisture from penetrating the streets aggregate base and subgrade.

Seal Coat – The surface application of bituminous oil and aggregate to provide a new traveling surface and impede the rate of oxidation of the existing bituminous pavement.

Overlay – Crack sealing the existing bituminous pavement and placing additional bituminous surfacing over the entire roadway surface.

Mill and Overlay – The milling (removal) of the existing deteriorated bituminous surface and placement of a bituminous surfacing across the entire roadway surface.

Reconstruction – The reconstruction of an existing roadway due to bituminous surface, aggregate base, or subgrade failure resulting in severe bituminous cracking and fracture. The process constructs a new street section including subgrade corrections, aggregate base construction, and bituminous surfacing.

Drainage System – The cleaning, inspection, repair and/or replacement of drainage ways and culverts.

2.2 Recent/Current Capital Improvements

Recent Capital Improvements in which City financing included bonding are:

- Salem Church Road Reconstruction, Roanoke Road to Delaware Avenue Constructed in 2009, bond payment through 2020
- 2012 Crack Seal Project, funded through City general funds
- 2013 Seal Coat Project, funded through City general funds
- 2014 Street Improvements Project, funded under bonds through 2025
- 2016 Seal Coat Project, funded through City general funds
- 2017 Street Improvement Project, funded under bonds through 2028

2.3 2018 to 2022 Capital Improvements

The proposed CIP identifies the major improvements scheduled shown in the following exhibits:

- ***Appendix A, Exhibits C and D*** - Proposed 2018 to 2022 Capital Improvements
- ***Appendix A, Exhibit E*** - Proposed 2023 to 2027 Capital Improvements

It is anticipated that after 2020, the roadway system in the City will be in good to very good condition with the ongoing, yearly maintenance activities on Charlton Road.

2.4 Capital Improvements Funding

The Capital Improvements identified in the plan are improvements that are funded by the City general funds (collected from the City general tax levy), bonding and financing through assessment to benefiting properties.

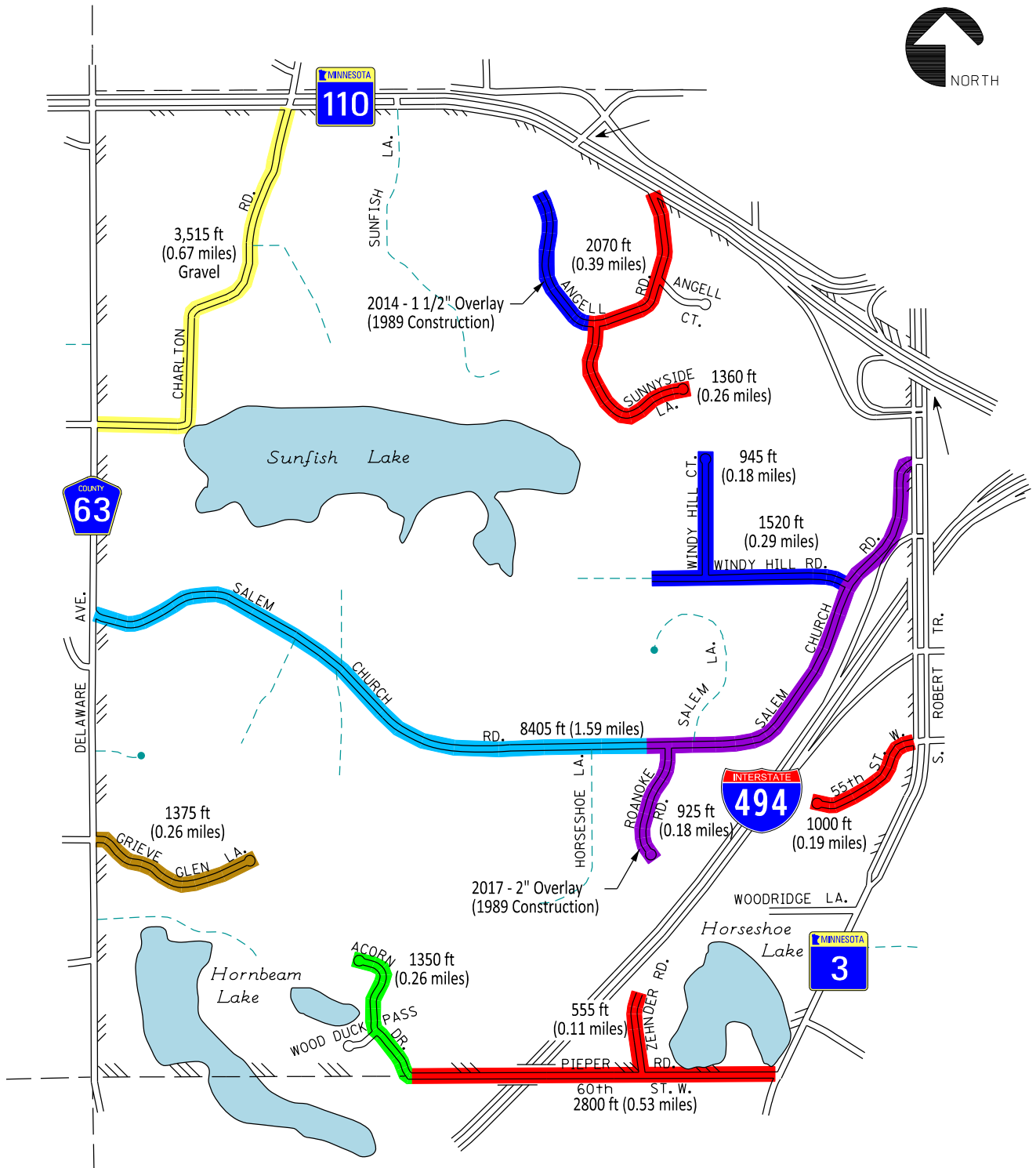
Appendix B includes the Capital Improvement Plan Project Summary of the currently identified capital improvements. It is important to note that the costs identified do not include legal, engineering, administration, and financing cost. The City's Special Assessment Policy is included in Appendix D for reference.

3. RECOMMENDATION

It is recommended the City updates its CIP every year in the spring to evaluate City infrastructure needs and assist in establishing the City budgets for road maintenance and capital improvements. It is recommended the CIP budget be separated from the routine road maintenance activities such as street sweeping, pavement patching, and sign maintenance from the capital improvement projects. We recommend that a Capital Improvement Fund be established to fund Capital Improvements accumulating funds, as needed, to complete Capital Improvement projects.

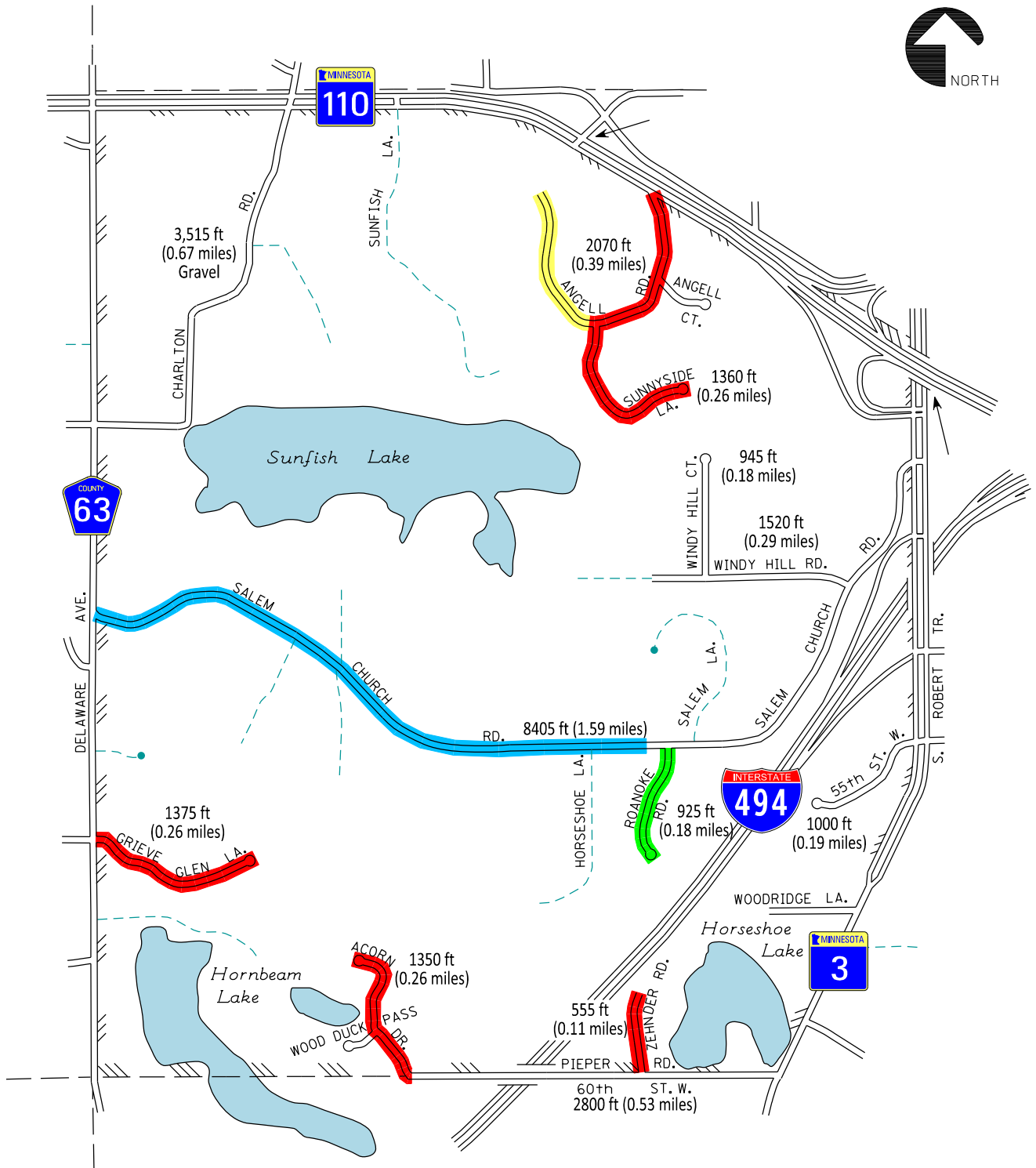
APPENDIX A

Exhibits



Year of Street Construction 1989 1994 1996 2006 2009 2014 2017

City Street Lengths: 4.24 miles of Paved Streets & 0.67 miles of Gravel Streets

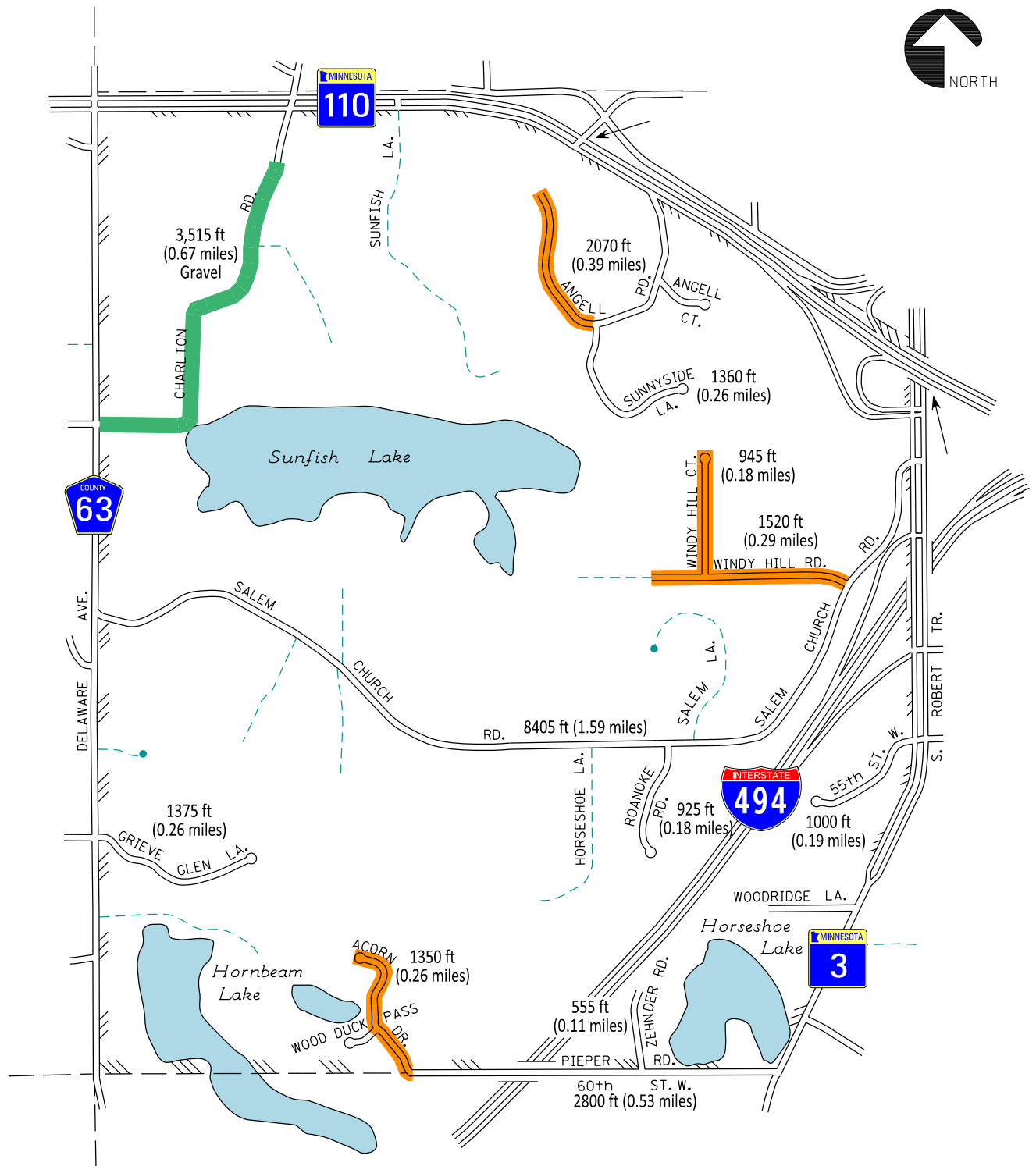


Year of Street Maintenance

■ 2013 Seal Coat
 ■ 2013 Overlay
 ■ 2016 Seal Coat
 ■ 2017 Overlay

City Street Lengths: 4.24 miles of Paved Streets & 0.67 miles of Gravel Streets

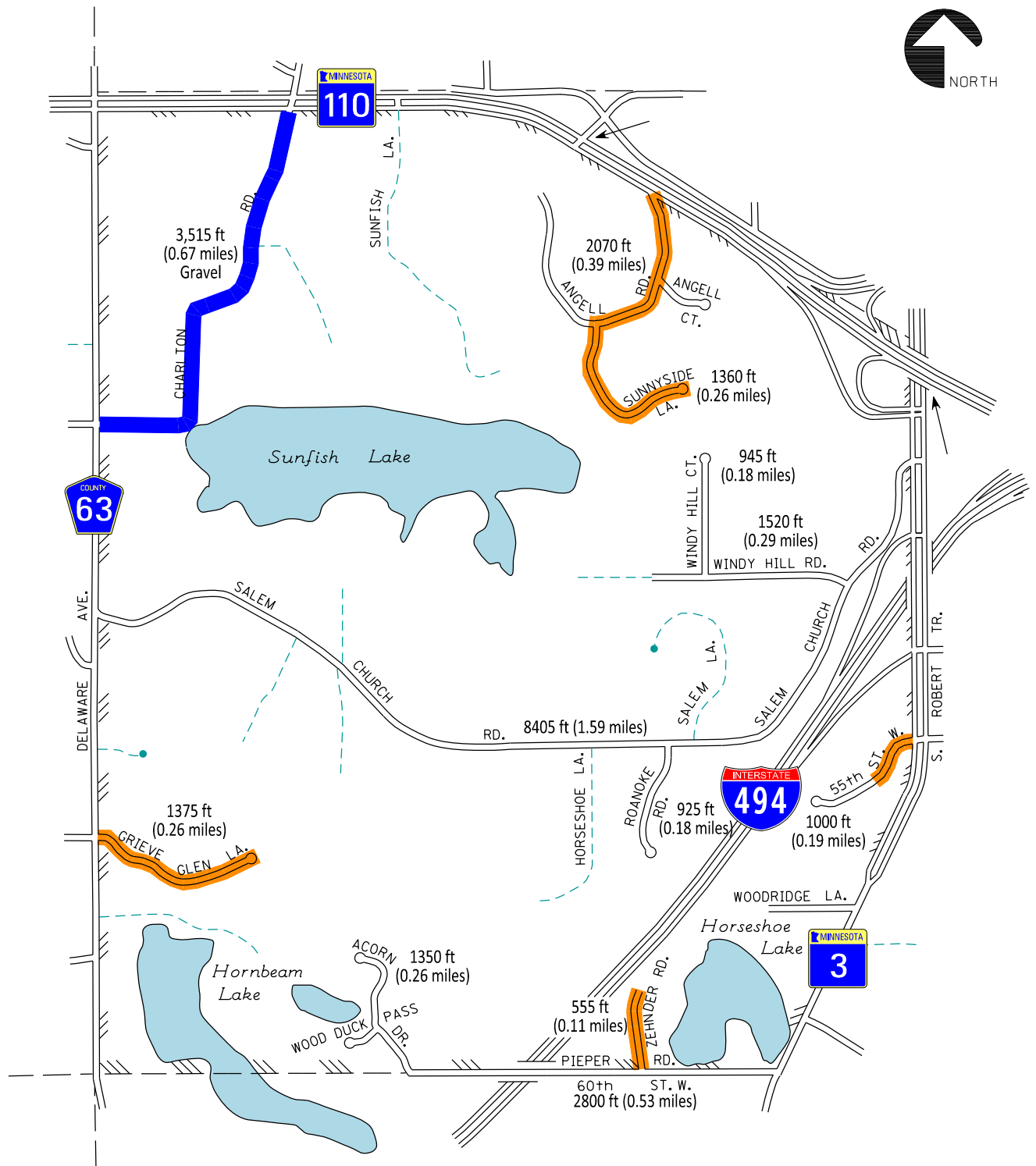
Date: Printed: 4/27/2017
WSB Filename: K:\001-990\Cad\2017 CIP MAP\Exhibit B - 2017 City Street Map - Maintenance History.dgn



