CITY OF ONALASKA MEETING NOTICE

COMMITTEE/BOARD: **Board of Public Works**

DATE OF MEETING: October 2, 2018 (Tuesday)

PLACE OF MEETING: City Hall – 415 Main Street (Common Council Chambers)

TIME OF MEETING: 6:30 P.M.

PURPOSE OF MEETING

1. Call to Order and roll call.

2. Approval of minutes from the previous meeting.

3. Public input: (limited to 3 minutes/individual)

Consideration and possible action on the following items:

4. Review and consideration of snowmobile trail within the City of Onalaska for the 2018 – 2019 winter season including crossing State Trunk Highway 35 at Oak Forest Drive

5. Review and consideration of 2018- 2020 Capital Improvements Budget
   A. Financing plan – including presentation by Baird Public Finance
   B. Rate impacts for water, sanitary sewer and storm sewer utilities – including presentation by Hawkins Ash CPA's
   C. Review and consideration of projects to be included or deleted from proposed 2018 – 2020 Capital Improvement Budget

6. Review and consideration of 2018 Quiet Zone Memorandum and proposed application for quiet zone

7. Review and consideration of speed limit along State Trunk highway 16 and intersection control at State Trunk Highway 16 and Emerald Drive East

PLEASE TAKE FURTHER NOTICE that members of the Common Council of the City of Onalaska who do not serve on the Board may attend this meeting to gather information about a subject over which they have decision making responsibility.

Therefore, further notice is hereby given that the above meeting may constitute a meeting of the Common Council and is hereby noticed as such, even though it is not contemplated that the Common Council will take any formal action at this meeting.

Notices Mailed To:

* Mayor Joe Chilsen	*Jarrod Holter, City Engineer
**Ald. Jim Binash	*Fred Buehler, Financial Services Director/Treasurer
Ald. Jim Olson	
Ald. Jerry Every	
Ald. Diane Wulf	
*Ald. Ron Gjertsen	
*Ald. Kim Smith	
City Attorney City Administrator	
La Crosse Tribune Dept Heads.	
Coulee Courier	
WKTY WLXR WLAX	Onalaska Omni Center
WKBT WXOW FOX	Onalaska Public Library

*Board Members ** Alternate Member

Date Notices Mailed and Posted: 9-26-18

In compliance with the Americans with Disabilities Act of 1990, the City of Onalaska will provide reasonable accommodations to qualified individuals with a disability to ensure equal access to public meetings provided notification is given to the City Clerk within seventy-two (72) hours prior to the public meeting and that the requested accommodation does not create an undue hardship for the City.

8. Review and consideration of French Valley – Crestwood Booster Station
   A. Preliminary Engineering Report
   B. Professional Engineering Services for design of booster station including funding sources

9. Review and consideration of parking within the downtown area in the vicinity of 2nd Avenue and Main Street

10. Review and consideration of Green Coulee Reservoir Site Study Memorandum

11. Review and consideration of 2018 Final Special Assessment Costs

12. Pay Estimates: Strand Associates, Short Elliot Hendrickson Inc., Mathy Construction, Gerke Excavating, Steiger Construction, HSR Associates, Municipal Well & Pump, Bluestem Forestry, State of Wisconsin Department of Transportation, Davy Engineering, Ayres Associates, St. Joseph Construction, Hydro Klean and any other contractor/developer.

13. Adjournment

STAFF REVIEW SUMMARY

CITY OF ONALASKA
BOARD OF PUBLIC WORKS

October 2, 2018

Agenda Item: #4

Project/Item Name: Snowmobile trail

Location: Citywide

Requested Action: Approval of snowmobile trail

Staff Report/Description: The Coulee Sno-drifters snowmobile Club is requesting the renewal of snowmobile trail through the City of Onalaska. Trail would follow the previous route which includes crossing STH 35 at Oak Forest Drive. Wis. DOT has been contacted for comments regarding the crossing of STH 35

Attachments: Map & e-mail

Proposed Local Snowmobile Route

Holter, Jarrod

From: Gary Hanson <GHanson@toyotaoflacrosse.com>
Sent: Tuesday, September 11, 2018 2:16 PM
To: Winga, Andrew - DOT
Cc: Holter, Jarrod
Subject: RE: Snowmobile Trail in Onalaska WI.

Sounds good Andy.
Thank you for your time and have a great day.
Gary

From: Winga, Andrew - DOT [mailto:Andrew.Winga@dot.wi.gov]
Sent: Tuesday, September 11, 2018 2:05 PM
To: Gary Hanson <GHanson@toyotaoflacrosse.com>
Cc: Holter, Jarrod <jholter@cityofonalaska.com>
Subject: RE: Snowmobile Trail in Onalaska WI.

Gary,

The DOT has no objections to the snowmobile route and has actually modified the roadway to accommodate. Unless the City or your club feel that it is necessary, I don't think it is needed to ask for permission on a yearly basis. If at some point in the future the trail became a problem we would reach out to the club and/or City and make some changes.

Thanks

Andy

Andrew Winga, P.E.
Traffic Supervisor
WisDOT
Division of Transportation System Development
Southwest Region
3550 Mormon Coulee Road
La Crosse, WI 54601
608 785-9061

andrew.winga@dot.wi.gov

From: Gary Hanson [mailto:GHanson@toyotaoflacrosse.com]
Sent: Tuesday, September 04, 2018 2:37 PM
To: Winga, Andrew - DOT <Andrew.Winga@dot.wi.gov>
Cc: Holter, Jarrod <jholter@cityofonalaska.com>
Subject: Snowmobile Trail in Onalaska WI.

Hello Andrew. Well it is that time of year for us to start thinking about our snowmobile season. I would like to ask permission for the snowmobile trail to cross Hwy 35/Oak Forest Drive in Onalaska Wisconsin for the upcoming 2018/2019 snowmobile season. We would have the trail marked mid November 2018 thru March 2019, and maintain the trail/signage throughout the season.
If there is any questions please contact me at 608-317-8946 Gary.
Thank you for your time
Gary Hanson
President
Coulee Sno-Drifter's
Snowmobile Club
Onalaska WI.

STAFF REVIEW SUMMARY

CITY OF ONALASKA
BOARD OF PUBLIC WORKS

October 2, 2018

Agenda Item:	#5
Project/Item Name:	2018 – 2020 Capital Improvements Budget
Location:	Citywide
Requested Action:	Discussion on budget and financing plan
Staff Report/ Description:	2018 – 2020 Capital Improvements Budgets are included in the packet for your review. It should be noted that the 2018, 2019 and 2020 Capital Improvement budgets all include water, sanitary sewer and storm water projects that are proposed to be funded as part of the 2019 financing package. 2019 General Fund projects have been included for possible financing in the 2019 financing plan. Baird Public Finance will give a presentation on possible financing plan including the use of mortgage revenue bonding. Hawkins Ash CPA's will give a presentation on rate impacts if the projects move forward. The proposed budget will need to be discussed at the October and November Board of Public Works meetings with reductions made to meet anticipated budget constraints. A public hearing will be scheduled for the December Board of Public Works meeting regarding a final proposed 2019 Capital Improvements budget
Attachments:	2018 - 2020 proposed Capital Improvements budgets, and Baird financing outline

#5-A

BAIRD

City of Onalaska

2019 FINANCING DISCUSSION
SEPTEMBER 24, 2018

Baird Public Finance

Brad Viegut
Managing Director
414.298.7540
bviegut@rwbaird.com

City of Onalaska

SUMMARY OF BQ STATUS

- BQ interest rates are typically lower than debt issued non-BQ
- $10 million of new debt (excluding refundings) may be issued BQ per calendar year
- 2018 debt
  - $5,195,000 BQ debt issued
    - $1,570,000 NAN
    - $3,625,000 Bonds
    - *$4,805,000 BQ capacity remaining*
- 2019 projected financing needs
  - $3,895,000 G.O.
  - $2,390,000 Storm
  - $9,030,000 Water/Sewer
- 2019 debt issued as NBQ is estimated to increase interest expense approximately $200,000 vs. BQ issuance

City of Onalaska

SUMMARY OF BQ STATUS

A strategy to issue 2019 debt as BQ:

- 2018
  - Issue $4,650,000 BQ for 2019 projects
- 2019
  - Refunding of 2018 NANs does not count toward 2019 BQ
    - *Green font on following page*
    - Aggregate par amount issued at one time cannot exceed $10,000,000 to be BQ
      - Separating the G.O. & Storm issues from the Water/Sewer issue provides that all three long-term issues can be issued BQ

City of Onalaska

COUNCIL ADOPTS AWARD RESOLUTIONS – BANK QUALIFIED

NAN

- December
  - $4,650,000
    - *$3,500,000 General*
    - *$1,150,000 Water/Sewer*

G.O. Refunding Bonds

- March
  - $3,895,000
    - *$395,000 Refund General portion of 2018 NAN*
    - *$3,500,000 Refund General portion of 2018 NAN*

Storm Revenue Bonds

- March
  - $2,390,000
    - *$230,000 Refund Storm portion of 2018 NAN*
    - *$1,990,500 Storm Water projects*

Water & Sewer Revenue Bonds

- April
  - $9,030,000
    - *$945,000 Refund Water/Sewer portion of 2018 NAN*
    - *$1,150,000 Refund Water/Sewer portion of 2018 NAN*
    - *$6,409,000 Water/Sewer projects*

HAWKINS | ASH
CPAs

City of Onalaska, Wisconsin
Estimated Storm Water Cash Flow

	2020 Estimate for rate increase	Projection 2020	Projection 2019	Estimate 2018	Actual 12/31/2017	Actual 12/31/2016
Operating Revenue	830,189	830,189	830,189	817,016	789,494	771,590
Operating Expenses						
Operations, maintenance, and general	466,160	466,160	457,019	423,700	386,970	364,045
Taxes	13,803	13,803	13,532	12,360	11,707	10,263
Depreciation	610,702	610,702	591,635	540,098	524,511	517,873
Total Operating Expenses	1,090,665	1,090,665	1,062,186	976,158	923,188	892,181
Operating (loss)	(260,476)	(260,476)	(231,997)	(159,142)	(133,694)	(120,591)
Nonoperating Revenues (Expenses)						
Interest income	700	700	700	686	884	696
Interest and fiscal charges (existing debt)	(120,973)	(120,973)	(129,929)	(140,229)	(153,893)	(143,443)
Misc non operating income (expense)	30,051	30,051	24,801	29,823	44,070	47,501
Total Nonoperating Revenue (Expenses)	(90,222)	(90,222)	(104,428)	(109,720)	(108,939)	(95,246)
Change in Net Assets	(350,698)	(350,698)	(336,425)	(268,862)	(242,633)	(215,837)
Add back depreciation	610,702	610,702	591,635	540,098	524,511	517,873
Subtract loan principal payments existing loan	(229,644)	(229,644)	(221,635)	(205,525)	(755,183)	(180,033)
Subtract capital project additions	-	(370,000)	(1,626,300)	(224,000)	-	-
Subtract capital asset additions	-	-	(38,610)	(7,764)	(324,618)	(228,892)
Timing of receivables/payables	-	-	-	-	29,487	100,370
Recapture of cash used (over 5 years)	(29,000)	-	-	-	-	-
Add proceeds from loan	-	-	2,226,300	230,000	868,445	80,000
Payment to escrow agent	-	-	-	-	(39,365)	-
Subtract principal and interest from new loan (MRB)	(161,976)	(161,976)	-	-	-	-
Subtract principal and interest from new loan (NAN)	-	-	(234,888)	(1,195)	-	-
Estimated Cash Flow	(160,616)	(501,616)	360,077	62,752	60,644	73,481
Cash balance beginning of year	392,982	894,598	534,521	471,769	411,125	337,644
Cash balance end of year	232,366	392,982	894,598	534,521	471,769	411,125

cash flow deficit: (160,616) (141,539) for 2019-2020 recapture over 5 years (28,307.80)

19% % of annual operating revenue

NUMBER OF BILLABLE ERU 12,109 approved increase for 2019
$ increase/ERU/qtr 3.32 0.38

STORM WATER

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CPAs

City of Onalaska, Wisconsin
Estimated Water Cash Flow

	Estimate 2020 for rate increase	Projection 2020	Projection 2019	Estimate 2018	Actual 12/31/2017	Actual 12/31/2016
Operating Revenue	2,338,925	2,338,925	2,338,925	2,139,522	2,378,978	2,231,701
Operating Expenses						
Operations, maintenance, and general	1,262,726	1,262,726	1,246,058	1,174,695	1,084,800	1,038,032
Taxes	41,401	41,401	40,630	33,619	35,760	36,287
Depreciation	772,660	772,660	741,565	700,941	692,608	628,809
Total Operating Expenses	2,076,787	2,076,787	2,028,253	1,909,255	1,813,168	1,703,128
Operating (loss)	262,138	262,138	310,672	230,267	565,810	528,573
Nonoperating Revenues (Expenses)						
Interest income	14,000	14,000	14,000	13,738	10,158	4,814
Interest and fiscal charges (existing debt)	(126,015)	(126,015)	(132,914)	(143,200)	(150,694)	(136,371)
Transfers out	(418,000)	(418,000)	(418,000)	(418,000)	(408,252)	(414,820)
Misc non operating income (expense)	(8,709)	(8,709)	(19,827)	(18,661)	237,063	(1,396)
Total Nonoperating Revenue (Expenses)	(538,724)	(538,724)	(556,741)	(566,123)	(311,725)	(547,773)
Change in Net Assets	(276,586)	(276,586)	(246,069)	(335,856)	254,085	(19,200)
Add back depreciation	772,660	772,660	741,565	700,941	692,608	628,809
add depreciation charge from sewer	78,972	78,972	78,972	78,972	78,972	76,225
Subtract loan principal payments existing loan	(445,308)	(445,308)	(434,621)	(428,647)	(520,049)	(3,801,051)
Subtract capital project additions	-	(2,141,001)	(2,373,300)	(722,000)	-	-
Subtract capital asset additions	-	-	(269,040)	(104,882)	(643,264)	(1,175,729)
Timing of payables/receivables	-	-	-	-	(76,596)	971,760
Add proceeds from loan	-		5,249,300	735,000	234,400	3,448,622
Payment to escrow agent	-	-	-	-	-	(195,836)
Special assessements received	3,000	3,000	3,000	3,000	2,216	5,592
Subtract principal and interest from new loan (MRB)	(370,423)	(370,423)	-	-	-	-
Subtract principal and interest from new loan (NAN)	-	-	(750,619)	(3,818)	-	-
Estimated Cash Flow	(237,685)	(2,378,686)	1,999,188	(77,290)	22,372	(60,808)
Cash balance beginning of year	634,663	3,013,349	1,014,161	1,091,451	1,069,079	1,129,887
Cash balance end of year	396,978	634,663	3,013,349	1,014,161	1,091,451	1,069,079

cash flow needed to break even: **(237,685)** **(456,788)** **for 2018-2020**
10% 3% simplified increase for 2019
actual will be determined by PSC

add'l income needed to get authorized rate of return **(500,000)**
21% add'l amount

Rate of Return (4.5 authorized)				
with projection numbers above	0.69%	1.19%	0.59%	3.74
with additional revenue of 500k	4.25%			

WATER
1 of 2

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CPAs

City of Onalaska, Wisconsin
Estimated Water Rate

	Projected est 12/31/2019	Estimate 12/31/2018
Res	483,387	445,865
comm	201,174	199,313
mf	78,277	80,541
govt	34,012	27,650
indust	7,140	6,642
irrig	29,908	12,662
Total cf of water used	833,898	772,674
Change from prior year	8%	
Add'l revenue needed	(737,685)	
increase in base	-	
increase to usage rate	737,685	
Increase per thousand to break even	$ 0.88	
Estimated charge per 100 CF of water used	$ 2.43	

3% simplified rate increase

Average user	old bill 2018	new 2019	increase	
2,300 CF/Qtr-usage charge only	$ 34.50	$ 35.65	$ 1.15	
base charge	16.50	17.00	0.50	
total	$ 51.00	$ 52.65	$ 1.65	3%

Average user	2019 bill	new 2020 estimate	increase	
2,300 CF/Qtr-usage charge only	$ 35.65	$ 55.89	$ 20.24	
base charge	17.00	17.00	-	
total	$ 52.65	$ 72.89	$ 20.24	38%

* current rates higher for residential and lower for nonres/irrigation

Water
2 of 2

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City of Onalaska, Wisconsin
Estimated Sewer Rate

	Projected est 12/31/2019	Estimate 12/31/2018	12/31/2017
res	349,133	351,843	346,423
comm	157,161	160,956	153,365
mf	66,387	68,544	64,229
govt	8,585	8,646	8,524
indust	6,007	5,541	6,474
irrig	-	-	-
Total per 100 CF of water used	587,272	595,529	579,015

Change from prior year	-1%
Add'l revenue needed	700,001
increase in base	-
increase to treatment rate	96,912
increase to transmission rate	603,089
Increase per thousand to break even	$ 1.03
New transmission charge per 100 CF of water used	$ 2.43

Average user 2,300 CF/Qtr	old bill 2018	new bill 2019	increase	
transmission charge	$ 32.20	$ 55.89	$ 23.69	
treatment charge	34.73	36.80	2.07	
base charge	6.50	6.50	-	
total bill	$ 73.43	$ 99.19	$ 25.76	35%

SEWER

2 of 2

HAWKINS | ASH
CPAs

City of Onalaska, Wisconsin
Estimated Sewer Cash Flow

	Estimate 2020 for rate increase	Projection 2020	Projection 2019	Estimate 2018	Actual 12/31/2017	Actual 12/31/2016
Operating Revenue	1,925,400	1,925,400	1,925,400	2,010,600	1,841,435	1,844,276
Operating Expenses						
Operations, maintenance, and general	1,005,554	1,005,554	993,782	850,365	789,059	771,402
La Crosse treatment charge	983,693	983,693	936,850	936,850	887,316	908,824
Taxes	41,223	41,223	40,415	28,109	26,242	23,993
Depreciation	604,664	604,664	565,099	522,698	529,887	468,913
Total Operating Expenses	2,635,134	2,635,134	2,536,146	2,338,022	2,232,504	2,173,132
Operating (loss)	(709,734)	(709,734)	(610,746)	(327,422)	(391,069)	(328,856)
Nonoperating Revenues (Expenses)						
Interest income	21,000	21,000	21,000	29,654	20,248	5,707
Interest and fiscal charges (existing debt)	(52,829)	(52,829)	(55,656)	(61,724)	(63,648)	(55,519)
Misc non operating income (expense)	(32,311)	(32,311)	110,764	(30,381)	(30,773)	(25,550)
Total Nonoperating Revenue (Expenses)	(64,140)	(64,140)	76,108	(62,451)	(74,173)	(75,362)
Change in Net Assets	(773,874)	(773,874)	(534,638)	(389,873)	(465,242)	(404,218)
Add back depreciation	604,664	604,664	565,099	522,698	529,887	468,913
Less depreciation charge from water	(78,972)	(78,972)	(78,972)	(78,972)	(78,972)	(76,225)
Subtract loan principal payments existing loan	(165,379)	(165,379)	(158,936)	(150,548)	(200,842)	(105,377)
Subtract capital project additions	-	(702,000)	(2,495,300)	(205,000)	-	-
Subtract capital asset additions	-	-	(354,310)	(28,757)	(892,690)	(243,229)
Recapture of cash used	(50,000)	-	-	-	-	-
Timing of payables/receivables	-	-	-	-	729,627	(315,344)
Add proceeds from loan	-	-	3,407,300	210,000	245,600	856,449
Payment to escrow agent	-	-	-	-	-	(118,374)
Special assessements received	4,000	4,000	4,000	4,000	4,410	5,530
Subtract principal and interest from new loan (MRB)	(240,440)	(240,440)	-	-	-	-
Subtract principal and interest from new loan (NAN)	-	-	(214,463)	(1,091)	-	-
Estimated Cash Flow	(700,001)	(1,352,001)	139,780	(117,543)	(128,222)	68,125
Cash balance beginning of year	1,694,014	3,046,015	2,906,235	3,023,778	3,152,000	3,083,875
Cash balance end of year	994,013	1,694,014	3,046,015	2,906,235	3,023,778	3,152,000

cash flow needed:	(700,001)	(1,212,221)	for 2019-2020
	36%		
Based on capital project borrowing of	3,407,300		
		% of operating revenue	
cash flow needed for capital projects	(240,440)	12.5%	
cash flow related to increase in treatment charges	(46,843)	2.4%	
cash flow needed for operations	(412,718)	21.4%	

La Crosse treatment charges	983,693	936,850	936,850		
Treatment rate	1.68	1.60	1.57	1.51	

SEWER

1 of 2

#5-C

CITY OF ONALASKA
2019 Capital Improvement Projects - *Proposed*

	Sanitary Sewer	Water	Storm Sewer	Tourism	General	Total Cost	Less Amount Already Bonded	Less Amount Other Sources	Amount Needed by Borrowing
I. Public Works Department									
1. Sidewalk program (NEW)									
a. Sidewalk replacement program (1/7 City)	$ -	$ -	$ -	$ -	$ 75,000	$ 75,000	$ -	$ -	$ 75,000
b. Miscellaneous repairs throughout City	$ -	$ -	$ -	$ -	$ 25,000	$ 25,000	$ -	$ -	$ 25,000
2. Pavement maintenance program w/ La Crosse County Hwy Dept (NEW)	$ -	$ -	$ -	$ -	$ 300,000	$ 300,000	$ -	$ -	$ 300,000
3. Green Coulee intersection improvements at East Main St (2015 #16, 2016 #7, 2017 #6, 2018 #6)									
a. Design							*2018 CIP #6*		
1) Schematic Design	$ -	$ -	$ -	$ -	$ 100,000	$ 100,000	$ 100,000	$ -	$ -
2) Preliminary Design	$ -	$ -	$ -	$ -	$ 200,000	$ 200,000	$ -	$ -	$ 200,000
4. Street paving - Irvin St from 2nd Ave S to 3rd Ave S including streetscaping (PASER 2.0) (2018 #26)	$ -	$ -	$ -	$ -	$ 186,000	$ 186,000	*2018 CIP #26* $ 62,000	$ -	$ 124,000
5. Sand Lake Rd reconstruction - Redwood St to Riders Club Rd (2016 #14, 2017 #7, 2018 #7)									
a. Design (2019)	$ -	$ -	$ -	$ -	$ 50,000	$ 50,000	$ -	$ -	$ 50,000
b. Construction (2021)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
c. USH 53 - Access rights along Sand Lake Rd - Future intersection	$ -	$ -	$ -	$ -	$ 85,000	$ 85,000	$ -	$ -	$ 85,000
6. Stormwater Management pond capacity enhancements @ USH 53 & Sand Lake Rd (2018 CIP #8)	$ -	$ -	$ 137,000	$ -	$ -	$ 137,000	$ -	$ -	$ 137,000
7. Railroad quiet zone study 2nd Ave SW & Irvin St									
a. Design Study (2013 CIP #24, 2017 CIP #3)	$ -	$ -	$ -	$ -	$ 15,000	$ 15,000	*2006 CIP* $ 15,000	$ -	$ -
b. Construction (2017 CIP #3)	$ -	$ -	$ -	$ -	$ 30,000	$ 30,000	*2017 CIP* $ 30,000	$ -	$ -
8. Street paving - Pinecrest Ln, Valley Ct, Fairfield Pl, 13th Ave S (2017 #22, 2018 #10) (PASER 2.5)	$ -	$ -	$ -	$ -	$ 145,000	$ 145,000	$ -	$ -	$ 145,000

