elm creek
Watershed Management Commission

ADMINISTRATIVE OFFICE
3235 Fernbrook Lane
Plymouth, MN 55447
PH: 763.553.1144
email: judie@jass.biz
www.elmcreekwatershed.org

TECHNICAL OFFICE
Barr Engineering
4300 Market Point Drive, Suite 200
Minneapolis, MN 55435
PH: 612.834.1060
Email; jHerbert@barr.com

October 7, 2020

Representatives
Elm Creek Watershed Management Commission
Hennepin County, MN

The meeting packet for this meeting may be found on the Commission's website: http://www.elmcreekwatershed.org/minutes--meeting-packets.html

Dear Representatives:

A regular meeting of the Elm Creek Watershed Management Commission will be held on **Wednesday, October 14, 2020, at 11:30 a.m.** **This will be a virtual meeting.**

Until further notice, all meetings will be held online to reduce the spread of COVID-19. To join a meeting, click https://us02web.zoom.us/j/990970201?pwd=Vi95cWpFRUFiMTEweDdWR0V2MWRPdz09, which takes you directly to the meeting.

OR, go to www.zoom.us and click **Join A Meeting**. The meeting ID is **990-970-201**. As of September 27, 2020, meetings require a passcode. The passcode for this meeting is **721052.**

If your computer is not equipped with audio capability, you need to dial into one of these numbers:

+1 929 205 6099 US (New York)	+1 312 626 6799 US (Chicago)
+1 669 900 6833 US (San Jose)	+1 346 248 7799 US (Houston)
+1 253 215 8782 US	+1 301 715 8592 US

Meetings remain open to the public via the instructions above.

Please email me at judie@jass.biz to confirm whether you or your Alternate will be attending the regular meeting.

Thank you.

Judie A. Anderson
Administrator
JAA:tim
Encls: Meeting Packet

cc:	Alternates	Jim Herbert	Joe Waln	James Kujawa	DNR
	TAC Members	Kris Guentzel	Brian Vlach	Diane Spector	BWSR
	City Clerks	Kirsten Barta	Met Council	Official Newspaper	MPCA

Z:\Elm Creek\Meetings\Meetings 2020\10 Notice_reg meeting.docx

elm creek
Watershed Management Commission

ADMINISTRATIVE OFFICE
3235 Fernbrook Lane
Plymouth, MN 55447
PH: 763.553.1144
email: judie@jass.biz
www.elmcreekwatershed.org

TECHNICAL OFFICE
Barr Engineering
4300 Market Point Drive, Suite 200
Minneapolis, MN 55435
PH: 612.834.1060
Email; jHerbert@barr.com

AGENDA
Regular Meeting
October 14, 2020

The meeting packet may be found on the Commission's website: http://elmcreekwatershed.org/minutes--meeting-packets.html

Until further notice, all meetings will be held online to reduce the spread of COVID-19. To join this meeting, click https://zoom.us/j/990970201 or go to www.zoom.us and click Join A Meeting. **The meeting ID is 990-970-201. The passcode for this meeting is 721052.**

If your computer is not equipped with audio capability, dial into one of these numbers:

+1 929 205 6099 US (New York)	+1 312 626 6799 US (Chicago)	+1 253 215 8782 US
+1 669 900 6833 US (San Jose)	+1 346 248 7799 US (Houston)	+1 301 715 8592 US

1. Call Regular Meeting to Order.
- a. Approve Agenda.*

2. Consent Agenda.
- a. Minutes last Meeting.*
- b. Treasurer's Report and Claims.*

3. Open Forum.

4. Action Items.
- **a.** Project Reviews – *see Staff Report.**
- **b.** Approve Letter re Floodplain Mapping.*
- **c.** Move date of November 11 meeting to November 4, 2020.*

5. Old Business.

6. New Business.

7. Communications.
- **a.** Staff Report.*
- **b**. Conservation Projects.**

8. Education.
- **a.** WMWA – next meetings – November 10 and December 8, 2020, at 8:30 a.m.
  These will be **virtual** meetings.
  https://us02web.zoom.us/j/922390839?pwd=RU95T2ttL3FzQmxHcU9jcFhDdng1QT09
  Meeting ID: 922 390 839 | Passcode: 545059 | or dial into one of the numbers above.