**2018 to 2022
Roadway Maintenance**

Yearly Gravel Surface Repairs

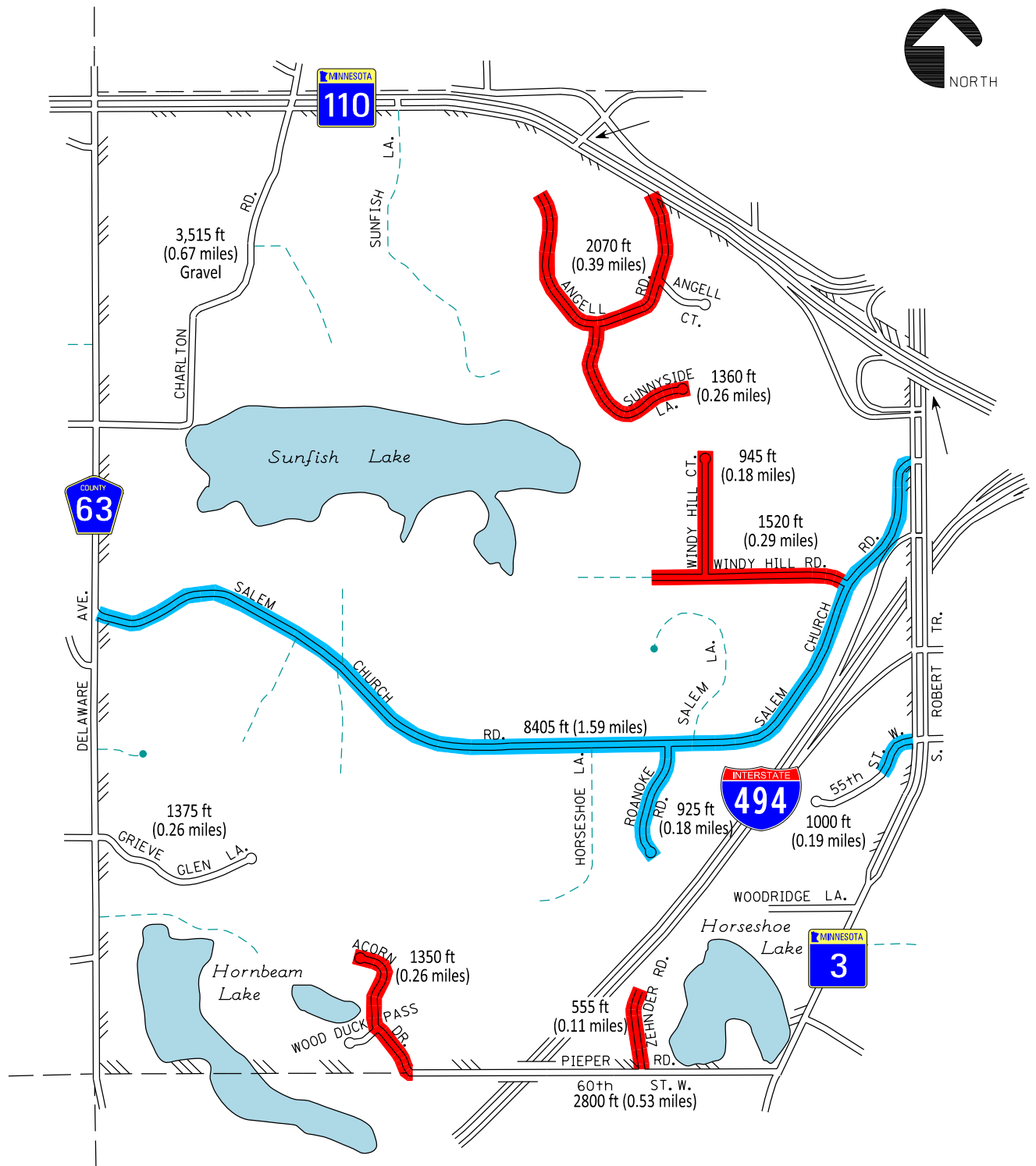
2021 Crack Fill & Seal Coat



**2018 to 2022 Improvements
(Pavement Rehabilitation)**

■ 2018 Reconstruction ■ 2020 Overlay

Date: Printed: 4/27/2017
WSB Filename: K:\001-990\Cad\2017 CIP MAP\Exhibit D - 2018 to 2022 Pavement Rehab.dgn



2023 to 2027 Improvements



2027 Crack Fill & Seal Coat



2025 Crack Fill & Seal Coat

APPENDIX B

Capital Improvement Plan Summary

2018 - 2022 CAPITAL IMPROVEMENT PLAN W/OUT CHARLTON ROAD IMPROVEMENTS

SUMMARY
APPENDIX B

	Notes	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTALS
Improvement Project Costs												
A.) Charlton Road Maintenance (100% City Tax Levy)												
1.) Street Grading		\$7,750	\$7,750	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,250	\$8,250	\$8,250	
2.) Dust Control		\$1,950	\$1,950	\$1,950	\$1,950	\$2,000	\$2,000	\$2,100	\$2,100	\$2,100	\$2,100	
3.) Repair and Ditch Cleaning		\$0	\$3,500	\$3,500		\$3,500		\$6,000			\$6,000	
Subtotal Annual Road Maintenance		\$9,700	\$13,200	\$13,450	\$9,950	\$13,500	\$10,000	\$16,100	\$10,350	\$10,350	\$16,350	
B.) General Street Maintenance/ Water Quality (100% City Tax Levy)												
1.) Street Sweeping		\$1,600	\$1,650	\$1,650	\$1,700	\$1,700	\$1,750	\$1,750	\$1,800	\$1,800	\$1,800	
2.) Sign Replacement and maintenance	1	\$1,000	\$1,200	\$1,200	\$1,200	\$7,500	\$1,000	\$1,000	\$1,200	\$1,200	\$1,200	
3.) Striping maintenance	1		\$4,600					\$4,700			\$4,700	
4.) Bituminous Maintenance		\$3,500	\$3,500	\$3,500	\$4,500	\$4,500	\$4,500	\$5,000	\$5,000	\$5,000	\$5,000	
5.) Shoulder Maintenance		\$1,000	\$1,100	\$1,100	\$1,100	\$1,200	\$1,200	\$1,200	\$1,300	\$1,300	\$1,300	
6.) Annual Lake Water Quality Monitoring	6	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,400	\$1,400	\$1,400	
Subtotal General Street Maintenance		\$8,400	\$13,350	\$8,750	\$9,800	\$16,200	\$9,750	\$14,950	\$10,700	\$10,700	\$15,400	
Capital Improvement Plan												
C.) 100% City Levy Improvements												
1.) Infrastructure Management Update		\$5,500			\$5,500			\$6,000			\$6,000	
2.) Crack Seal			\$0		\$0	\$0	\$0		\$0	\$0	\$0	
3.) Crack Seal & Seal Coat			\$0		\$34,000	\$0	\$65,000		\$0	\$0	\$0	
4.) Culvert Cleaning & End Section Repair	2	\$0	\$3,500						\$0			
5.) Sunfish Lake TMDL Improvements	4					\$0	\$0					
6.) Miscellaneous Storm Water Improvements	4	\$0										
7.) SWPPP Program and Implementation	5	\$7,500	\$2,750	\$3,000	\$2,750	\$8,000	\$3,500	\$3,500	\$3,500	\$3,500	\$3,500	
8.) Charlton Road Engineering Study		\$20,000										
Sub Total CIP Projects		\$33,000	\$6,250	\$3,000	\$42,250	\$8,000	\$68,500	\$9,500	\$3,500	\$3,500	\$9,500	
D.) Assessed City Improvements (Bonding Requirements)												
1.) 2009 Salem Church Road Project (Final Payment 2/1/2020)		\$44,536	\$43,740	\$42,896								\$131,172
2.) 2014 Street Improvement Project		\$38,362	\$43,218	\$42,375	\$41,528	\$40,682	\$39,837	\$38,808	\$37,779			\$322,589
3.) 2017 Street Improvement Project, East half of Salem Church Road and Roanoke Road	3	\$33,500	\$33,500	\$33,500	\$33,500	\$33,500	\$33,500	\$33,500	\$33,500	\$33,500	\$33,500	\$335,000
4.) 2020 Street Improvement Project, 2" Overlays	3				\$13,500	\$13,500	\$13,500	\$13,500	\$13,500	\$13,500	\$13,500	\$94,500
5.) 2025 Street Improvement Project (55th Street W.)	3				\$0	\$0	\$0	\$0	\$0	\$11,000	\$11,000	\$22,000
Sub Total Assessed City Projects		\$116,398	\$120,458	\$118,771	\$88,528	\$87,682	\$86,837	\$85,808	\$84,779	\$58,000	\$58,000	
E.) Assessed City Improvements (Collected from Special Assessments)												
1.) Salem Church Road Levy		\$16,520	\$15,680	\$14,840								\$47,040
2.) 2014 Street Improvement Levy		\$24,634	\$23,874	\$23,113	\$22,353	\$21,592	\$20,832	\$20,071	\$19,311			\$175,780
3.) 2017 Street Improvement Levy		\$14,150	\$14,150	\$14,150	\$14,150	\$14,150	\$14,150	\$14,150	\$14,150	\$14,150	\$14,150	\$141,500
4.) 2020 Street Improvement Levy					\$10,750	\$10,750	\$10,750	\$10,750	\$10,750	\$10,750	\$10,750	\$75,250
5.) 2025 Street Improvement Levy					\$0	\$0	\$0	\$0	\$0	\$2,100	\$2,100	\$4,200
Subtotal Special Assessment Funding		\$55,304	\$53,704	\$52,103	\$47,253	\$46,492	\$45,732	\$44,971	\$44,211	\$27,000	\$27,000	
General Fund Expenditures												
City Tax Levy (Collected from General Tax Levy)												
GENERAL TAX LEVY (A+B+C)		\$51,100	\$32,800	\$25,200	\$62,000	\$37,700	\$88,250	\$40,550	\$24,550	\$24,550	\$41,250	
ASSESSED PROJECTS LEVY (D-E)		\$61,094	\$66,754	\$66,668	\$41,275	\$41,190	\$41,105	\$40,837	\$40,568	\$31,000	\$31,000	
Subtotal City Tax Levy Funding Requirements		\$112,194	\$99,554	\$91,868	\$103,275	\$78,890	\$129,355	\$81,387	\$65,118	\$55,550	\$72,250	

- Notes**
1.) Replace Regulatory Signs
2.) Charlton Road, Grieve Glen Lane, Sunny Side Lane and Windy Hill Court Culverts
3.) Overlay, Mill and Overlay and / or Reconstruct; assumes project to be assessed
4.) Storm Water Improvements Required by MS4 Permit
5.) Water Quality Improvements per MPCA requirements
6.) Watershed typically reimburses City \$400 per lake for CAMP monitoring

2018 - 2022 CAPITAL IMPROVEMENT PLAN W/ CHARLTON ROAD IMPROVEMENTS

SUMMARY
APPENDIX B

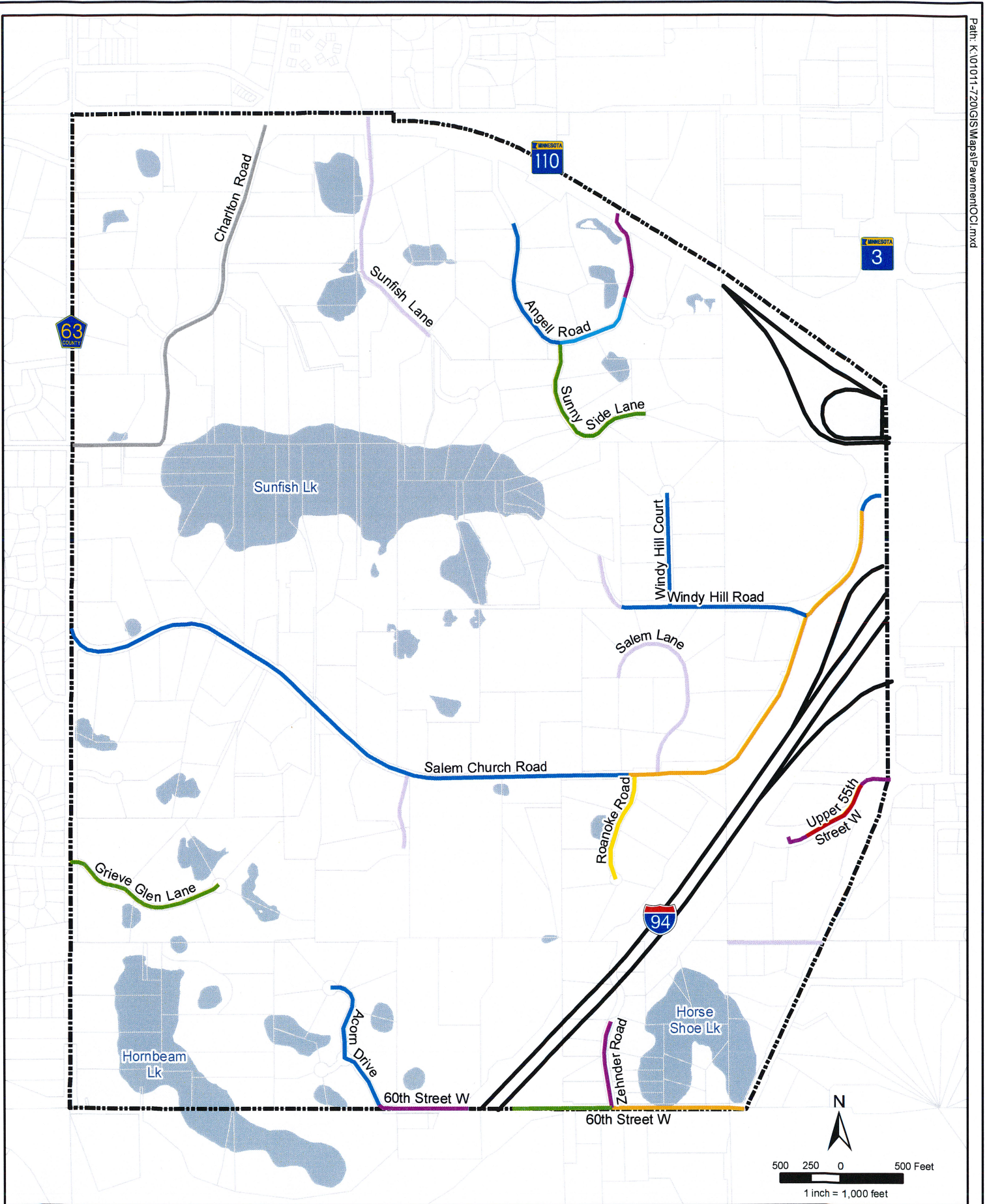
	Notes	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	TOTALS
<u>Improvement Project Costs</u>												
<u>A.) Charlton Road Maintenance (100% City Tax Levy)</u>												
1.) Street Grading		\$7,750	\$7,750	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,250	\$8,250	\$8,250	
2.) Dust Control		\$1,950	\$1,950	\$1,950	\$1,950	\$2,000	\$2,000	\$2,100	\$2,100	\$2,100	\$2,100	
3.) Repair and Ditch Cleaning		\$0	\$3,500	\$3,500		\$3,500		\$6,000			\$6,000	
Subtotal Annual Road Maintenance		\$9,700	\$13,200	\$13,450	\$9,950	\$13,500	\$10,000	\$16,100	\$10,350	\$10,350	\$16,350	
<u>B.) General Street Maintenance/ Water Quality (100% City Tax Levy)</u>												
1.) Street Sweeping		\$1,600	\$1,650	\$1,650	\$1,700	\$1,700	\$1,750	\$1,750	\$1,800	\$1,800	\$1,800	
2.) Sign Replacement and maintenance	1	\$1,000	\$1,200	\$1,200	\$1,200	\$7,500	\$1,000	\$1,000	\$1,200	\$1,200	\$1,200	
3.) Striping maintenance	1		\$4,600					\$4,700			\$4,700	
4.) Bituminous Maintenance		\$3,500	\$3,500	\$3,500	\$4,500	\$4,500	\$4,500	\$5,000	\$5,000	\$5,000	\$5,000	
5) Shoulder Maintenance		\$1,000	\$1,100	\$1,100	\$1,100	\$1,200	\$1,200	\$1,200	\$1,300	\$1,300	\$1,300	
6.) Annual Lake Water Quality Monitoring	6	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,400	\$1,400	\$1,400	
Subtotal General Street Maintenance		\$8,400	\$13,350	\$8,750	\$9,800	\$16,200	\$9,750	\$14,950	\$10,700	\$10,700	\$15,400	
<u>Capital Improvement Plan</u>												
<u>C.) 100% City Levy Improvements</u>												
1.) Infrastructure Management Update		\$5,500			\$5,500			\$6,000			\$6,000	
2.) Crack Seal			\$0		\$0	\$0	\$0		\$0	\$0	\$0	
3.) Crack Seal & Seal Coat			\$0		\$34,000	\$0	\$65,000		\$0	\$0	\$0	
4.) Culvert Cleaning & End Section Repair	2	\$0	\$3,500						\$0			
5.) Sunfish Lake TMDL Improvements	4					\$0	\$0					
6.) Miscellaneous Storm Water Improvements	4	\$0										
7.) SWPPP Program and Implementation	5	\$7,500	\$2,750	\$3,000	\$2,750	\$8,000	\$3,500	\$3,500	\$3,500	\$3,500	\$3,500	
8.) Charlton Road Engineering Study		\$20,000										
Sub Total CIP Projects		\$33,000	\$6,250	\$3,000	\$42,250	\$8,000	\$68,500	\$9,500	\$3,500	\$3,500	\$9,500	
<u>D.) Assessed City Improvements (Bonding Requirements)</u>												
1.) 2009 Salem Church Road Project (Final Payment 2/1/2020)		\$44,536	\$43,740	\$42,896								\$131,172
2.) 2014 Street Improvement Project		\$38,362	\$43,218	\$42,375	\$41,528	\$40,682	\$39,837	\$38,808	\$37,779			\$322,589
3.) 2017 Street Improvement Project	3	\$33,500	\$33,500	\$33,500	\$33,500	\$33,500	\$33,500	\$33,500	\$33,500	\$33,500	\$33,500	\$335,000
4.) 2018 Charlton Road Improvements			\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$405,000
5.) 2020 Street Improvement Project, 2" Overlays	3				\$13,500	\$13,500	\$13,500	\$13,500	\$13,500	\$13,500	\$13,500	\$94,500
6.) 2025 Street Improvement Project (55th Street W.)	3				\$0	\$0	\$0	\$0	\$0	\$11,000	\$11,000	\$22,000
Sub Total Assessed City Projects		\$116,398	\$165,458	\$163,771	\$133,528	\$132,682	\$131,837	\$130,808	\$129,779	\$103,000	\$103,000	\$1,207,261
<u>E.) Assessed City Improvements (Collected from Special Assessments)</u>												
1.) Salem Church Road Levy		\$16,520	\$15,680	\$14,840								\$47,040
2.) 2014 Street Improvement Levy		\$24,634	\$23,874	\$23,113	\$22,353	\$21,592	\$20,832	\$20,071	\$19,311			\$175,780
3.) 2017 Street Improvement Levy		\$14,150	\$14,150	\$14,150	\$14,150	\$14,150	\$14,150	\$14,150	\$14,150	\$14,150	\$14,150	\$141,500
4.) 2018 Charlton Road Improvements			\$20,700	\$20,700	\$20,700	\$20,700	\$20,700	\$20,700	\$20,700	\$20,700	\$20,700	\$186,300
5.) 2020 Street Improvement Levy					\$10,750	\$10,750	\$10,750	\$10,750	\$10,750	\$10,750	\$10,750	\$75,250
6.) 2025 Street Improvement Levy					\$0	\$0	\$0	\$0	\$0	\$2,100	\$2,100	\$2,100
Subtotal Special Assessment Funding		\$55,304	\$74,404	\$72,803	\$67,953	\$67,192	\$66,432	\$65,671	\$64,911	\$47,700	\$47,700	
<u>General Fund Expenditures</u>												
<u>City Tax Levy (Collected from General Tax Levy)</u>												
GENERAL TAX LEVY (A+B+C)		\$51,100	\$32,800	\$25,200	\$62,000	\$37,700	\$88,250	\$40,550	\$24,550	\$24,550	\$41,250	
ASSESSED PROJECTS LEVY (D-E)		\$61,094	\$91,054	\$90,968	\$65,575	\$65,490	\$65,405	\$65,137	\$64,868	\$55,300	\$55,300	
Subtotal City Tax Levy Funding Requirements		\$112,194	\$123,854	\$116,168	\$127,575	\$103,190	\$153,655	\$105,687	\$89,418	\$79,850	\$96,550	