CITY OF ONALASKA
2019 Capital Improvement Projects - *Proposed*

	Sanitary Sewer	Water	Storm Sewer	Tourism	General	Total Cost	Less Amount Already Bonded	Less Amount Other Sources	Amount Needed by Borrowing
I. Public Works Department (cont'd)									
9. Street reconstruction - 2nd Ave SW - STH 35 to railroad tracks & Oak Forest Dr - 2nd Ave SW to STH 35 (2017 #23, 2018 #11) (PASER 2.0)	$ 10,000	$ 257,000	$ 78,000	$ -	$ 233,000	$ 578,000	$ -	$ -	$ 578,000
10. Abbey Rd reconstruction, City limits to Commerce Rd (2017 #26, 2018 #13)								*(Wtr & Swr Expense)*	
a. Design	$ 45,000	$ 45,000	$ -	$ -	$ -	$ 90,000	$ -	$ 90,000	$ -
b. Construction	$ 445,000	$ 487,000	$ 187,000	$ -	$ 402,000	$ 1,521,000	$ -	$ -	$ 1,521,000
11. Commerce Road reconstruction (NEW) - Abbey Rd to Abbey Rd	$ 133,000	$ 184,000	$ 86,000	$ -	$ 196,000	$ 599,000	$ -	$ -	$ 599,000
12. Green Coulee water high service zone improvements Reservoir Design (2016 #9, 2017 #17, 2018 #10)							*2016 CIP #11 ($50,000)* *2017 CIP #17 ($20,000)* *2018 CIP #16 ($80,000)*		
a. Design	$ -	$ 150,000	$ -	$ -	$ -	$ 150,000	$ 150,000	$ -	$ -
b. Construction (2020) Est. $1,000,000)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
13. Street paving - Oak Ave N from Vilas St to Westwood Dr, Parkridge Dr, Sunset Pl, Terrace Dr & Sunrise Ct - (2018 #20) (PASER 2.1)	$ -	$ -	$ -	$ -	$ 357,000	$ 357,000	$ -	$ -	$ 357,000
14. Street paving - Wilson St from 13th Ave S to Oak Forest Dr (2018 #21) (PASER 2.0)	$ -	$ -	$ -	$ -	$ 188,000	$ 188,000	$ -	*LRIP* $ 54,940	$ 133,060
15. Sanitary sewer slip lining (2018 #23)	$ 400,000	$ -	$ -	$ -	$ -	$ 400,000	$ -	$ -	$ 400,000
16. Street paving - Pierce St from Oak to 8th, 7th Ave N from Madison to Well St (2018 #27) (PASER 2.3)	$ -	$ -	$ -	$ -	$ 100,000	$ 100,000	$ -	$ -	$ 100,000
17. 6th Ave lift station - reconstruction (2017 #30, 2018 #28)							*2017 CIP*		
a. Preliminary Design (2017)	$ 40,000	$ -	$ -	$ -	$ -	$ 40,000	$ 40,000	$ -	$ -
							2018 CIP		
b. Final Design & Bidding (2018)	$ 60,000	$ -	$ -	$ -	$ -	$ 60,000	$ 60,000	$ -	$ -
c. Construction (2019)	$ 740,000	$ -	$ -	$ -	$ -	$ 740,000	$ -	$ -	$ 740,000
18. Traffic signal replacement/renovation (2018 #29)									
a. Theater Rd & East Main St	$ -	$ -	$ -	$ -	$ 170,000	$ 170,000	$ -	$ -	$ 170,000
19. John St storm sewer lining & rehabilitation (2018 #32)	$ -	$ -	$ 150,000	$ -	$ -	$ 150,000	$ -	$ -	$ 150,000

CITY OF ONALASKA
2019 Capital Improvement Projects - *Proposed*

	Sanitary Sewer	Water	Storm Sewer	Tourism	General	Total Cost	Less Amount Already Bonded	Less Amount Other Sources	Amount Needed by Borrowing
I. Public Works Department (cont'd)									
20. Sand Lake Rd street lighting - Rolling Oaks to CTH SN (2018 #33)	$ -	$ -	$ -	$ -	$ 113,000	$ 113,000	$ -	$ -	$ 113,000
21. Street reconstruction - Troy St -Hwy 35 to 6th Ave N (PASER 1.9) (2018 #64)	$ 222,000	$ 251,000	$ 699,000	$ -	$ 235,000	$ 1,407,000	$ -	$ -	$ 1,407,000
22. Street paving - Monica Ct, Monica Ln & Hope Ct (PASER 2.0) (NEW)	$ -	$ -	$ -	$ -	$ 139,000	$ 139,000	$ -	$ -	$ 139,000
23. Court St lift station - replacement (NEW)	$ 300,000	$ -	$ -	$ -	$ -	$ 300,000	$ -	*TIF* $ 150,000	$ 150,000
24. CTH SN - La Crosse County - Onalaska's share for intersection improvements at CTH SN & CTH OT (NEW)	$ -	$ -	$ -	$ -	$ 45,000	$ 45,000	$ -	$ -	$ 45,000
25. Election equipment - electronic poll books (NEW)	$ -	$ -	$ -	$ -	$ 50,000	$ 50,000	$ -	$ -	$ 50,000
26. Cemetery fencing (NEW)	$ -	$ -	$ -	$ -	$ 60,000	$ 60,000	$ -	$ -	$ 60,000
27. One-ton truck w/plow, box & anti-icing system (NEW)(No trade in)	$ 20,000	$ 20,000	$ 20,000	$ -	$ 20,000	$ 80,000	$ -	$ -	$ 80,000
28. Alley Paving - 2nd - 3rd/Main - King (NEW)	$ -	$ -	$ -	$ -	$ 50,000	$ - $ 50,000	$ -	$ -	$ 50,000
29. Public Works Facility - heated storage addn to west end of bldg (60' X 156') (NEW) (Design/Construction)	$ 263,500	$ 263,500	$ 263,500	$ -	$ 263,500	$ 1,054,000	$ -	$ -	$ 1,054,000
30. French Rd/Crestwood Ln areas - (Proposed 2011)							*2015 CIP ($60,700)* *2018 CIP ($58,300)*		
a. Project Design	$ 14,700	$ 84,700	$ -	$ -	$ 19,600	$ 119,000	$ 119,000	$ -	$ -
b. Booster Station	$ -	$ 800,000	$ -	$ -	$ -	$ 800,000	$ -	$ -	$ 800,000
c. Crestwood Ln - street improvements	$ 106,000	$ 285,000	$ -	$ -	$ 170,000	$ 561,000	$ -	$ -	$ 561,000
d. Resevoir (2022) Est $1,200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
31. Cemetery Master Plan (NEW)	$ -	$ -	$ -	$ -	$ 20,000	$ 20,000	$ -	$ -	$ 20,000

CITY OF ONALASKA
2019 Capital Improvement Projects - *Proposed*

	Sanitary Sewer	Water	Storm Sewer	Tourism	General	Total Cost	Less Amount Already Bonded	Less Amount Other Sources	Amount Needed by Borrowing
I. Public Works Department (cont'd)									
32. Street paving - 10th Ave S from Schafer to Green, 11th Ave S from Green to Hickory, Hickory St from 10th Ave S to 12th Ave S, Green St from 10th Ave S to 11th Ave S, Placid Ct, La Crosse St from 9th Ave S to 11th Ave S, Fairfield St & Michael Ct (PASER 2.5) (NEW)	$ -	$ -	$ -	$ -	$ 420,000	$ 420,000	$ -	$ -	$ 420,000
33. Wellhouse improvements - chemical rooms (NEW)									
a. Design (3 well houses)	$ -	$ 40,000	$ -	$ -	$ -	$ 40,000	$ -	$ -	$ 40,000
b. Construction (2020) Est. $250,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
34. Update existing HVAC controls @ Public Works facility (NEW)	$ 5,800	$ 5,800	$ 5,800	$ -	$ 5,800	$ 23,200	$ -	$ -	$ 23,200
35 Fiber computer cable from City Hall to Public Works Facility & Library (NEW)							*2018 CIP #24 ($33,000)*		
a. Design (2018)	$ 10,000	$ 10,000	$ 3,000	$ -	$ 10,000	$ 33,000	$ 33,000	$ -	$ -
b. Construction (2019)	$ 50,000	$ 50,000	$ -	$ -	$ 200,000	$ 300,000	$ -	$ -	$ 300,000
II. Planning Department									
36 Urban Forestry - General (NEW)	$ -	$ -	$ -	$ -	$ 25,000	$ 25,000	$ -	$ -	$ 25,000
37.. Urban Forestry - Tree Planting (NEW)	$ -	$ -	$ -	$ -	$ 50,000	$ 50,000	$ -	$ -	$ 50,000
38 Old City Shop site - building removal and site restoration work (NEW)	$ -	$ -	$ -	$ -	$ 250,000	$ 250,000	$ -	*TIF* $ 250,000	$ -
39 Bluffland Coalition (NEW)	$ -	$ -	$ -	$ -	$ 10,000	$ 10,000	$ -	$ -	$ 10,000
40 Impact/Park Fee Study (New)	$ -	$ -	$ -	$ -	$ 25,000	$ 25,000	$ -	$ -	$ 25,000

CITY OF ONALASKA
2019 Capital Improvement Projects - *Proposed*

	Sanitary Sewer	Water	Storm Sewer	Tourism	General	Total Cost	Less Amount Already Bonded	Less Amount Other Sources	Amount Needed by Borrowing
III. Fire Department									
41 Land & Facilities (Proposed 2008)									
a. Purchase land (1.5 acres@$6.00/sq ft) Fire Station #2 - STH 16 & I-90 vicinity	$ -	$ -	$ -	$ -	$ 396,000	$ 396,000	$ -	$ -	$ 396,000
42 Exhaust system for appartus bay/living quarters (NEW)	$ -	$ -	$ -	$ -	$ 80,000	$ 80,000	$ -	Grant $ 72,000	$ 8,000
43 Rapid Deployment Craft (NEW)	$ -	$ -	$ -	$ -	$ 8,000	$ 8,000	$ -	$ -	$ 8,000
IV. Parks & Recreation Department									
44 Rowe Park									
a. Parking lot for Shelter #1 (2018 #47)	$ -	$ -	$ -	$ -	$ 60,000	$ 60,000	$ -	$ -	$ 60,000
45 Miscellaneous concrete - accessibility for parks, approx. 400 linear ft (NEW)	$ -	$ -	$ -	$ -	$ 12,000	$ 12,000	$ -	$ -	$ 12,000
46 Open air shelters									
a. Meier Farm	$ -	$ -	$ -	$ -	$ 30,000	$ 30,000	$ -	*Park Fund* $ 15,000	$ 15,000
b. Hilltopper Heights	$ -	$ -	$ -	$ -	$ 30,000	$ 30,000	$ -	*Park Fund* $ 15,000	$ 15,000
47 Rowe Park									
a. Playground replacement (NEW)	$ -	$ -	$ -	$ -	$ 150,000	$ 150,000	$ -	$ -	$ 150,000
b. Window replacement at shop (NEW)	$ -	$ -	$ -	$ -	$ 4,000	$ 4,000	$ -	$ -	$ 4,000
48 Oak Park playground replacement (NEW)	$ -	$ -	$ -	$ -	$ 50,000	$ 50,000	$ -	$ -	$ 50,000
49 Public art (Proposed 2018 #34)	$ -	$ -	$ -	$ -	$ 90,000	$ 90,000	$ -	$ -	$ 90,000
V. Police									
50 Squad car - unmarked (2018 #48)	$ -	$ -	$ -	$ -	$ 48,000	$ 48,000	$ -	$ -	$ 48,000
51 Squad cars (2) (NEW)	$ -	$ -	$ -	$ -	$ 121,000	$ 121,000	$ -	$ -	$ 121,000

CITY OF ONALASKA
2019 Capital Improvement Projects - *Proposed*

	Sanitary Sewer	Water	Storm Sewer	Tourism	General	Total Cost	Less Amount Already Bonded	Less Amount Other Sources	Amount Needed by Borrowing
VI. Omni Center									
52 Close in shelter area west of Arena #1 (NEW)	$ -	$ -	$ -	$ -	$ 52,420	$ 52,420	$ -	$ -	$ 52,420
53 Cabinets & counter in Concession #1 (NEW)	$ -	$ -	$ -	$ -	$ 18,500	$ 18,500	$ -	$ -	$ 18,500
54 Replace main power panels in Building #1 (NEW)	$ -	$ -	$ -	$ -	$ 25,490	$ 25,490	$ -	$ -	$ 25,490
55 Electric ice edger (NEW)	$ -	$ -	$ -	$ -	$ 6,750	$ 6,750	$ -	$ -	$ 6,750
VI. Omni Center									
56 Locker room showers & flooring (NEW)	$ -	$ -	$ -	$ -	$ 5,500	$ 5,500	$ -	$ -	$ 5,500
57 Used ice resurfacer (NEW)	$ -	$ -	$ -	$ -	$ 75,000	$ 75,000	$ -	Trade $ 2,000	$ 73,000
58 Carpet Arena #2 entry (NEW)	$ -	$ -	$ -	$ -	$ 12,000	$ 12,000	$ -	$ -	$ 12,000
VII. Library									
59 New chairs & foot stools in general areas (NEW)	$ -	$ -	$ -	$ -	$ 22,755	$ 22,755	$ -	$ -	$ 22,755
60 LED lights (NEW)	$ -	$ -	$ -	$ -	$ 10,000	$ 10,000	$ -	$ -	$ 10,000
61 Ceiling fans (NEW)	$ -	$ -	$ -	$ -	$ 5,290	$ 5,290	$ -	$ -	$ 5,290
62 Repaint under walkway (NEW)	$ -	$ -	$ -	$ -	$ 2,000	$ 2,000	$ -	$ -	$ 2,000
VIII. City Hall									
63 Add dedicated water line to Fire Dept from water main (NEW)	$ -	$ -	$ -	$ -	$ 9,500	$ 9,500	$ -	$ -	$ 9,500
64 Roof replacement over original bldg - Council Chambers & PD and Fire areas (NEW)	$ -	$ -	$ -	$ -	$ 44,250	$ 44,250	$ -	$ -	$ 44,250
65 New kitchen & living area in Fire Dept living area (NEW)	$ -	$ -	$ -	$ -	$ 75,000	$ 75,000	$ -	$ -	$ 75,000
66 Parking lot maintenance (NEW)	$ -	$ -	$ -	$ -	$ 15,000	$ 15,000	$ -	$ -	$ 15,000

CITY OF ONALASKA
2019 Capital Improvement Projects - *Proposed*

	Sanitary Sewer	Water	Storm Sewer	Tourism	General	Total Cost	Less Amount Already Bonded	Less Amount Other Sources	Amount Needed by Borrowing
VIII. City Hall (cont)									
67 Cement & brick work around City Hall & Main St pillars (NEW)	$ -	$ -	$ -	$ -	$ 50,000	$ 50,000	$ -	$ -	$ 50,000
68 Carpet replacement - Police Dept & Fire Dept living quarters (NEW)	$ -	$ -	$ -	$ -	$ 25,000	$ 25,000	$ -	$ -	$ 25,000
69 Paint stairwells (4) & lower level hallways (NEW)	$ -	$ -	$ -	$ -	$ 4,500	$ 4,500	$ -	$ -	$ 4,500
IX. Information Technology Dept									
70 Microsoft Windows upgrade & Microsoft Suite update for all computers	$ -	$ -	$ -	$ -	$ 25,000	$ 25,000	$ -	$ -	$ 25,000
71 Phone system update, includes phones & installation/setup	$ -	$ -	$ -	$ -	$ 175,000	$ 175,000	$ -	$ -	$ 175,000
72 Transfer of new hire info from NeoGov to Tyler Technologies	$ -	$ -	$ -	$ -	$ 40,000	$ 40,000	$ -	$ -	$ 40,000
73 Emergency Operations Center updating technology in the room (wiring, etc.)	$ -	$ -	$ -	$ -	$ 40,000	$ 40,000	$ -	$ -	$ 40,000
TOTALS:	***$ 2,865,000***	***$ 2,933,000***	***$ 1,629,300***	***$ -***	***$ 6,855,855***	***$ 14,283,155***	***$ 609,000***	***$ 648,940***	***$ 13,025,215***

	Projected Costs	Less Already Bonded	Less Other Sources	Net Project Cost	Issuance Costs	Projected Bond Issue
Sewer Projects	$ 2,865,000	$ 124,700	$ 45,000	$ 2,695,300	$ -	$ 2,695,300
Water Projects	$ 2,933,000	$ 244,700	$ 45,000	$ 2,643,300	$ -	$ 2,643,300
Storm Water Projects	$ 1,629,300	$ 3,000		$ 1,626,300	$ -	$ 1,626,300
Tourism	$ -	$ -		$ -	$ -	$ -
General Projects	$ 6,855,855	$ 236,600	$ 558,940	$ 6,060,315	$ -	$ 6,060,315
Grand Totals	$ 14,283,155	$ 609,000	$ 648,940	$ 13,025,215	$ -	$ 13,025,215

CITY OF ONALASKA
2018 Capital Improvement Projects - ADOPTED / TO BE REFINANCED

	Sanitary Sewer	Water	Storm Sewer	Total Cost	Less Amount Already Bonded	Less Amount Other Sources	Amount Needed to be Refinanced
I. Public Works Department							
4. Water Main Replacement & Street Reconstruction (incl. curb & gutter) - Holiday Heights (2015 Proposed #10, 2016 Proposed #4 & 2017 Proposed #4), East Young Dr, West Young Dr, Medary Ln, & Hoffman Pl - (PASER 2.4)	$ 76,000	$ 585,000	$ 200,000	$ 861,000	$ -	$ -	$ 861,000
9. Street reconstruction - King St, 5th Ave N to 6th Ave N & 6th Ave N reconstruction - Main St to Monroe St (2015 Proposed #25, 2016 Proposed #15, 2017 Proposed #8) (PASER 2.5)	$ 9,000	$ 51,000	$ 21,000	$ 81,000	$ -	$ -	$ 81,000
14. Riders Club Rd street renovation (2014 CIP #21, 2015 CIP #7, 2016 CIP #33 & 2017 CIP #15) - STH 35 to Sand Lake Rd (PASER 2.6)							
a. Design (100%)	$ -	$ -	$ -	$ -		$ -	$ -
b. Right of way acquisition (100%)	$ -	$ -	$ -	$ -		$ -	$ -
c. Construction (80% STP-U Funding) (20% - City Funding)	$ 20,000	$ -	$ -	$ 20,000	$ -		$ 20,000
15. Braund St/PH Design - Braund St to Theater Rd PH to Hwy 16 - street reconstruction (2014 CIP #22, 2015 CIP #8, 2016 CIP #34, & 2017 CIP #16)							
a. Design - PASER 2.0 (100%)	$ -	$ -	$ -	$ -		$ -	$ -
b. Right of way acquisition local (100%)	$ -	$ -	$ -	$ -			$ -
c. Construction (80% STP-U) (20% City)	$ 6,000	$ -	$ -	$ 6,000	$ -		$ 6,000

CITY OF ONALASKA
2018 Capital Improvement Projects - ADOPTED / TO BE REFINANCED

	Sanitary Sewer	Water	Storm Sewer	Total Cost	Less Amount Already Bonded	Less Amount Other Sources	Amount Needed to be Refinanced
24. Fiber computer cable from City Hall to Public Works Facility & Library (NEW)							
a. Design (2018)	$ 10,000	$ 10,000	$ 3,000	$ 23,000	$ -	$ -	$ 23,000
b. Construction (2019) - $165,000	$ -	$ -	$ -		$ -	$ -	$ -
25. SCADA System upgrades (NEW)	$ 44,000	$ 76,000	$ -	$ 120,000	$ -	$ -	$ 120,000
28. 6th Ave lift station - reconstruction (2017 #30)							
a. Preliminary Design (2017)		$ -	$ -			$ -	$ -
b. Final Design & Bidding (2018)	$ 40,000	$ -	$ -	$ 40,000	$ -	$ -	$ 40,000
b. Construction (2019) $600,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTALS:	***$ 205,000***	***$ 722,000***	***$ 224,000***	***$ 1,151,000***	***$ -***	***$ -***	***$ 1,151,000***

	Projected Costs	Less Already Bonded	Less Other Sources	Issuance Costs	Projected Bond Issue
Sewer Projects	$ 205,000	$ -	$ -	$ -	$ 205,000
Water Projects	$ 722,000		$ -	$ -	$ 722,000
Storm Water Projects	$ 224,000	$ -		$ -	$ 224,000
Grand Totals	$ 1,151,000	$ -	$ -	$ -	$ 1,151,000

CITY OF ONALASKA
2020 Capital Improvement Projects - *Proposed*

		Sanitary Sewer	Water	Storm Sewer	Total Cost	Less Amount Already Bonded	Less Amount Other Sources	Amount Needed by Borrowing
I. Public Works Department								
1	Green Coulee water high service zone reservoir	$ -	$ 1,100,000	$ -	$ 1,100,000	$ -	$ -	$ 1,100,000
2	11th Ave N - forcemain replacement/street reconstruction - Main St to Well St , Monroe St 11th to East, Pierce St 11th to 12th	$ 204,000	$ 189,000	$ 14,000	$ 407,000	$ -	$ -	$ 407,000
3	SCADA System upgrades	$ 44,000	$ 76,000	$ -	$ 120,000	$ -	$ -	$ 120,000
4	Vacuum Street Sweeper	$ -	$ -	$ 250,000	$ 250,000	$ -	$ -	$ 250,000
5	Wellhouse improvements - chemical rooms	$ -	$ 250,000	$ -	$ 250,000	$ -	$ -	$ 250,000
6	Street reconstruction - Sunset Vista Subdivision (2018 #62)							
	a. West Ave - Troy St to Royal	$ 95,000	$ 165,000	$ 23,000	$ 283,000	$ -	$ -	$ 283,000
	b. Park Ave W - Troy St to Park	$ -	$ -	$ 39,000	$ 39,000	$ -	$ -	$ 39,000
	c. Park Ave - Troy St to Royal St	$ 129,000	$ 153,000	$ 25,000	$ 307,000	$ -	$ -	$ 307,000
	d. 4th Ave N - Troy St to Quincy St	$ 161,000	$ 197,000	$ 19,000	$ 377,000	$ -	$ -	$ 377,000
	e. Royal St - STH 35 to East Ave	$ 69,000	$ 111,000	$ -	$ 180,000	$ -	$ -	$ 180,000
	TOTALS:	***$ 702,000***	***$ 2,241,000***	***$ 370,000***	***$ 3,313,000***	***$ -***	***$ -***	**$ 3,313,000**

	Projected Costs	Less Already Bonded	Less Other Sources	Issuance Costs	Projected Bond Issue
Sewer Projects	$ 702,000	$ -	$ -	$ -	$ 702,000
Water Projects	$ 2,241,000		$ -	$ -	$ 2,241,000
Storm Water Projects	$ 370,000	$ -		$ -	$ 370,000
Grand Totals	$ 3,313,000	$ -	$ -	$ -	$ 3,313,000

STAFF REVIEW SUMMARY

CITY OF ONALASKA
BOARD OF PUBLIC WORKS

October 2, 2018

Agenda Item: #6

Project/Item Name: 2018 quiet zone memo

Location: 2nd Ave. SW & Irvin Street

Requested Action: Discussion on memo and submission of quiet zone request

Staff Report/Description: Quiet zone materials have been updated with the most recent changes at the Great River Landing and recent train data. A diagnostic meeting to look at the crossings was held with the City, Consultant, BNSF, Wis. DOT, OCR, and FRA. Based upon the meeting and updated data a memo was produced by the consultant outlining what future action can be taken. Staff will be bringing forward information on liability of railroad quiet zones from the City attorney and City insurance provider CVMIC.

Attachments: Quiet zone memo

Holter, Jarrod

From: Tom Mann <tem@cvmic.com>
Sent: Tuesday, September 25, 2018 8:16 AM
To: Rick Balistrieri; Holter, Jarrod
Subject: RE: Railroad quiet zone liability

Good Morning Jarrod

In CVMIC's entire history, we have never had a claim resulting from railroad quite zone liability. The fact that you institute or do not institute a quiet zone is a discretionary decision for which you have immunity under Wis. Stat. 893.80 (4). I would also contend that the level at which you set a standard is also a discretionary decision and immunity would also apply to that.

If you have further questions or comments, please feel free to contact me.

Cities and Villages
MUTUAL INSURANCE COMPANY
9898 W. Bluemound Road
Wauwatosa, WI 53226

Tom Mann, ARM
Director of Liability Claims
tel: (414) 831-5988
office: (262) 784-5666 (ext 188)
email: tem@cvmic.com
web: cvmic.com
fax: (262) 784-5599

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From: Rick Balistrieri
Sent: Tuesday, September 25, 2018 6:56 AM
To: Holter, Jarrod <jholter@onalaskawi.gov>
Cc: Tom Mann <tem@cvmic.com>
Subject: RE: Railroad quiet zone liability

Good morning, I have forwarded this message to Director of Liability Tom Mann, I believe he will be your best resource.

Rick

Rick

From: Holter, Jarrod <jholter@onalaskawi.gov>
Sent: Monday, September 24, 2018 5:18 PM
To: Rick Balistrieri <pmb@cvmic.com>
Subject: Railroad quiet zone liability

Rick,

I am looking for some information on railroad quiet zone liability. Fred thought I maybe should talk to Michelle Voskuil but I do not have her e-mail address. Can you forward it to me? Would she be the correct person to get in touch with?

Thank you,

C. Jarrod Holter, P.E.
City Engineer/Director of Public Works

City of Onalaska
(608)781-9537
jholter@cityofonalaska.com

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MEMORANDUM

TO:	Mr. Jarrod Holter, City Engineer/Director of Public Works
FROM:	Josh Cotter, P.E.
DATE:	August 15, 2018
RE:	Railroad Quiet Zone
	SEH No. ONALA 144842

This memo provides an update to the 2014 Railroad Quiet Zone study and the June 9, 2016 memo regarding implement a City wide quiet zone.

I. BACKGROUND

The City of Onalaska has been allocating effort to implement a Quiet Zone within its City limits since 2003. There are two railroad-highway grade crossings within the City limits; one is with Irvin Street and the other is with 2nd Avenue. Both at grade crossings are on the BNSF Railway Company (BNSF) St Croix Subdivision.