9. Grant Opportunities and Updates. *(over)*

*in meeting packet
**available at meeting or on website

10. Project Reviews.

Item No.	A	E	I|RPFI RP|D	AR	Project No.	Project Name
					W Denotes wetland project	
ah.				AR	2014-015	Rogers Drive Extension, Rogers.
ai.				AR	2015-030	Kiddiegarten Child Care Center, Maple Grove.
aj.				AR	2016-002	The Markets at Rush Creek, Maple Grove.
ak.				AR	2016-005W	Ravinia Wetland Bank Plan, Corcoran.
al.				AR	2016-047	Hy-Vee North, Maple Grove.
am.				AR	2017-014	Laurel Creek, Rogers.
an.				AR	2017-029	Brayburn Trails, Dayton.
ao.				AR	2017-039	Rush Creek Apartments, Maple Grove.
a.					2017-050W	Ernie Mayers Wetland/floodplain violation, Corcoran.
b.					2018-020	North 101 Storage, Rogers.
ap.				AR	2018-026	Windrose, Maple Grove.
c.					2018-046	Graco, Rogers
aq.				AR	2018-048	Faithbrook Church Phase 2, Dayton.
ar.				AR	2019-001	Fernbrook View Apartments, Maple Grove.
as.				AR	2019-002	Parkside Villas, Champlin.
at.				AR	2019-021	Brenly Meadows, Rogers.
d.					2019-024	Boston Scientific, Maple Grove.
au.				AR	2019-027	Havenwood at Maple Grove.
av.				AR	2019-032	OSI Expansion, Medina.
e.					2020-001	Outlot L, Markets at Rush Creek, Maple Grove.
f.					2020-002	Project 100, Maple Grove.
g.	A	E			2020-008	Ione Gardens, Dayton.
aw.				AR	2020-009	Stetler Barn, Medina.
h.					2020-015	Dayton Interchange Business Center, Dayton.
i.		E			2020-016	Skye Meadow, Rogers.
j.	A	E			2020-017	Meadow View Townhomes, Medina.
k.					2020-022	Elm Road Street & Utility Project, Maple Grove.
l.					2020-023	Ziegler Dayton Site Upgrades, Dayton.
m.		E	R		2020-024	Walti Culvert Exchange, Corcoran.
n.	A	E			2020-025	Paulsen Farms, Corcoran.
o.	A	E			2020-026	Rogers HS Addition and Renovation, Rogers.
p.					2020-027	Kariniemi Addition, Corcoran.
q.	A	E			2020-028	Perl Gardens, Plymouth.
r.		E			2020-029	Sundance Greens 5th Addition, Dayton.
s.					2020-030	Nelson International, Corcoran.
t.		E	R		2020-031	EAW Chippewa Road Ext and Weston Woods development, Medina.
u.					2020-032	Enclave Rogers - Commerce Boulevard, Rogers
v.					2020-033	Weston Woods, Medina
w.					2020-034	Strehler Road, Corcoran.

= Action item E = Enclosure provided I = Informational update will be provided at meeting RPFI - removed pending further information
R = Will be removed RP= Information will be provided in revised meeting packet….. D = Project is denied AR awaiting recordation

11. Other Business.
12. Adjournment.

*in meeting packet
**available at meeting or on website

elm creek
Watershed Management Commission

ADMINISTRATIVE OFFICE
3235 Fernbrook Lane
Plymouth, MN 55447
PH: 763.553.1144
email: judie@jass.biz
www.elmcreekwatershed.org

TECHNICAL OFFICE
Barr Engineering
4300 Market Point Drive, Suite 200
Minneapolis, MN 55435
PH: 612.834.1060
email: jherbert@barr.com

Regular Meeting and Public Hearing Minutes
September 9, 2020

I. A virtual meeting of the Elm Creek Watershed Management Commission was called to order at 11:30 a.m., Wednesday, September 9, 2020, by Chair Doug Baines.