Notes

- 1.) Replace Regulatory Signs
2.) Charlton Road, Grieve Glen Lane, Sunny Side Lane and Windy Hill Court Culverts
3.) Overlay, Mill and Overlay and / or Reconstruct; assumes project to be assessed
4.) Storm Water Improvements Required by MS4 Permit
5.) Water Quality Improvements per MPCA requirements
6.) Watershed typically reimburses City \$400 per lake for CAMP monitoring

APPENDIX C

2015 Pavement Condition Index



2015 Pavement Condition Index

City of Sunfish Lake, Minnesota

Pavement Condition Index

0 - 39	70 - 79	Private Roads
40 - 49	80 - 89	Gravel
50 - 59	90 - 100	
60 - 69		



APPENDIX D
Assessment Policy

**CITY OF SUNFISH LAKE
DAKOTA COUNTY, MINNESOTA**

RESOLUTION NO. 11- 12

**RESOLUTION APPROVING ASSESSMENT POLICY FOR
THE CITY OF SUNFISH LAKE**

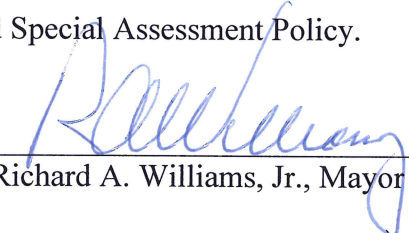
WHEREAS, Chapter 429 of the Minnesota Statutes authorizes the City to levy special assessments for certain public improvements.

WHEREAS, the City desires to adopt a formal written policy with respect to the methodology of allocating project costs between the City and special assessments and a methodology for dividing the special assessment amount among the specially benefitted properties.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SUNFISH LAKE:

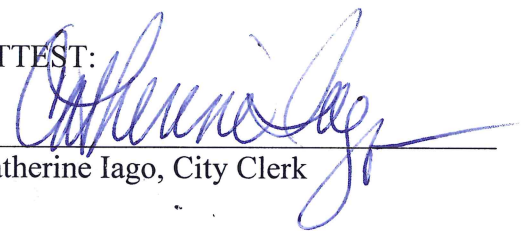
1. The Council hereby approves the attached Special Assessment Policy.

Passed this 5th day of July, 2011.



Richard A. Williams, Jr., Mayor

ATTEST:



Catherine Iago, City Clerk

CITY OF SUNFISH LAKE
DAKOTA COUNTY, MINNESOTA

SPECIAL ASSESSMENT POLICY

Section 1. Background. Chapter 429 of the Minnesota Statutes authorizes the City to levy special assessments for certain public improvements. The two most common types of public improvements within the City are street improvements and storm water improvements.

The City acknowledges that the validity of any special assessment to a particular lot depends on whether the amount of the assessment is equal to or less than the benefit conferred upon the lot by reason of the public improvement. Under state law, the benefit is determined by the increase in fair market value of the lot caused by reason of the improvement. The benefit rule controls all special assessments and supersedes any City formulas and calculations relating to how project costs are allocated. The City also acknowledges that assessments have to be uniformly imposed on similarly situated properties within a class of properties.

The first step in determining an assessment is to determine which portion of project costs will be paid by the City and which portion will be specially assessed. The second step is to spread or divide the total assessment amount among the various lots that have received a special benefit. This policy addresses both steps. The policy is a guideline and the Council has the authority to alter the policy from time to time based on facts and circumstances that the Council believes justify such changes.

Section 2. Street Improvements. The typical types of street improvements in the City are:

- a. Sealcoating;
- b. Mill and overlay; and
- c. Street reconstruction, including new pavement where none existed before.

If only sealcoating is being performed, the policy is not to assess the cost of the sealcoating. Rather, the City will pay the cost of sealcoating out of the general fund as a maintenance item.

Projects involving mill and overlay and street reconstruction will be specially assessed. The percentage of costs that will be specially assessed depends on the type of street.

Within the City, there are three (3) types of streets. They are:

- a. Collector Street. – A collector street is a City street that provides access to local streets, private streets, direct driveway access and is utilized by the surrounding area for trips originating outside of the City and terminating outside of the City limits. The number of through trips exceed the number of local trips. The City streets that meet this criteria are:

- Salem Church Road; and
- Charlton Road.

The assessment policy for a Collector Street is to assess 40% of street improvement cost to the specially benefitted properties.

- b. Neighborhood Collector Street - a neighborhood collector street is a City street that provides direct access to local streets, private streets, direct driveway access and has fewer trips that originate outside of the area and terminate outside the area than local trips. A local trip is considered a trip that remains within the City limits. The City streets that meet this criteria are:

- 60th Street North;
- Windy Hill Road; and
- Angell Road (east of Sunnyside Lane).

The assessment policy for a Neighborhood Collector Street is to assess 60% of street improvement cost to the specially benefitted properties.

- c. Local Street - a local street is a City Street that only provides direct access to private driveways which has trips that originate on the street and or terminate on the street. A local street includes a public street that provides access to shared driveways. The City Streets that meet this criteria are:

- Acorn Drive;
- Zehnder Road;
- 55th Street West;
- Roanoke Road;
- Grieve Glen Lane;
- Windy Hill Court;
- Angell Road (west of Sunnyside Lane); and
- Sunnyside Lane.

The assessment policy for a Local Street is to assess 80% of street improvement cost to the specially benefitted properties.

The special assessments for mill and overlay and for street reconstruction will be spread or divided on a per buildable lot basis with each such lot receiving an equal amount of assessment.

A special assessment for mill and overlay and for street reconstruction will be amortized over a period of time not less than five years and not more than ten years. The interest rate payable by the landowners on the remaining balance of the special assessments will not be more than 2% above the bond interest rate charged the City. If the City has not issued bonds, the interest rate charged the landowners will not be more than 2% above the estimated interest rate that the City would have incurred if bonds were issued to finance the project. Interest will begin to accrue from the date the assessments are levied.

To the extent storm water improvements are constructed with the street improvements and are incident and ancillary to the street improvement and do not otherwise confer significant benefit to properties outside of the lots that would typically be assessed for the street improvements and do not constitute more than 50% of the project costs, the storm water improvements will be considered as part of the street assessments and will be levied on the same basis as the street assessments.

In general, in determining the specially benefitted properties for a street assessment, the following lots will be included:

- a. The lots that adjoin a public street or have indirect driveway access to the public street.
- b. The lots that adjoin or have indirect driveway access to a private street where the private street has access to the public street that is being improved.

Section 3. Storm Water Improvements. Storm water improvements include such items as culvert repair or reconstruction, holding ponds, erosion control, drainage ditch reconstruction, surface drainage improvements, trunk lines, and lateral lines.

Storm water improvements can generally be placed into two (2) categories:

- a. Lateral Storm Water Management Improvements. Lateral storm water management improvements benefit the immediate adjacent area. Lateral storm water management improvements are storm water infrastructure facilities that receive runoff from adjacent public right of way or from some or all adjacent parcels but do not include significant runoff from locations that are off site of the improvements.
- b. Trunk Storm Water Management Improvements. Trunk storm water management improvements benefit an area that extends beyond the immediate property (i.e. beyond the lateral benefit). Trunk storm water management improvements manage runoff from areas of the City that are not immediately adjacent to the improvement. The trunk portion of an improvement is the size or cost of the improvement that exceeds the lateral storm water needs. Trunk storm water management improvements usually have a design and capacity to receive storm water runoff from lots that adjoin the improvement as well as non-adjoining lots.

Lateral storm water management improvements will be assessed to the adjacent specially benefitted properties on the same basis as a street assessment, taking into account the different classes of streets and allocating the assessable portion of the project on a per buildable lot basis.

With respect to trunk storm water management improvements, 50% of the project costs will be assessed and the assessable amount will be spread or divided among the specially benefitted properties on a per buildable lot basis with each such lot receiving an equal amount of assessment.

Special assessments for lateral storm water management improvements and trunk storm water management improvements will be amortized over a period of time not less than five years and not more than ten years. The interest rate payable by the landowners on the remaining balance of the special assessments will not be more than 2% above the bond interest rate charged the City. If the City has not issued bonds, the interest rate charged the landowners will not be more than 2% above the estimated interest rate that the City would have incurred if bonds were issued to finance the project. Interest will begin to accrue from the date the assessments are levied.



FEASIBILITY REPORT

DRAFT

Charlton Road Street Reconstruction

City of Sunfish Lake
Dakota County, Minnesota

May 2, 2017

Prepared for:
City of Sunfish Lake

WSB PROJECT NO. 1629-741



FEASIBILITY REPORT

DRAFT

CHARLTON ROAD IMPROVEMENTS

**FOR THE
CITY OF SUNFISH LAKE**

May 2, 2017

Prepared By:





May 2, 2017

Honorable Mayor and City Council
City of Sunfish Lake
15 Sunnyside Lane
Sunfish Lake, MN 55118

Re: Feasibility Report (Draft)
Charlton Road Improvements
City of Sunfish Lake, MN
WSB Project No. 1629-741

Dear Mayor and City Council Members:

WSB & Associates, Inc. (WSB) is submitting the enclosed feasibility report (draft) for the reconstruction improvements to Charlton Road as requested by the City Council.

The study looked at three (3) alternatives street segment improvements along with improvements to the outlet from Sunfish Lake. The final recommendation will involve input from the abutting residents, City Council, financing and cooperation from the abutting residents from which additional easement dedication will be required to construct the improvements. All three options address drainage and a paved surface with only the length of the improvements that vary which is indicative of the different project costs. The project cost is proposed to be recovered by assessment to benefiting parcels, City financing, and ad-valorem taxes.

Once you have had an opportunity to review this draft report, if you have any questions or comments, please contact me at (763) 287-7189.

Sincerely,

WSB & Associates, Inc.

Donald W. Sterna, PE
City Engineer

Attachment

cc: Richard Williams, Jr., Mayor
Dan O'Leary., Council Member
Steve Bulach, Council Member
Mike Hovey, Council Member
Joanne Wahlstrom, Council Member
Timothy Kuntz, City Attorney
Cathy Iago, City Clerk

CERTIFICATION

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.

Donald W. Sterna, PE

Date: May 2, 2017

License No. 19103

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TITLE SHEET

LETTER OF TRANSMITTAL

CERTIFICATION SHEET

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1. EXECUTIVE SUMMARY

Charlton Road Improvement Project involves reconditioning of the existing roadway surface and drainage improvements. The feasibility report studies options for the Council to consider when determining what type and where the improvements along Charlton Road should be made. The following report studied three (3) specific roadway segments in relationship to the type of improvements, project costs, proposed assessments and financing considerations. Also, the report discusses improvement and financing options to improve the Sunfish Lake outlet to increase capacity and better manage the lake levels during higher water levels. Two other factor that will be discussed in this report is the concern of the residents relating to the current minimum city street width of 22 feet being applied to any improvements to Charlton Road along with an option for flattening of the 90-degree curve where Charlton Road. This report outlines three (3) improvement options for the City Council and residents to evaluate for Charlton Road along with the Do-Nothing option of maintaining the current gravel roadway.

Option 1 involves reconstruction from TH 110 to the south property of St. Anne's Church or 550 feet. Option 2 extends the reconstruction to the south property line of the Smith residents which is 1950 feet. Option 3 includes reconstruction of the entire length of Charlton Road to Delaware Avenue or 3500 feet and flattening the 90-degree curve. Also, the reported discusses the "do-nothing" option, which is continuing the current maintenance options.

The report also address options for improvements to the outlet from Sunfish Lake to address recent high maintenance activities but also improving the outlet capacity of the system to better regulate the lake levels and improve the drawdown efficiencies. The current outlet configuration has recently required a lot of maintenance and as the lake levels recede so does the capacity of the outlet thereby extending the period of higher water lake levels. The report address options to increase the outlet capacity with a more consistent discharge rate when lake levels exceed the Ordinary High Water (OHW) elevation of 937.1. By improving the outlet, the lake levels would be managed more effectively with minimal maintenance and increase dependability.

The options for consideration include the following:

1. The current city street width standards for new roadway are 2-11-foot-wide paved roadway with 1.5-foot-wide gravel shoulders. The City develop a Rust Road standard for Acorn Road due to the original narrow and windy roadway which had less than 150 vehicles a day and a 20-drivable surface meeting Fire Code Standards. Develop a new city street standard that more closely fits the existing roadway characteristics of Charlton Road.
2. Develop a new City Standard for Perseveration Routes that would allow 2-10 paved driving lanes with 1.5-foot-wide aggregate shoulders. This width proposed width meets MnDOT minimum design standards for rural reconditioning projects with ADT less than 749 vehicles a day.
3. Establish Charlton Road as an Urban District to per Minnesota Statutes for 30 MPH minimum speed limit enforcement. Post curves at a cautionary 20 MPH advisory speed limit for the curves.

4. Implement improvements along areas where residential agreement can be reached on dedication of the necessary easements to the city and no cost for construction, drainage and maintenance.
5. Provide an 8-foot-wide parking lane between St Ann's Church and TH 110 to accommodate 12 vehicles to accommodate larger events and provide an area for maintenance or service vehicles to park.
6. Provide for up to additional bump outs to facilitate maintenance vehicles and fire protection usage.
7. Improvements to the existing outlet from Sunfish Lake. The current outlet has been experiencing significant maintenance issue which have been expensive and difficult to correct and has at times impeded the ability of the outlet to function properly.
8. Maintaining an existing gravel surface with subgrade repairs and drainage improvements and continue to perform annual maintenance, "do-nothing" alternative, on the roadway with no major improvements or repairs.

The proposed project involves the need for expanded permanent street easement along with additional drainage and utility easements and some temporary easements. 16 parcels along Charlton Road.

A discussion of each alternative and cost comparison is included in the following report, along with the history of previous studies of Charlton Road Improvements. The total estimated project costs vary between \$105,000 and \$660,000 depending on the design option selected. This includes a 10% contingency and 25% indirect costs for legal, engineering, administration, and financing. Funding for this project will consist of a combination of special assessments, City financing, and ad-valorem taxes as necessary. The proposed street assessment rate follows the current city assessment policy for collector roadways and ranges from \$10,500 for option 1, \$6,200 for option 2 and \$8,500 for option 3 per assessable unit. The assessments will generate approximately 40% of the total project revenue.

It is proposed that the design of the project would occur in 2017 with easement dedication in the fall of 2017. Construction would occur in 2018 and be fully completed, including all restoration items, by September 1, 2018.

2. INTRODUCTION

The City Council authorized WSB to prepare a feasibility study for the consideration of reconstruction and surfacing of Charlton Road from CSAH 63 (Delaware Avenue) to TH 110. The project location is shown on **Figure 1** in **Appendix A**. The purpose of this report is to evaluate the existing condition of Charlton Road and identify and recommend possible improvements options for the roadway and drainage facilities while preserving the topography, maintaining rural aesthetics, and minimizing vegetation impacts while trying to meet acceptable street standards for safety, liability, drainage and functionality. This report will summarize the proposed improvements, associated project costs, project financing options, and project schedule. The report also discusses improvements for the Council to consider.