The act of silencing locomotive horns has been determined to increase the train-vehicle collision frequency by 66.8%. The Quiet Zone Rule is designed to prevent collisions that have been found to occur when motorists traverse crossings that locomotive horns are silenced at. To implement a compliant Quiet Zone, the risk index is quantified for each crossing within the proposed Quiet Zone utilizing DOT collision prediction formulas and DOT values for preventing the collisions. Safety Measures are then used to reduce the risk below certain thresholds. One threshold is average risk to the motoring public at public highway-rail grade crossings equipped with flashing lights and gates and at which locomotive horns are sounded (Nationwide Significant Risk Threshold or NSRT), the other is the determined risk to the motoring public when locomotive horns are routinely sounded at every public highway-rail grade crossing within the proposed Quiet Zone (Risk Index With Horns or RIWH). The recognized safety measures are also categorized as either a Supplemental Safety Measure (SSM) or an Alternate Safety Measure (ASM).

A. A SSM is a safety system or procedure that is determined by the Associate Administrator to be an effective substitute for the locomotive horn in the prevention of highway-rail casualties. Quiet Zones utilizing only SSMs to implement a Quiet Zone are able to be approved by designation of a public authority without the need for formal application to the FRA. There are five recognized SSMs: temporary closure of a highway-rail grade crossing (certain hours of every day), a four-quadrant gate system, gates with medians or channelization, one way street with gates, and permanent closure of the highway-rail grade crossing.

B. An ASM is a safety system or procedure, other than a SSM, which requires individual review by the Associate Administrator for determination to be an effective substitute for the locomotive horn in the prevention of highway-rail casualties at specific highway-rail grade crossings. Quiet Zones that do not meet the standards for public authority designation and are utilizing risk reduction credit allowed by the installation of ASM/s, are required to be individually reviewed by the FRA Associate Administrator through the Public Authority Application process. There are three recognized ASMs: modified SSMs, non-engineering ASMs, and Engineering ASMs.

II. QUIET ZONE UPDATE

Multiple items have changed since the initial study was performed in 2014. Some of the changes include; the large investment in the Great River Landing (which is immediately adjacent to the Irvin Street grade crossing), stakeholder representative changes, and the train/roadway traffic volumes. In addition to these ongoing changes, the initial effort found that SSMs were not a feasible option and that an ASM would be needed to implement a Quiet Zone at 2nd Avenue. While ASMs allow for a larger variety of implementation options, they require a formal Public Authority Application and an individualized review by the FRA. A Public Authority Application process is an additional step that requires the public authority (the City of Onalaska) to provide justification for the proposed amount of risk reduction, and it also must include a statement describing efforts taken by the public authority to address comments submitted by each stakeholder in response to the Notice of Intent (NOI). If the FRA determines that any of the comments are not satisfactorily addressed, the FRA may use its discretion with the proposed conditions and the application in general. Each application is reviewed individually by FRA staff in Washington DC, and takes 9+ months to receive feedback.

Given the long timeline of a formal application, the City found value in an additional diagnostic meeting to assemble the stakeholders and discuss the proposed improvements. This allows an opportunity for the City to better understand any comments and to discuss potential solutions. The diagnostic meeting was held on June 18, 2018 and the minutes of the meeting are attached. The sections below summarize the meeting and the remaining options.

A. PRE-DIAGNOSTIC MEETING

Prior to the diagnostic meeting information was compiled and updates were requested of each stakeholder. SEH assisted the City in determining which options would be presented for discussion at the diagnostic meeting. Using the crossing characteristics and past efforts as a guide, the following proposed improvements were proposed to be evaluated during the diagnostic meeting:

1. **2ND AVENUE**
   a. No changes
   b. Close off the commercial access in SW quadrant and install a 100'+ median on the south side of the tracks
   c. Close off the commercial access in SW quadrant, install a 100'+ median on the south side of the tracks, and install a 70' median on the north side of the tracks
   d. Close off the commercial access in SW quadrant, install a 100'+ median on the south side of the tracks, install a 70' median on the north side of the tracks, and install an additional gate across the commercial drive in the NE quadrant

2. **IRVIN STREET**
   a. No changes
   b. A 60' median to the west, and a 100'+ median to the east of the crossing
   c. The installation of two exit quadrant gates to the existing two quadrant gate system, to allow for a four quadrant gate system
   d. Install fence and gates to allow for a potential partial Quiet Zone

All of the stakeholders attended the diagnostic meeting. The stakeholders consist of the OCR, WisDOT, the FRA, BNSF, and the City of Onalaska. The stakeholders were to either provided the updates prior to or during the diagnostic meeting.

B. DIAGNOSTIC MEETING

The only update that altered the Quiet Zone Risk Index was a lower train count. The attached FRA Quiet Zone Calculator inputs and output are included to illustrate the current data and crossing risk. Most of the discussion was surrounding the proposed safety measure options for each crossing. While the remainder of the diagnostic meeting discussions can be seen in the attached meeting minutes, any additional consideration for each crossing is noted below:

1. **ADDITIONAL CONSIDERATIONS AT 2ND AVENUE**
   a. Forklift use across this crossing was noted.
   b. A pedestrian crossing the tracks at a location outside of the designated grade crossing was observed.
   c. Restricted vision due to placement of dumpsters.
   d. The lack of ability to restrict left turn movements out of the commercial driveway in the NE quadrant of the crossing.

2. **ADDITIONAL CONSIDERATIONS AT IRVIN STREET**
   a. The stated intent of this crossing is for pedestrian use and for: safety response, maintenance, vendors and/or special events.
   b. Pedestrian traffic was noted at this crossing.
   c. There is a high potential for the adjacent land to be developed, in an unknown manner, in the near future.

C. **REMAINING IMPROVEMENT OPTIONS**

Upon conclusion of the diagnostic meeting each of the options were considered in tandem with the recommendations and concerns that were documented during the diagnostic meeting. The remaining safety measure options were narrowed as depicted in the attached Table 1 "Onalaska Quiet Zone Scenario Options".

When reviewing the remaining options it is important to note that the comments made during the diagnostic meeting are not final and are only indicative of the formal concerns that may be offered during the NOI comment period. The discussion below includes potential methods to address the comments offered during the diagnostic meeting. Because decisions at Irvin Street reduces the options at 2nd Ave, its discussion is presented first.

1. **IRVIN STREET**

   Temporary closure was eliminated due to the concern of closing off pedestrian access for ingress/egress from 10pm until 7am, and the perpetual horn blowing that would be allowed from 7am to 10pm. Four Quadrant Gates was not desirable due to the high infrastructure costs. SSM medians are not feasible due to the location of 1st Street. ASM medians are of interest, but not until the use adjacent to the crossing is better understood. The only remaining option currently available is to install no safety measures. Due to the amount of risk with this remaining option Irvin Street could be a standalone Quiet Zone or paired with 2nd Avenue.

   a. **No Safety Measure Option**

      While on site the BNSF concurred that the installation of fence from the crossing to the tree line to the north, along the east side of the tracks, may be an amenable amount of fence to deter path users from crossing at non designated locations.

2. **2ND AVENUE**

   Due to the amount of risk at 2nd Avenue some sort of safety measure is required whether it is a standalone Quiet Zone or paired with Irvin Street. All of the remaining options have the following considerations in common: forklift use, restricted vision due to the placement of dumpsters, and pedestrians not using the designated crossing area.

   Due to the audible warning of forklifts during backing movements, the assumed common occurrence of this forklift use, and the restricted vision of a reverse movement; there was a concern that the train horn is a substantial warning device for this crossing user. One potential means to reduce this concern would be to ensure that companies adjacent to the grade crossing implement grade crossing safety into their safety program, and also to implement a watchman/lookout for any movements over the crossing. The placement of dumpsters should be discussed with the company, and restricted on any public property. The unrestricted pedestrian crossings could be addressed by either the implementation of safety programs by the adjacent companies or by the installation of fencing.

a. **ASM Median Options**

The least objectionable portion of the ASM median options was the proposed modifications on the south side of the crossing. The main concern with the ASM median proposals was the lack of the ability to restrict left turn movements out of the commercial driveway in the NE quadrant of the crossing. Considerations should be given to taking steps to ensure that motorists exiting the driveways are not able to move against the flow of traffic to circumvent the purpose of the median and drive around lowered gates. This may be accomplished by the posting of "no left turn" signs or other means of notification.

Utilizing an assumption that the proposed non-traversible medians meet all of the conditions of a SSM median, other than length, it would be reasonable to propose a risk reduction that corresponds with the proportion of the proposed median length to that of an SSM median length. Once additional conditions are not met the amount of risk reduction is much more difficult to justify. One means to do so is through video observation. The method to obtain risk reduction credit through this means is to perform observation traffic violations during a minimum of 600 gate activations prior to any proposed safety measures, and then again after safety measures are installed. Assuming 36 activations per day this would correlate to approximately 3 weeks of observations. The proposed risk reduction would be in line with the observed violation reduction multiplied by 0.78.

Using the aforementioned method to determine ASM median risk reduction means a SSM type median on the south side of the crossing would result in a 40% risk reduction, but any median on the north side of the crossing would require video observation evidence to obtain additional risk reduction.

b. **3 Quadrant Gates and Median Option**

This option would utilize SSM type medians on one side of the crossing and exit gates on the other approach. This combination of the four quadrant gate and non-traversable median SSMs is considered an ASM and requires a Public Authority Application. To implement this option the southbound approach would have to be modified to include a median to accommodate the gates needed to restrict access on the north side of the crossing. While this option would address the concern regarding left turn movements out of the northeastern quadrant of the crossing, it is currently unknown if exit gates would require further signal upgrades. Any required signal modifications could substantially increase the cost of implementation.

c. **Wayside Horn Option**

This option of replacing the audible warning source can be employed within or outside of a Quiet Zone. Further, crossings with wayside horns are not included in the Quiet Zone Risk Index calculation. While this option does not completely silence the audible warning of an oncoming train, it does reduce the volume, and the footprint of the impact. This option would concentrate the audible warning for a minimum of 15 seconds at the crossing, instead of the full approach. A wayside horn would be installed and maintained by the City.

D. POTENTIAL QUIET ZONE COMBINATIONS

The attached Table 2 "Risk Index Summary" demonstrates the remaining possible crossing combinations. Some notable items shown in the table include: that every option that includes 2nd Avenue will require a safety measure to be implemented, and that a Quiet Zone at Irvin Street alone is feasible without any further risk reduction. Since the risk at Irvin Street is only estimated, there is a possibility that future use of this crossing could elevate the risk high enough that will require safety measures to be installed.

E. CONCLUSION

While Irvin Street is Quiet Zone eligible with the installation of some fencing, 2nd Avenue is not as straight forward. When considering a Quiet Zone at Irvin Street without the inclusion of 2nd Avenue, it is recommended to first determine the path forward at 2nd Avenue. Considerations include: the potential additional difficulty of implementing a Quiet at 2nd Avenue without being combined with Irvin Street, the restriction of an implemented Quiet Zone to not be able to include additional crossings at a later date, and the amount of time to obtain a response for an ASM application. If a Public Authority Application is desired it is recommended to involve the FRA throughout the process.

F. NON QUIET ZONE RELATED RECOMMENDATIONS

The BNSF and OCR are currently in the process of upgrading the existing signal and warning devices at 2nd Avenue. This allows the City an opportunity to provide input on the proposed gate mast locations. It is recommended that the City review any planned improvement and propose for the gates to be installed at a location that will accommodate the proposed improvements. If the gate masts are relocated in the future it will: cost around $70k, require approximately one year of lead time, and take a reasonable amount of coordination effort.

Additionally, as the City progresses with the planned roadway project in the vicinity of the 2nd Avenue grade crossing it is recommended to reduce the risk of a collision at the crossing by altering the commercial driveway in the southwest quadrant and installing a median on the south side of the crossing. Considering the northwest and southeast crossing quadrant angles are near or less than 30 degrees, another method to improve safety at this crossing would be realign the approaches to be closer to perpendicular with the railroad tracks.

Attachments:

- Diagnostic Meeting Minutes
- FRA Quiet Zone Calculator Output/Input
- Table 1 - Onalaska Quiet Zone Scenario Options
- Table 2 - Risk Index Summary

SEH

Building a Better World
for All of Us®

MINUTES

Onalaska QZ Field Diagnostic
June 18, 2018
1:00 p.m.
Onalaska, WI

Meeting Chair: Josh Cotter

Present: Jarrod Holter, Onalaska; Calvin Nutt & Carl, BNSF; Tammy Wagner, FRA; Scott Willinger & Peggy Wischhoff, WisDOT; Kasey Kohlhardt, OCR; Jeremy Tomesh, SEH; Josh Cotter, SEH

I. Introductions

A meeting was held at the City of Onalaska's City Hall located at 415 Main Street and the attendees are listed above. A handout containing FRA Quiet Zone Calculator pages, crossing inventory forms, a table summarizing the information to be considered, exhibits of the existing conditions, and exhibits of the proposed conditions for both public grade crossings were supplied to aid in the discussion.

II. Purpose

The purpose of the meeting was to discuss the proposed Quiet Zone and to perform a diagnostic review of the two grade public grade crossings within the proposed Quiet Zone: 2nd Avenue (City jurisdiction) and Irvin Street (City Jurisdiction).

III. Background and Process

The City of Onalaska has been allocating effort to implement a Quiet Zone within its City limits since 2003. The previous diagnostic meeting was approximately 5 years ago, and involved different stakeholder representatives. In addition to personnel changes the City recently made a large investment in the Great River Landing, which is immediately east of the Irvin Street grade crossing. This effort included substantial considerations to reduce the amount of pedestrian trespassing and illegal crossing of the BNSF's tracks.

One of the items discussed, regarding past efforts, was that SSMs have not been found to be feasible at 2nd Ave. This has led to proposed Alternative Safety Measures at 2nd Ave, which would require a public authority application for formal approval. The extended process of a public authority application was discussed and illustrated in a flow chart. Given the required processes, it was estimated that the Quiet Zone was desired to be implemented in the next year or two.

IV. Review Grade Crossing Information and Proposed Improvements

The existing crossing information was reviewed and the only present update was that the current train counts are 36 trains per day, as opposed to the 44 trains per day that is shown in the US DOT Inventory Form dated from 2016. It was also noted that updated traffic counts will be needed near the end of the application process to ensure accurate risk calculations at the time of the Notice of Establishment.

The group then discussed upcoming projects that could impact either crossing. The City noted that with the Great River Landing improvements complete, the City is seeing interest in further development near Irvin Street. They also mentioned that some road/utility maintenance work is likely adjacent to the 2nd Avenue grade crossing. The impact of these future improvements is currently unknown, but they would consider any input from this Quiet Zone effort. WisDOT and BNSF noted that the existing crossing warning devices and circuitry at the 2nd Avenue grade crossing is planned to be upgraded in the near future. It was recommended that any City planned roadway widening improvements adjacent to the 2nd Avenue grade crossing be coordinated with the grade crossing signal upgrade.

With the team now able to consider the crossing information updates and proposed projects, the proposed improvement options were discussed for both crossings. The following options were presented by the City:

A. 2nd Avenue
   a. No changes
   b. Close off the commercial access in SW quadrant and install a 100'+ median on the south side of the tracks
   c. Close off the commercial access in SW quadrant, install a 100'+ median on the south side of the tracks, and install a 70' median on the north side of the tracks
   d. Close off the commercial access in SW quadrant, install a 100'+ median on the south side of the tracks, install a 70' median on the north side of the tracks, and install an additional gate across the commercial drive in the NE quadrant

In response to the City's proposed improvement options at 2nd Avenue additional options were proposed to be considered. These included: reevaluating a one way street scenario with the traffic being limited to northbound only in the vicinity of the crossing, closing off the commercial access driveway in the NE quadrant of the crossing, more extensive use of non-traversable medians to restrict left turn movements out of the NE quadrant of the crossing, and an exit quadrant gate on the north side of the crossing.

While creative, the one way traffic proposal was met with opposition. The main reason being that Midwest Hardwoods' facility is bisected by the railroad tracks, and they travel extensively in both directions over the crossing. This proposal would limit their ability to operate their business. Closing off commercial access to the NE quadrant was then discussed. It was determined that there are four businesses that use this driveway, and that the adjacent roadway to the east is approximately 15' higher than 2nd Avenue. While there were headwinds with this option, it was to be evaluated in the field. Next non-traversable medians were discussed. Due to the anticipated WB-62 truck traffic there was difficulty in finding a configuration that would restrict the left turn movement out of the NE quadrant. This was determined to potentially be feasible if the vehicle size was restricted. Finally, an exit quadrant gate was determined to have merit, and it would be evaluated in the field.

B. Irvin Street
   a. No changes
   b. A 60' median to the west, and a 100'+ median to the east of the crossing
   c. The installation of two exit quadrant gates to the existing two quadrant gate system, to allow for a four quadrant gate system
   d. Install fence and gates to allow for a potential partial Quiet Zone

The floor was open after the City presented its' proposed improvement options at Irvin Street. The BNSF notified the City that the existing signal system at Irvin would need to be replaced to accommodate four quadrant gates. It was noted that the proposed SSM median option would create issues due to the lack of consideration for access to 1st Avenue. It was also noted that a partial Quiet Zone would not likely create the desired benefit to the users of the Great River Landing, or the adjacent developments, so the partial quiet zone option was determined to not be a viable option.

V. Site Visit

The group then visited the crossings in the field to further explore the discussed safety improvements. Once everyone reconvened, Calvin led the safety briefing and Carl was the watchman/lookout. The diagnostic team then evaluated the proposed options for implementation issues. The following comments are those discussed during the site visits to each of the crossings:

A. 2nd Avenue (DOT # 079897G, MP 303.019)

- 2nd Avenue is a 2 lane urban local City Street with flashing light signals, gates, and CWT circuitry.
- The 2016 AADT was 1,155
- Fork lift use across this crossing was noted
- The City's proposed median and relocation of the existing commercial driveway in the SW quadrant of the crossing was a generally accepted method to address the south side of the crossing
- The majority of the conversation at this crossing focused heavily on the ability of the proposed options to restrict left turn movements out of the commercial driveway in the NE quadrant of the crossing. Of the remaining options that restrict left turns out this commercial driveway, in general it was found that:
  - Alternate access was not apparent, therefore closing this commercial access drive did not appear to be feasible
  - The City would need to work with the four industries to determine if the size of the vehicles that use this commercial driveway can be restricted, to approximately 40' single unit trucks, so access could be restricted by non-traversable medians to right-in right-out movements
  - Due to the skew of the crossing there is approximately 120' between feasible gate mast locations. This option would require the installation of three or four 30' gates, at least one of which would have to be in a newly constructed median, and possibly minor the widening of the existing grade crossing panel surface to accommodate the new median.
    - It was noted that BNSF was opposed to implementing this specific proposed safety measure, by means of revoking BNSF funds from a 50/50 OCR agreement that would otherwise fund the planned upgrade of this grade crossing warning system
- Potential fencing adjacent to Northwest Lumber to restrict any pedestrian movements
- Potential safety training for Northwest Lumber due to the extensive crossing use

B. Irvin Street (DOT # 079898N, MP 303.609)

- Irvin Street is a 2 lane urban local City Street with flashing light signals, gates, and CWT circuitry.
- Due to the recent change in planned use of this crossing to: safety response, maintenance, vendors and/or special events; the projected AADT is 10
- Pedestrian traffic was noted at this crossing
  - A recommendation was made to install a fence to the north between the crossing and the adjacent wooded area to the north to better funnel pedestrians to the Irvin Street crossing
- The four quadrant gate option will require the upgrading of railroad signal circuitry, but it is a feasible option
- Any proposed median would depend on the future development of the land on both sides of the crossing
  - A new proposal was to consider converting 1st Avenue into a one way street with right turn only access onto Irvin
  - The use of a cul-de-sac on the west side of the crossing was contemplated to allow for a full 100' median

VI. Next steps/action items

A. SEH and the City will work together and decide the scope of the proposed Quiet Zone based on this meeting.

SEH believes that this document accurately reflects the business transacted during the meeting. If any attendee believes that there are any inconsistencies, omissions or errors in the minutes, they should notify the writer at once. Unless objections are raised within seven (7) days, we will consider this account accurate and acceptable to all.

If there are errors contained in this document, or if relevant information has been omitted, please contact Josh Cotter at 651 765 2917.

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Cancel Change Scenario: ONALASKA - 53117 **Continue**

Create New Zone

Manage Existing Zones

Log Off

Crossing	Street	Traffic	Warning Device	Pre-SSM	SSM	Risk	
079897G	**2ND AVE**	**1155**	**Gates**	0	0	24,651.07	MODIFY
079898N	**IRVIN ST**	**10**	**Gates**	0	0	9,592.38	MODIFY

* Only Public At Grade Crossings are listed.

Click for Supplementary Safety Measures [SSM]

Click for ASM spreadsheet: **ASM** * Note:The use of ASMs requires an application to and approval from the FRA.

Summary	
Proposed Quiet Zone:	ONALASKA - UPDATE
Type:	New 24-hour QZ
Scenario:	ONALASKA -_53117
Estimated Total Cost:	$0.00
Nationwide Significant Risk Threshold:	14723 .00
Risk Index with Horns:	10264.82
Quiet Zone Risk Index:	17121.72

Step by Step Instructions:

Step 1: To specify New Warning Device (For Pre-Rule Quiet Zone Only) and/or SSM, click the MODIFY Button

Step 2: Select proposed warning device or SSM. Then click the UPDATE button.To generate a spreadsheet of the values on this page, click on ASM button—This spreadsheet can then be used for ASM calculations.

Step 3: Repeat Step (2) until the SELECT button is shown at the bottom right side of this page. Note that the SELECT button is shown ONLY when the Quiet Zone Risk Index falls below the NSRT or the Risk Index with Horn.

Step 4: To save the scenario and continue, click the SELECT button

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Update and Verify Crossing Information

CONTINUE

Create New Zone

Manage Existing Zones

Log Off

Zone:

Quiet Zone Type : **New 24-hour Quiet Zone**

079898N IRVIN ST

Step by Step Instructions:

Step 1: To add more crossings to the zone Click the ADD CROSSING.

Step 2: To Make changes to the default information, select the crossing from list. Enter the changes in the appropriate box, then click the UPDATE button.

Step 3: To permanently remove a crossing from the zone, select Crossing from list. Click the DELETE CROSSING button.

Step 4: Verify All Crossing Information Provided is correct. Then Click the Check Box, then CONTINUE button .

*** Note:** To see a list of SSMs, click on "Pre-Existing SSM".

* = Not Public At Grade Crossing
** = Closed Crossing

☐ **To verify ALL CROSSING INFORMATION PROVIDED is correct, click on the check box here.**

ADD CROSSING | DELETE CROSSING

079897G 2ND AVE

Present warn device: Gates	Gates
Number of highway vehicles per day: 000450	1155
Total trains: 44	36
Day through trains : 22	18
Total Switching Trains : 0	0
Number of main tracks: 2	2
Number of other tracks: 2	1
Urban(U.)/Rural(R.): U.Local	U.Local
Highways paved: Yes	Yes
Maximum timetable speed mph: 35	35
Number of highway lanes: 2	2
Number of years accident data: 5	5
Number of accidents in accident data years: 0	0
Wayside horn:	No
Pre-Existing SSM:	No

UPDATE

Note: Updating Crossing information on the Quiet Zone Calculator **DOES NOT** update the crossing inventory. Be sure that an updated current and accurate inventory form is also submitted.

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Update and Verify Crossing Information

CONTINUE

Create New Zone

Manage Existing Zones

Log Off

Zone:

Quiet Zone Type : **New 24-hour Quiet Zone**

079897G 2ND AVE

Step by Step Instructions:

Step 1: To add more crossings to the zone Click the ADD CROSSING.

Step 2: To Make changes to the default information, select the crossing from list. Enter the changes in the appropriate box, then click the UPDATE button.

Step 3: To permanently remove a crossing from the zone, select Crossing from list. Click the DELETE CROSSING button.

Step 4: Verify All Crossing Information Provided is correct. Then Click the Check Box, then CONTINUE button .

*** Note:** To see a list of SSMs, click on "Pre-Existing SSM".

* = Not Public At Grade Crossing
** = Closed Crossing

☐ **To verify ALL CROSSING INFORMATION PROVIDED is correct, click on the check box here.**

ADD CROSSING | DELETE CROSSING

079898N IRVIN ST

Present warn device: Gates	Gates
Number of highway vehicles per day: 000250	10
Total trains: 44	36
Day through trains : 22	18
Total Switching Trains : 0	0
Number of main tracks: 2	2
Number of other tracks: 0	0
Urban(U.)/Rural(R.): U.Local	U.Local
Highways paved: Yes	Yes
Maximum timetable speed mph: 60	60
Number of highway lanes: 2	2
Number of years accident data: 5	5
Number of accidents in accident data years: 0	0
Wayside horn:	No
Pre-Existing SSM:	No

UPDATE

Note: Updating Crossing information on the Quiet Zone Calculator **DOES NOT** update the crossing inventory. Be sure that an updated current and accurate inventory form is also submitted.