Present were: Gerry Butcher, Champlin; Ken Guenthner, Corcoran; Doug Baines, Dayton; Joe Trainor, Maple Grove; Elizabeth Weir, Medina; Catherine Cesnik, Plymouth; Kevin Jullie, Rogers; Kirsten Barta and Kris Guentzel, Hennepin County Dept. of Environment and Energy (HCEE); Jim Herbert and Joe Waln, Barr Engineering; James Kujawa, Surface Water Solutions; Amy Timm, Three Rivers Park District (TRPD); and Amy Juntunen and Judie Anderson, JASS.

Also present: Todd Tuominen, Champlin; Kent Torve, Wenck Associates, Corcoran; Nico Cantarero, Wenck Assocs., Dayton; Derek Asche, Maple Grove; Ben Scharenbroich and Amy Riegel, Plymouth; and Andrew Simmons, Rogers.

Public present: Lisa Wyffels, Corcoran.

A. Motion by Guenthner, second by Trainor to approve the **agenda*** as amended**.** *Motion carried unanimously.*

B. Motion by Guenthner, second by Trainor to approve the consent agenda.

1. **Minutes*** of the August 12, 2020 regular meeting.

2. **September Treasurer's Report** and **Claims*** totaling $36,383.92.

Motion carried unanimously.

[Weir and Jullie arrived 11:35 a.m.]

II. **Communications.**

A. **Technical Services Budget.***

In his presentation, Herbert described the estimated hours and associated costs through August for the five tasks included in Barr's 2020 budget. Barr is projecting year 2020 costs will be well under the Commission's $185,000 budget and Barr's $160,000 proposed budget, although some of the individual line items will likely be over and some will be under the published budget.

B. **FEMA Floodplain Mapping Project.***

Waln presented an update on the floodplain mapping project. He noted that the hydrologic modeling took a much greater effort than the estimated budget. During model calibration, Barr noticed that peak flows from the model are significantly lower than FEMA Flood Insurance Study flows. Adopting lower

flows would allow development to occur closer to water bodies and with lower floor elevations. Ultimately, they concluded that the lower flows are justified.

DNR's review of the hydrologic model resulted in major changes to the model. At the request of the DNR, six of the 75 existing subwatersheds were further subdivided into smaller watersheds for a total of 81. DNR also requested an additional 20 storage areas be added to the 29 storage areas already identified. These areas were reworked and the model recalibrated. The cost of the additional hydrologic model work has been $25,000 more than was budgeted.

Hydraulic modeling is approximately fifty-percent complete and is on track to stay within budget if the scope of work remains unchanged.

With no further delays the project will finish in May 2021, an optimistic estimate given the DNR's limited capacity to review and approve technical submittals within the timeframe assumed in the contract. The contract end-date is March 31, 2021.

Baines queried about the modeling of the Crow River area, which is not within the scope of the contract. [In checking with DNR and FEMA, Waln was advised that the Crow River area hydrology and hydraulics were updated as part of the Hennepin County FEMA map updates adopted in 2016. Wright County is scheduled to adopt those updates to their maps early next year.]

Tuominen noted that Champlin will complete the final phase of the Elm Creek Stream Restoration from the Hayden Lake Outfall to Elm Creek Crossing Road in 2021 and emphasized the importance of having the study completed by that time.

It was a consensus of the members to request additional funds from the DNR to complete the project. Staff will determine to whom that request should be made. It was suggested that Baines, as chair of the Commission, and Asche, as chair of the Technical Advisory Committee, should assist in the request presentation. [Jeff Weiss was identified as the contact person at DNR.]