2.1 History

In early 1993, the City Council of Sunfish Lake authorized the preparation of a feasibility report for the upgrade of Charlton Road from State Trunk Highway 110 (TH 110) south to Delaware Avenue, CSAH 63. The report provided detailed cost estimates, discussions, and recommendations to improve Charlton Road by bituminous or aggregate surfacing. Design considerations were identified based on interests defined by the residents and City Council. The project selected consisted of culvert installations, ditch grading, subgrade corrections, and geotextile fabric installation in the severely deteriorated sections of Charlton Road.

This work was completed in 1994 at a construction cost of \$119,000, which involved subgrade improvements to several segments of Charlton Road with aggregate surfacing rehabilitation. The completed project did stabilize most the deteriorated portions of the gravel roadway. In some areas, it improved the driving surface and lessened some of the annual maintenance costs. The assessment that was levied at the time was \$2,886 per unit which was approximately 73% of the project cost.

Gravel surfaced roadways require continuous maintenance and periodic upgrades to sustain the road's stability. Only minor yearly maintenance has been completed on Charlton Road since 1994. A typical maintenance schedule for an aggregate surfaced roadway would have substantial regravelling and subgrade correction work completed every five years.

Since the 1994 improvements, other areas have become soft and unstable due to poor subgrade soils underlying Charlton Road. These soils are very sensitive to moisture and frost heaves. This was evident in 2007 and previous years when the frost left the roadway during the spring thaw, which developed frost boils on the surface. During these years, additional maintenance was necessary to provide an adequate driving surface.

The City's annual maintenance costs between the years of 1996 through 2007 were \$55,972 which averaged around \$4,589 a year and ranging from \$537 to \$13,787. The City's maintenance cost from 2008 through 2016 were \$92,863 which have more than doubled in the past 9 years ranging from \$3,138 to \$29,079 a year. The table on the following page summarizes the year to date maintenance expense from 1996 through 2016.

Year To Date	Charlton Road Maintenance Expense
1996	\$3,678
1997	\$3,839
1998	\$2,971
1999	\$13,787
2000	\$6,190
2001	\$3,561
2002	\$4,524
2003	\$6,190
2004	\$2,928
2005	\$5,037
2006	\$537
2007	\$1,830
Total	\$55,072
Average Costs/Year	\$4,589

Year To Date	Charlton Road Maintenance Expense
2008	\$3,683.40
2009	29,079.49
2010	5,284.71
2011	3,138.00
2012	8,675.76
2013	9,955.75
2014	10,135.50
2015	8,271.62
2016	14,639.13
Total	\$92,863.36.11
Average Costs/Year	\$10,318.15

Current maintenance costs for bituminous surfaced roadways are approximately \$3,750 yearly per mile per year based on previous roadway maintenance history within Sunfish Lake. This cost assumes that every 8 years a chip seal is applied. This equates to \$2,500 per year for the length of Charlton Road if Charlton Road was paved.

3. EXISTING CONDITIONS

3.1 Streets and Drainage

Charlton Road is currently a rural section roadway that extends approximately 3,500 feet between Delaware Avenue (CSAH 63) and TH 110. Charlton Road varies in width between 19 to 25 feet with a typical width of 21 feet. The roadway consists of an aggregate surface with intermittent ditching along both sides with trees very close to the roadway edges and overhead utilities. The aggregate surface consists of 4 to 8 inches of class 5 aggregate base with spotty areas of little or no aggregate surfacing due to frost boils. The sub soils consist of silty sand, clayey sands and lean clay. The alignment of the road has several gradual curves with a severe (90°) horizontal curve at the southern end of the road. The roadway cross slope generally drains to one side or the other, and in a few locations, it is crowned in the middle to drain to both sides.

The outlet from Sunfish lake over the past several years has become blocked several times due to debris within the outlet pipe which has in turn impacted lake level. The existing outlet pipe connects into an existing manhole at the 90-degree bend on Charlton road which during large rain events pulls gravel and debris into the outlet pipe thereby plugging it. The outlet eventually drains west and south into Mendota Heights. Currently a Joint Power Agreement is in place allowing for this drainage to enter Mendota Heights. Any revisions to the outlet could require an amendment to this agreement along with a permit from the DNR.

3.2 Traffic Conditions

Traffic counts were completed on Charlton Road in May of 2006 which showed an average daily traffic (ADT) on weekdays and weekends is 190 and 138 vehicles respectively. New traffic counts were taken in April 2017 that showed the north end had an average of 204 ADT, the middle segment had an average of 143 ADT and the west end at Delaware Avenue had an average of 242 ADT. Based on these recent counts, traffic volumes have remained relatively consist with basically no noticeable growth trend.

3.3 Right of Way

Charlton Road only has six of the 21 parcels fronting on Charlton Road with platted right-of-way of 33-foot-wide measured from centerline of the roadway. The other 16 parcels abutting the roadway only have prescriptive rights for the roadway to be maintained. On these parcels, the City only has rights for maintenance and maintain existing drainage. This means that no permanent easements or dedicated right of way exists along roadway on these 16 parcels. Acquiring additional Permanent Easements for roadway, drainage and utility easements have in the past been the biggest hurdle to overcome for financing any improvements. Without these easements being dedicated to the City, Charlton Road become financially unfeasible to improve. The only easement that is recommended to be purchased is the additional land required to flatten the 90- degree curve beyond what is typically being dedicated by the other parcels. The right of way maps are shown on **Figures 7 and 8** in **Appendix A**.

4. RESIDENT SURVEY RESULTS

Residents that utilized Charlton Road for access and egress have been surveyed over the years regarding their thoughts and concerns for the roadway over the years. Surveys have been conducted three times in the recent past. The first survey was completed in 1993 prior to the feasibility study for the 1994 improvements; another survey was conducted in 2003 when the City council again reviewed improvements to Charlton Road; a third survey was conducted in the spring of 2007 to obtain input for the feasibility study presented in 2009. In 2016, the City Council once again formed a task force to review the previous results and to take a fresh look at other potential options to see if a compromise solution could be developed.

The last meeting with the residents in 2016 showed a real interest in improvements to Charlton Road and cooperation on dedication of the necessary easements required to construct and maintain the roadway. The direction from the last meeting was to request the city council to develop more detailed plans that would minimize the paved surface width, improve drainage, preserve and protect the natural features along the roadway. A more customized roadway approach with a narrower roadway foot print utilizing curb and gutter to manage drainage was suggested. Also, the residents want a solution that also minimizes easement dedication widths such as a narrower roadway easement with variable drainage and utility easements.

The detailed results of the 2003, and 2007, resident surveys were included in past feasibility reports and can be accessed if requested by the Council or current residents.

5. CHARLTON ROAD TASK FORCE

A new grass roots task force committee formed in 2016 to work with the Council and engineer to look at developing a new roadway standard and to consider ways to customizing the roadway geometrics to fit with the current usage of the roadway, provide for service vehicle parking to avoid obstructing traffic flow which in turn could also benefit fire protection vehicles along the roadway. A field walk with the task force was undertaken to review of Charlton Road and identify roadway deficiencies, evaluate roadway options, and identify potential improvements. The task force will be instrumental in assisting in reaching out to other residents as well as a proponent for improvements and input into final project if or when it moves forward to construction. Future meetings are anticipated to finalize the preliminary design as we work our way toward construction.

6. PROPOSED IMPROVEMENTS

6.1 Street and Drainage Improvements

The proposed improvements involve both reconstruction and reconditioning sections of Charlton Road to improve the poor subgrade on the south west end and over the remaining section utilize the existing aggregate surface to economize on the design over the sound subgrade areas. A new Preservation Route design standard should be developed utilizing 20-foot paved surface widths and narrower roadway right-of-way widths of 15-feet each side of centerline. We are also recommending in areas of narrower right-of-way widths that permeant drainage and utility easements be dedicated varying in widths from 10 to 15 feet.

We are recommending that only the reconstruction areas use the full city pavement section while the recondition areas utilize the in place aggregate base as part of the required aggregate base section thereby minimizing costs. Concrete curb and gutted is recommended over ditches to minimize impacts to the vegetation and preserve the natural terrain along the roadway to manage drainage.

The roadway section from Delaware Avenue to the 90-degree bend is recommended to be sub cut 1.5 feet with fabric placed on the bottom, 1.5 feet of select granular borrow with drain tile be constructed to support the roadway and prevent the subgrade from becoming saturated. The adjacent wetland on the north side most likely will be impacted which will require the purchase of wetland credits to lower the high ground water through this area. Bituminous surfacing will consist of a minimum 20-foot wide pavement section with the placement of 4 inches of bituminous asphalt and 1.5-foot aggregate shoulders along the rural sections meeting a nine (9) ton roadway design. The proposed project area is shown on **Figure 1** in **Appendix A**.

Option No. 1 – TH 110 to the southern Church property line

The improvements proposed as part of Option No. 1 involve the reconditioning of the street surface, widen for parking along the west side by the church and replacement with a street section of 20-foot-wide paved surface with 1.5-foot-wide aggregate shoulders and concrete curb and gutter in place of the aggregate shoulders where needed to avoid property impacts and control drainage. This street width closely matches the existing width of Charlton Road. A 2-inch-thick gravel base with 4-inches of bituminous pavement would be constructed over the approved subgrade.

It is recommended to widen out the pavement 8 feet on the west side north of the church driveway entrance to allow for 12 additional parking spots for the church and for use by maintenance and emergency vehicles.

The advantages of this street section are:

- Establishes a good drainage system that is maintainable.
- Pavement will have a longer life expectancy before major repairs are necessary.
- Lower annual maintenance costs.

- Provides adequate lane width for emergency vehicles to pass.
- Improves snow storage and reduced snow and ice maintenance issues.
- Has the most surface area for multiple users to occupy i.e. pedestrians, joggers, and bicyclers.
- Eliminates the current dust problem.
- Provides parking areas for service vehicles.
- Provides areas to fire protection equipment to utilize.
- Least impact on the adjacent vegetation.

The disadvantages of this street section are:

- Will require some brushing and clearing of vegetation adjacent to the roadway.
- Is the more expensive alternative than gravel.
- Change in surface characteristics.
- Only improves 550 feet of the Charlton Road.
- Has the highest per parcel assessment rate.

A detailed Engineer's Opinion of Cost for the construction of Alternative 1 is attached to this report in **Appendix B**. The costs, as shown, include a 10% construction contingency and indirect costs in the amount of 25% of the estimated construction cost.

Option No. 2 – TH 110 to 1950 -Feet South

The improvements associated with Option No. 2 consist of the area for option 1 and extends the southern limit south past the corner commonly named Crandall Corner. The roadway is proposed to be shifted slightly to align with the platted Right-of-Way. A 2-inch-thick gravel base with 4-inches of bituminous pavement would be constructed over the approved subgrade. This section as well is proposed to utilize concrete curb and gutter to minimize the impacts to the hill on the west side of the roadway along Crandall Corner.

Bituminous bump out parking areas adequately sized to accommodate emergency vehicles and lawn service vehicles are proposed to be located at two (2) locations close driveways that service multiple residential property on Charlton Road.

The advantages of this street section are:

- Establishes a good drainage system that is maintainable.
- Pavement will have a longer life expectancy before major repairs are necessary.
- Lower annual maintenance costs.
- Provides adequate lane width for emergency vehicles to pass.
- Improves snow storage and reduced snow and ice maintenance issues.
- Has the most surface area for multiple users to occupy i.e. pedestrians, joggers, and bicyclers.
- Eliminates the current dust problem.
- Provides parking areas for service vehicles.
- Provides areas to fire protection equipment to utilize
- Least impact on the adjacent vegetation.

The disadvantages of this street section are:

- Will require some brushing and clearing of vegetation adjacent to the roadway.
- Is the more expensive alternative than gravel.
- Change in surface characteristics.
- Only improves 1950 feet of the Charlton Road.

Option No. 3 – Complete Reconstruction from TH 110 to Delaware

The improvements associated with Option No. 3 are like the improvements proposed as Option No. 1 and 2 except the roadway surface is proposed to be paved along the entire length of Charlton Road. The areas of poor subgrade material would be excavated within the roadway and a geotextile fabric would be placed to 18 inches of sand placed over the fabric. The geotextile fabric will prevent the migration of the poor soils beneath the subgrade excavation into the sand layer providing greater stability to the gravel surface. The 90-degree curve on the south end is proposed to be softened to improve safety. The sharp radius curve located at the south end of Charlton Road was proposed to be reconstructed in the 1993 feasibility study. This was also identified as a proposed improvement with the 2003 and 2009 reports. The location of the curve realignment is shown on **Figure 6** in **Appendix A**. The sharp curve requires a driver to slow their vehicle to navigate the curve. During slippery and winter conditions, and at other times, vehicles have missed the curve ending up on the property to the south and hitting the cable guard rail. The new property owner on the northwest corner of the curve is in favor of expanding the radius onto their property so this would be a good time to make this improvement. Residents' opinions of the curve vary somewhat, although a recently a higher percentage favors fixing the curve.

The existing curve is a hazard to traffic, and softening the curve by constructing a larger radius is in the best interest of the City and the public that utilizes the roadway. Realignment of Charlton Road at the sharp radius will require permanent street easement acquisition from the this parcel. Previous design layouts identified the easement area needed to be 0.063 acres on the northwest side of the curve to construct a curve that meets 25 mph design criteria. This radius curve would still be below minimum roadway design for a typical rural residential road but is a significant improvement.

Concrete curb and gutter is also proposed along cut sections to improve drainage and minimize property impacts in these areas. The water will be collected in a series of drainage structures and outlet to a small treatment pond just to the east of the existing wetland on the north side of Charlton Road. The pond would be necessary to meet water quality requirements prior to discharging to the wetland. A culvert will also be installed in the area to improve the drainage from the wetland to the south side of Charlton Road prior to entering the existing ditch along Delaware Avenue.

The advantages of this street section are:

- The entire roadway will be paved which will minimize dust and yearly regrading and maintenance.

- Establishes a good drainage system that is maintainable.
- Pavement will have a longer life expectancy before major repairs are necessary.
- Lower annual maintenance costs.
- Provides adequate lane width for emergency vehicles to pass.
- Improves snow storage and reduced snow and ice maintenance issues.
- Has the most surface area for multiple users to occupy i.e. pedestrians, joggers, and bicyclers.
- Eliminates the current dust problem.
- Provides parking areas for service vehicles.
- Provides areas to fire protection equipment to utilize
- Least impact on the adjacent vegetation.
- Safer driving conditions along the roadway.
- Improve drainage throughout the corridor.
- Eliminates roadside swales from filling in with aggregate from the roadway.

The disadvantages of this street section are:

- Highest initial cost among all the options Will require some brushing and clearing of vegetation adjacent to the roadway.
- Change in surface characteristics.

Option No. 4 – Complete Annual Maintenance as Needed – “Do Nothing”

The “do-nothing” alternative will consist of maintaining the existing roadway surface and drainage system as situations arise. Annual maintenance costs are identified in the existing condition section and have an average annual cost currently estimated in the Capital Improvement Program (CIP) of around \$9,700 annually. Typical annual maintenance consists of road grading three times, adding class 5 aggregate as needed, dust control, and drainage ditch maintenance as needed. Even with annual maintenance, the structural integrity of the roadway deteriorates. This is what is currently occurring with the aggregate surface. The poor soils are working their way closer to the surface due to poor drainage and frost action and will increase the current annual maintenance costs over time.

6.2 Sunfish Lake Outlet Improvements

The proposed improvements include removing the existing outlet control pipe from Sunfish Lake and replacing it with a new higher capacity hydraulically designed outlet that would reduce the likelihood of the outlet being blocked. Discharge capacity could be increased while providing a consistent discharge rate during time of high water levels. The improvements would allow for more efficient lowering of high water levels thereby minimizing future damage to lake shore property and improve the usability of the lake during high water levels. The outlet will discharge would be directed along the north side of Charlton road thereby eliminating the consistent flow of lake water discharge along residential properties. A new storm sewer pipe would be placed along the Charlton Road near Delaware Avenue to convey the water to the ditch along Delaware Avenue.

6.3 Permanent Roadway, Drainage, and Utility Easements

For the proposed improvements, it is recommended to have a permanent 30-foot-wide roadway easement, 15-feet each side of centerline, with either 10 feet of 15 feet wide drainage and utility easements along each side of Charlton Road to be dedicated from the parcels in which Charlton Road does not have platted right of way. This would provide the proper roadway easement widths for roadway and drainage and allow the City access whenever maintenance is necessary. The existing right of way and parcels with proposed easement areas are shown on **Figures 6 and 7**, proposed easements plan sheets in **Appendix A**. There are a few area that would need either a right to enter agreement or temporary easement to tie in the grading.

7. FINANCING

7.1 Opinion of Cost

Detailed opinions of cost can be found in **Appendix B** of this report. The opinions incorporate estimated 2017 construction costs and include a 10% contingency factor and all related indirect costs which are estimated at 25%. The indirect costs include legal, engineering, and financing, as well as other administrative items. This cost does not include any easements or easement acquisition costs.

The construction quantities utilized for the cost estimates are estimated and would be adjusted when construction plans and final design are complete.

7.2 Funding

Projects of this type are typically financed through the sale of municipal bonds. The bond proceeds are used to pay for the project costs. The payments are typically recovered by a combination of special assessments, City financing, and ad-valorem taxes.

The method of assessment for the improvements to Charlton Road project is recommended to be by the residential unit, which would range between 4 and 31 depending on the improvement option selected by the City Council. The method of assessment to the benefited property owners and percentage of the project borne by the City is recommended to follow the adopted City Assessment Policy. Charlton Road is classified as a collector roadway which identifies assessment of 40% of the improvements to the benefitting property owners.