Table 1 - Onalaska Quiet Zone Scenario Options

ZONE	SUB ZONE	OPTION	RIWH	QZRI	STREET	MINIMUM QUIET ZONE UPGRADE	PROPOSED SAFETY MEASURE	QZRI WITH PROPOSED SAFETY MEASURE	ESTIMATED COST	NOTES
1	A	1	14,779	24,651	2nd Avenue	None (2Q + CWT Exist)	None	24,651	$ -	Existing condition.
		2					ASM Median^	14,791	$ 45,000	100' median on south side of crossing and closure of adjacent driveway.
		3					ASM Medians^	12,326	$ 100,000	The implementation of SSM type medians, would not meet the requirements due to the location of commercial access driveways. The effectiveness would need to be determined through video monitoring of gate violations before and after installation.
		4					3Q Gates & Median (ASM)	4,684	$ 210,000	The additional exit gates on the north side of the road, this option may require the lengthening of existing crossing surfaces to accommodate a median on the north side of the crossing. This option includes closing of the commercial access drive in the southwest quadrant.
		5					Wayside Horn	N/A	$ 150,000	This option is not technically a "Quiet Zone" but allows for a substitution of a locomotive horn.
		6					One Way Streets (SSM)	4,437	N/A	A one way street would not be conducive to the existing business that bisected by the railroad tracks.
		7					Nightly Closure (SSM)	0	$ 60,000	The access provided by the roadway does not allow for a temporary night time closure.
		8					4Q Gate (SSM)	4,437	$ 670,000	Four quadrant gates was evaluated and because of the crossing geometry, the design became impractical. The road would need to be widened to accomdate four gates on each approach due to the skew of the crossing.
		9					Closure (SSM)	0	$ 25,000	The permanent closure was considered but a full signalized access point at George Street and Highway 53 was rejected by the WisDOT because of operational issues on Highway 53. Even if this was acceptable, the closure would have imposed a hardship on the local business that has facilities on both sides of the track and would need a private industrial crossing.
		10					SSM Medians	4,930	$ 600,000	A 100' raised median on the south side of the crossing is practical if he commercial driveway in the southwest quadrant is closed. The commercial driveway in the northeast quadrant serves four businesses, which does not allow for it to be closed. Relocating this driveway would require the acquisition and demolition of an active business.
	B	1	5,751	9,592	Irving Street	None (2Q + CWT Exist)	None	9,592	$ 20,000	Existing condition. Estimated cost is an allocation for pedestrian fencing. The estimated risk of this option would allow for this crossing to be a stand alone Quiet Zone, or to be paired with 2nd Ave.
		2					ASM Medians^	5,755	$ 50,000	Multiple options exist, with varying levels of risk reduction. One that was discussed at the diagnostic meeting was converting 1st Avenue to a one way road with a right only turn allowed at the Irving Street intersection. Plans to develop the area adjacent to Irvin Street were also discussed. There was interest to impliment this option, but not until adjacent development plans are completed.
		3					4Q Gate (SSM)	1,727	$ 525,000	This option will require a full crossing rebuild, which is cost prohibitive.
		4					Nightly Closure (SSM)	0	$ 60,000	The concern with this option is that when the crossing closes, it includes closing off pedestrian access. Due to the proposed use of this crossing this option was not found to be desirable.
		5					Wayside Horn	N/A	$ 150,000	This option is not technically a "Quiet Zone" but allows for a substitution of a locomotive horn. Due to the proposed use of this crossing this option was not found to be desirable.
		6					SSM Medians	1,918	$ 75,000	The location of 1st street on the east side of the crossing prohibits the ability for an SSM median to be installed. Additional pavement and traffic patterns would also need to be investigated to allow for the installation of compliant medians on the west side of the crossing.
		7					Conversion to Private/Ped Crossing	0	$ -	While feasible, this legal alteration would not restrict locomotive horns. It would also limit the available options for a Quiet Zone at 2nd Ave.
		8					One Way Streets (SSM)	1,727	N/A	The roadway system in Onalaska, because of the terrain and river, does not provide logical pairing streets with 2nd Avenue that would allow for one way streets.
		9					Closure (SSM)	0	$ -	Vehicular access is desired for maintenance, event deliveries, pedestrians, and safety response. Therefore this is not a feasible option.

Cell Highlighting Key
- Remaining options
- Alternate Quiet Zone options
- Options that were eliminated

ASM = Alternative Safety Measure
SSM = Supplementary Safety Measure
RIWH = Risk Index With Horns
QZRI = Quiet Zone Risk Index
NSRT = National Significant Risk Threshold (14,723)
* Data not available
^ A Public Authority Application is required to determine the risk reduction value

Approximate Cost Estimates
Channelization Devices - $20,000 per crossing
Non Traversable Medians = Two 100' medians - $75,000
2Q = Two Quadrant Gates - $150,000
4Q = Four Quadrant Gates - $250,000
CWT = Constant Warning Time - $100,000
Closure = Closing a railroad/public road crossing - $25,000

Table 2 – Risk Index Summary

		Proposed Safety Measure	2nd Avenue	Irvin Street	RIWH	QZRI	Comment
Seperated Options	1	Irvin St. - None	N/A	9,592	5,751	9,592	QZRI < NSRT
	2	2ND Ave - None	24,651	N/A	14,779	24,651	QZRI> RIWH and QZRI> NSRT Needs additional safety measures
	3	2ND Ave - South Median^	14,791	N/A	14,779	14,791	QZRI> RIWH and QZRI> NSRT Needs additional safety measures
	4	2ND Ave - North & South Median^	12,326	N/A	14,779	12,326	QZRI < NSRT and QZRI < RIWH
	5	2ND Ave – 3Q Gates & Median^	4,684	N/A	14,779	4,684	QZRI < NSRT and QZRI < RIWH
Combined Options	6	2ND Ave - None Irvin St. - None	24,651	9,592	20,530	17,122	QZRI> RIWH and QZRI> NSRT Needs additional safety measures
	7	2ND Ave - South Median^ Irvin St. - None	14,791	9,592	20,530	12,192	QZRI < NSRT and QZRI < RIWH
	8	2ND Ave - North & South Median^ Irvin St. - None	12,326	9,592	20,530	10,959	QZRI < NSRT and QZRI < RIWH
	9	2ND Ave – 3Q Gates & Median^ Irvin St. - None	4,684	9,592	20,530	7,138	QZRI < NSRT and QZRI < RIWH

Cell Highlighting Key

- Unacceptable level of risk for a proposed Quiet Zone
- Acceptable level of risk for a proposed Quiet Zone

ASM = Alternative Safety Measure
SSM = Supplementary Safety Measure
RIWH = Risk Index With Horns
QZRI = Quiet Zone Risk Index
NSRT = National Significant Risk Threshold (14,723)
^ A Public Authority Application is required to determine the risk reduction value

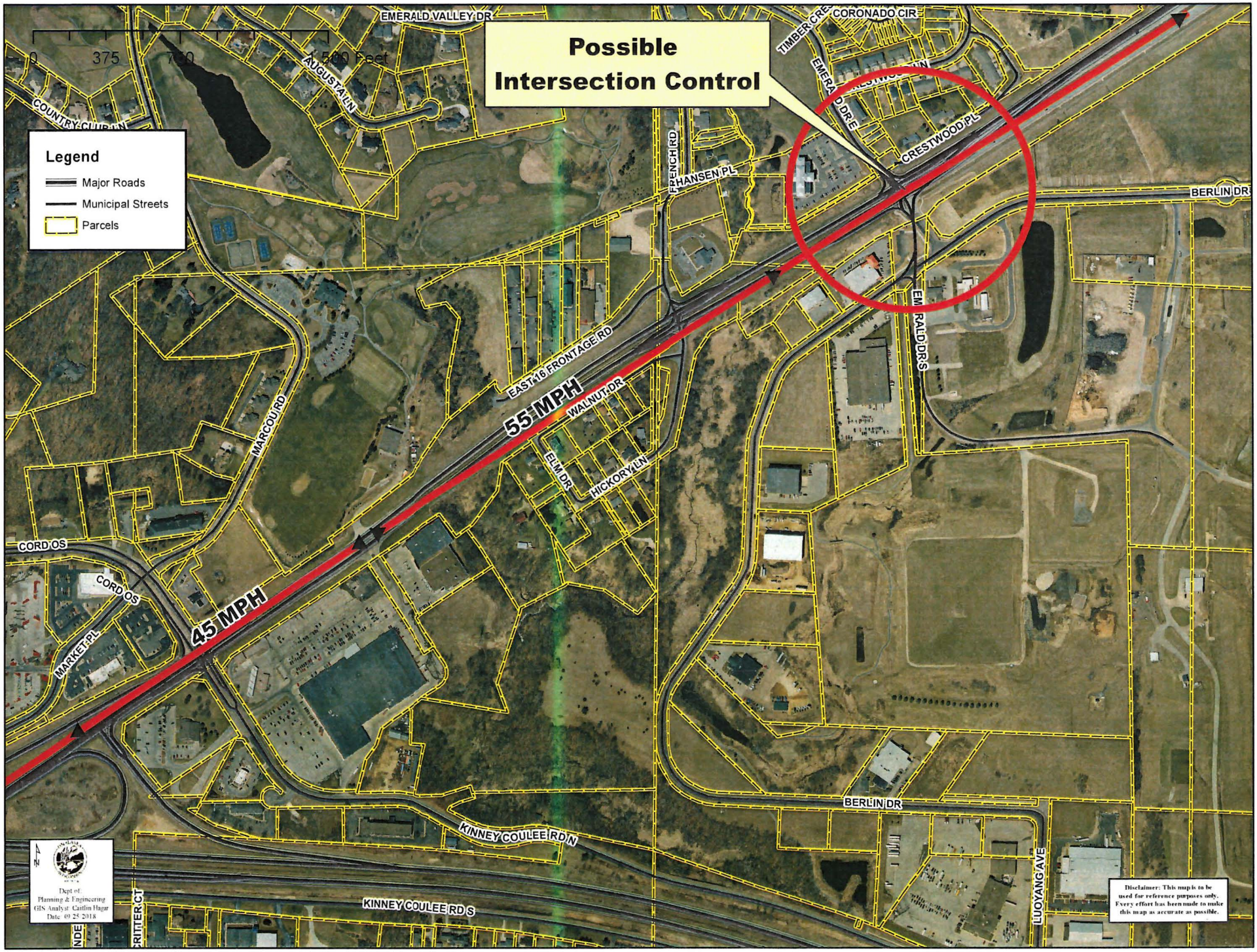
STAFF REVIEW SUMMARY

CITY OF ONALASKA
BOARD OF PUBLIC WORKS

October 2, 2018

Agenda Item: #7

Project/Item Name:	STH 16 speed limit and intersection control
Location:	STH 16 between East Main Street and Emerald Drive East
Requested Action:	Discussion and update regarding speed limit and intersection control in this area.
Staff Report/Description:	Wisconsin DOT is following up on City staff request to look at the speed limit along STH 16. The Wisconsin DOT has also given a position regarding the signalization of the intersection of STH 16 and Emerald Valley Drive East/Berlin Drive.
Attachments:	e-mail


Possible
Intersection Control
Legend
Major Roads
Municipal Streets
Parcels
0 375 750 1500 Feet
EMERALD VALLEY DR
AUGUSTA LN
COUNTRY CLUB LN
TIMBER CRE
CORONADO CIR
EMERALD DR E
CRESTWOOD PL
FRENCH RD
HANSEN PL
BERLIN DR
EMERALD DR S
EAST 16 FRONTAGE RD
55 MPH
WALNUT DR
MARCOU RD
ELM DR
HICKORY LN
CORD OS
CORD OS
45 MPH
MARKET PL
BERLIN DR
KINNEY COULEE RD N
KINNEY COULEE RD S
LUOYANG AVE
RITTER CT
Dept of
Planning & Engineering
GIS Analyst: Caitlin Hagar
Date: 09 25 2018
Disclaimer: This map is to be used for reference purposes only. Every effort has been made to make this map as accurate as possible.

Holter, Jarrod

From: Byom, Brad - DOT <Brad.Byom@dot.wi.gov>
Sent: Monday, September 10, 2018 9:42 AM
To: Holter, Jarrod
Cc: Winga, Andrew - DOT
Subject: RE: speed limit along STH 16

Hi Jarrod,

Just following up this issue. I had some discussions last week and the Department is not opposed to signalizing the intersection of Emerald Drive/Landfill Rd, but we just can't fund it. There are state statutes and MOU's that prohibit standalone signals projects. The City of Onalaska and the City of LaCrosse will have to fund it, once a signal investigation study is completed.

As far as the STH 16 speed limit is concerned, I will plan on studying that later this month. I get the feeling that the segment from 157 to I-90 could probably be lowered, but it depends on the 85th percentile speed. We have Statewide speed management guidelines that must be followed for posting "reasonable and prudent" speeds that State Statutes require. I should be able to have the speed study done by the end of October.

Thanks Jarrod,

Brad Byom, PE
Traffic Safety Engineer
DTSD - SW Region - LaCrosse
608-789-5707

From: Byom, Brad - DOT
Sent: Tuesday, August 28, 2018 8:34 AM
To: 'Holter, Jarrod' <jholter@onalaskawi.gov>

Cc: Winga, Andrew - DOT <Andrew.Winga@dot.wi.gov>
Subject: RE: speed limit along STH 16

We do have a Safety project coming up in 2021 that will hopefully help the crash problem at OS/N. Kinney. I'm guessing this intersection is generating the public concern? Or is there a big push for the East Berlin/Emerald intersection too? Not many crashes there.

From: Holter, Jarrod [mailto:jholter@onalaskawi.gov]
Sent: Monday, August 27, 2018 1:09 PM
To: Byom, Brad - DOT <Brad.Byom@dot.wi.gov>; Winga, Andrew - DOT <Andrew.Winga@dot.wi.gov>
Subject: RE: speed limit along STH 16

Brad,

I would agree that with the addition of the 4 lanes to West Salem it has allowed traffic to flow better and allow traffic to move at a higher speed. You are correct in am getting more concerns regarding Westbound traffic than Eastbound traffic and the 45 mph does start at the Woodmans/HOM Furniture entrance.

Is there any chance of moving the 45 mph speed limit further East, back to Emerald Drive East/Berlin Drive?

Thank you,

C. Jarrod Holter, P.E.
City Engineer/Director of Public Works

City of Onalaska
(608)781-9537
jholter@cityofonalaska.com

From: Byom, Brad - DOT [mailto:Brad.Byom@dot.wi.gov]
Sent: Monday, August 27, 2018 10:10 AM
To: Holter, Jarrod; Winga, Andrew - DOT
Subject: RE: speed limit along STH 16

I'm guessing speeds have gone up in the last 2 years since STH 16 went to 4 lanes out to West Salem.

I can move our speed display sign out there for the w.b. traffic. The 45 starts about 850' east of OS/N. Kinney. I'm guessing it's a w.b. problem more so than e.b.

Andy, this may be a good location for a permanent speed display sign.

From: Holter, Jarrod [mailto:jholter@cityofonalaska.com]
Sent: Friday, August 24, 2018 11:49 AM
To: Winga, Andrew - DOT <Andrew.Winga@dot.wi.gov>
Cc: Byom, Brad - DOT <Brad.Byom@dot.wi.gov>
Subject: RE: speed limit along STH 16

Andy,

Thank you for the follow up.

As a heads up a City Alderperson has sent in the request to Assembly Person Steve Doyle also.

Thank you,

C. Jarrod Holter, P.E.
City Engineer/Director of Public Works

City of Onalaska
(608)781-9537
jholter@cityofonalaska.com

From: Winga, Andrew - DOT [mailto:Andrew.Winga@dot.wi.gov]
Sent: Friday, August 24, 2018 10:20 AM
To: Holter, Jarrod
Cc: Byom, Brad - DOT
Subject: RE: speed limit along STH 16

Jarrod,

Sorry for the delay in getting back to you. I was out of the office at a conference this week. I did forward this on to Brad several weeks ago to take a look at and I am not sure where he might be at with this.

Andy

From: Holter, Jarrod [mailto:jholter@cityofonalaska.com]
Sent: Monday, August 20, 2018 10:22 AM

To: Winga, Andrew - DOT <Andrew.Winga@dot.wi.gov>
Subject: RE: speed limit along STH 16

Andy,

Any chance to give this a look? I know you have a set process for altering the speed limit but wanted to know if it was being considered?

Thank you,

C. Jarrod Holter, P.E.
City Engineer/Director of Public Works

City of Onalaska
(608)781-9537
jholter@cityofonalaska.com

From: Holter, Jarrod
Sent: Friday, August 03, 2018 11:24 AM
To: 'Andy Winga (andrew.winga@dot.state.wi.us)'
Cc: Rindfleisch, Eric; Smith, Kim
Subject: speed limit along STH 16

Andy,

We have been receiving citizen input regarding the speed limit along STH 16 from multiple residents. I have had residents that live at Marcou Road and French Road both comment in the past week regarding the speed along STH 16. Would the Wis. DOT consider moving the 45 mph speed limit further East? It currently starts 45 mph just East of the East Main/North Kinney traffic signal. Could it be moved as far East as Emerald Drive East/Berlin Drive? With the continued City development to the East along STH 16 this area is transforming into a more urban environment.

Please let me know if there is further action that can be taken by the City in regard to this topic. If you have any questions please contact me.

Thank you,

C. Jarrod Holter, P.E.
City Engineer/Director of Public Works

City of Onalaska
(608)781-9537
jholter@cityofonalaska.com

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STAFF REVIEW SUMMARY

CITY OF ONALASKA
BOARD OF PUBLIC WORKS

October 2, 2018

Agenda Item: #8

Project/Item Name:	French Valley – Crestwood booster station
Location:	French and Crestwood Road area
Requested Action:	Approval of engineering report and design services
Staff Report/Description:	Davy engineering has completed an engineering report outlining the proposed improvements needed for City development in the French and Crestwood Road area. These include the installation of a water booster station and associated roadway and utility improvements adjoining the booster station site. Staff is recommending moving forward with design of these projects to allow for water and sanitary sewer service to be available in the summer of 2019.
Attachments:	Booster station engineering report, proposed design services fees and design service funding outline

#8-A

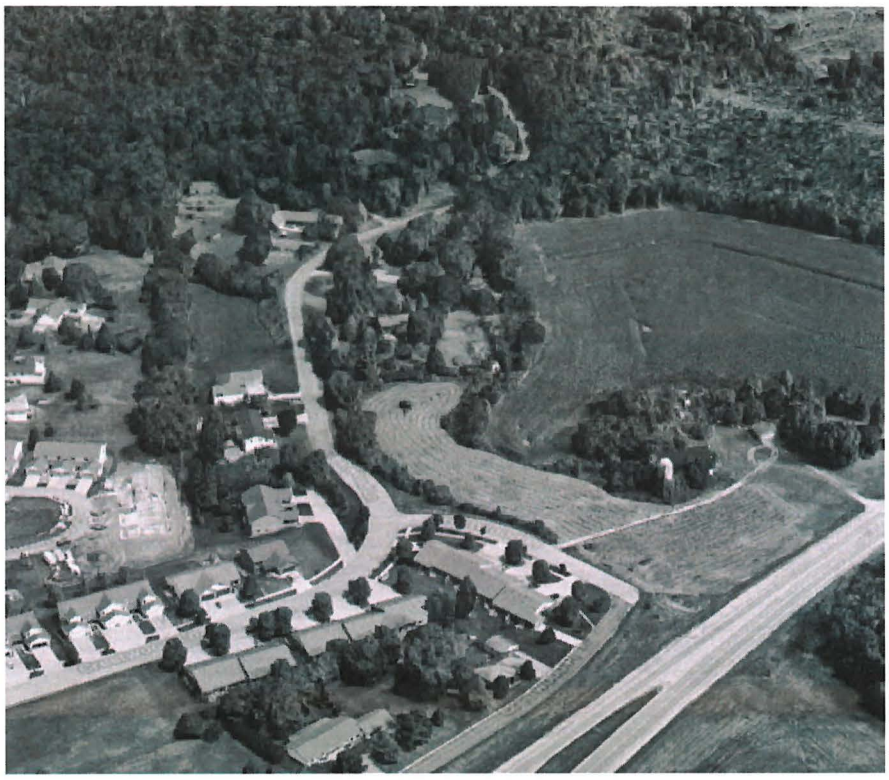
DAVY ENGINEERING

PRELIMINARY ENGINEERING REPORT

CRESTWOOD BOOSTER STATION

WATER SYSTEM HIGH SERVICE ZONE

ONALASKA, WISCONSIN



SEPTEMBER, 2018

1398-109.010

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PRELIMINARY ENGINEERING REPORT

CRESTWOOD BOOSTER STATION

WATER SYSTEM HIGH SERVICE ZONE

ONALASKA, WISCONSIN

DAVY ENGINEERING CO.
CONSULTING ENGINEERS
LA CROSSE, WISCONSIN
PROJECT NO. 1398-109.010
September, 2018

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PRELIMINARY ENGINEERING REPORT
CRESTWOOD BOOSTER STATION
WATER SYSTEM HIGH SERVICE ZONE
ONALASKA, WISCONSIN

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- 5.2 SERVICE AREA
- 5.3 PROJECTED HSZ WATER DEMAND
- 5.4 BOOSTER STATION DESIGN
- 5.5 COST ESTIMATE

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- 6.2 WATERMAIN
- 6.3 SANITARY SEWER
- 6.4 ROADWAY
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2 HSZ – WATER SYSTEM SERVICE AREAS

3 PRELIMINARY SITE LAYOUT

4 ANNEXATION AREAS

5 CRESTWOOD LANE IMPROVEMENTS

6 EXAMPLE BOOSTER STATION LAYOUT

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PRELIMINARY ENGINEERING REPORT
CRESTWOOD BOOSTER STATION
WATER SYSTEM HIGH SERVICE ZONE
ONALASKA, WISCONSIN

1.0 BACKGROUND

There are three future residential subdivision developments in preliminary planning stages that are located east of French Road and north of STH 16. These sites include Crestwood Estates, French Valley, and property located directly east of Crestwood Lane as shown in Figure 1. Each of these developments will require extensions of the existing City of Onalaska water distribution system, including connection to the High Service Zone (HSZ).

The previous 1997 and 2007 feasibility reports evaluated future extensions of the Onalaska water distribution system to these areas and beyond including the need for booster stations and future reservoirs to allow development in the HSZ.

Based on recent discussions with property owners, the City anticipates that the Crestwood area properties will be developed prior to the French Road area. The development of these properties will include annexation by the City of Onalaska. The initial phase of development in the Crestwood area will require a HSZ booster station. The previous report proposed a booster station site located in the easterly portion of the service zone near Maple Lane. It is currently not practical to extend water system infrastructure to Maple Lane, as there are no pending developments or existing parcels to serve in the immediate future.

An alternative booster station site would be located near the Crestwood Lane/Crestwood Place intersection, closer to the area planned for more immediate development. There is existing water system infrastructure (Normal Service Zone) in-place nearby with sufficient flow capacity to serve a booster station site at this general location.

2.0 SCOPE

This preliminary report evaluates the feasibility of this new booster station including a watermain extension along Crestwood Lane to serve the future Crestwood Estates development. The Crestwood Lane improvements will also include extension of City sanitary sewer and reconstruction of the existing roadway. This report also includes discussion for the ultimate connection of the Country Club HSZ to the French Road area.

The booster station will require pump sizing to meet the short-term needs of the initial site developments in the Crestwood area, along with future developments in the French Road area and land south of Highway 16. The building dimensions will be sized for the ultimate water service area.

Cost estimates are provided for booster station options, along with watermain, sanitary sewer and roadway improvements along Crestwood Lane extending to Crestwood Estates.

Water system hydraulics were analyzed using the WaterCAD computer model of the Onalaska water system.

3.0 EXISTING WATER DISTRIBUTION SYSTEM

The existing City of Onalaska regional water distribution system map showing the Crestwood/French Road area is included with Figure 2.

There is an existing 12-inch trunk watermain located along the north side of STH 16 beyond Emerald Drive that serves the normal service zone (NSZ) in the Crestwood area. This watermain extends to the corner of the Crestwood Place roadway. There is an existing 8-inch watermain loop on Emerald Drive/Crestwood Lane/Crestwood Place that is connected to the 12-inch trunk main at each end. The proposed Crestwood area booster station would connect to this 8-inch watermain at the intersection of Crestwood Lane and Crestwood Place.

There is also an existing 12-inch watermain located on Emerald Drive E. that extends to Harter Drive and serves the NSZ in the French Road area. This main will ultimately be extended north to serve the NSZ zone in the French Valley development. There is an existing 12-inch HSZ watermain located at the current north dead end of Emerald Valley Drive. This watermain is planned to ultimately extend northerly and then easterly across the Country Club golf course to the western limits to French Valley. The French Valley HSZ will also be served by a 12-inch watermain extended through Crestwood Estates.

The existing watermain in the industrial park on the south side of STH 16 will ultimately be extended northeasterly and loop back on the north side of STH 16 to provide a valuable loop serving the booster station.

The current regional HSZ in the Crestwood/French Road area is served by the 220,000-gallon Country Club Reservoir. This reservoir has an overflow elevation of 1016 Feet. The HSZ is also served by the existing OS (E. Main Street) Booster station. The 1,100,000-gallon Wild Rose Reservoir serves the NSZ and has an overflow elevation of 883 Feet. The Wild Rose Reservoir also serves as a direct feed for the OS Booster Station.

4.0 HSZ ZONE DEVELOPMENT

The HSZ land areas within the future Crestwood and French Valley developments that will require a booster station are shown in Figure 2. These areas lie between the elevations of 790 feet to 930 feet. The upper level 930 contour indicates the limits for a minimum water pressure of 35 psi at street level, the DNR minimum. The 900 contour is also shown which indicates the highest elevation that can be reliably served with pressures greater than 45 psi, the preferred minimum service pressure.

There are some areas shown in the HSZ band that lie slightly above elevation 930. These future residences would require individual pressure pumps to provide for household use. The pressure at the service connection in the street must be no less than 35 psi.

The long-range plan for the Crestwood/French Road HSZ includes a future reservoir located near the northeastern portion of the French Valley development. This reservoir will be added as water system demand increases from future developments. The reservoir and connecting main will be designed to supplying a fire flow of 1,500 gpm at 20 psi minimum for 2 hours during peak demand and with the largest booster pump out of service.

5.0 CRESTWOOD AREA BOOSTER STATION

5.1 PRELIMINARY SITE LAYOUT

The proposed site for the Crestwood Area booster station is located on current Manske family property directly east of the Crestwood Lane/Crestwood Place intersection as shown in Figure 3. This site is preferred based on its proximity to the existing water distribution system infrastructure and HSZ properties to be developed in the near-future.

The preliminary site layout is positioned to fit within the the future subdivision lot configuration as represented by a conceptual "ghost plat" subdivision layout shown in Figure 2.

5.2 SERVICE AREA

The proposed booster station pumps will be sized initially to provide water service to existing parcels and future developments within 790-930 elevation HSZ in the Crestwood and French Road areas. The booster station configuration will also be designed to accommodate the ultimate connection to additional water service areas south of STH 16.

The total, potential HSZ service area for the Crestwood booster station is approximately 308 Acres as summarized in Table 1.

Existing residential areas along Timber Crest Drive, Crestwood Lane and Maple Lane have existing low density residential development that are unlikely to change significantly. These consist of approximately 38 acres of the HSZ and includes 24 existing parcels.

There are preliminary layouts for two future residential subdivision developments within the HSZ. These include Crestwood Estates and French Valley, which will be used to estimate future water use.

5.3 PROJECTED HSZ WATER DEMAND

The Crestwood Area booster station will be designed to provide water to meet multiple demand conditions for the Crestwood/French Road Service area. These include average day (AD), peak day (PD), peak hour (PH), and fire protection demands.

The previous 2007 report for the French Road Development Water System established the average day demand to be 700 gpd/acre. This value assumes 3.8 dwelling units per acre, 2.6 persons per unit, and 70 gpd per person. These values were derived from the 2000 census data for Onalaska.

The PD demand is the highest daily demand on a water system in a single year. This typically occurs during the summer, when lawn watering and other outdoor water uses are greatest. Based on historical records, a value of 3.45 was used as the ratio of PD to AD demands for future projections.

The PH demand is the highest hourly water use over a given year. The ratio of PH to PD demands of 1.6 is used for this report.

Table 1 – Crestwood Booster Station Service Area

	Acres	Dwelling Units
Existing Residential Areas		
Timber Crest Drive	11	10
Crestwood Lane	15	9
Maple Lane	12	5
Subtotals	**38**	**24**
Crestwood Estates	**21**	**18**
Developable Areas		
French Valley	63	239
East of Country Club	36	137
East of Crestwood Lane	28	106
North & East of Maple lane	36	137
Subtotals	**163**	**619**
Totals – Initial Phase	**222**	**661**
Future Phase		
South of Highway 16	**86**	**327**
Totals – Ultimate Development	**308**	**988**

The Crestwood/French Road HSZ will serve a population of 1,720 for the early phase, based on 2.6 persons per dwelling unit. The ultimate development, including the service area south of STH 16, will serve a population of 2,570.

Peak day domestic usage for the initial phase is estimated to be 1,720 persons x 70 gpcd x 3.45 = 415,400 gallons. Using the Peak Hour/Peak Day ratio of 1.6, the Peak Hour is 460 gpm (415,400/24 hours/60 min. x 1.6 = 460 gpm). The equivalent usage for the ultimate development is estimated to be = 620,700 gallons; 690 GPM.

5.4 BOOSTER STATION DESIGN

The NSZ can deliver a 1,500 GPM fire flow at 36 psi residual pressure to the booster station site with the existing watermain configuration along Crestwood Lane and Crestwood Place. DNR requires 35 psi minimum when the pumps are supplying the design flow rate (690 gpm). At the design flow rate, 44 psi can be maintained. The residual pressure will be improved when the 12" loop from the south side of STH 16 is completed. It's also expected that this part of the HSZ will be served with a reservoir before full development.

Two 460 GPM pumps and a 100 GPM "jockey" pump are recommended for the Crestwood/French Road area initial phase booster station. The design flow rate needs to be met with the largest pump (excluding the fire pump) out of service. Note that these pumps will be "oversized" during the early years of operation. The pumps will be capable of maintaining pressures of 35 to 95 psi in the planned service area. An automatic control will be provided to stop the pumps if suction pressure drops below 20 psi. The jockey pump will run continuously to maintain pressure, with a feed back line to prevent the pump from overheating.

Two 690 GPM pumps will ultimately need to replace the 460 GPM pumps prior to the HSZ extending to the service area south of STH 16.

A single fire pump sized to provide 1,500 GPM at 20 psi residual to the upper area of the HSZ will also be provided. A standby generator large enough to run the fire pump is included.

During normal operation of the 460 GPM pump, the static pressure in the normal service zone, near the booster station, will be reduced from 47 psi to 46 psi. When the fire pump runs, the pressure will be reduced to 36 psi.

A typical booster station plan is shown in Figure 6. This layout shows the general components and building structure that will be included with the proposed Crestwood Booster Station design.

Installation of the standby generator is required as the NSZ cannot provide a minimum of 3 psi pressure at all street locations within the initial phase of the HSZ development. The on-site engine-generator will include an automatic transfer switch capable of powering at minimum the domestic service pumps and the station building demands.

Service connections should only be permitted where the static pressure at street centerline is 35 psi to 100 psi. Ridge shortcuts should be designed for 20 psi minimum and valley crossings 115 psi maximum.

5.5 COST ESTIMATE

The total estimated project cost for the Crestwood Booster Station is $938,400. No land acquisition cost is included. PSC Construction Authorization (typically 90 days+) and DNR plan approval are required before construction may begin. See detailed cost breakdown for the proposed Booster Station in Appendix A.

6.0 CRESTWOOD LANE – WATERMAIN / SEWER & ROADWAY EXTENSION

6.1 GENERAL

The future Crestwood Estates Subdivision, along with existing residences along Crestwood Lane, are currently located in the Town of Medary. The developer of the Crestwood Estates property has expressed interest in annexation of their property by the City of Onalaska. The City is interested in this prospect given it would fit with current municipal comprehensive planning for this region. See Figure 4 for the preliminary annexation area limits.

With annexation, Crestwood Estates would be required to connect to existing City water and sanitary service. The Crestwood Area HSZ booster station is necessary to provide service. The watermain and sanitary sewer extensions would follow the existing roadway alignment of Crestwood Lane. With the utility extensions, the roadway must be replaced as well. See Figure 5 for the limits of the proposed Crestwood Lane Improvements.

6.2 WATERMAIN

An 8-inch HSZ watermain will be extended to a future intersection with Crestwood Lane from the east. This street would provide the alignment for a future 12" trunk watermain that will extend southeasterly to the service area south of STH 16. The 12" watermain would then extend north from the intersection to the limits of Crestwood Estates. Ultimately, the 12" main will extend to the HSZ reservoir. The Crestwood lane watermain improvements will include nine water services stubbed to existing residences. There will also be two water services needed for residences in the normal service zone.

6.3 SANITARY SEWER

There is an existing 8-inch gravity sanitary sewer main stubbed north of the existing manhole at the Crestwood Place intersection. A new 8" sewer will be extended northerly along Crestwood Lane to Crestwood Estates.

6.4 ROADWAY

The existing roadway is a rural section, approximately 22' wide without shoulders and shallow ditches. There is insufficient room for a standard urban section with curb & gutter in this area. The proposed rural section roadway will require a variance from City urban street standard design details. The street design section would match the preliminary street section proposed for Crestwood Estates.that consists of the following:

- 24' wide HMA Surfacing (3.5")
- 10" Aggregate Base
- Geotextile Fabric
- Breaker Rock where necessary
- 2' aggregate surfaced shoulders each side
- Driveway Culverts for drainage

See Figure 5 for the proposed typical street section for Crestwood Lane.

6.5 SUMMARY OF COST ESTIMATE

The total estimated project cost for the Crestwood Lane Improvement Project is $645,020. DNR plan approvals are required before construction may begin. See detailed cost breakdown for the proposed Crestwood Lane Project in Appendix B.

APPENDICES

PRELIMINARY COST ESTIMATE
CRESTWOOD BOOSTER STATION
ONALASKA, WI

Quantity	Units	Item	Unit Cost	Total
2,300	cu.yd.	Excavation	$ 12.00	$ 27,600.00
100	cu.yd.	Concrete	$ 750.00	$ 75,000.00
		Masonry		$ 120,000.00
		Roof System		$ 80,000.00
		Windows, Doors and Frames		$ 24,000.00
		Painting		$ 10,000.00
		HVAC		$ 12,000.00
1	ea	Fire Pump 1,500 GPM@150'		$ 44,000.00
2	ea	Service Pump 460 GPM@150'		$ 31,000.00
1	ea	Jockey Pump 100 GPM@150'		$ 12,000.00
		Hypochlorite Feed Equipment		$ 8,000.00
		Flow Meter, Piping & Valves		$ 46,000.00
		Standby Generator		$ 40,000.00
		Building Electrical		$ 30,000.00
		Controls/SCADA Integration		$ 95,000.00
		Access Road/Parking		$ 25,000.00
250	sq, ft.	Retaining Wall	$ 40.00	$ 10,000.00
80	lin.ft.	Building Sewer & Water	$ 80.00	$ 6,400.00
		Erosion Control		$ 2,000.00
		Total Estimated Construction Cost		**$ 698,000.00**
		Engineering		
		Preliminary Report		$ 7,500.00
		Planning & Design		$ 69,800.00
		Bid & Award		$ 10,000.00
		Construction Phase		$ 69,800.00
		PSC Construction Authorization		$ 3,500.00
		Land		N/A
		Gas & Electric Service		$ 10,000.00
		Contingencies		$ 69,800.00
		Subtotal		$ 240,400.00
		TOTAL ESTIMATED PROJECT COST		**$ 938,400.00**

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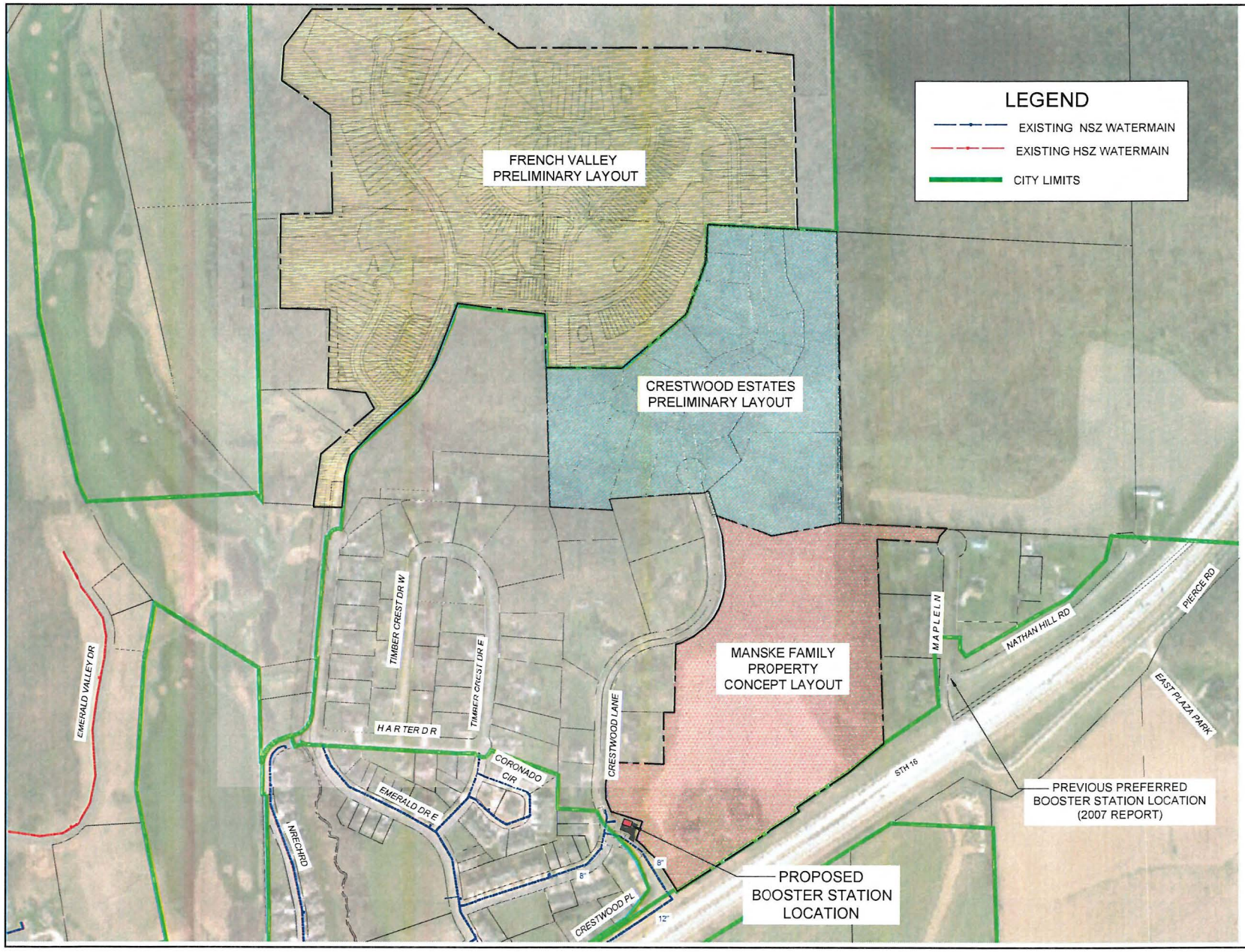
PRELIMINARY COST ESTIMATE
CRESTWOOD LANE IMPROVEMENTS
ONALASKA, WISCONSIN

Quantity	Unit	Item	Unit Price	Amount
Sanitary Sewer				
1	ea.	Connect to Existing Manhole	$ 1,000.00	$ 1,000.00
50	cu. yds.	Rock Excavation	$ 60.00	$ 3,000.00
1,750	lin. ft.	8" SDR 35 PVC	$ 40.00	$ 70,000.00
10	ea.	Sanitary Manhole	$ 3,200.00	$ 32,000.00
12	ea.	8"x4" Wye & Plug	$ 150.00	$ 1,800.00
360	lin. ft.	4" SDR 26 PVC Lateral	$ 25.00	$ 9,000.00
12	ea.	Tracer Wire Magnesium Grounding Anodes	$ 70.00	$ 840.00
12	ea.	Tracer Wire Locator Boxes	$ 30.00	$ 1,200.00
100	cu. yd.	Unsatisfactory Subgrade	$ 20.00	$ 2,000.00
		Estimated Total Sanitary Sewer		**$ 120,840.00**
Watermain				
1	ea.	Connect to Existing Watermain	$ 1,200.00	$ 1,200.00
280	lin. ft.	6" DIP Pressure Class 350 Watermain	$ 40.00	$ 11,200.00
1,450	lin. ft.	8" DIP Pressure Class 350 Watermain	$ 50.00	$ 72,500.00
340	lin. ft.	12" DIP Pressure Class 350 Watermain	$ 65.00	$ 22,100.00
7	ea.	6" Gate Valve & Box	$ 1,600.00	$ 11,200.00
3	ea.	8" Gate Valve & Box	$ 2,000.00	$ 6,000.00
2	ea.	12" Gate Valve & Box	$ 3,800.00	$ 7,600.00
5	ea.	Hydrant	$ 3,600.00	$ 18,000.00
100	lin. ft.	6" Hydrant Lead	$ 60.00	$ 6,000.00
1,700	lbs.	Special Fittings	$ 8.00	$ 13,600.00
12	ea.	1" Corp Stop	$ 180.00	$ 2,160.00
12	ea.	1" Curb Stop & Box	$ 250.00	$ 3,000.00
360	lin. ft.	1" Copper Service	$ 35.00	$ 12,600.00
12	ea.	Tracer Wire Magnesium Grounding Anodes	$ 70.00	$ 840.00
12	ea.	Tracer Wire Locator Boxes	$ 55.00	$ 660.00
100	cu. yd.	Unsatisfactory Subgrade	$ 20.00	$ 2,000.00
		Estimated Total Watermain		**$ 190,660.00**

Street Improvements

300	lin. ft.	12" RCP Culvert	$	40.00	$	12,000.00
24	ea.	12" RCP Apron	$	500.00	$	12,000.00
1	ea.	Traffic Control	$	1,000.00	$	1,000.00
40	lin. ft.	Sawcutting Existing Pavement	$	5.00	$	200.00
1,800	cu. yd.	Excavation	$	9.00	$	16,200.00
5,200	sq. yd.	Preparation & Finish Grading Prior to Paving	$	1.00	$	5,200.00
5,200	sq. yd.	Geotextile Fabric, Type SAS	$	1.50	$	7,800.00
2,900	ton	Aggregate Base (10")	$	15.00	$	43,500.00
500	ton	Breaker Rock	$	14.00	$	7,000.00
900	ton	HMA Pavement (3.5")	$	90.00	$	81,000.00
230	gal.	Tack Coat	$	4.00	$	920.00
10	ea.	Adjust Manhole Castings	$	250.00	$	2,500.00
4	ea.	Adjust Gate Valve Box	$	150.00	$	600.00
30	sq.yd.	Remove & Replace Concrete Driveway	$	100.00	$	3,000.00
1,800	sq. yd.	Place Topsoil, Seeding, Fertilizing	$	2.00	$	3,600.00
1,800	sq. yd.	Mulching	$	1.00	$	1,800.00
700	sq. yds.	Erosion Conrol Mat - Class I Type B	$	3.00	$	2,100.00
500	lin. ft.	Furnish, Install & Maintain Silt Fence	$	3.00	$	1,500.00
1	ea.	Tracking Pad	$	500.00	$	500.00
3	ea.	Inlet Protection	$	150.00	$	450.00
1	ea.	Erosion Control Management	$	5,000.00	$	5,000.00
8	ea.	Density Testing	$	100.00	$	800.00
		Estimated Total Street Improvement			**$**	**184,670.00**
		Total Estimated Construction Cost			$	496,170.00
		Engineering, Legal & Contingencies			$	148,850.00
		TOTAL ESTIMATED PROJECT COST			**$**	**645,020.00**

FIGURES



REVISION DATE	REMARKS

FIELDBOOK:
SCALE: AS SHOWN
DRAWN: JPM
CHECKED: MFD
DATE: 09/7/2018

DAVY ENGINEERING CO.
LA CROSSE, WISCONSIN

FIGURE 1 - FUTURE SITE DEVELOPMENTS
CRESTWOOD BOOSTER STATION
ONALASKA WISCONSIN

PROJECT NUMBER
001398-109.010

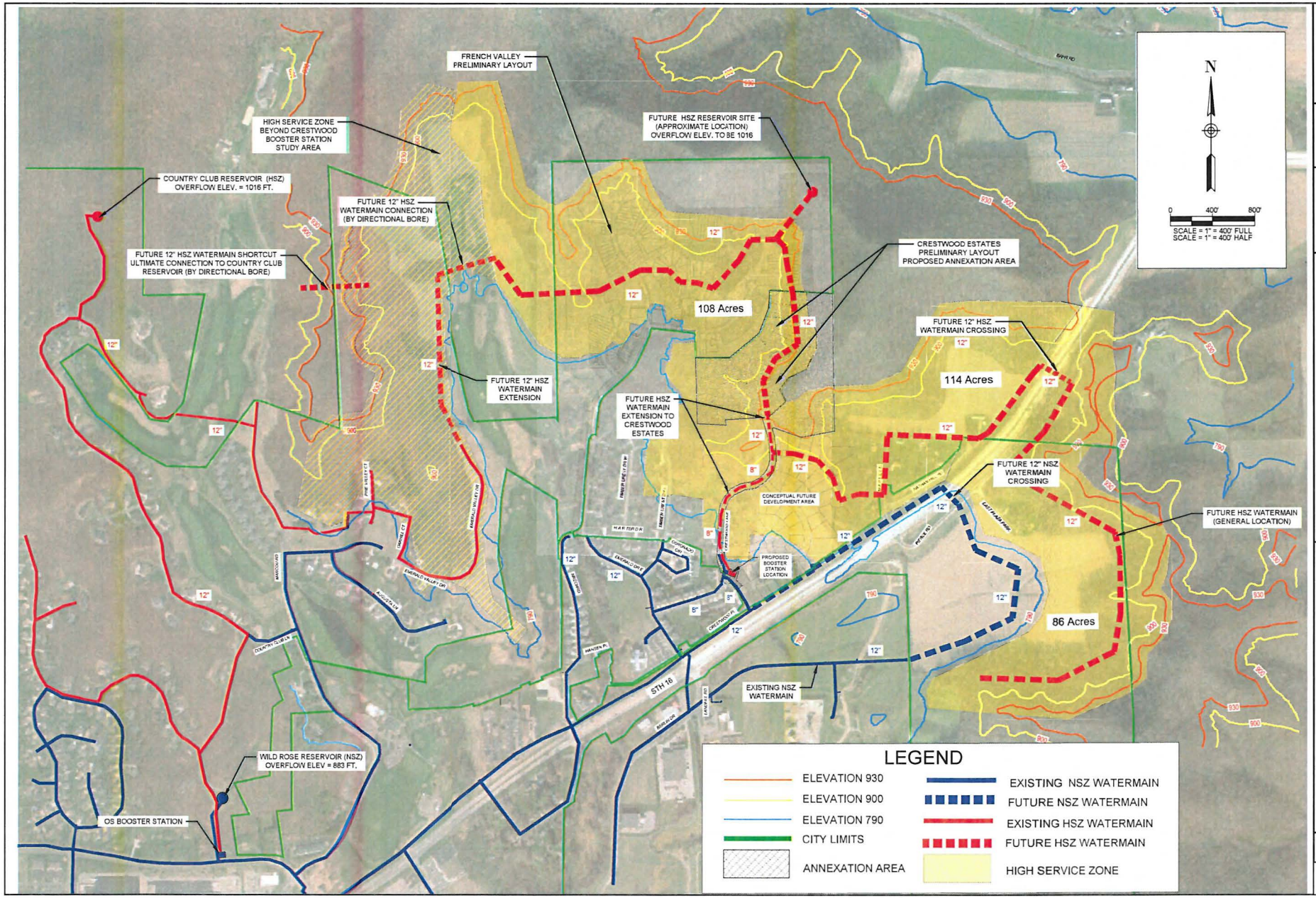
REMARKS	REVISION DATE

FIELDBOOK:
SCALE: AS SHOWN
DRAWN: JPM
CHECKED: MFD
DATE: 09/07/2018

DAVY ENGINEERING CO.
LA CROSSE, WISCONSIN

FIGURE 3 - PRELIMINARY SITE LAYOUT
CRESTWOOD BOOSTER STATION
ONALASKA WISCONSIN

PROJECT NUMBER
001398-109.010



REMARKS	REVISION DATE

FIELDBOOK:
SCALE: AS SHOWN
DRAWN: JPM
CHECKED: MFD
DATE: 09/07/2018

DAVY ENGINEERING CO.
LA CROSSE, WISCONSIN

FIGURE 2 - HSZ WATER SERVICE AREAS
CRESTWOOD BOOSTER STATION
ONALASKA WISCONSIN

PROJECT NUMBER
001398-109.010

N

0 200' 400'

SCALE = 1" = 200' FULL
SCALE = 1" = 400' HALF

LEGEND

CITY LIMITS (APPROXIMATE)