The following assessments are recommended for each Improvement Option on Charlton Road. Utilizing the costs associated with each Improvement Option; the unit assessment based on 40% of the project cost being assessed would be calculated as follows:

CHARLTON ROAD IMPROVEMENTS

1. Option 1:

$\$104,181 \times 40\% = \$41,672$ Assessable Project Costs

$\$41,672 \text{ Project Costs} / 4 \text{ Units} = \$10,418/\text{Unit}$

2. Option 2:

$\$338,025 \times 40\% = \$135,210$ Assessable Project Costs

$\$135,210 \text{ Project Costs} / 22 \text{ Units} = \$6,146/\text{Unit}$

3. Option 3:

$\$658,335 \times 40\% = \$263,334$ Assessable Project Costs

$\$263,334 \text{ Project Costs} / 31 \text{ Units} = \$8,495/\text{Unit}$

SUNFISH LAKE OUTLET IMPROVEMENTS

$\$32,128 \text{ } 100\% \text{ Assessable Project Costs}$

$\$32,128 \text{ Project Costs} / 33 \text{ Units} = \$975/\text{Unit}$

Benefit to the adjacent parcels that is equal to or greater than the proposed assessment amount would have to be determined by an appraiser.

The City's share of the proposed improvements would range between \$63,000 for Option No. 1 and \$396,000 for Option No. 3. It is also recommended that any improvements the outlet from Sunfish Lake be financed 100% by the property owners around the lake. This amount could be financed from the City's street fund and ad-valorem taxes. Right-of-way acquisition is only recommended for one parcel to flatten the 90-degree bend on the south end. Cost right-of-way acquisition can be included in the total project cost which would slightly increase the unit assessment.

8. PERMITS/APPROVALS

This project will need a NPDES permit from the MPCA. Due to the small size of the project, only an erosion control plan will be required for the permit. Also, if improvements are made to the outlet from Sunfish Lake, then a DNR permit would need to be acquired along with review and approval from the City of Mendota Heights which accepts the water from Sunfish Lake. Wetland impacts will be necessary if Option 2 and 3 are chosen which would require wetland credits to be acquired.

9. COUNCIL AUTHORIZATION

The report is presented to the City Council for review and comment on the proposed alternatives and proposed financing. If the Council accepts the report with recommended modifications, the council can receive the report and order a public hearing. Recommended changes to the report will be completed and presented to the adjacent property owners. Prior to the public hearing, it is recommended that a neighborhood meeting be held with the residents to review and discuss the proposed improvements in an informal setting. Public comments can then be completed and presented to the public and City Council at a public hearing. At that time, the council can choose an alternative for the improvements.

If an agreeable Improvement Option is selected, construction plans and specifications would be prepared. Prior to obtaining bids for the project, the City Council would approve the plans and specifications and authorize Advertisement for Bids. The successful bid would be presented to the Council for Award of Contract.

Upon completion of the project, a final assessment role would be prepared and presented to the City Council and benefiting property owners at a public Assessment hearing. The Council would determine the final assessment amounts and the amount to be financed.

10. PROJECT SCHEDULE

The preliminary project schedule identifies the estimated time schedule to complete the various tasks. The project schedule is based on 100% dedication of the necessary easements by September 1, 2017.

Receive Draft Feasibility Study	May 2, 2017
Neighborhood meeting	Mid- May 2017
Receive Final Feasibility Study	July 7, 2017
Order Public Hearing	August 4, 2017
Public Hearing	September 1, 2017
Order Plans and Specifications	September 1, 2017
Approve Plans and Specifications	November 3, 2017
Receive Bids	February 2018
Award Contract	April 2018
Begin Construction	May 2018
Complete Construction	August 2018
Assessment Hearing.....	September 2018

11. RECOMMENDATIONS AND CONCLUSIONS

The total estimate project cost of these street and utility improvements ranges from \$105,000 to \$660,000. Funding for these improvements will be provided through a combination of special assessments and ad-valorem taxes. The project could be constructed in 2018 with the final bituminous placed in August of 2018.

This project is feasible and cost-effective from an engineering standpoint if the required easements are dedicated to the city. If easements need to be acquired, the costs of land acquisition would make this project unfeasible. Therefore, the success of the project is in the hands of the residents that this project will benefit. It is our recommendation that the drainage and street improvements along Charlton Road be implemented as outlined in this report for Option No. 1. Also, it is recommended make the improvement to the outlet from Sunfish Lake in conjunction with any improvements to Charlton Road.

It is the recommendation of WSB & Associates, Inc. that the City Council accepts this feasibility report and schedule the public hearing as proposed

APPENDIX A

Figure 1 – Project Location Map

Figure 2 – Typical Sections

Figure 3 – Typical Sections

Figure 4 – Typical Sections

Figure 5 – Typical Sections

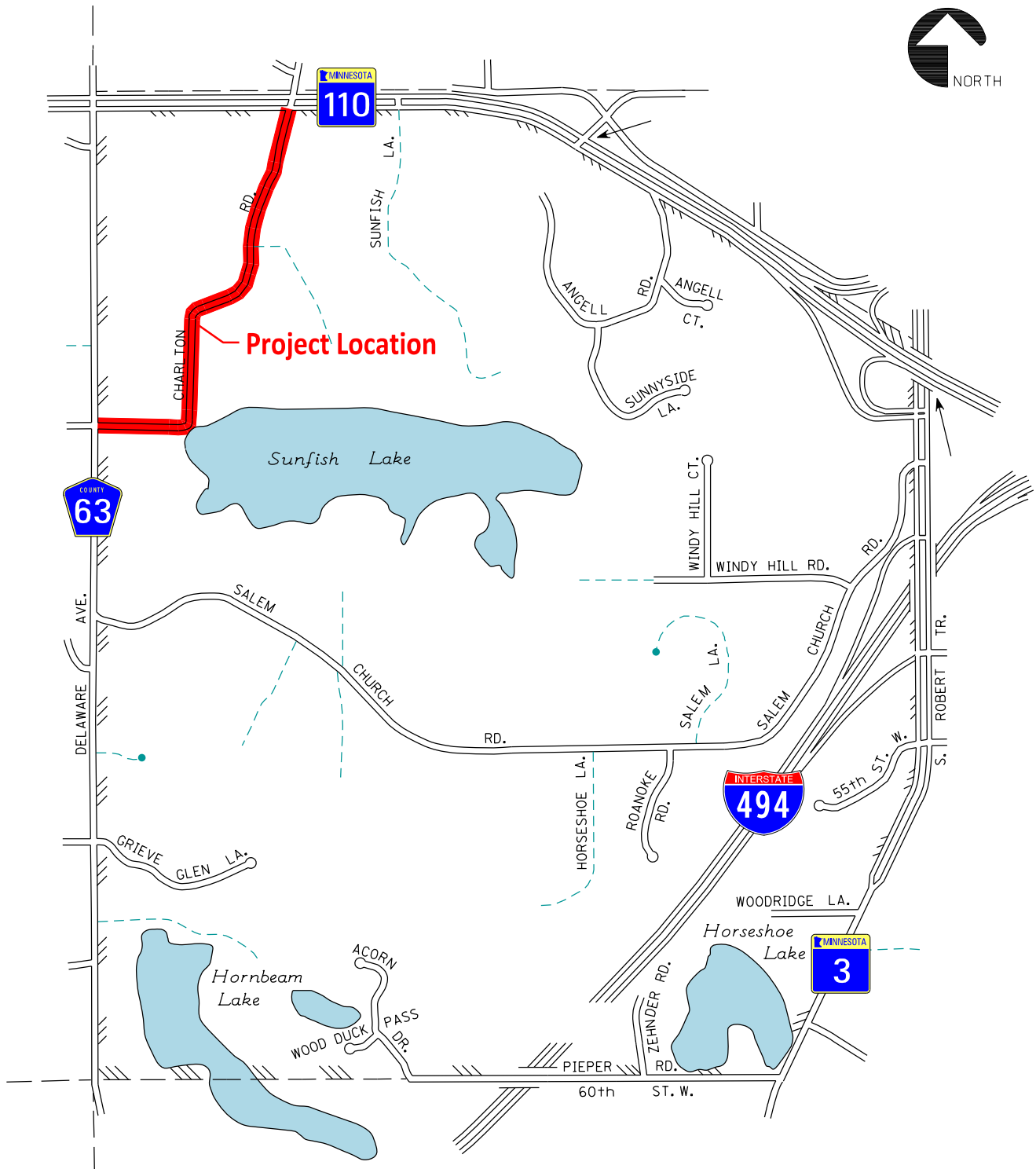
Figure 6 – Curve Realignment

Figure 7 – Right-of-Way

Figure 8 – Right-of-Way

Figure 9 – Charlton Road Assessment Map

Figure 10 – Sunfish Lake Outlet Assessment Map



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Charlton Road Improvements

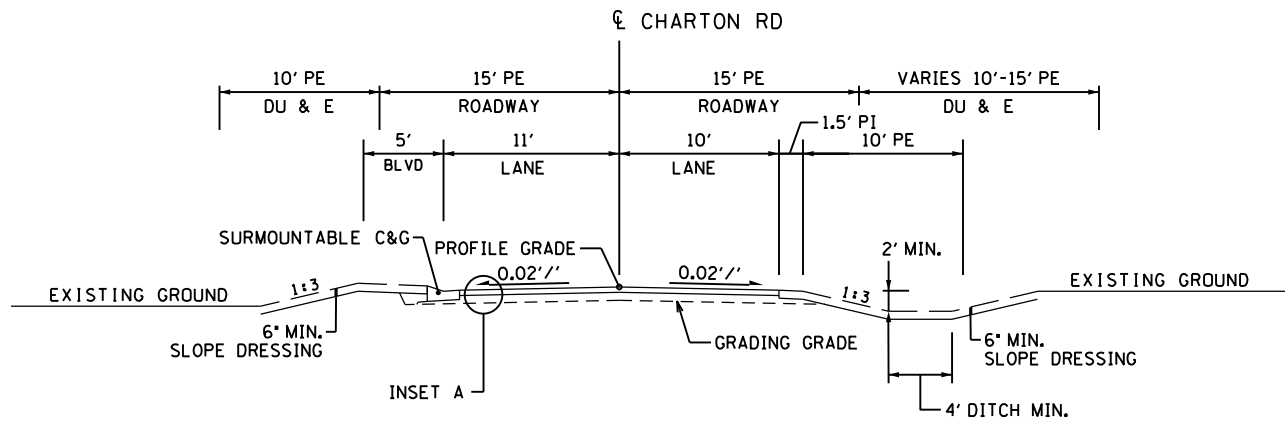
Sunfish Lake, Minnesota

Figure Number 1
Project Location Map



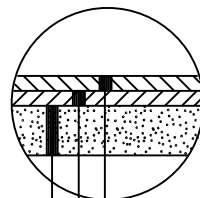
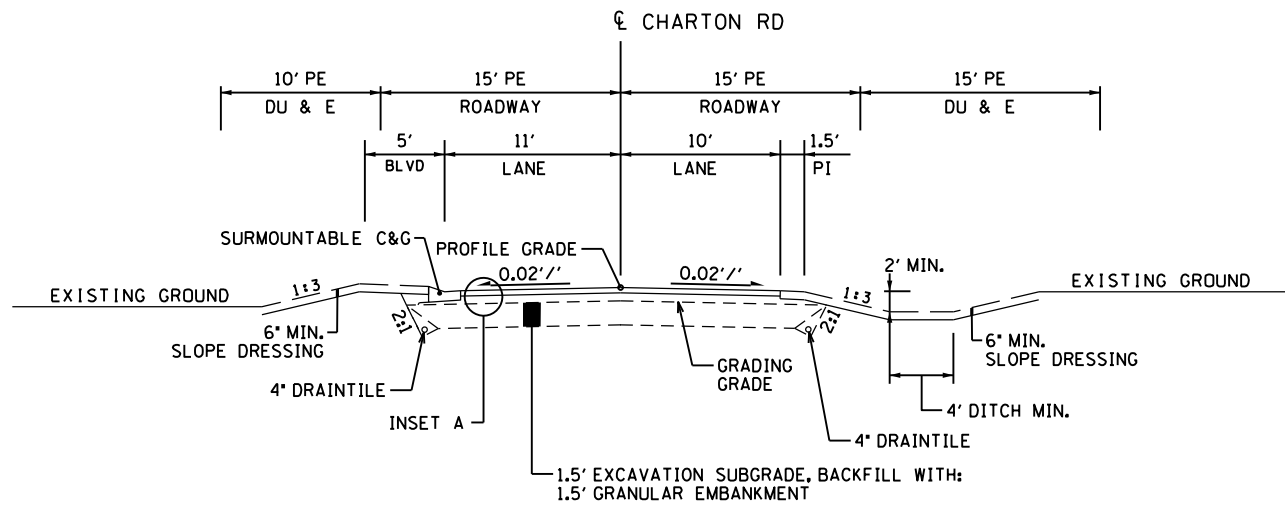
CHARLTON ROAD - SECTION 4

STA 16+50 E.B. TO STA 18+00 E.B.
STA 29+66 E.B. TO STA 32+75 E.B.



CHARLTON ROAD - SECTION 3

STA 15+90 E.B. TO STA 16+50 E.B.



INSET A
CHARLTON ROAD

- 2" TYPE SP 12.5 BITUMINOUS WEAR COURSE (SPWEB340C) MNDOT SPEC 2360
- 2" TYPE SP 12.5 BITUMINOUS NONWEAR COURSE (SPWEB340C) MNDOT SPEC 2360
- 6" AGGREGATE BASE, CLASS 6 SPEC 2211

Figure Number 3

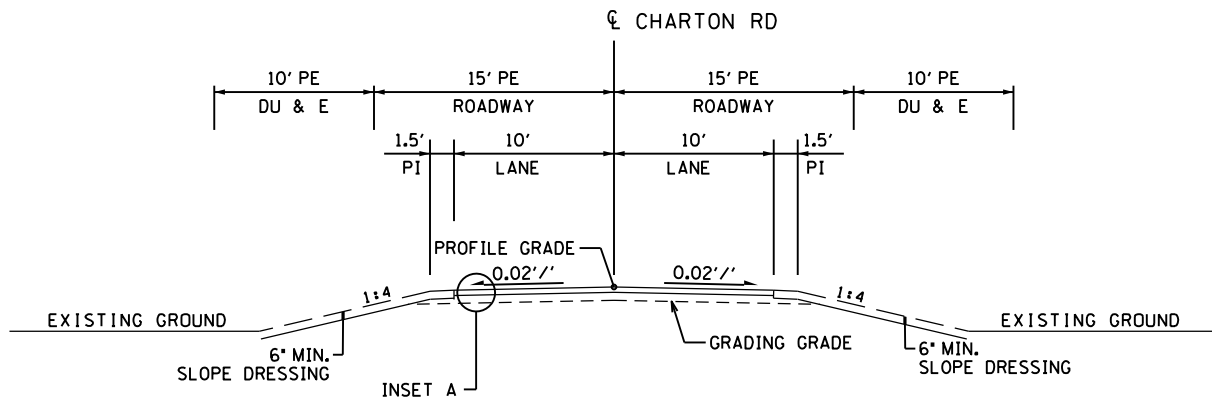
Typical Sections





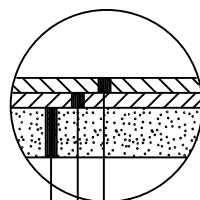
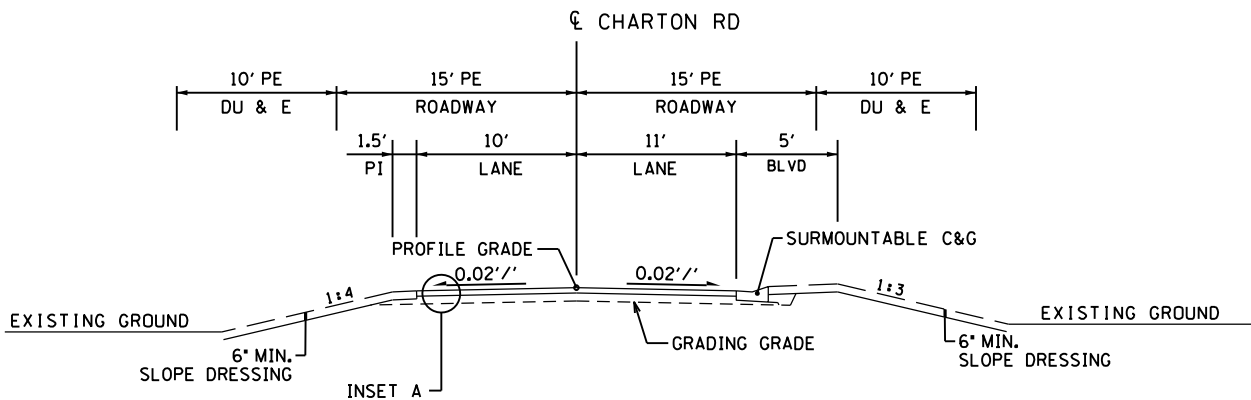
CHARLTON ROAD - SECTION 8

STA 32+75 E.B. TO STA 35+80 E.B.
STA 43+75 E.B. TO STA 44+32 E.B.



CHARLTON ROAD - SECTION 7

STA 23+40 E.B. TO STA 27+63 E.B.
STA 35+80 E.B. TO STA 43+75 E.B.