PROPOSED ANNEXATION AREAS

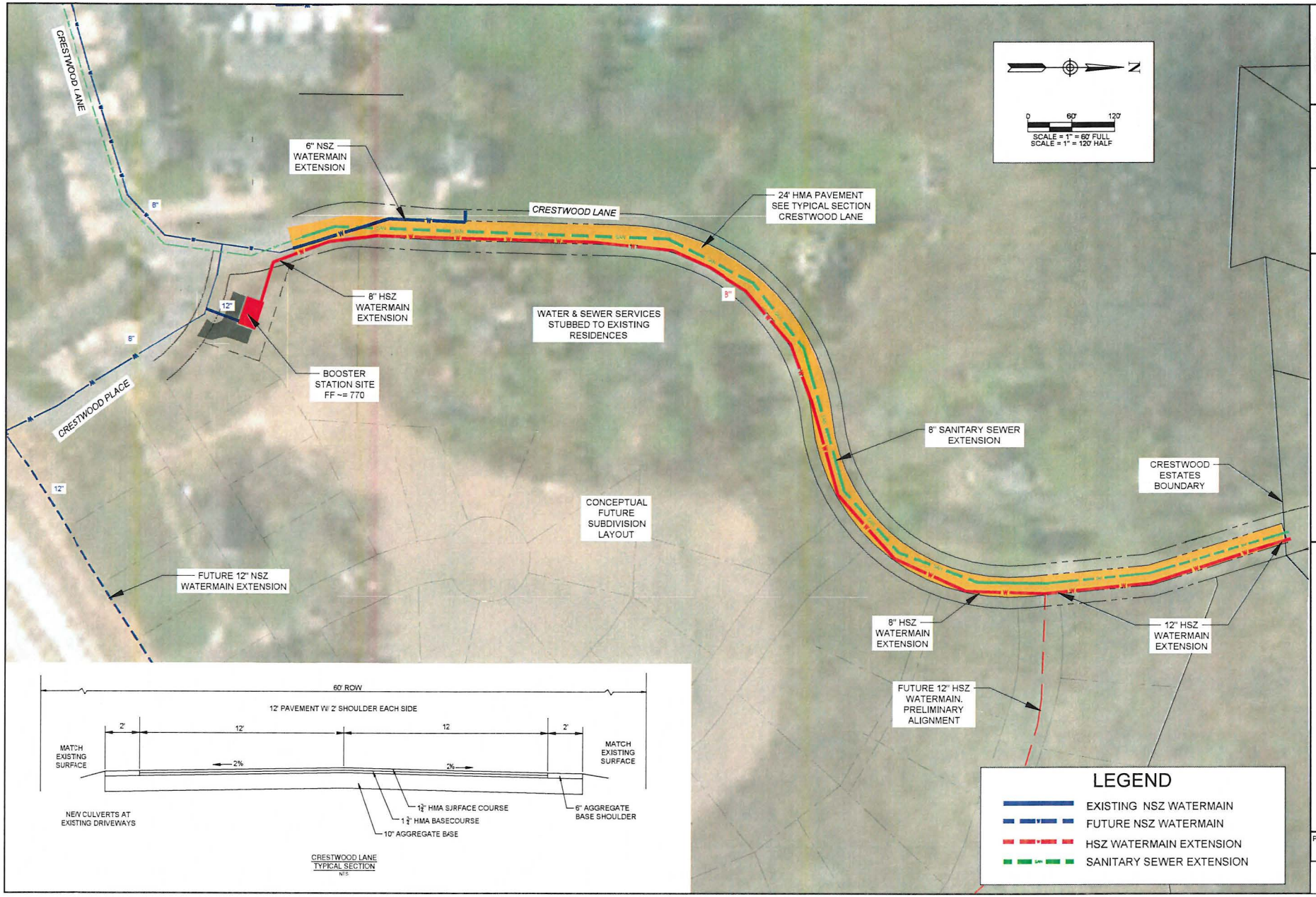
REVISION DATE	REMARKS

FIELDBOOK
SCALE: AS SHOWN
DRAWN: JPM
CHECKED: MFD
DATE: 09/07/2018

DAVY ENGINEERING CO.
LA CROSSE, WISCONSIN

FIGURE 4 - PROPOSED ANNEXATION AREAS
CRESTWOOD BOOSTER STATION
ONALASKA WISCONSIN

PROJECT NUMBER
001398-109.010



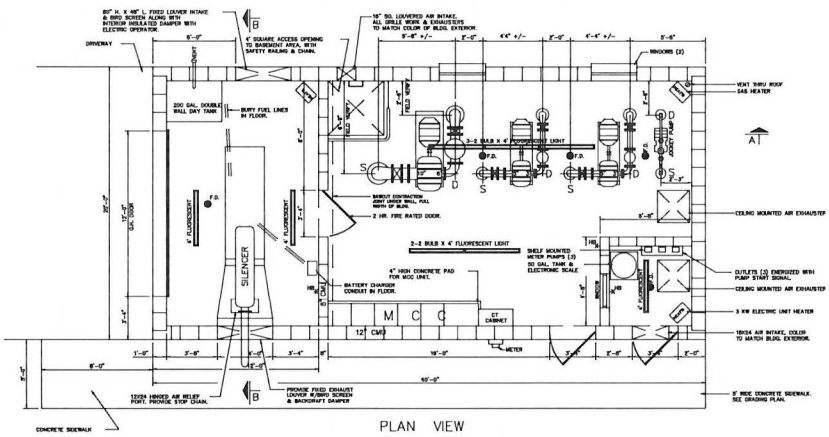
REMARKS	REVISION DATE

FIELDBOOK:
SCALE: AS SHOWN
DRAWN: MWM
CHECKED: MFD
DATE: 08/07/2018

DAVY ENGINEERING CO.
LA CROSSE, WISCONSIN

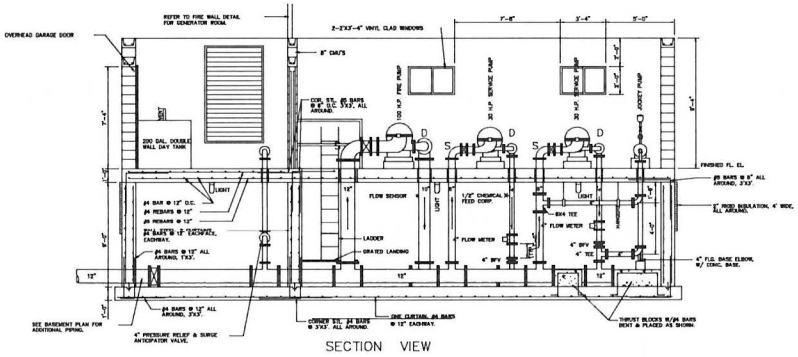
FIGURE 5 - CRESTWOOD LANE IMPR.
CRESTWOOD BOOSTER STATION
ONALASKA WISCONSIN

PROJECT NUMBER
001398-109.010



PLAN VIEW

EXAMPLE BUILDING VIEWS



SECTION VIEW

EXAMPLE BUILDING EXTERIOR

REVISION DATE	REMARKS

REDBOOK
SCALE: NTS
DRAWN: CBM/KY
CHECKED: JBT
DATE: 10/16/2018

DAVY ENGINEERING CO.
LA CROSSE, WISCONSIN

FIGURE 6 - BOOSTER STATION - EXAMPLE
CRESTWOOD BOOSTER STATION
ONALASKA, WISCONSIN

PROJECT NUMBER
01398-109.010

This is **EXHIBIT C**, consisting of [7] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [3/15/2018].

Payments to Engineer for Services and Reimbursable Expenses
COMPENSATION PACKET BC-2: Basic Services – Standard Hourly Rates

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

ARTICLE 2 – OWNER'S RESPONSIBILITIES

C2.01 *Compensation For Basic Services (other than Resident Project Representative) – Standard Hourly Rates Method of Payment*

A. Owner shall pay Engineer for Basic Services set forth in Exhibit A, except for services of Engineer's Resident Project Representative, if any, as follows:

1. An amount equal to the cumulative hours charged to the Project by each class of Engineer's personnel times Standard Hourly Rates for each applicable billing class for all services performed on the Project, plus Reimbursable Expenses and Engineer's Consultants' charges, if any.

2. The Standard Hourly Rates charged by Engineer constitute full and complete compensation for Engineer's services, including labor costs, overhead, and profit; the Standard Hourly Rates do not include Reimbursable Expenses or Engineer's Consultants' charges.

3. Engineer's Reimbursable Expenses Schedule and Standard Hourly Rates are attached to this Exhibit C as Appendices 1 and 2.

4. The total compensation for services under Paragraph C2.01 is estimated to be $142,490.00 based on the following estimated distribution of compensation:

a.	Preliminary Reports	$13,500.00
b.	Planning & Design Phase	$109,490.00
c.	Bidding or Negotiating Phase	~~$16,000.00~~ TBD
d.	Construction Phase	TBD
e.	PSC Construction Authorization	$3,500.00

5. Engineer may alter the distribution of compensation between individual phases of the work noted herein to be consistent with services actually rendered, but shall not exceed the total estimated compensation amount unless approved in writing by Owner. See also C2.03.C.2 below.

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#8-B

French Road Booster & Crestwood Lane desgin

9/24/2018
2019 C/P #30

Project Costs

Davy Engineering	
Preliminary engineering & reports	$13,500.00
Planning & design	$109,490.00
Public Service Commission authoization	$3,500.00
Bidding	TBD
Construction engineering	TBD
	$126,490.00

Funding Sources

Water portion	Booster & mains	2018 C/P Holiday Heights	$24,000.00
		2015 C/P fund balance	$60,700.00
		Water operating budget	$7,500.00
Sanitary sewer portion	Mains	2018 C/P Holiday Heights	$14,700.00
General portion	Street	2018 C/P Holiday Heights	$19,600.00
			$126,500.00

STAFF REVIEW SUMMARY

CITY OF ONALASKA
BOARD OF PUBLIC WORKS

October 2, 2018

Agenda Item: #9

Project/Item Name: Downtown parking

Location: 2nd Avenue and Main Street

Requested Action: Discussion on downtown parking

Staff Report/Description: Parking within the downtown continues to be in high demand due to growth of businesses and increased usage of parks in area. Discussion on topic at meeting.

Attachments: Map

0
125
250
500 Feet
LOCUST ST
KING ST
MAIN ST
IRVIN ST
HICKORY ST
HICKORY ST
2ND AVE N
2ND AVE N
3RD AVE N
4TH AVE N
6TH AVE N
8TH AVE S
5TH AVE S
4TH AVE S
3RD AVE S
2ND AVE S
2ND AVE S
COURT ST S
1ST AVE S
N
Dept of
Planning & Engineering
GIS Analyst Caitlin Hagar
Date 09 25 2018
Disclaimer: This map is to be used for reference purposes only. Every effort has been made to make this map as accurate as possible.

STAFF REVIEW SUMMARY

CITY OF ONALASKA
BOARD OF PUBLIC WORKS

October 2, 2018

Agenda Item: #10

Project/Item Name: Green Coulee Reservoir

Location: Green Coulee area

Requested Action: Discussion on site study memorandum

Staff Report/Description: With increased development in the Green Coulee area water high service zone; staff is recommending the installation of a Green Coulee high service zone reservoir. Current jockey pump at the Aspen Valley booster station does not keep up with demands placed upon the system. By Wisconsin DNR code the reservoir should be added as a second source of supply and allow a consistent service flow of water to users. SEH began initial study with five locations and reduced those to two locations. Each of the two locations has two alternative for water storage included. Staff is looking for a recommendation to move forward with the preferred alternative.

Attachments: Memorandum

Building a Better World
for All of Us®

MEMORANDUM

TO: Jarrod Holter, PE

FROM: Joshua Bohnert, PE

DATE: September 25, 2018

RE: Onalaska Greens Coulee Reservoir Site Study
SEH No. ONALA 136997 14.00

The City of Onalaska (City) is in need of storage for the Greens Coulee pressure zone per Wisconsin Chapter NR 811.82(1), see separate 2015 report titled *Greens Coulee Pressure Zone Study* (2015 Study). The 2015 study examined the need for the tank and explored four potential sites. The City hired Short Elliott Hendrickson Inc. (SEH®) to assess two of these sites in further detail with multiple tank options. The purpose of this memo is to discuss the feasibility of construction for various options for the future Greens Coulee Reservoir in Onalaska, Wisconsin. All costs shown are in 2018 USD.

Cost Comparison

Since the 2015 Study, the City has selected two potential sites for the tank. Figure 1 shows a concept layout for the Mayo Property (Site 1). Table 1-A provides a cost estimate of a ground storage tank on the Mayo Property (Option 1-A). Table 1-B provides a cost estimate of an elevated storage tank on the Mayo Property (Option 1-B). Figure 2 shows a concept layout for the Greens Coulee Park (Site 2). Table 2-A provides a cost estimate of a ground storage tank on the Greens Coulee Park (Option 2-A). Table 2-B provides a cost estimate of an elevated storage tank on the Greens Coulee Park (Option 2-B).

Comparison of Sites

Site 1: Mayo Property

The Mayo Property lies atop a ridge on the east side of USH 53. Snowflake Place, Tahoe Place, Alpine Place, Bearpaw Place, Wood Run Place, and Maplewood Place have been built into the eastern flank of the ridge. The best access point from existing roadway and watermain to the Mayo Property, for the purposes of constructing a water tank, is a vacant lot on the north side of the Alpine Place cul-de-sac. A driveway with a series of switchbacks with retaining walls would need to be constructed upon this lot to provide vehicular access from the cul-de-sac (elevation = 825 feet) to the finger ridge (elevation = 895 feet) lying midway between Alpine Place and Tahoe Place. There are two distinct options for a water tank upon the Mayo Property:

1. The hillside west of the finger ridge would provide a location for a ground storage tank with an overflow matching the Country Club Reservoir (elevation = 1015.8). No natural flat areas of sufficient size exist on the hillside, so significant earthwork and soil stabilization including retaining walls would be necessary to construct the vehicular access and pad for the water tank. A steep switchback driveway would be required to access this location, and the location would restrict the contractor for staging and laydown.
2. The finger ridge located midway between Alpine Place and Tahoe Place would provide a location for an elevated storage tank whose height would be approximately 120 feet to match the overflow of the Country Club Reservoir (elevation = 1015.8 feet). A steep switchback driveway would be required to access this

location. This area would provide a laydown and staging area, except for the close proximity to neighboring homes.

Site 2: Greens Coulee Park

Greens Coulee Park lies atop the ridge on the east side of Greens Coulee. Clifford Drive, Spring Hill Way, Harmony Point Place, and Quarry Lane have been built into the western flank of the ridge. The best access point from existing roadway follows the existing Greens Coulee Park trail from Stonebridge Avenue (elevation = 765 feet) to the finger ridge (elevation = 945 feet). The best access from existing watermain would be a proposed utility easement obtained from property owner(s) around the Quarry Lane cul-de-sac to allow for watermain to be directionally drilled between the houses from Quarry Lane north into Greens Coulee Park. There are two distinct options for a water tank in Greens Coulee Park:

1. The hillside east of Quarry Lane would provide a location for a ground storage tank with an overflow matching the Country Club Reservoir (elevation = 1015.8). No natural flat areas of sufficient size exist on the hillside, so significant earthwork and soil stabilization including retaining walls would be necessary to construct the vehicular access and pad for the water tank. A steep switchback driveway would be required to access this location, and the location would restrict the contractor for staging and laydown.
2. The finger ridge located midway between Quarry Lane and Harmony Point Place would provide a location for an elevated storage tank whose height would be approximately 70 feet to match the overflow of the Country Club Reservoir (elevation = 1015.8 feet). This area would provide a large laydown and staging area away from homes.

The land for Greens Coulee Park was purchased using Wisconsin DNR funds. Parklands purchased with Wisconsin DNR funds have added protections. Granting control or partial control of the land may be allowed depending on the impact of the action on the recreation resource with DNR approval. The DNR requires that land lost to outdoor recreation must be replaced with property of equal or greater recreational value and utility at the grantees expense.

The footprint of the water tank and any security fencing will reduce the usable parkland area, it will be necessary to request approval from Wisconsin DNR and purchase replacement land. Wisconsin DNR will want to see that other locations have been thoughtfully considered and that the proposed improvements will have the smallest possible impact on the remaining parkland. One possible option for land replacement could be to partner with Mississippi Valley Conservancy, a local land trust, in their ongoing land acquisition efforts in the area. Potential costs could that option could amount to approximately $21,000 per area of impact.

Comparison of Tank Styles Available at 150,000 gallons

Reinforced Concrete

Standard Cast-in-Place Concrete Tank – Ground and Below-Ground
A standard cast-in-place (CIP) concrete tank is a basic tank constructed of concrete and rebar. The consulting engineer would design all aspects of the tank, and a general contractor would construct the tank as designed. Because the concrete is not pre-stressed, load and temperature variations in the concrete may cause cracking over time. A standard cast-in-place concrete tank may be constructed above ground or below ground. If above ground, shotcrete could be used to enhance weather proofing and/or provide an architectural veneer. If below grade, a high pH shotcrete or an engineered coating could be used to protect the concrete from corrosive soils.

Costs:
1. Initial capital cost of approximately $400,000.
2. Maintenance cost of approximately $30,000 every 20 years.

Advantages:
1. Concrete requires minimal maintenance.
2. May be partially buried or above grade.
3. May be constructed rectangular or circular.

Disadvantages:
1. Is often thicker than prestressed concrete.
2. Has higher chance to crack than prestressed concrete.
3. Contractor does not perform their own structural analysis.

Wire- and Strand-Wound, Circular, Prestressed Concrete Water Tanks (AWWA D110-13 (R18)) - Ground
An AWWA D110 prestressed concrete tank is a concrete tank constructed of either reinforced cast-in-place concrete or precast reinforced concrete panels. The consulting engineer would specify the functional and architectural features of the tank, but the tank contractor would design the structure. The foundation is poured in-place separately from the tank wall. During construction, the walls would be prestressed vertically by tendons and circumferentially by strands and/or wires to permanently compress the concrete. The vertical tendons are internal to the concrete, while the circumferential strands and wires are external to the concrete. Shotcrete would cover the strands and wires wrapping the concrete wall and would provide an architectural veneer finish. Since the wires and strands are buried in shotcrete, maintenance on the strands and wires is difficult, but not impossible. Cracking is possible, but less likely than standard cast-in-place concrete due to the prestressing.

Costs:
1. Initial capital cost of approximately $360,000.
2. Maintenance cost of approximately $30,000 every 20 years.

Advantages:
1. Concrete requires minimal maintenance.
2. Reinforced concrete is prestressed to prevent cracking.
3. A specialized contactor performs their own structural analysis of the tank.
4. May be constructed as cast-in-place or with precast panels.

Disadvantages:
1. Requires more space around tank during construction to wrap the tank with wire.
2. Specialized equipment is required.

<u>Carbon Steel</u>

Welded Carbon Steel Tanks (AWWA D100-11) – Ground and Elevated
An AWWA D100 steel tank is a tank constructed of welded steel panels. The consulting engineer would specify the functional and architectural features of the tank, but the tank contractor would design the structure. The foundation is poured in-place separately from the tank. The final product would be one continuous welded steel structure. If the tank is elevated, either a spread footing and/or piles would be constructed to prevent tipping. The steel structure would be coated according to AWWA D102-17, and the coating may be customized to any degree.

Costs:
1. Ground Tank
    a. Initial capital cost of approximately $300,000.
    b. Maintenance cost of approximately $220,000 every 20 years.
2. Elevated Tank
    a. Initial capital cost of approximately $750,000 for 72 feet from ground to overflow, plus $2,600 per foot above 72 feet.
    b. Maintenance cost of approximately $270,000 every 20 years.

Advantages:
1. May be constructed as ground or elevated.
2. A specialized contactor performs their own structural analysis of the tank.
3. Seams are welded so that the final product is a single unit.

Disadvantages:
1. Steel requires routine maintenance and coatings
2. Requires more space around tank during construction to stage steel panels.
3. Requires curtains to prevent paint and weld splash around the tank.

Factory-Coated Bolted Carbon Steel Tanks (AWWA D103-09) – Ground
An AWWA D103 steel tank is a tank constructed of bolted steel panels coated with a sealant, either glass or epoxy. The consulting engineer would specify the functional and architectural features of the tank, but the tank contractor would design the structure. The foundation is poured in-place separately from the tank. The steel structure would be coated according to AWWA D102-17, and the coating is limited to the sealant used.

Costs:
1. Initial capital cost of $210,000 to $230,000, depending on sealant used.
2. Maintenance cost of approximately $130,000 every 20 years.

Advantages:
1. The sealant acts as a coating to the steel, reducing life cycle maintenance costs.
2. A specialized contactor performs their own structural analysis of the tank.

Disadvantages:
1. Tank is bolted with glass or epoxy sealant.
2. Requires more space around tank during construction to stage steel panels.
3. The epoxy and/or glass is brittle and can crack with impact or flexing.
4. A fence is typically recommended around this type of tank.

Comparison of Alternatives

Table 1 summarizes various alternatives discussed with the City in a meeting on 9/6/2018. The City and SEH® collectively shared ideas and weighed each alternative according to four categories with a score of 1 to 4. A high score means the alternative is more favorable. Based on Table 1, the most desirable alternative is **Option 2-A**, a ground storage tank in Greens Coulee Park. Of the ground storage tank alternatives, the most economical option is the wire- and strand-wound, circular, prestressed concrete water tank (AWWA D110-13 (R18)) based on the information and assumptions of this memo.

Table 1: Decision Matrix

Parameter	Alternatives			
	Option 1-A	Option 1-B	Option 2-A	Option 2-B
Economics	2	3	4	3
Environmental	1	2	3	4
Aesthetics	3	1	4	2
Life Cycle Cost	2	1	3	1
Total Score	**8**	**7**	**14**	**10**

JJB
Figure
c: Jeremy Tomesh, Randy Sanford, David Schofield
\\sehlx1\projects\ko\o\onala\136997\4-prelim-dsgn-rpts\onala136997 greens coulee reservoir 092518.docx

Table 1-A for Option 1-A

Project Name: CITY OF ONALASKA - GREENS COULEE TANK
SEH Project No: ONALA 136997
Date: 9/25/18
Estimator: DAS/JJB
Description: MAYO SITE - GROUND STORAGE TANK

ITEM	UNIT	EST. QUANTITY	UNIT PRICE	AMOUNT
REMOVE ASPHALTIC PAVEMENT	SY	100	$ 5.00	$ 500.00
SAWCUT	LF	100	$ 5.00	$ 500.00
STORM SEWER, 12"	LF	1,000	$ 40.00	$ 40,000.00
STORM MANHOLE	EA	5	$ 4,000.00	$ 20,000.00
CONNECT TO EX. STORM SEWER	EA	1	$ 1,000.00	$ 1,000.00
WATER MAIN, 12"	LF	600	$ 60.00	$ 36,000.00
WATER MAIN, 12" DIRECTIONAL DRILL	LF	400	$ 150.00	$ 60,000.00
GATE VALVE, 12"	EA	3	$ 3,000.00	$ 9,000.00
GATE VALVE, 6"	EA	3	$ 2,000.00	$ 6,000.00
HYDRANT	EA	3	$ 4,000.00	$ 12,000.00
CONNECT TO EX. WATERMAIN	EA	1	$ 1,000.00	$ 1,000.00
COMMON EXCAVATION	CY	7,100	$ 10.00	$ 71,000.00
PIT RUN & BREAKER RUN	CY	1,400	$ 20.00	$ 28,000.00
ASPHALTIC PAVEMENT, 3"	SY	2,000	$ 20.00	$ 40,000.00
CONCRETE CURB & GUTTER	LF	50	$ 20.00	$ 1,000.00
RESTORATION	SY	11,200	$ 5.00	$ 56,000.00
SILT FENCE	LF	5,000	$ 5.00	$ 25,000.00
INLET PROTECTION	EA	6	$ 100.00	$ 600.00
150,000 GALLON GROUND STORAGE TANK	LUMP	1	$ 360,000.00	$ 360,000.00
LAND ACQUISITION	LUMP	1	$ 50,000.00	$ 50,000.00
MOBILIZATION	%	$ 767,600.00	2%	$ 16,000.00
SUBTOTAL				$ 834,000.00
CONTINGENCIES (15%)			15%	$ 126,000.00
BANK STABILIZATION	SF	17,000	$ 15.00	$ 255,000.00
TANK SITE STABILIZATION	LUMP	1	$ 100,000.00	$ 100,000.00
INFLATION	2018	2019	4%	$ 34,000.00
TOTAL CONSTRUCTION				$ 1,349,000.00
ADMINISTRATION, ENGINEERING AND LEGAL (15%)			15%	$ 203,000.00
TOTAL PROJECT				$ 1,552,000.00

Unit prices are based on the engineers best knowledge at the time of preparation. The accuracy is a function of economic conditions and external influence that can fluctuate greatly. Construction not specifically listed is not included. Soft cost fees shown follow general rules of thumb. Each project has unique issues which can cause these numbers to vary.

Notes:
- 150,000 gallon prestressed wire wound concrete tank (AWWA D110).
- Tank to be located approximately 750-feet West-Northwest of the Alpine Place cul-de-sac on the Mayo Property.
- 2500-foot Driveway to Alpine Place (8% slope max).
- 1000-foot 12-inch watermain and 12-inch storm sewer (overflow) to Alpine Place.
- Retaining walls needed near Alpine Place and along westernmost driveway run.

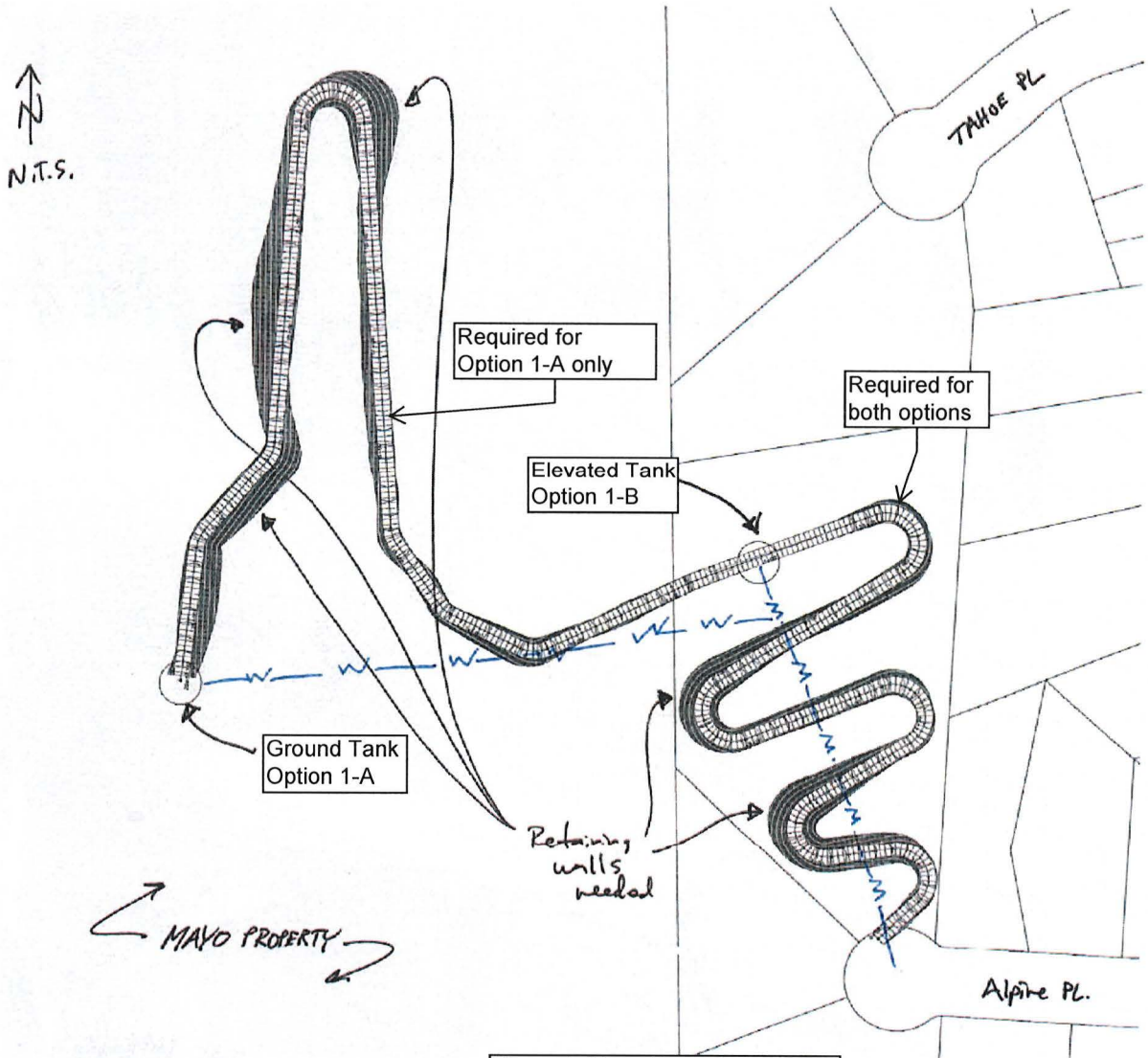


Figure 1: Mayo Property Concept

Table 1-B for Option 1-B

Project Name: CITY OF ONALASKA - GREENS COULEE TANK
SEH Project No: ONALA 136997
Date: 9/25/18
Estimator: DAS/JJB
Description: MAYO SITE - ELEVATED STORAGE TANK

ITEM	UNIT	EST. QUANTITY	UNIT PRICE	AMOUNT
REMOVE ASPHALTIC PAVEMENT	SY	100	$ 5.00	$ 500.00
SAWCUT	LF	100	$ 5.00	$ 500.00
STORM SEWER, 12"	LF	500	$ 40.00	$ 20,000.00
STORM MANHOLE	EA	3	$ 4,000.00	$ 12,000.00
CONNECT TO EX. STORM SEWER	EA	1	$ 1,000.00	$ 1,000.00
WATER MAIN, 12"	LF	500	$ 60.00	$ 30,000.00
GATE VALVE, 12"	EA	3	$ 3,000.00	$ 9,000.00
GATE VALVE, 6"	EA	2	$ 2,000.00	$ 4,000.00
HYDRANT	EA	2	$ 4,000.00	$ 8,000.00
CONNECT TO EX. WATERMAIN	EA	1	$ 1,000.00	$ 1,000.00
COMMON EXCAVATION	CY	4,100	$ 10.00	$ 41,000.00
PIT RUN & BREAKER RUN	CY	700	$ 20.00	$ 14,000.00
ASPHALTIC PAVEMENT, 3"	SY	2,000	$ 20.00	$ 40,000.00
CONCRETE CURB & GUTTER	LF	50	$ 20.00	$ 1,000.00
RESTORATION	SY	4,900	$ 5.00	$ 24,500.00
SILT FENCE	LF	2,200	$ 5.00	$ 11,000.00
INLET PROTECTION	EA	6	$ 100.00	$ 600.00
150,000 GALLON ELEVATED STORAGE TANK	LUMP	1	$ 880,000.00	$ 880,000.00
LAND ACQUISITION	LUMP	1	$ 50,000.00	$ 50,000.00
MOBILIZATION	%	$ 1,098,100.00	2%	$ 22,000.00
SUBTOTAL				**$ 1,171,000.00**
CONTINGENCIES (15%)			15%	$ 176,000.00
BANK STABILIZATION	SF	5,000	$ 15.00	$ 75,000.00
INFLATION	2018	2019	4%	$ 47,000.00
TOTAL CONSTRUCTION				**$ 1,469,000.00**
ADMINISTRATION, ENGINEERING AND LEGAL (15%)			15%	$ 221,000.00
TOTAL PROJECT				**$ 1,690,000.00**

Unit prices are based on the engineers best knowledge at the time of preparation. The accuracy is a function of economic conditions and external influence that can fluctuate greatly. Construction not specifically listed is not included. Soft cost fees shown follow general rules of thumb. Each project has unique issues which can cause these numbers to vary.

Notes:
- 150,000 gallon 120 foot tall steel pedesphere elevated storage tank (AWWA D100).
- Tank to be located approximately 450-feet North-Northwest of the Alpine Place cul-de-sac on the Mayo Property.
- 1100-foot Driveway to Alpine Place (8% slope max).
- 500-foot 12-inch watermain and 12-inch storm sewer (overflow) to Alpine Place.
- Retaining walls needed near Alpine Place.

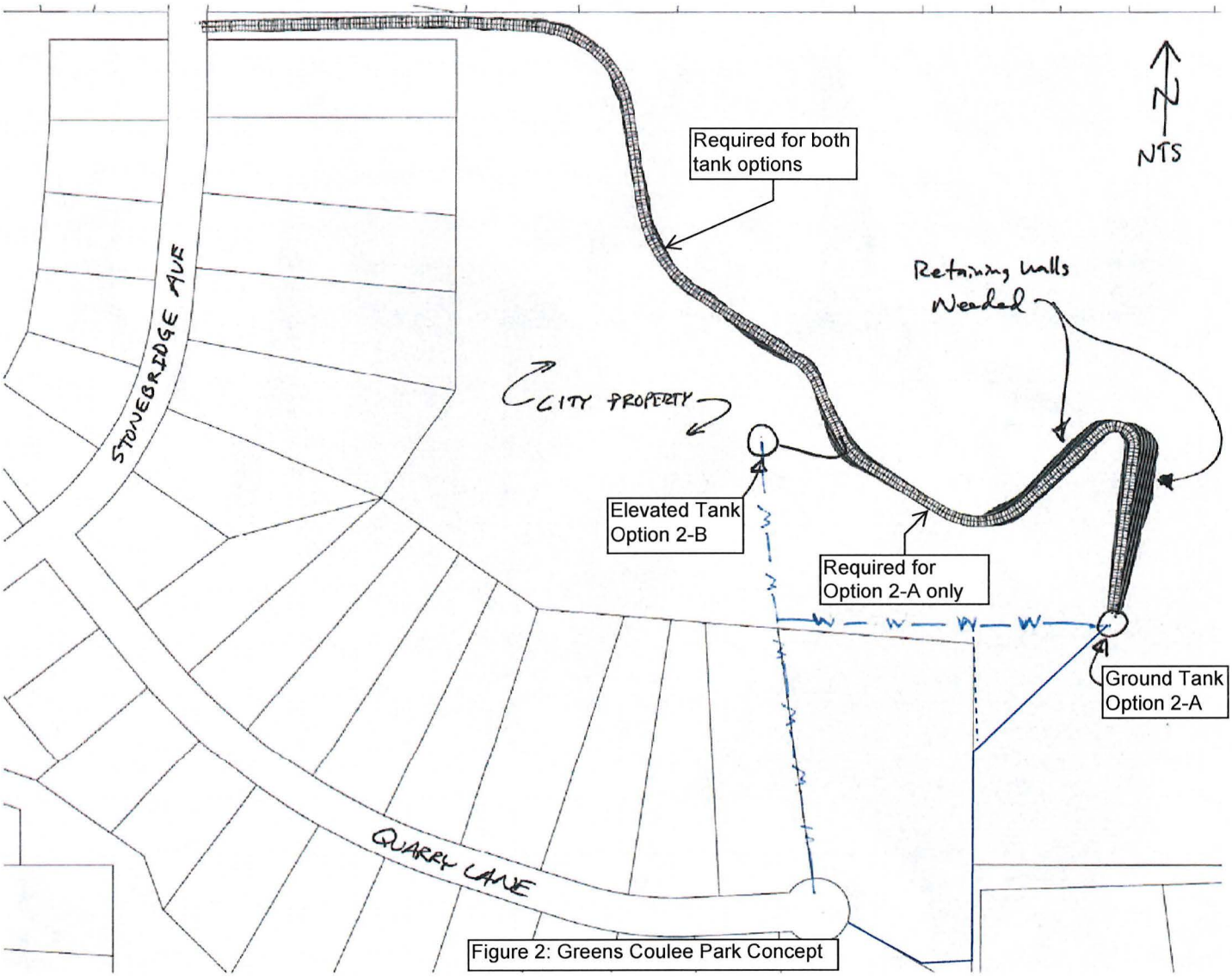


Figure 2: Greens Coulee Park Concept

Table 2-A for Option 2-A

Project Name: CITY OF ONALASKA - GREENS COULEE TANK
SEH Project No: ONALA 136997
Date: 9/25/18
Estimator: DAS/JJB
Description: CITY SITE - GROUND STORAGE TANK

ITEM	UNIT	EST. QUANTITY	UNIT PRICE	AMOUNT
REMOVE ASPHALTIC PAVEMENT	SY	100	$ 5.00	$ 500.00
SAWCUT	LF	100	$ 5.00	$ 500.00
STORM SEWER, 12"	LF	1,000	$ 40.00	$ 40,000.00
STORM MANHOLE	EA	5	$ 4,000.00	$ 20,000.00
CONNECT TO EX. STORM SEWER	EA	1	$ 1,000.00	$ 1,000.00
WATER MAIN, 12"	LF	1,000	$ 60.00	$ 60,000.00
WATER MAIN, 12" DIRECTIONAL DRILL	LF	500	$ 150.00	$ 75,000.00
GATE VALVE, 12"	EA	3	$ 3,000.00	$ 9,000.00
GATE VALVE, 6"	EA	2	$ 2,000.00	$ 4,000.00
HYDRANT	EA	2	$ 4,000.00	$ 8,000.00
CONNECT TO EX. WATERMAIN	EA	1	$ 1,000.00	$ 1,000.00
COMMON EXCAVATION	CY	4,500	$ 10.00	$ 45,000.00
PIT RUN & BREAKER RUN	CY	1,300	$ 20.00	$ 26,000.00
ASPHALTIC PAVEMENT, 3"	SY	100	$ 20.00	$ 2,000.00
CONCRETE CURB & GUTTER	LF	50	$ 20.00	$ 1,000.00
RESTORATION	SY	9,800	$ 5.00	$ 49,000.00
SILT FENCE	LF	4,400	$ 5.00	$ 22,000.00
INLET PROTECTION	EA	6	$ 100.00	$ 600.00
150,000 GALLON GROUND STORAGE TANK	LUMP	1	$ 360,000.00	$ 360,000.00
LAND ACQUISITION/REPLACEMENT	ACRE	0.84	$ 21,000.00	$ 17,640.00
MOBILIZATION	%	$ 724,600.00	2%	$ 15,000.00
SUBTOTAL				**$ 758,000.00**
CONTINGENCIES (15%)			15%	$ 114,000.00
BANK STABILIZATION	SF	8,500	$ 15.00	$ 127,500.00
TANK SITE STABILIZATION	LUMP	1	$ 150,000.00	$ 150,000.00
INFLATION	2018	2019	4%	$ 31,000.00
TOTAL CONSTRUCTION				**$ 1,180,500.00**
ADMINISTRATION, ENGINEERING AND LEGAL (15%)			15%	$ 178,000.00
TOTAL PROJECT				**$ 1,358,500.00**

Unit prices are based on the engineers best knowledge at the time of preparation. The accuracy is a function of economic conditions and external influence that can fluctuate greatly. Construction not specifically listed is not included. Soft cost fees shown follow general rules of thumb. Each project has unique issues which can cause these numbers to vary.

Notes:
- 150,000 gallon prestressed wire wound concrete tank (AWWA D110).
- Tank to be located approximately 650-feet Northeast of the Quarry Lane cul-de-sac on City Property.
- 2200-foot Driveway to Stonebridge Avenue (15% slope max) to follow existing trail.
- 1000-foot 12-inch watermain and 12-inch storm sewer (overflow) to Quarry Lane.
- Retaining walls needed along easternmost driveway run.

Table 2-B for Option 2-B

Project Name: CITY OF ONALASKA - GREENS COULEE TANK
SEH Project No: ONALA 136997
Date: 9/25/18
Estimator: DAS/JJB
Description: CITY SITE - ELEVATED STORAGE TANK

ITEM	UNIT	EST. QUANTITY	UNIT PRICE	AMOUNT
REMOVE ASPHALTIC PAVEMENT	SY	100	$ 5.00	$ 500.00
SAWCUT	LF	100	$ 5.00	$ 500.00
STORM SEWER, 12"	LF	750	$ 40.00	$ 30,000.00
STORM MANHOLE	EA	4	$ 4,000.00	$ 16,000.00
CONNECT TO EX. STORM SEWER	EA	1	$ 1,000.00	$ 1,000.00
WATER MAIN, 12"	LF	750	$ 60.00	$ 45,000.00
WATER MAIN, 12" DIRECTIONAL DRILL	LF	500	$ 150.00	$ 75,000.00
GATE VALVE, 12"	EA	3	$ 3,000.00	$ 9,000.00
GATE VALVE, 6"	EA	2	$ 2,000.00	$ 4,000.00
HYDRANT	EA	2	$ 4,000.00	$ 8,000.00
CONNECT TO EX. WATERMAIN	EA	1	$ 1,000.00	$ 1,000.00
COMMON EXCAVATION	CY	1,000	$ 10.00	$ 10,000.00
PIT RUN & BREAKER RUN	CY	900	$ 20.00	$ 18,000.00
ASPHALTIC PAVEMENT, 3"	SY	100	$ 20.00	$ 2,000.00
CONCRETE CURB & GUTTER	LF	50	$ 20.00	$ 1,000.00
RESTORATION	SY	6,700	$ 5.00	$ 33,500.00
SILT FENCE	LF	3,000	$ 5.00	$ 15,000.00
INLET PROTECTION	EA	5	$ 100.00	$ 500.00
150,000 GALLON ELEVATED STORAGE TANK	LUMP	1	$ 750,000.00	$ 750,000.00
LAND ACQUISITION/REPLACEMENT	ACRE	0.64	$ 21,000.00	$ 13,440.00
MOBILIZATION	%	$ 1,020,000.00	2%	$ 21,000.00
SUBTOTAL				**$ 1,055,000.00**
CONTINGENCIES (15%)			15%	$ 159,000.00
BANK STABILIZATION	SF	2,000	$ 15.00	$ 30,000.00
INFLATION	2018	2019	4%	$ 43,000.00
TOTAL CONSTRUCTION				**$ 1,287,000.00**
ADMINISTRATION, ENGINEERING AND LEGAL (15%)			15%	$ 194,000.00
TOTAL PROJECT				**$ 1,481,000.00**

Unit prices are based on the engineers best knowledge at the time of preparation. The accuracy is a function of economic conditions and external influence that can fluctuate greatly. Construction not specifically listed is not included. Soft cost fees shown follow general rules of thumb. Each project has unique issues which can cause these numbers to vary.

Notes:
- 150,000 gallon 70 foot tall steel pedesphere elevated storage tank (AWWA D100).
- Tank to be located approximately 750-feet North of the Quarry Lane cul-de-sac on City Property.
- 1500-foot Driveway to Stonebridge Avenue (15% slope max) to follow existing trail.
- 750-foot 12-inch watermain and 12-inch storm sewer (overflow) to Quarry Lane.

Greens Coulee Pressure Zone Study

Onalaska Utility Department

Onalaska, Wisconsin

SEH No. ONALA 134029 4.00

December 8, 2015

SEH

Building a Better World
for All of Us®

Engineers | Architects | Planners | Scientists

Executive Summary

NR 811.82 requires elevated storage to be added to the pressure zone, as the elevation of some existing units already exceeds the overflow elevation of the main pressure zone. In light of this requirement, SEH recommends Option 5, Option 6 or Option 7, all which provide elevated storage to the pressure zone. Elevated storage would provide flow equalization and pressure stabilization. A tank of 150,000 gallons is recommended in this study.

The preferred option by the Utility is Option 5A, followed by Option 5D. Multiple other options were assessed in this report. The Utility with SEH made this selection based on Wisconsin Statutes NR 811, Utility preference, the 20-year plan of the Utility for the water distribution system, and the availability of parcels.

For short term planning, SEH recommends the Utility replace the Jockey pump and re-calibrate the hydro-pneumatic tank. A vendor or contractor could be brought on site to provide an official quote directly to the Utility, and the work could be overseen by the Utility directly. This relatively inexpensive maintenance would alleviate the high pressures observed by the Utility until elevated storage can be provided to the pressure zone.

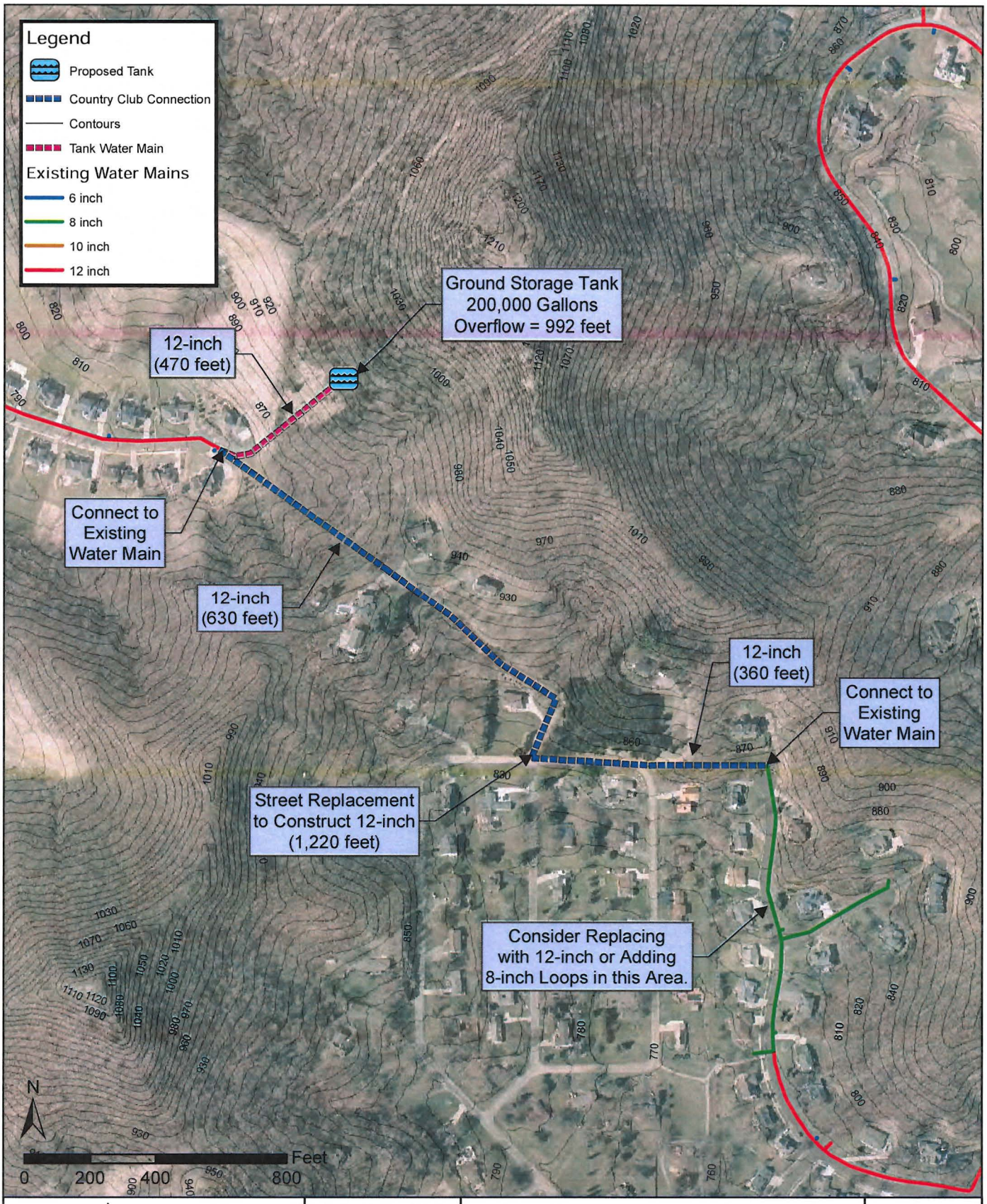
Cost estimates are summarized in Table 6-1 and cost break-downs are provided in Appendix A and Appendix B. SEH recommends the Utility apply for the Safe Drinking Water Loan Program to fund the future projects.

Table 6-2
Decision Matrix
(Scale 1 to 5: 1 = Least Desirable, 5 = Most Desirable)

Alternative	Option 1: Continue Existing Booster Station Operation	Option 2: Replace Jockey Pump and Re-Calibrate Hydro-pneumatic Tank	Option 5A: Remove Jockey Pump, Remove Hydro-Pneumatic tank, and Construct New Storage Tank on Quarry Lane	Option 5B: Remove Jockey Pump, Remove Hydro-Pneumatic tank, and Construct New Storage Tank on Clifford Drive	Option 5C: Remove Jockey Pump, Remove Hydro-Pneumatic tank, and Construct New Storage Tank on Aspen Valley Drive	Option 5D: Remove Jockey Pump, Remove Hydro-Pneumatic tank, and Construct New Storage Tank on Tahoe Drive	Option 6: Remove Jockey Pump, Remove Hydro-Pneumatic tank, and Connect to Country Club Pressure Zone	Option 7: Remove Jockey Pump, Remove Hydro-Pneumatic tank, Connect to Country Club Pressure Zone, and Construction Ground Storage Tank at Location 1
Most Limiting Factor	NR 811 Storage Requirement	NR 811 Storage Requirement	Neighboring Parcels	Township Roadway	High Cost of Watermain Replacements	Some Water Main Replacement	Neighboring Township	Neighboring Township
Pressure Stability	1	3	5	5	5	5	3	5
Available Fire Protection	3	3	5	5	5	5	5	5
Capital & Construction Costs	5	5	3	3	1	2	4	1
Energy Costs	3	3	4	4	4	4	4	4
Property Acquisition	5	5	2	1	2	4	1	2
Long-Term Needs	1	2	5	5	5	5	5	5
Reliability	1	2	4	4	4	4	5	5
Totals	**19**	**23**	**28**	**27**	**26**	**29**	**27**	**27**

\\sehlx\projects\KOLO\Onala\134029\Pressure Zone Tables and Figures\[Table 6-2 Decision Matrix.xlsx]Decision Matrix

Most Desirable Option



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SEH

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TF: (800) 325-2055
www.sehinc.com

Project: ONALA 134029
Print Date: 10/21/2015

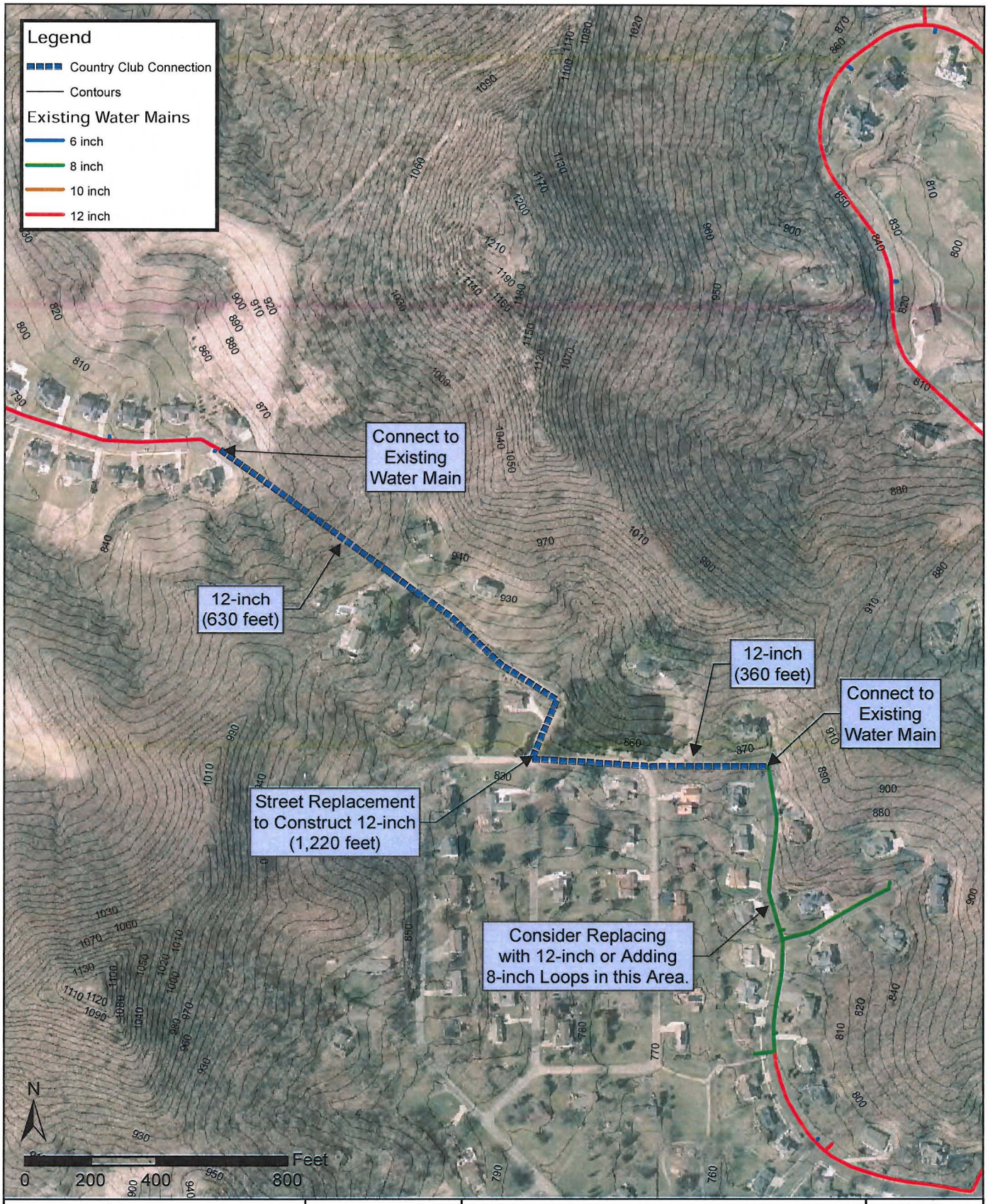
Map by: jbohnert
Projection: NAD_1983_StatePlane_Wisconsin_South_FIPS_4803_Feet
Source: City of Onlaska GIS

OPTION 7: COUNTRY CLUB & TANK LOCATION 1

GREENS COULEE PRESSURE ZONE

Figure B-7

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.