INSET A
CHARLTON ROAD

- 2" TYPE SP 12.5 BITUMINOUS WEAR COURSE (SPWEB340C) MNDOT SPEC 2360
- 2" TYPE SP 12.5 BITUMINOUS NONWEAR COURSE (SPWEB340C) MNDOT SPEC 2360
- 6" AGGREGATE BASE, CLASS 6 SPEC 2211





Date: Printed: 4/28/2017
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Charlton Road Improvements

Sunfish Lake, Minnesota

Figure Number 6
Curve Realignment

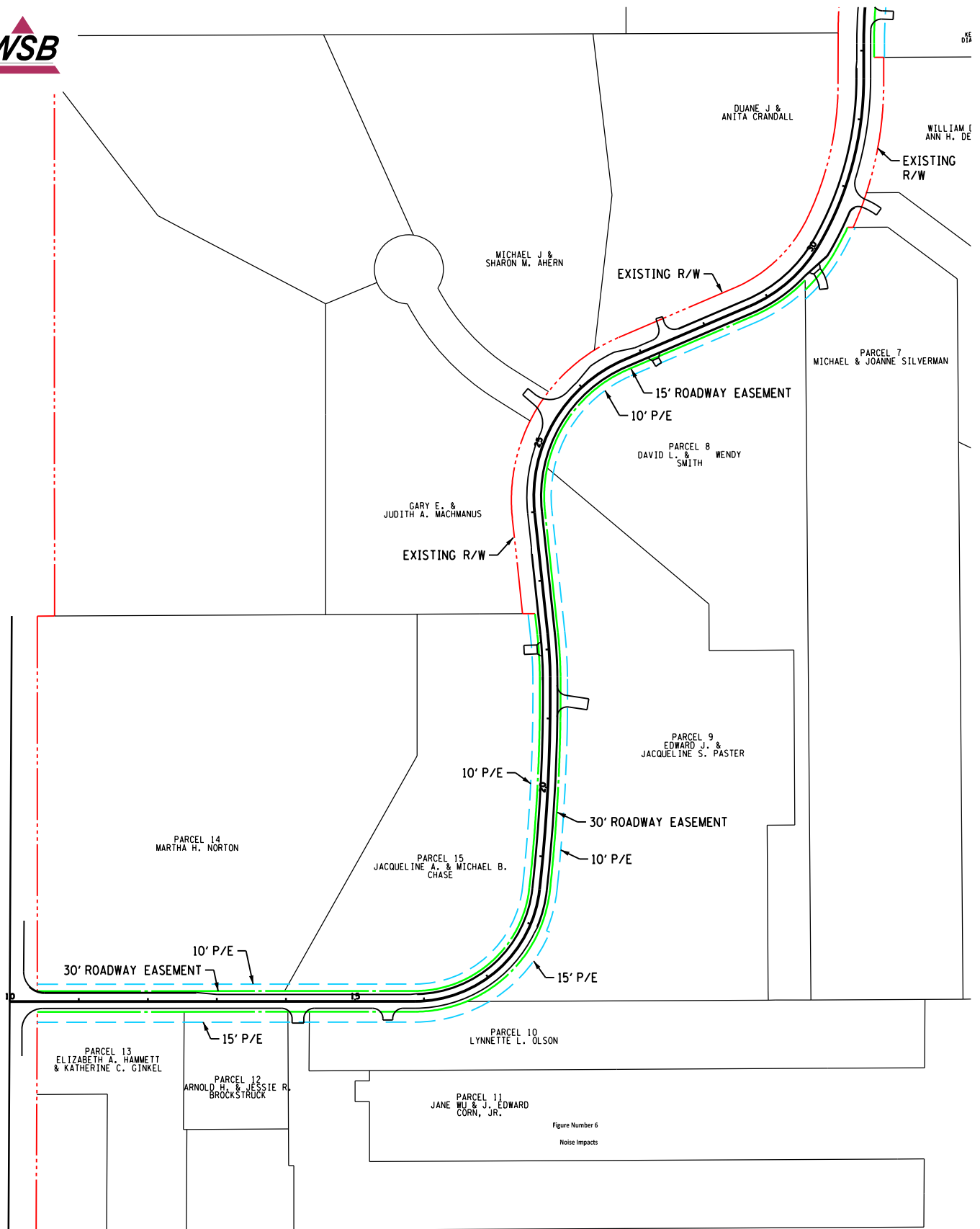


Figure Number 6
Noise Impacts

Figure Number 7

Right-of-Way



Charlton Road Improvements

Sunfish Lake, Minnesota

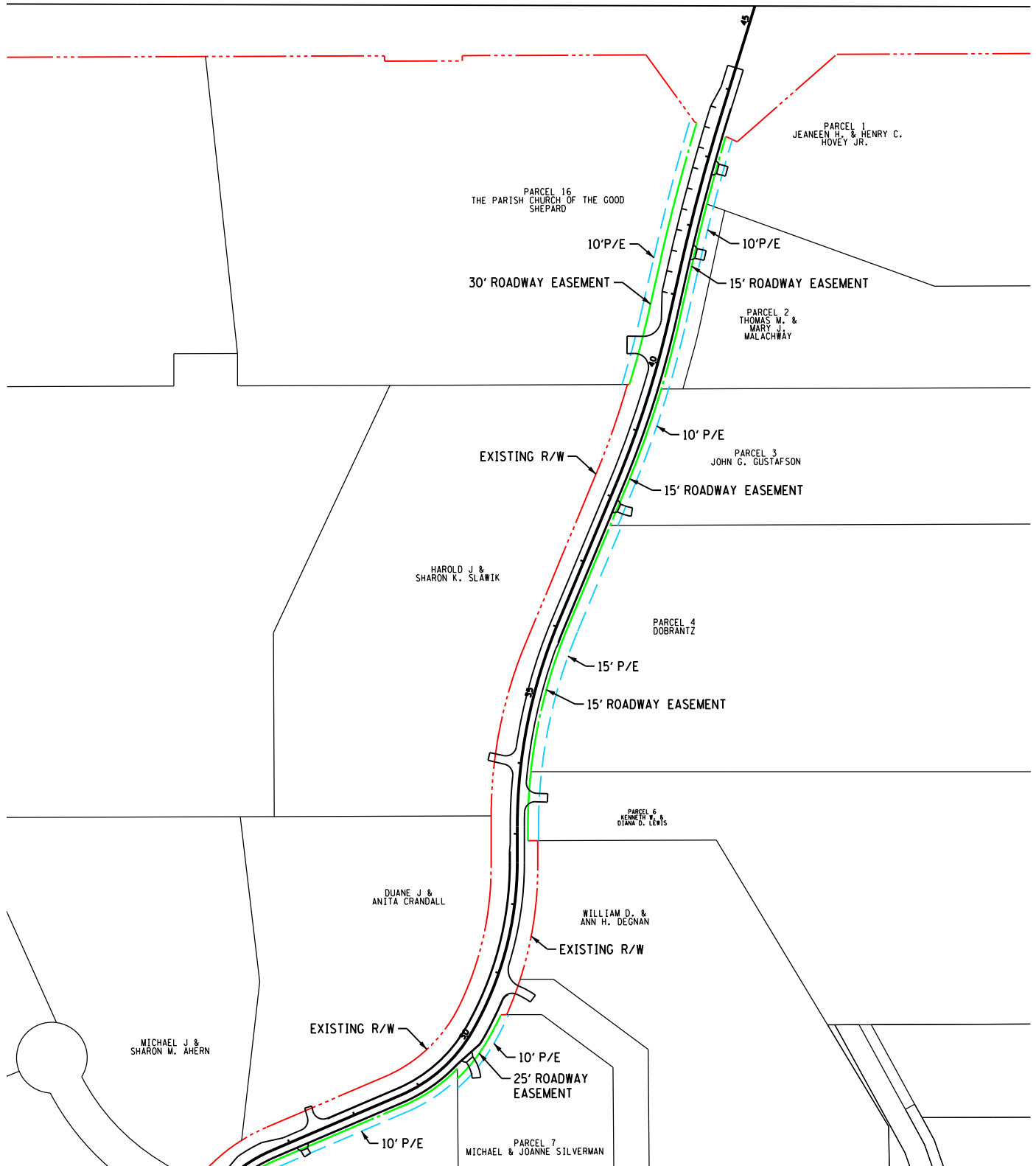


Figure Number 8

Right-of-Way





MINNESOTA
110

Delaware Avenue

Charlton Road

2 Units 1

2

3

4

16

5 2 Units

6

19

18

17

14

7

20

15

8

22

21

29

13

12

11

10

9

23

24

28

25

26

LEGEND



Assessed for OPTION 1



Assessed for OPTION 2



Assessed for OPTION 3



0 200 ft 400 ft



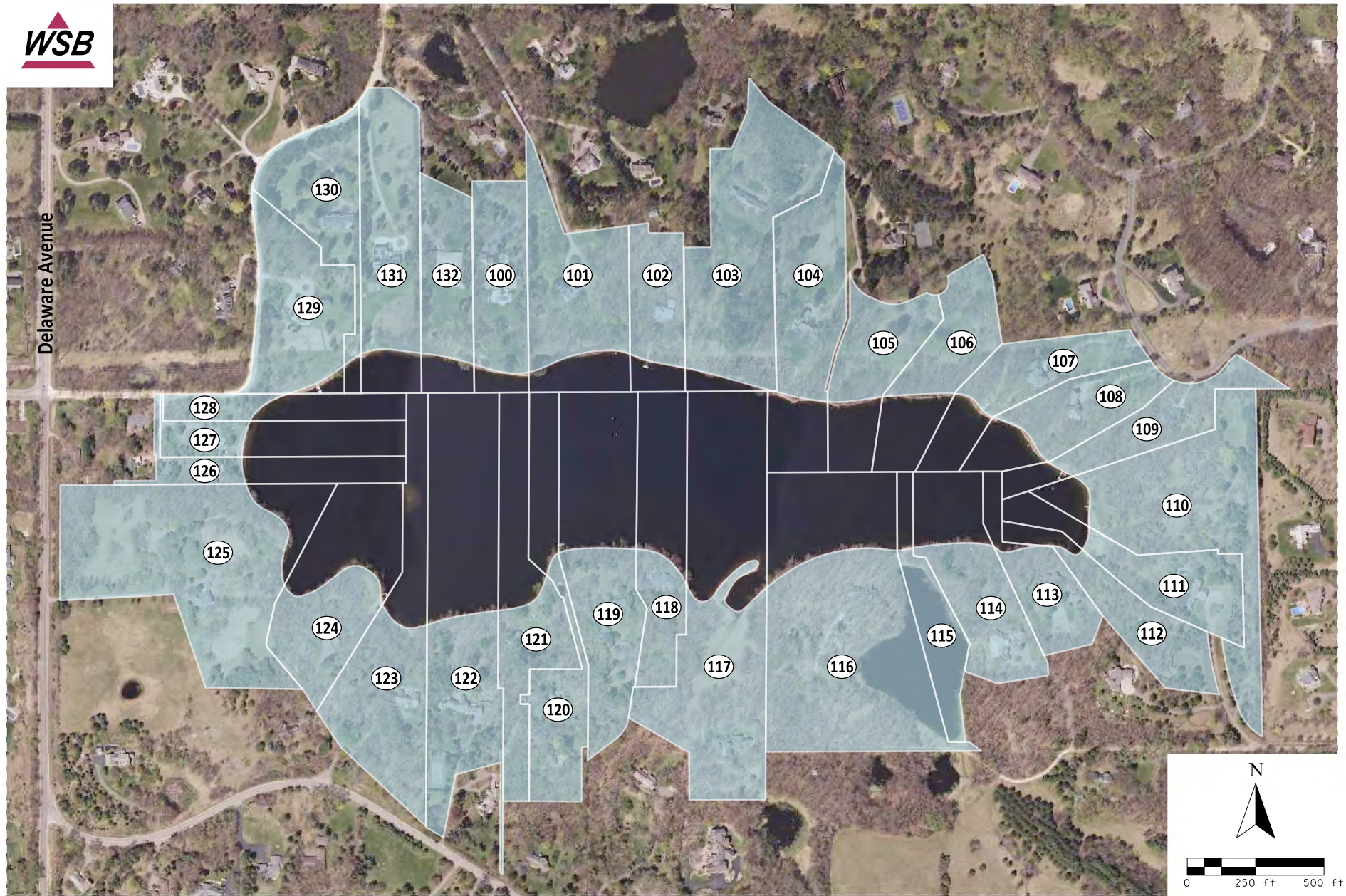
Charlton Road Improvements
Sunfish Lake, Minnesota

Figure 9

Proposed Assement Area



Delaware Avenue



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Sunfish Lake Outlet
Sunfish Lake, Minnesota

33 Assessment Units

Proposed Assessment Area

APPENDIX B

Opinion of Probable Cost

Preliminary Schedule I

WSB Project:

Charlton Road Improvements

Project Location:

City of Sunfish Lake, Dakota County, MN

Project No:

01629-741

Date:

4/28/2017

Preliminary Schedule I

TAB	SHEET No.	Item Number	Description	Unit	Notes	Unit Price	OPTION 1		OPTION 2		OPTION 3		SUNFISH LAKE OUTLET	
							Total		Total		Total		Estimated Quantity	Estimated Cost
							Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost
		2021.501	MOBILIZATION	LUMP SUM		\$20,000.00	0.4	\$8,000.00	0.9	\$18,000.00	1	\$20,000.00		
		2101.501	CLEARING	ACRE		\$3,000.00	0.50	\$1,500.00	1.25	\$3,750.00	2.00	\$6,000.00	0.25	\$750.00
		2101.506	GRUBBING	ACRE		\$3,000.00	0.50	\$1,500.00	1.25	\$3,750.00	2.00	\$6,000.00	0.25	\$750.00
		2104.501	REMOVE BITUMINOUS PAVEMENT	SQ SY		\$8.00	30	\$240.00	90	\$720.00	120	\$960.00		
		2104.501	REMOVE PIPE CULVERTS	LIN FT		\$8.00	60	\$480.00	290	\$2,320.00	840	\$6,720.00	80	\$640.00
		2104.501	REMOVE GUARDRAIL- CABLE	LIN FT		\$9.00					150	\$1,350.00		
		2104.509	REMOVE SIGN TYPE C	EACH		\$30.00	7	\$210.00	8	\$240.00	15	\$450.00		
		2104.509	REMOVE HYDRANT	EACH		\$500.00					1	\$500.00		
		2104.513	SAWING BITUMINOS PAVEMENT (FULL DEPTH)	LIN FT		\$3.75	75	\$281.25	195	\$731.25	270	\$1,012.50		
		2104.523	SALVAGE SIGN TYPE C	EACH		\$75.00					2	\$150.00		
		2104.523	SALVAGE SIGN TYPE SPECIAL	EACH		\$150.00					1	\$150.00		
		2105.501	COMMON EXCAVATION	CU YD		\$12.00	1200	\$14,400.00	2650	\$31,800.00	4750	\$57,000.00		
		2105.507	SUBGRADE EXCAVATION	CU YD		\$14.00					950	\$13,300.00		
		2105.522	SELECT GRANULAR BORROW (CV)	CU YD		\$18.00					1200	\$21,600.00		
		2105.604	GEOTEXTILE FILTER TYPE V	SQ YD		\$2.00					1500	\$3,000.00		
		2112.501	SUBGRADE PREPARATION	ROAD STA	6	\$225.00	5	\$1,125.00	20	\$4,500.00	29	\$6,525.00		
		2118.607	AGGREGATE SURFACING (CV) CLASS 2	CU YD		\$32.00	12	\$384.00	82	\$2,624.00	152	\$4,864.00		
		2211.501	AGGREGATE BASE CLASS 5	TON		\$20.00	220	\$4,400.00	720	\$14,400.00	1320	\$26,400.00		
		2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	2	\$2.75	50	\$137.50	210	\$577.50	370	\$1,017.50		
		2360.501	TYPE SP 12.5 WEARING COURSE MIX (2;C)	TON		\$63.00	360	\$22,680.00	1300	\$81,900.00	2140	\$134,820.00		
		2451.607	PIPE BEDDING	CU YD		\$22.00	8	\$176.00	53	\$1,166.00	98	\$2,156.00		
		2501.515	15" GS PIPE APRON	EACH		\$285.00			2	\$570.00	2	\$570.00		
		2501.515	18" GS PIPE APRON	EACH		\$325.00			2	\$650.00	4	\$1,300.00		
		2501.515	15" RC PIPE APRON	EACH		\$325.00	1	\$325.00	6	\$1,950.00	10	\$3,250.00		
		2501.515	18" RC PIPE APRON	EACH		\$375.00					3	\$1,125.00	1	\$375.00
		2501.515	24" RC PIPE APRON	EACH		\$450.00			2	\$900.00	2	\$900.00		
		2502.521	4" PERF PE PIPE DRAIN	LIN FT		\$4.50					1200	\$5,400.00		

Preliminary Schedule I

WSB Project:

Charlton Road Improvements

Project Location:

City of Sunfish Lake, Dakota County, MN

Project No:

01629-741

Date:

4/28/2017

Preliminary Schedule I

TAB	SHEET No.	Item Number	Description	Unit	Notes	Unit Price	OPTION 1		OPTION 2		OPTION 3		SUNFISH LAKE OUTLET	
							Total		Total		Total			
							Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost
		2502.521	4" TP PIPE DRAIN	LIN FT		\$7.00					30	\$210.00		
		2503.541	15" RC PIPE SEWER DES 3006 CL III	LIN FT		\$32.00	25	\$800.00	192	\$6,144.00	336	\$10,752.00	223	\$7,136.00
		2503.541	18" RC PIPE SEWER DES 3006 CL III	LIN FT		\$34.00					370	\$12,580.00		
		2503.541	24" RC PIPE SEWER DES 3006 CL III	LIN FT		\$40.00			36	\$1,440.00	36	\$1,440.00		
		2503.603	15" HDPE PIPE SEWER (SMOOTH WALL)	LIN FT		\$28.00			25	\$700.00	138	\$3,864.00		
		2503.603	18" HDPE PIPE SEWER (SMOOTH WALL)	LIN FT		\$30.00			83	\$2,490.00	83	\$2,490.00		
		2504.602	HYDRANT	EACH		\$3,750.00					1	\$3,750.00		
		2506.501	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 1 (2x3 BOX)	EACH	5	\$1,600.00	1	\$1,600.00	7	\$11,200.00	10	\$16,000.00		
		2506.501	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 2	EACH	5	\$6,000.00							1	\$6,000.00
		2506.501	CONST DRAINAGE STRUCTURE DESIGN 4020-48	LIN FT		\$375.00					12	\$4,500.00	13	\$4,875.00
		2506.516	CASTING ASSEMBLY	EACH		\$750.00					2	\$1,500.00	2	\$1,500.00
		2506.522	ADJUST FRAME AND RING CASTING	EACH		\$350.00					2	\$700.00		
		2506.602	CONNECT INTO EXISTING STORM SEWER	EACH		\$400.00					1	\$400.00		
		2511.501	RANDOM RIPRAP CLASS III (FIELD STONE)	CU YD	4	\$120.00	5	\$600.00	15	\$1,800.00	25	\$3,000.00	12	\$1,440.00
		2511.515	GEOTEXTILE FILTER TYPE IV	SQ YD		\$5.00	21	\$105.00	89	\$445.00	153	\$765.00	35	\$175.00
		2531.501	CONCRETE CURB AND GUTTER DESIGN D412	LIN FT		\$16.00	430	\$6,880.00	1710	\$27,360.00	3135	\$50,160.00		
		2531.501	CONCRETE CURB AND GUTTER DESIGN B612	LIN FT		\$17.00					240	\$4,080.00		
		2554.509	GUIDE POST TYPE B	EACH		\$75.00	2	\$150.00	8	\$600.00	10	\$750.00		
		2563.601	TRAFFIC CONTROL	LUMP SUM		\$2,500.00	0.4	\$1,000.00	0.9	\$2,250.00	1	\$2,500.00		
		2564.531	SIGN PANELS TYPE C	SQ FT		\$45.00	52	\$2,340.00	67	\$3,015.00	122	\$5,490.00		
		2564.531	SIGN PANELS TYPE SPECIAL	SQ FT	3	\$350.00					1	\$350.00		
		2564.537	INSTALL SIGN TYPE C	EACH		\$150.00					2	\$300.00		
		2564.537	INSTALL SIGN TYPE SPECIAL	EACH		\$250.00					1	\$250.00		
		2573.502	SILT FENCE, TYPE MS	LIN FT		\$2.50	650	\$1,625.00	2000	\$5,000.00	3500	\$8,750.00	150	\$375.00
		2573.53	STORM DRAIN INLET PROTECTION	EACH		\$250.00	2	\$500.00	9	\$2,250.00	19	\$4,750.00		
		2573.535	STABILIZED CONSTRUCTION EXIT	LUMP SUM		\$2,000.00	1	\$2,000.00	1	\$2,000.00	1	\$2,000.00		
		2574.525	COMMON TOPSOIL BORROW	CU YD		\$17.00	50	\$850.00	150	\$2,550.00	250	\$4,250.00		
		2575.605	HYDROSEEDING	SQ YD	1	\$2.25	1000	\$2,250.00	3750	\$8,437.50	6500	\$14,625.00		

Preliminary Schedule I

WSB Project:

Charlton Road Improvements

Project Location:

City of Sunfish Lake, Dakota County, MN

Project No:

01629-741

Date:

4/28/2017

Preliminary Schedule I

TAB	SHEET No.	Item Number	Description	Unit	Notes	Unit Price	OPTION 1		OPTION 2		OPTION 3		SUNFISH LAKE OUTLET	
							Total		Total		Total			
							Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost
		2575.523	EROSION CONTROL BLANKETS CATEGORY 3N	SQ YD	1	\$1.85	1250	\$2,312.50	4750	\$8,787.50	7750	\$14,337.50	250	\$462.50
		2582.502	4" SOLID LINE EPOXY	LIN FT		\$0.75	200	\$150.00	200	\$150.00	200	\$150.00		
		2582.502	4" DOUBLE SOLID LINE EPOXY	LIN FT		\$1.50	250	\$375.00	250	\$375.00	250	\$375.00		
SUBTOTAL BASE BID CONSTRUCTION COST									\$79,376.25		\$257,542.75		\$501,588.50	\$24,478.50
5% CONTINGENCY									\$3,968.81		\$12,877.14		\$25,079.43	\$1,223.93
TOTAL CONSTRUCTION COSTS									\$83,345.06		\$270,419.89		\$526,667.93	\$25,702.43
25% INDIRECT COSTS									\$20,836.27		\$67,604.97		\$131,666.98	\$6,425.61
ESTIMATE TOTAL PROJECT COSTS									<u>\$104,181.33</u>		<u>\$338,024.86</u>		<u>\$658,334.91</u>	<u>\$32,128.03</u>

- NOTES:
1. AS DIRECTED BY THE ENGINEER.
 2. TACK COAT ASSUMED TO BE APPLIED AT 0.07 GAL/SQ YD.
 3. SIGN PANEL TYPE SPECIAL IS DOUBLE SIDED - 2 PANELS PER SIDE.
 4. RIPRAP TO BE FIELD STONE.
 5. INCLUDES CASTING PAYMENT.
 6. QUANTITY TO SCARIFY AND RECOMPACT AGGREGATE SURFACE THAT IS TO REMAIN IN PLACE.
- (P) DENOTES PLAN QUANTITY.

APPENDIX C

Preliminary Assessment Roll

Option 1

Option 2

Option 3

Sunfish Lake Outlet

Cost Distribution Calculations for Option 1

WSB Project: Charlton Road Improvements
Project Location: City of Sunfish Lake
City Project No.:
WSB Project No.: 1629-741

Design By: DWS
Checked By:

Date: 4/27/2017

Special Assessments

Surface & Drainage Improvements

Total Assessable Units within the Project	4
Total Surface Improvement Cost	\$ 104,181.33
City Costs	\$ 62,508.80
Total Assessable Costs	\$ 41,672.53
Assessment Cost per Assessable Unit	<u>\$10,418.13</u>

Special Assessment per Unit

\$10,418.13

Preliminary Assessment Roll for Option 1

WSB Project: Charlton Road Improvements Project Location: City of Sunfish Lake City Project No.: WSB Project No: 1629-741					Design By: DWS Checked By: Date: 4/27/2017				
Assessment/Funding Source					40% Assessment Per City Policy	60% City Costs		Recommended Assessment	City Costs
No.	Property Identification No.		Property Owner	Property Owner Address					
1	PID:	38-03000-50-030	Parish Ch of the Good Shepard	2035 Charlton Road Saint. Paul, MN 55118-4704	2	\$20,836.26	\$31,254.40	\$20,836.26	\$31,254.40
2	PID:	38-03000-51-010	Michael & Margaret Hovey	2030 Charlton Road Saint. Paul, MN 55118-4705	1	\$10,418.13	\$15,627.20	\$10,418.13	\$15,627.20
3	PID:	38-03000-51-020	Mary Jo Malachway	2040 Charlton Road Sunfish Lake, MN 55118	1	\$10,418.13	\$15,627.20	\$10,418.13	\$15,627.20
TOTAL					4	\$41,672.52	\$62,508.80	\$41,672.52	\$62,508.80

Cost Distribution Calculations for Option 2

WSB Project: Charlton Road Improvements
Project Location: City of Sunfish Lake
City Project No.:
WSB Project No.: 1629-741

Design By: DWS
Checked By:

Date: 4/27/2017

Special Assessments

Surface & Drainage Improvements

Total Assessable Units within the Project	22
Total Surface Improvement Cost	\$ 338,024.86
City Costs	\$ 202,814.92
Total Assessable Costs	\$ 135,209.94
Assessment Cost per Assessable Unit	<u>\$6,145.91</u>

Special Assessment per Unit

\$6,145.91

Preliminary Assessment Roll for Option 2									
WSB Project:		Charlton Road Improvements					Design By: DWS		
Project Location:		City of Sunfish Lake					Checked By:		
City Project No.:									
WSB Project No:		1629-741					Date: 4/27/2017		
Assessment/Funding Source					40% Assessment Per City Policy	60% City Costs		Recommended Assessment	City Costs
No.	Property Identification No.	Property Owner	Property Owner Address	Total Assessable Units					
1	PID: 38-03000-50-030	Parish Ch of the Good Shepard	2035 Charlton Road Saint. Paul, MN 55118-4704	2	\$12,291.82	\$18,437.72		\$12,291.82	\$18,437.72
2	PID: 38-03000-51-010	Michael & Margaret Hovey	2030 Charlton Road Saint. Paul, MN 55118-4705	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
3	PID: 38-03000-51-020	Mary Jo Malachway	2040 Charlton Road Sunfish Lake, MN 55118	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
4	PID: 38-03000-51-030	John & Gary Gustafson	3411 Pine Grove Ln Kalamazoo, MI 49008	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
5	PID: 38-03000-52-013	Gladys Dobrantz	9240 Arnold Ave Inver Grove Heights, MN 55077	2	\$12,291.82	\$18,437.72		\$12,291.82	\$18,437.72
6	PID: 38-03000-52-020	Aydin & Rebecca Moradian	2120 Charlton Road Sunfish Lake, MN 55118	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
7	PID: 38-13300-01-010	Calvin S & Claire E Noble	2130 Charlton Road Sunfish Lake, MN 55118	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
8	PID: 38-13300-01-020	Catharine Ubel Tste Nye	2140 Charlton Road Sunfish Lake, MN 55118	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
9	PID: 38-13300-01-030	Karin J Klarer	2144 Charlton Road Sunfish Lake, MN 55118	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
10	PID: 38-13300-01-040	Douglas & Nancy Beedon	2150 Charlton Road Saint Paul, MN 55118-4737	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
11	PID: 38-84200-01-020	Dennis J & Jacqueline Turso	2152 Charlton Road Saint Paul, MN 55118-4737	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
12	PID: 38-84200-01-030	John J & Shannon Nelson	2154 Charlton Road Sunfish Lake, MN 55118	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
13	PID: 38-03000-54-031	Michael & Joanne Silverman	2158 Charlton Road Saint Paul, MN 55118-4737	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
14	PID: 38-84200-01-010	William D. & Ann H Degnan	2156 Charlton Road Sunfish Lake, MN 55118	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
15	PID: 38-03000-54-021	David L. & Wendy Smith	2162 Charlton Road Saint Paul, MN 55118-4737	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
16	PID: 38-57650-01-010	Makoto & Akiko Ishii	2099 Charlton Road Sunfish Lake, MN 55118-4704	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
17	PID: 38-57600-01-010	Duane J. & Anita Crandall	2157 Charlton Road Saint Paul, MN 55118-4738	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
18	PID: 38-57600-01-020	Michael J. & Sharon M. Ahern	2159 Charlton Road Saint Paul, MN 55118-4738	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
19	PID: 38-57600-01-030	Jerrold M. & Alleen C. Tostrud	2161 Charlton Road Saint Paul, MN 55118-4738	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
20	PID: 38-57600-01-060	Gary E. Macmanus	2163 Charlton Road Saint Paul, MN 55118-4738	1	\$6,145.91	\$9,218.86		\$6,145.91	\$9,218.86
TOTAL				22	\$135,210.02	\$202,814.92		\$135,210.02	\$202,814.92

Cost Distribution Calculations for Option 3

WSB Project: Charlton Road Improvements
Project Location: City of Sunfish Lake
City Project No.:
WSB Project No.: 1629-741

Design By: DWS
Checked By:

Date: 4/27/2017

Special Assessments

Surface & Drainage Improvements

Total Assessable Units within the Project	31
Total Surface Improvement Cost	\$ 658,334.91
City Costs	\$ 395,000.95
Total Assessable Costs	\$ 263,333.96
Assessment Cost per Assessable Unit	<u>\$8,494.64</u>

Special Assessment per Unit	\$8,494.64
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Preliminary Assessment Roll for Option 3									
WSB Project:		Charlton Road Improvements					Design By: DWS		
Project Location:		City of Sunfish Lake					Checked By:		
City Project No.:									
WSB Project No:		1629-741					Date: 4/27/2017		
Assessment/Funding Source					40% Assessment Per City Policy	60% City Cost		Recommended Assessment	City Costs
No.	Property Identification No.	Property Owner	Property Owner Address	Total Assessable Units					
1	PID: 38-03000-50-030	Parish Ch of the Good Shepard	2035 Charlton Road Saint. Paul, MN 55118-4704	2	\$16,989.28	\$25,483.94		\$16,989.28	\$25,483.94
2	PID: 38-03000-51-010	Michael & Margaret Hovey	2030 Charlton Road Saint. Paul, MN 55118-4705	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
3	PID: 38-03000-51-020	Mary Jo Malachway	2040 Charlton Road Sunfish Lake, MN 55118	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
4	PID: 38-03000-51-030	John & Gary Gustafson	3411 Pine Grove Ln Kalamazoo, MI 49008	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
5	PID: 38-03000-52-013	Gladys Dobrantz	9240 Arnold Ave Inver Grove Heights, MN 55077	2	\$16,989.28	\$25,483.94		\$16,989.28	\$25,483.94
6	PID: 38-03000-52-020	Aydin & Rebecca Moradian	2120 Charlton Road Sunfish Lake, MN 55118	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
7	PID: 38-13300-01-010	Calvin S & Claire E Noble	2130 Charlton Road Sunfish Lake, MN 55118	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
8	PID: 38-13300-01-020	Catharine Ubel Tste Nye	2140 Charlton Road Sunfish Lake, MN 55118	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
9	PID: 38-13300-01-030	Karin J Klarer	2144 Charlton Road Sunfish Lake, MN 55118	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
10	PID: 38-13300-01-040	Douglas & Nancy Beedon	2150 Charlton Road Saint Paul, MN 55118-4737	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
11	PID: 38-84200-01-020	Dennis J & Jacqueline Turusso	2152 Charlton Road Saint Paul, MN 55118-4737	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
12	PID: 38-84200-01-030	John J & Shannon Nelson	2154 Charlton Road Sunfish Lake, MN 55118	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
13	PID: 38-03000-54-031	Michael & Joanne Silverman	2158 Charlton Road Saint Paul, MN 55118-4737	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
14	PID: 38-84200-01-010	William D. & Ann H Degnan	2156 Charlton Road Sunfish Lake, MN 55118	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
15	PID: 38-03000-54-021	David L. & Wendy Smith	2162 Charlton Road Saint Paul, MN 55118-4737	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
16	PID: 38-57650-01-010	Makoto & Akiko Ishii	2099 Charlton Road Sunfish Lake, MN 55118-4704	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
17	PID: 38-57600-01-010	Duane J. & Anita Crandall	2157 Charlton Road Saint Paul, MN 55118-4738	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
18	PID: 38-57600-01-020	Michael J. & Sharon M. Ahern	2159 Charlton Road Saint Paul, MN 55118-4738	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
19	PID: 38-57600-01-030	Jerrold M. & Alleen C. Tostrud	2161 Charlton Road Saint Paul, MN 55118-4738	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
20	PID: 38-57600-01-060	Gary E. Macmanus	2163 Charlton Road Saint Paul, MN 55118-4738	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
21	PID: 38-03000-53-022	Shannon Werb	2165 Charlton Road Sunfish Lake, MN 55118	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
22	PID: 38-03000-53-021	Martha H. Norton	2130 Delaware Avenue Sunfish Lake, MN 55118	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
23	PID: 38-03100-27-010	Elizabeth Ann Hammett	5306 Forest Breeze Ct Saint Cloud, FL 34771-7743	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
24	PID: 38-03100-27-020	John & Sharon Hutchinson	2194 Charlton Road Sunfish Lake, MN 55118	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
25	PID: 38-03100-27-080	William & Elizabeth Hammett	2196 Charlton Road Saint Paul, MN 55118-4737	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
26	PID: 38-03100-27-060	J Edward & Jane Wu. Corn	2190 Charlton Road Saint Paul, MN 55118-4737	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
27	PID: 38-03100-27-075	Michael S & Suzanne Macdonald	2184 Charlton Road Saint Paul, MN 55118-4737	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
28	PID: 38-03100-27-040	Brent J & Rebecca A Brooks	2672 91st Ave NE Blaine, MN 55449	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
29	PID: 38-03000-54-011	Rebecca Ann Debertin	2166 Charlton Road Sunfish Lake, MN 55118	1	\$8,494.64	\$12,741.97		\$8,494.64	\$12,741.97
TOTAL				31	\$263,333.84	\$395,001.07		\$263,333.84	\$395,001.07

Cost Distribution Calculations for Sunfish Lake Outlet

WSB Project: Sunfish Lake Outlet
Project Location: City of Sunfish Lake
City Project No.:
WSB Project No.: 1629-741

Design By: DWS
Checked By:

Date: 4/27/2017

Special Assessments

Surface & Drainage Improvements

Total Assessable Units within the Project	33
Total Surface Improvement Cost	\$ 32,128.03
Total Assessable Costs	\$ 32,128.03
Assessment Cost per Assessable Unit	<u>\$973.58</u>