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Print Date: 10/21/2015

Map by: jbohnert
Projection: NAD_1983_StatePlane_Wisconsin_South_FIPS_4803_Feet
Source: City of Onlaska GIS

OPTION 6: COUNTRY CLUB

GREENS COULEE PRESSURE ZONE
Onalaska, Wisconsin

Figure B-6

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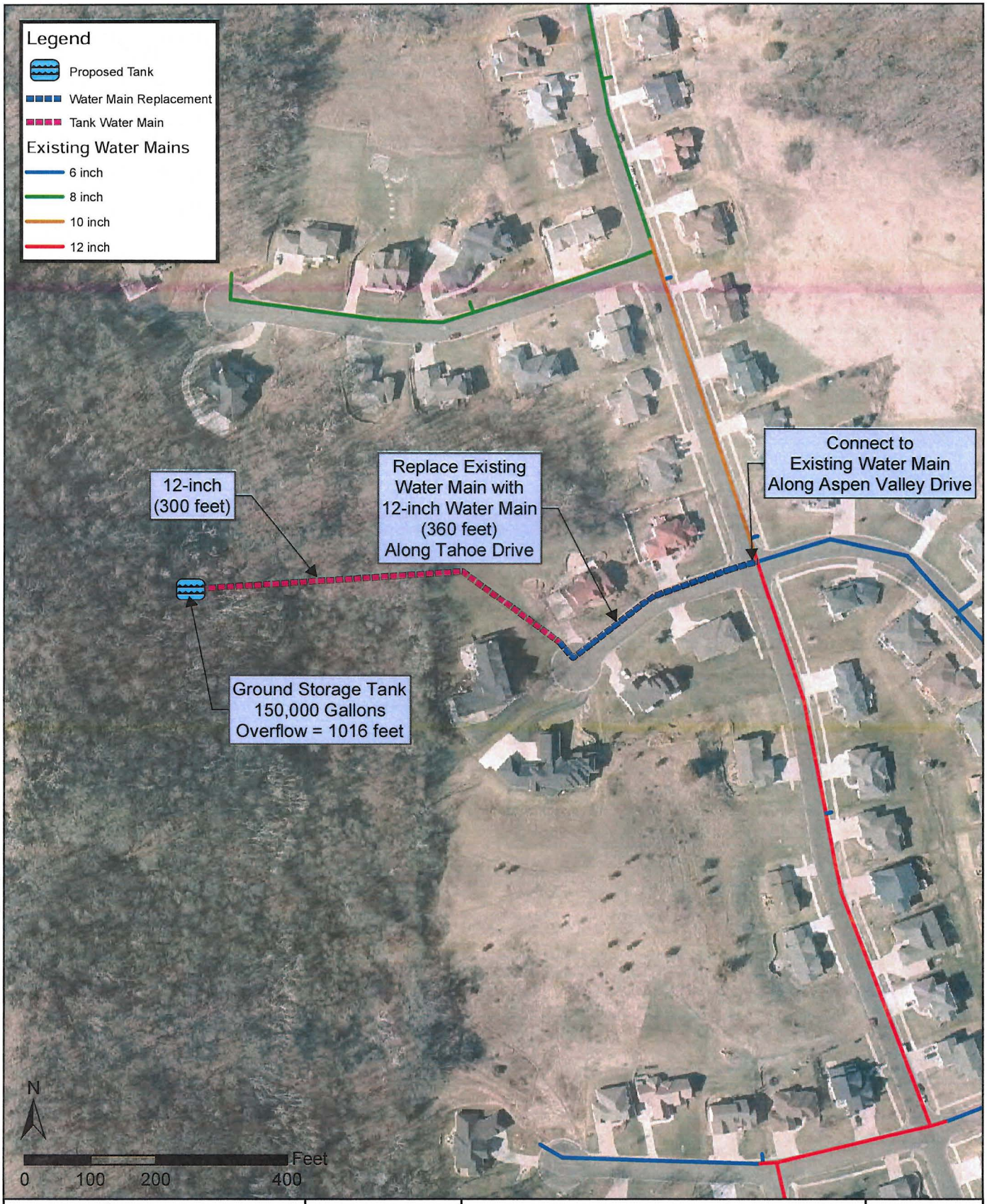

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Project: ONALA 134029
Print Date: 11/19/2015

Map by: jbohnert
Projection: NAD_1983_StatePlane_Wisconsin_South_FIPS_4803_Feet
Source: City of Onlaska GIS

OPTION 5D: TANK LOCATION D

GREENS COULEE PRESSURE ZONE
Onalaska, Wisconsin

Figure
B-5d

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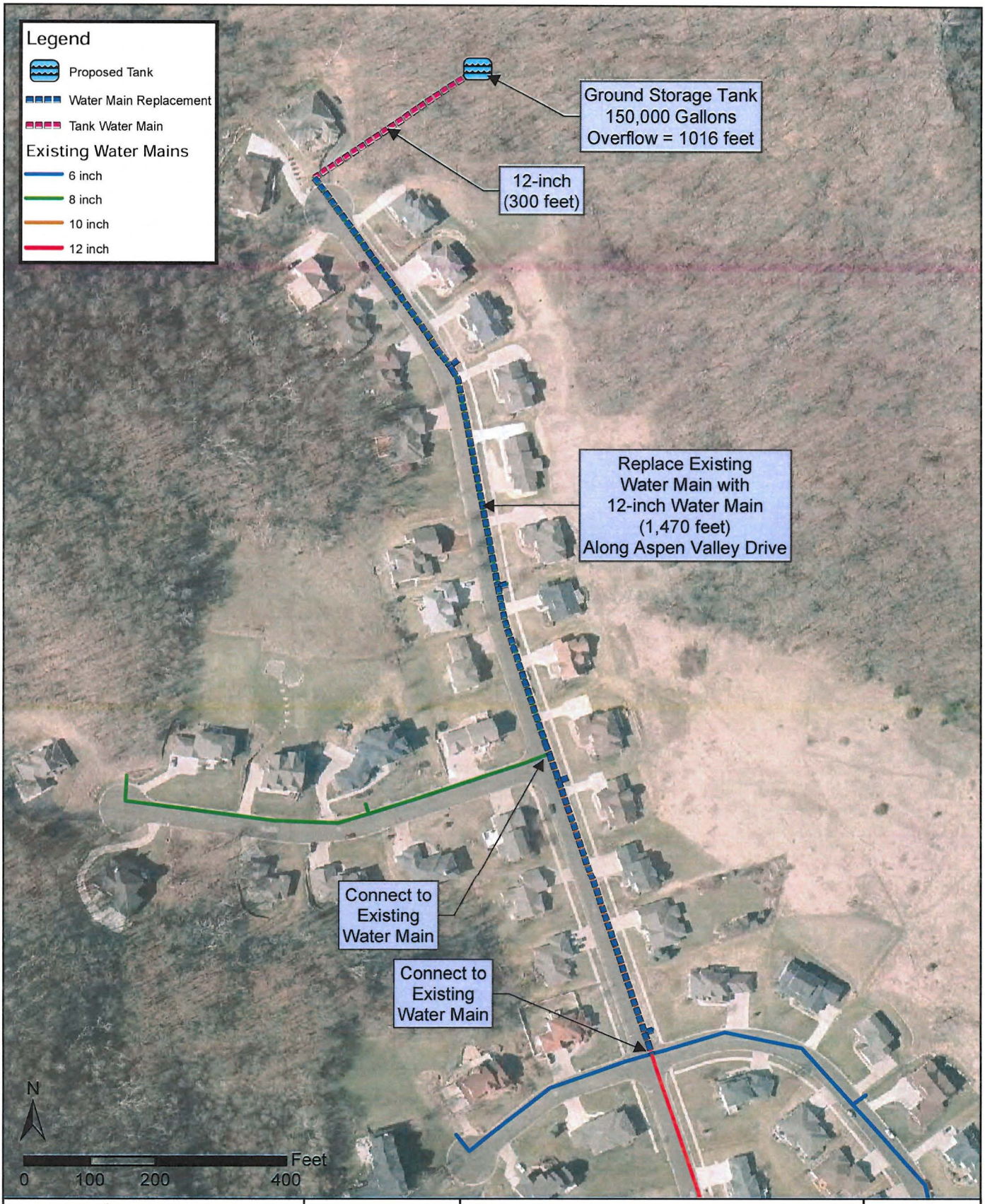

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Project: ONALA 134029
Print Date: 11/19/2015

Map by: jbohnert
Projection: NAD_1983_StatePlane_Wisconsin_South_FIPS_4803_Feet
Source: City of Onlaska GIS

OPTION 5C: TANK LOCATION C

GREENS COULEE PRESSURE ZONE
Onalaska, Wisconsin

Figure B-5c

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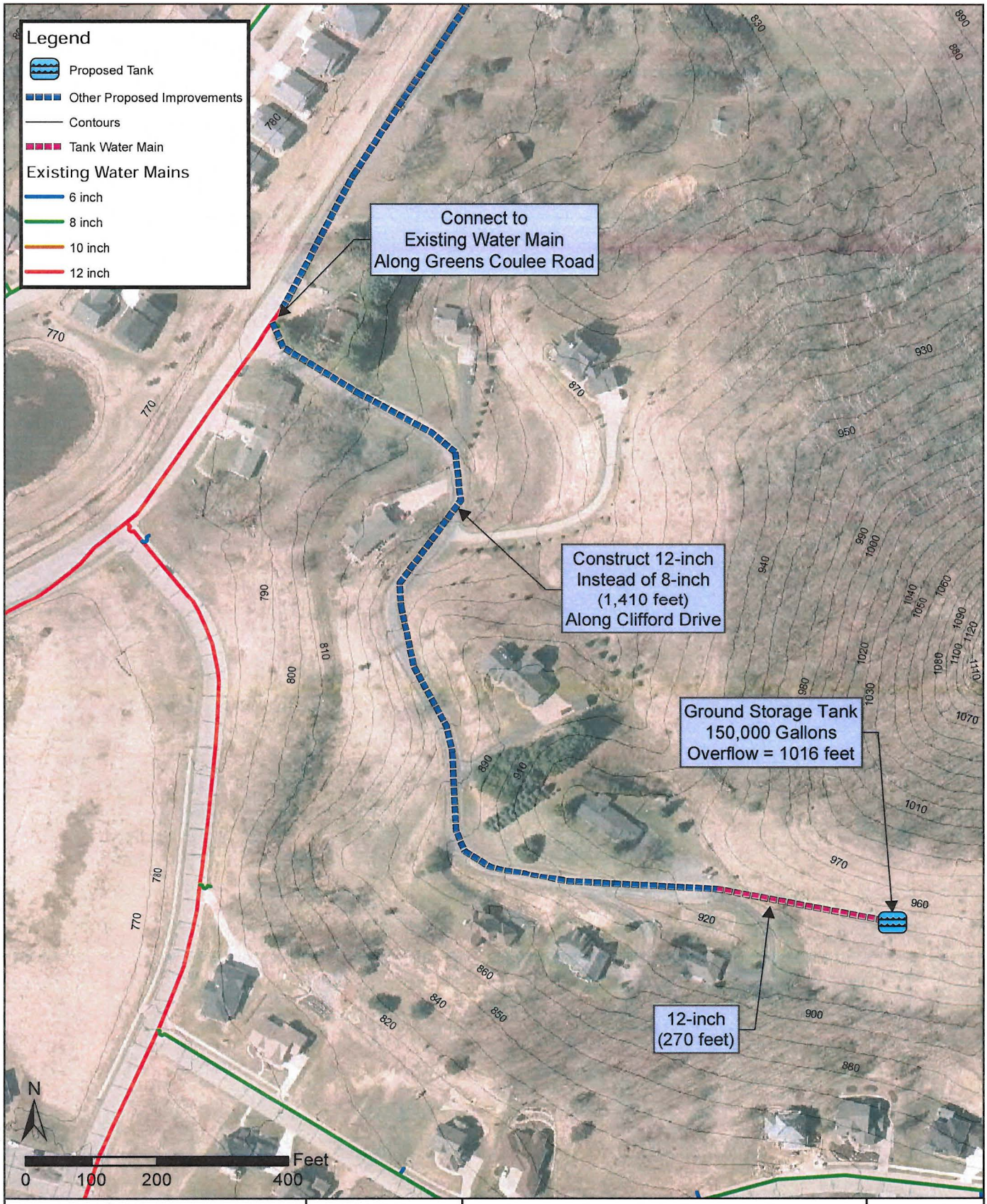

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Print Date: 11/19/2015

Map by: jbohnert
Projection: NAD_1983_StatePlane_Wisconsin_South_FIPS_4803_Feet
Source: City of Onlaska GIS

OPTION 5B: TANK LOCATION B

GREENS COULEE PRESSURE ZONE
Onalaska, Wisconsin

Figure B-5b

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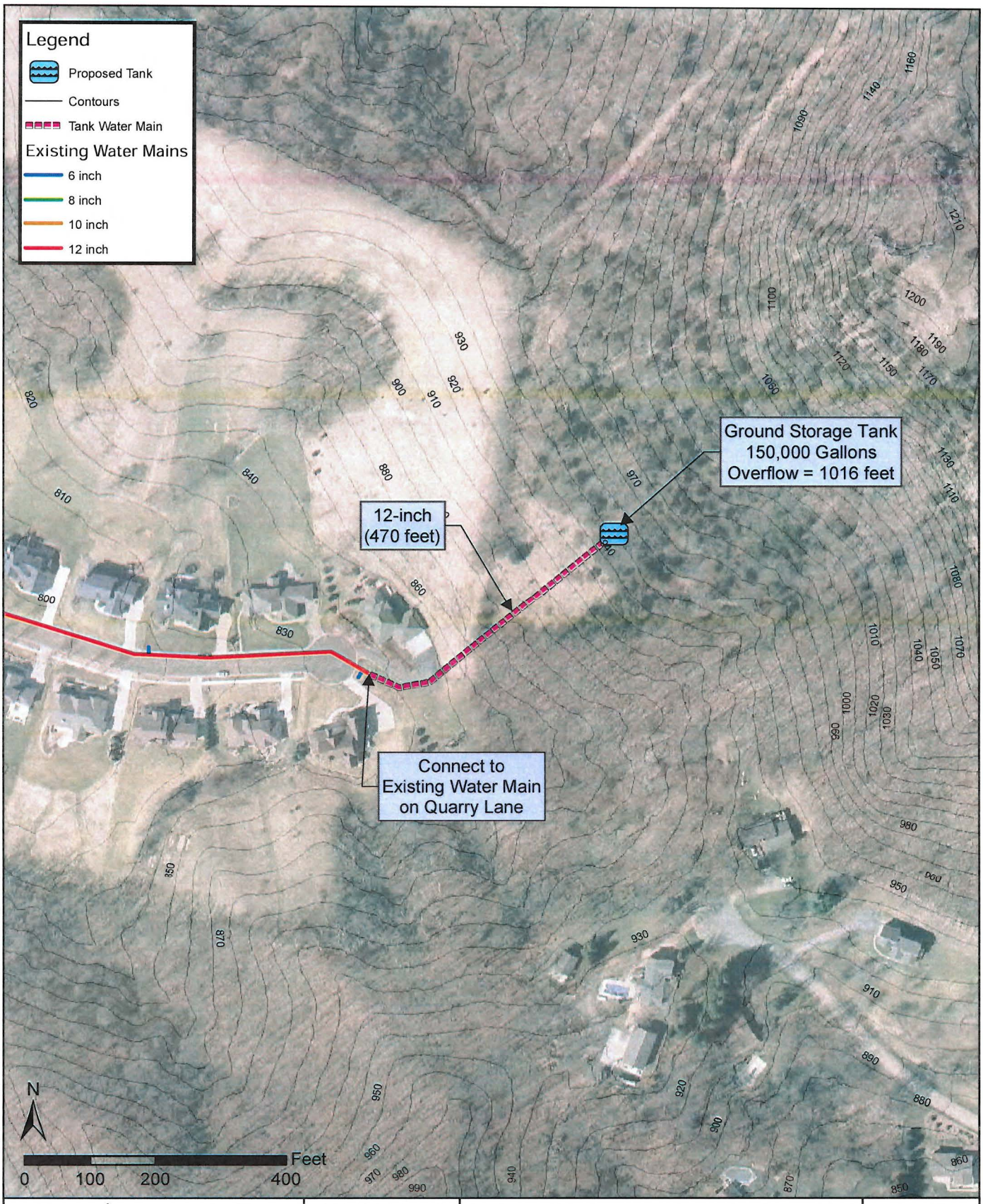

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Project: ONALA 134029
Print Date: 11/19/2015

Map by: jbohnert
Projection: NAD_1983_StatePlane_Wisconsin_South_FIPS_4803_Feet
Source: City of Onlaska GIS

OPTION 5A: TANK LOCATION A

GREENS COULEE PRESSURE ZONE
Onalaska, Wisconsin

Figure B-5a

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STAFF REVIEW SUMMARY

CITY OF ONALASKA
BOARD OF PUBLIC WORKS

October 2, 2018

Agenda Item: #11

Project/Item Name: Special assessments

Location: Citywide

Requested Action: Approval of final special assessment costs

Staff Report/Description: Attached are the proposed Final Special Assessment Costs for the 2018 year.

Attachments: Final special assessment costs

September 24, 2018

FINAL SPECIAL ASSESSMENT COSTS
2018 MISCELLANEOUS CONCRETE PROJECT
CONTRACTOR: Steiger Construction
CITY OF ONALASKA, WISCONSIN

1)	4" Concrete Sidewalk Replacement (including 7.5% Administrative Cost)	= $5.38/S.F.
2)	4" Concrete Sidewalk Removal (including 7.5% Administrative Cost)	= $1.88/S.F.

FINAL SPECIAL ASSESSMENT COSTS
2018 UTILITY PROJECT
CONTRACTOR: Gerke Excavating
CITY OF ONALASKA, WISCONSIN

1)	6" Concrete Apron Replacement (including 7.5% Administrative Cost)	= $5.02/S.F.
2)	Concrete Driveway Removal (including 7.5% Administrative Cost)	= $0.46/S.F.
3)	2" Bituminous Pavement, Rolled in Place (Part D) (including 7.5% Administrative Cost)	= $112.49/ Ton

BOARD OF PUBLIC WORKS
MONTHLY ESTIMATES
October 2, 2018

REV

Contractor	Original Contract Amount	Change Orders	Paid to Date	Due this Estimate
1. **AYRES ASSOCIATES** 2018 Air Photo Estimate #2	$ 22,420.00	$ -	$ 11,210.00	$ 11,210.00
2. **STRAND ASSOCIATES** 6th & Quincy Lift Station Design Estimate #8	$ 59,900.00	$ 18,000.00	$ 39,303.77	$ 20,064.70
3. **STRAND ASSOCIATES** 12th/Sand Lake & Main St Traffic Signal Design Estimate #7	$ 27,900.00	$ -	$ 27,230.00	$ 670.00
4. **SEH INC.** Railroad Quiet Zone study Design Estimate #6	$ 11,900.00	$ -	$ 6,579.62	$ 311.21
5. **MATHY CONSTRUCTION** 2018 Pavement Project Construction Estimate #5	$ 1,184,065.45	$ -	$ 941,442.57	$ 77,251.51
6. **GERKE EXCAVATING** 2018 Utility Project Construction Estimate #5	$ 1,708,611.00	$ -	$ 971,440.83	$ 126,822.25
7. **STEIGER CONSTRUCTION** 2018 Misc. Concrete Project Construction Estimate #4	$ 85,087.50	$ -	$ 40,168.61	$ 4,026.95
8. **SEH INC.** 2018 Utility Project Construction Estimate #3	$ 19,601.16	$ -	$ 19,100.08	$ 3,392.95
9. **SEH INC** Green Coulee Reservoir Project Design Estimate #4	$ 10,000.00	$ -	$ 6,117.02	$ 1,180.46

BOARD OF PUBLIC WORKS
MONTHLY ESTIMATES
October 2, 2018

Contractor	Original Contract Amount	Change Orders	Paid to Date	Due this Estimate
10. **ST JOSEPH CONSTRUCTION** Pond #17 Construction Estimate #2	$ 174,102.50	$ -	$ 11,043.75	$ 22,087.50
11. **HYDROKLEAN** Green Coulee Culvert Joint Repair Construction Estimate #1	$ 15,200.00	$ -	$ -	$ 15,200.00
12. **STRAND ASSOCIATES** SCADA Remote Access Design Estimate #2	$ 4,500.00	$ -	$ 550.00	$ 1,250.00
13. **HSR ASSOCIATES** Public Works Facility Study Design Estimate #1	$ 3,232.00	$ -	$ -	$ 3,232.00
14. **SEH INC** Abbey Road Design Estimate #1	$ 84,500.00	$ -	$ -	$ 13,104.27
15. **MUNICIPAL WELL & PUMP** Well #7 - Motor Construction Estimate #1	$ 19,200.00	$ -	$ -	$ 19,200.00
16. **STRAND ASSOCIATES** 2018 SCADA Enhancements Design Estimate #5	$ 19,000.00	$ -	$ 6,992.71	$ 740.99
17. **BLUESTEM FORESTRY** 2018 Forestry Plan Design Estimate #2	$ 11,500.00	$ -	$ 4,200.00	$ 4,000.00
18. **DAVY ENGINEERING** French Road Booster Station Design Estimate #3	$ 13,500.00	$ -	$ 2,816.98	$ 9,485.37

BOARD OF PUBLIC WORKS
MONTHLY ESTIMATES
October 2, 2018

Contractor	Original Contract Amount	Change Orders	Paid to Date	Due this Estimate
19. **STATE OF WI - DOT** Riders Club Road Construction *(5991-02-57)* Estimate #2	$ 294,911.00	$ -	$ 160,196.71	$ 139,811.52
20. **STATE OF WI - DOT** PH/Braund Street Construction *(5991-02-55)* Estimate #2	$ 233,326.00	$ -	$ 542.45	$ 201,610.81
21. **GEWALT HAMILTON ASSOCIATES** Green Coulee Traffic Count Design Estimate #1	$ 2,880.00	$ -	$ 2,880.00	$ 3,360.00
22. **LA CROSSE COUNTY HIGHWAY** 2018 Chip Seal Construction Estimate #1	$ 193,153.28	$ -	$ -	$ 193,153.28