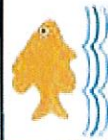
Special Assessment per Unit

\$973.58

Preliminary Assessment Roll for Sunfish Lake Outlet							
WSB Project:		Sunfish Lake Outlet			Design By:		DWS
Project Location:		City of Sunfish Lake			Checked By:		
City Project No.:							
WSB Project No:		1629-741			Date:		4/27/2017
Assessment/Funding Source					100% Assessment		Recommended Assessment
No.	Property Identification No.		Property Owner	Property Owner Address			
100	PID:	38-84200-01-020	Dennis J & Jacquelin Turso	2152 Charlton Rd Saint Paul, MN 55118-4737	1	\$973.58	\$973.58
101	PID:	38-13300-01-040	Douglas & Nancy Beedon	2150 Charlton Rd Saint Paul, MN 55118-4737	1	\$973.58	\$973.58
102	PID:	38-13300-01-030	Karin J Klarer	2144 Charlton Rd Sunfish Lake, MN 55118	1	\$973.58	\$973.58
103	PID:	38-11850-01-020	Arnulf & Denis Tste Svendsen	1 Sunfish Ln Saint Paul, MN 55118-4722	1	\$973.58	\$973.58
104	PID:	38-03000-83-020	Roger R Conant	2 Sunfish Ln Saint Paul, MN 55118-4721	1	\$973.58	\$973.58
105	PID:	38-42600-01-021	Eric C & Laurie L Tostrud	1490 Somerset Ct Mendota Heights, MN 55118-2826	1	\$973.58	\$973.58
106	PID:	38-42600-01-031	H William & Mary Jo Park	15 Sunnyside Ln Saint Paul, MN 55118-4723	1	\$973.58	\$973.58
107	PID:	38-42600-01-060	Michael F McFadden	25 Sunnyside Ln Sunfish Lake, MN 55118-4723	1	\$973.58	\$973.58
108	PID:	38-42600-01-070	Thomas P & Julie K Hurley	27 Sunnyside Ln Sunfish Lake, MN 55118	1	\$973.58	\$973.58
109	PID:	38-42600-01-080	Daniel K II & Kay O Halvorsen	37 Sunnyside Ln Saint Paul, MN 55118-4723	1	\$973.58	\$973.58
110	PID:	38-73202-01-010	Kurt L & Katherine A Larson	11 Salem Ln Sunfish Lake, MN 55118	1	\$973.58	\$973.58
111	PID:	38-72302-01-020	James H & Ann H Ohagan	35 Windy Hill Rd Inver Grove Heights, MN 55077-1424	1	\$973.58	\$973.58
112	PID:	38-73202-01-030	James H & Ann H Ohagan	35 Windy Hill Rd Inver Grove Heights, MN 55077-1424	1	\$973.58	\$973.58
113	PID:	38-84300-01-010	John D Jr & Frances Lamey	55 Windy Hill Rd Inver Grove Heights, MN 55077-1424	1	\$973.58	\$973.58
114	PID:	38-03100-03-012	Janet C Tste Riley	75 Windy Hill Rd Sunfish Lake, MN 55118	1	\$973.58	\$973.58
115	PID:	38-03100-01-010	Richard H Jr Bancroft	100 Windy Hill Rd Inver Grove Heights, MN 55077-1425	1	\$973.58	\$973.58
116	PID:	38-03800-06-013	Richard H Jr & Debor Bancroft	100 Windy Hill Rd Inver Grove Heights, MN 55077-1425	1	\$973.58	\$973.58
117	PID:	38-45400-01-030	Thomas & Michelle Schlehuber	325 Salem Church Rd Sunfish Lake, MN 55118	1	\$973.58	\$973.58
118	PID:	38-03100-26-015	Sena A Kihitir	331 Salem Church Rd Sunfish Lake, MN 55118	1	\$973.58	\$973.58
119	PID:	38-03700-02-014	Sarah Pennie Thompson	335 Salem Church Rd Sunfish Lake, MN 55118-4720	1	\$973.58	\$973.58
120	PID:	38-32000-01-020	Robert J Riesberg	343 Salem Church Rd West Saint Paul, MN 55118	1	\$973.58	\$973.58
121	PID:	38-32000-01-010	Joseph M & Linda A Schaefer	345 Salem Church Rd Sunfish Lake, MN 55118	1	\$973.58	\$973.58
122	PID:	38-03700-05-051	Elizabeth S Tste Driscoll	30 7th Street East Suite 2000 Saint Paul, MN 55101	1	\$973.58	\$973.58
123	PID:	38-03700-05-010	Mark T & Stacy L Roszkowski	369 Salem Church Rd West Saint Paul, MN 55118	1	\$973.58	\$973.58
124	PID:	38-03700-05-020	James C Stowell	389 Salem Church Rd Sunfish Lake, MN 55118	1	\$973.58	\$973.58
125	PID:	38-11750-01-010	2250 Delaware LLC	2250 Delaware Ave Sunfish Lake, MN 55118	1	\$973.58	\$973.58
126	PID:	38-03100-27-060	J Edward & Jane Wu. Corn	2190 Charlton Road Saint Paul, MN 55118-4737	1	\$973.58	\$973.58
127	PID:	38-03100-27-075	Michael S & Suzanne Macdonald	2184 Charlton Road Saint Paul, MN 55118-4737	1	\$973.58	\$973.58
128	PID:	38-03100-27-040	Brent J & Rebecca A Brooks	2672 91st Ave NE Blaine, MN 55449	1	\$973.58	\$973.58
129	PID:	38-03000-54-011	Rebecca Ann Debertin	2166 Charlton Road Sunfish Lake, MN 55118	1	\$973.58	\$973.58
130	PID:	38-03000-54-021	David L. & Wendy Smith	2162 Charlton Road Saint Paul, MN 55118-4737	1	\$973.58	\$973.58
131	PID:	38-03000-54-031	Michael & Joanne Silverman	2158 Charlton Rd Saint Paul, MN 55118-4737	1	\$973.58	\$973.58
132	PID:	38-84200-01-030	John J Jr & Shannon Nelson	2154 Charlton Rd Sunfish Lake, MN 55118	1	\$973.58	\$973.58
TOTAL					33	\$32,128.14	\$32,128.14

APPENDIX D

Soil Borings



Charlton Road Improvements City of Sunfish Lake, Minnesota

- 10' Boring (6 total)
- 5' Road Core (6 total)

Boring Map



LOG OF TEST BORING

PROJECT NAME: Carlton 2016 St Improvements
CLIENT/WSB #: 01629-741

PROJECT LOCATION: Sunfish Lake, MN

BORING NUMBER B1

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
1	11" AGGREGATE BASE, Frozen to 3 1/2"		Pavement Section								
1	FILL, mostly Silty Sand, brown		Fill			1	HSA				
2	CLAYEY SAND, brown, moist, soft	SC	Mixed Alluvium								
3				8		2	SB				
4											
5	SILTY SAND, brown, moist, loose	SM	Coarse Alluvium								
6				8		3	SB				
7											
8				8		4	SB				
9	CLAYEY SAND, brown, moist, soft	SC	Mixed Alluvium								
10				8		5	SB				
11	End of Boring 11.0 ft.										
12											
13											
14											
15											
16											
17											
18											

WATER LEVEL MEASUREMENTS

START: 1/26/2017

END: 1/26/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
1/26/2017	8:30 am	11	9.5		None		3 1/4" HSA 0' - 9.5'	J. Tatro	DAJ

Notes:

WSB BORING LOG - WSB.GDT - 1/27/17 11:31 - K:\01629-741\GEOTECH-CMT\CHARLTON 2016 ST IMPROVEMENTS, SUNFISH LAKE, MN.GPJ



LOG OF TEST BORING

PROJECT NAME: Carlton 2016 St Improvements
CLIENT/WSB #: 01629-741

PROJECT LOCATION: Sunfish Lake, MN

BORING NUMBER B2

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS				
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
1	20" AGGREGATE BASE		Pavement Section			1	HSA					
2	FILL, mostly Lean Clay, a little Silty Sand, brown, dark brown		Fill	9		2	SB					
3												
4												
5	LEAN CLAY WITH ORGANICS, greyish brown, wet, very soft	CL	Fine Alluvium	8		3	SB					
6												
7												
8												
9	LEAN CLAY WITH ORGANICS, greyish brown, wet, very soft	CL	Fine Alluvium	4		4	SB					
10												
11												
12												
13	SILTY SAND WITH GRAVEL, dark brown, wet, medium dense	SM	Coarse Alluvium	4		5	SB					
14												
15												
16												
17	End of Boring 16.0 ft.			21		6	SB					
18												
	End of Boring 16.0 ft.			15		7	SB					

WATER LEVEL MEASUREMENTS

START: 1/26/2017

END: 1/26/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
1/26/2017	9:30 am	16	14.5		None		3 1/4" HSA 0' - 14.5'	J. Tatro	DAJ

Notes:

WSB BORING LOG - WSB, GDT - 1/27/17 11:31 - K:\01629-741\GEOTECH-CMTC\CHARLTON 2016 ST IMPROVEMENTS, SUNFISH LAKE, MN.GPJ



LOG OF TEST BORING

PROJECT NAME: Carlton 2016 St Improvements
CLIENT/WSB #: 01629-741

PROJECT LOCATION: Sunfish Lake, MN

BORING NUMBER B3

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
0	3" AGGREGATE BASE, Frozen to 3" FILL, mostly Lean Clay, brown		Pavement Section Fill			1	HSA				
1											
2	CLAYEY SAND, brown, wet, very soft to soft	SC	Mixed Alluvium			2	SB				
3				4							
4											
5											
6				6		3	SB				
7											
8	LEAN CLAY, brown to grayish brown, saturated, very soft	CL	Fine Alluvium			4	SB				
9											
10											
11				9		5	SB				
12	SILTY SAND WITH GRAVEL, brown, wet, loose	SM	Coarse Alluvium								
13											
14				7		6	SB				
15	End of Boring 13.5 ft.										
16											
17											
18											

WATER LEVEL MEASUREMENTS

START: 1/26/2017

END: 1/26/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
1/26/2017	10:30 am	13.5	12		None		3 1/4" HSA 0' - 12'	J. Tatro	DAJ

Notes:

WSB BORING LOG - WSB.GDT - 1/27/17 11:31 - K:\01629-741\GEO TECH-CM\CHARLTON 2016 ST IMPROVEMENTS, SUNFISH LAKE, MN.GPJ



LOG OF TEST BORING

PROJECT NAME: Carlton 2016 St Improvements
CLIENT/WSB #: 01629-741

PROJECT LOCATION: Sunfish Lake, MN

BORING NUMBER B4

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
0	5 1/2" AGGREGATE BASE		Pavement Section								
1	FILL, a mixture of Lean Clay, Clayey Sand, brown, gray		Fill			1	HSA				
2											
3				8		2	SB				
4											
5											
6				6		3	SB				
7											
8	SANDY LEAN CLAY WITH A LITTLE GRAVEL, brown, moist, firm	CL	Glacial Till	12		4	SB				
9											
10											
11				12		5	SB				
12	End of Boring 11.0 ft.										
13											
14											
15											
16											
17											
18											

WATER LEVEL MEASUREMENTS

START: 1/24/2017

END: 1/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
1/24/2017	10:15 am	11	9.5		None		3 1/4" HSA 0' - 9.5'	J. Tatro	DAJ

Notes:

WSB BORING LOG - WSB GDT - 1/27/17 11:31 - K:\01629-741\GEOTECH-CMT\CHARLTON 2016 ST IMPROVEMENTS, SUNFISH LAKE, MN.GPJ



LOG OF TEST BORING

PROJECT NAME: Carlton 2016 St Improvements
CLIENT/WSB #: 01629-741

PROJECT LOCATION: Sunfish Lake, MN

BORING NUMBER B5

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS				
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
1	24" AGGREGATE BASE		Pavement Section			1	HSA					
2	FILL, mostly Lean Clay, dark brown		Fill	14		2	SB					
3												
4												
5				5		3	SB					
6												
7	SILTY SAND, brown, moist, loose	SM	Coarse Alluvium	10		4	SB					
8												
9	SANDY LEAN CLAY WITH A LITTLE GRAVEL, brown, moist, firm	CL	Glacial Till	13		5	SB					
10												
11	End of Boring 11.0 ft.											
12												
13												
14												
15												
16												
17												
18												

WATER LEVEL MEASUREMENTS

START: 1/24/2017

END: 1/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
1/24/2017	10:45 am	11	9.5		None		3 1/4" HSA 0' - 9.5'	J. Tatro	DAJ

Notes:

WSB BORING LOG - WSB.GDT - 1/27/17 11:31 - K:\01629-741\GEOTECH-CMT\CHARLTON 2016 ST IMPROVEMENTS, SUNFISH LAKE, MN.GPJ



LOG OF TEST BORING

PROJECT NAME: Carlton 2016 St Improvements
CLIENT/WSB #: 01629-741

PROJECT LOCATION: Sunfish Lake, MN

BORING NUMBER B6

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS				
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
1	6" AGGREGATE BASE		Pavement Section									
1	FILL, mostly Clayey Sand, brown		Fill			1	HSA					
2												
3				15		2	SB					
4	SANDY LEAN CLAY WITH A LITTLE GRAVEL, brown, moist, firm	CL	Glacial Till									
5				9		3	SB					
6												
7												
8				12		4	SB					
9												
10				15		5	SB					
11	End of Boring 11.0 ft.											
12												
13												
14												
15												
16												
17												
18												

WATER LEVEL MEASUREMENTS							START: 1/24/2017	END: 1/24/2017	
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief: J. Tatro	Logged By: DAJ
1/24/2017	11:50 am	11	9.5		None		3 1/4" HSA 0' - 9.5'	Notes:	

WSB BORING LOG - WSB.GDT - 1/27/17 11:31 - K:\01629-741\GEOTECH-CMT\CHARLTON 2016 ST IMPROVEMENTS, SUNFISH LAKE, MN.GPJ



LOG OF TEST BORING

PROJECT NAME: Carlton 2016 St Improvements
CLIENT/WSB #: 01629-741

PROJECT LOCATION: Sunfish Lake, MN

BORING NUMBER C1

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
0	4" AGGREGATE BASE		Pavement Section								
1	FILL, a mixture of Lean Clay, Silty Sand, brown		Fill			1	HSA				
2											
3				-		2	SB				
4											
5											
6				20		3	SB				
6	End of Boring 6.0 ft.										
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											

WATER LEVEL MEASUREMENTS

START: 1/24/2017

END: 1/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
1/24/2017	12:30 pm	6	4.5		None		3 1/4" HSA 0' - 4.5'	J. Tatro	DAJ
								Notes:	

WSB BORING LOG - WSB.GDT - 1/27/17 11:31 - K:\01629-741\GEO TECH-CMT\CHARLTON 2016 ST IMPROVEMENTS, SUNFISH LAKE, MN.GPJ



LOG OF TEST BORING

PROJECT NAME: Carlton 2016 St Improvements
CLIENT/WSB #: 01629-741

PROJECT LOCATION: Sunfish Lake, MN

BORING NUMBER C2

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
0	4" AGGREGATE BASE		Pavement Section								
1	FILL, a mostly Lean Clay, brown		Fill			1	HSA				
2											
3				14		2	SB				
4											
5											
6				13		3	SB				
6	End of Boring 6.0 ft.										
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											

WATER LEVEL MEASUREMENTS

START: 1/24/2017

END: 1/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
1/24/2017	12:15 pm	6	4.5		None		3 1/4" HSA 0' - 4.5'	J. Tatso	DAJ

Notes:

WSB BORING LOG - WSB.GDT - 1/27/17 11:31 - K:\01629-74\GEO\TECH-CMT\CHARLTON 2016 ST IMPROVEMENTS, SUNFISH LAKE, MN.GPJ



LOG OF TEST BORING

PROJECT NAME: Carlton 2016 St Improvements
CLIENT/WSB #: 01629-741

PROJECT LOCATION: Sunfish Lake, MN

BORING NUMBER C3

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
0	3" AGGREGATE BASE FILL, mostly Silty Sand, brown		Pavement Section Fill			1	HSA				
1											
2											
3				18		2	SB				
4											
5	LEAN CLAY, brown, wet, very soft	CL	Fine Alluvium								
6				4		3	SB				
6	End of Boring 6.0 ft.										
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											

WATER LEVEL MEASUREMENTS

START: 1/24/2017

END: 1/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
1/24/2017	9:35 am	6	4.5		None		3 1/4" HSA 0' - 4.5'	J. Tatro	DAJ
								Notes:	

WSB BORING LOG - WSB.GDT - 1/27/17 11:31 - K:\01629-741\GEOTECH-CMT\CHARLTON 2016 ST IMPROVEMENTS, SUNFISH LAKE, MN.GPJ



LOG OF TEST BORING

PROJECT NAME: Carlton 2016 St Improvements
CLIENT/WSB #: 01629-741

PROJECT LOCATION: Sunfish Lake, MN

BORING NUMBER C4

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
1	7" AGGREGATE BASE		Pavement Section			1	HSA				
2	FILL, a mixture of Clayey Sand, Silty Sand, Lean Clay, brown		Fill			2	SB				
3				20		3	SB				
4											
5											
6				7							
7	End of Boring 6.0 ft.										
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											

WATER LEVEL MEASUREMENTS

START: 1/24/2017

END: 1/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
1/24/2017	9:50 am	6	4.5		None		3 1/4" HSA 0' - 4.5'	J. Tatro	DAJ

Notes:

WSB BORING LOG - WSB.GDT - 1/27/17 11:31 - K:\01629-741\GEOTECH-CMTC\CHARLTON 2016 ST IMPROVEMENTS, SUNFISH LAKE, MN.GPJ



LOG OF TEST BORING

PROJECT NAME: Carlton 2016 St Improvements
CLIENT/WSB #: 01629-741

PROJECT LOCATION: Sunfish Lake, MN

BORING NUMBER C5

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
0	3" AGGREGATE BASE	SC	Pavement Section Mixed Alluvium	14		1	HSA				
1	CLAYEY SAND, brown, moist, firm					2	SB				
2						3	SB				
3											
4											
5											
6	End of Boring 6.0 ft.										
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											

WATER LEVEL MEASUREMENTS

START: 1/24/2017

END: 1/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
1/24/2017	11:40 am	6	4.5		None		3 1/4" HSA 0' - 4.5'	J. Tatro	DAJ

Notes:

WSB BORING LOG - WSB.GDT - 1/27/17 11:31 - K:\01629-741\GEOTECH-CMT\CHARLTON 2016 ST IMPROVEMENTS, SUNFISH LAKE, MN.GPJ



LOG OF TEST BORING

PROJECT NAME: Carlton 2016 St Improvements
CLIENT/WSB #: 01629-741

PROJECT LOCATION: Sunfish Lake, MN

BORING NUMBER C6

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
1	18" AGGREGATE BASE		Pavement Section			1	HSA				
2	FILL, mostly Clayey Sand, brown		Fill	22		2	SB				
3											
4											
5											
6	End of Boring 6.0 ft.			8		3	SB				
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											

WATER LEVEL MEASUREMENTS							START: 1/24/2017	END: 1/24/2017	
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
1/24/2017	11:00 am	6	4.5		None		3 1/4" HSA 0' - 4.5'	J. Tatro	DAJ

WSB BORING LOG - WSB, GDT - 1/27/17 11:31 - K:\01629-741\GEOTECH-CMT\CHARLTON 2016 ST IMPROVEMENTS, SUNFISH LAKE, MN.GPJ