[The regular meeting was suspended at 12:34 p.m.]

III. Public Hearing.

On May 13, 2020, the Commission, upon recommendation of its Technical Advisory Committee (TAC), approved a motion to move forward with a Minor Plan Amendment (MPA) to its Third Generation Watershed Management Plan to revise the Capital Improvement Program (CIP). The MPA would revise Table 4.5 of the Commission's Third Generation Plan CIP in order to add three projects, remove one project, add more specificity to two projects, and shift the timing of one project currently listed on the CIP. These new projects and project updates were submitted by the member cities. Following a public meeting conducted by the Commission on June 10, 2020, the Commission adopted Resolution 2020-02 Adopting a Minor Plan Amendment.

Liz Weir, representative from Medina and Commission Vice Chair, was present at a meeting of a Committee of the Hennepin County Board on August 4, 2020, to answer questions regarding the amendment. The County Board approved the Minor Plan Amendment and adopted a 2020 maximum levy of $185,588 for the Elm Creek Commission on August 11, 2020.

At their August 24, 2020 meeting, the Technical Advisory Committee approved a motion to recommend to the Commission funding of 25% of the cost of only the enhancement to the Street Sweeper, not the entire piece of equipment as is currently stated in the CIP. Motion by Butcher, second by Trainor to approve the recommendation of the TAC as stated above. *Motion carried unanimously.*

With that revision, the proposed projects for which the levy will be certified are:

Project 2020-01	Livestock Exclusions, Buffers, Stabilizations, Corcoran and Rogers	$53,025
Project 2020-02	Agricultural BMPs Cost-Share, Corcoran and Rogers	$53,025
Project 2020-03	Enhanced Street Sweeper, Plymouth	$31,512
		$137,562

Staff's September 9, 2020 memo* describes the projects and shows the subsequent revisions to the CIP. Legal notice of today's Public Hearing was published in the August 20 and 27, 2020 editions of the *Osseo-Maple Grove Press.* The purpose of the hearing is to present the proposed projects and proposed financing and to take comment from the member cities and the public.

[The public hearing was opened at 12:42 p.m.]

No written or verbal comments have been received from the cities, reviewing agencies, or the public. No additional discussion occurred among the members.

[The public hearing was closed at 12:43 p.m.]

With no further discussion, motion by Weir, second by Guenthner to adopt Resolution 2020-02* Ordering 2020 Improvement Projects, Designating Members Responsible for Construction and Making Findings and Designating Commission Cost-Share Funding. *Motion carried unanimously.*

Motion by Weir, second by Guenthner to approve the Cooperative Agreement with the City of Plymouth for Project 2020-03 and authorizing the Chair and the Administrator to execute the agreements for Projects 2020-01 and 2020-02 as the projects are identified. *Motion carried unanimously.*

[The regular meeting resumed at 12:46 p.m.]

IV. Open Forum.

V. Action Items.

A. Project Review 2020-026 Kariniemi Addition, Corcoran.* This is a 12.7-acre parcel located on Lot 3, Block 1 of the Rolling Hills Acres subdivision (ECWMC Project 2019-030) about a mile north of Highway 55 on the east side of Rolling Hills Road. The applicant proposes to create three lots with a shared driveway for access along the northerly portion of the property. Project work will disturb 2.6 acres and create 0.83 acres of new impervious areas. Staff's findings dated August 27, 2020, are included in the meeting packet. Motion by Weir, second by Trainor to approve this project contingent upon an operations and maintenance agreement being created and approved by the City and Commission, recorded on the property title, and a copy of the recorded document being provided to the Commission. *Motion carried unanimously.*

B. Policy on Project Review Fees.* The Technical Advisory Committee (TAC) has completed its review of the fees generated with the development project reviews as well as the expenses incurred for reviewing those projects. The TAC proposes to move from the current fee structure to a more flexible escrow structure where the applicants will be required to fund the cost of the review in full. An additional percentage of the cost of the review will be collected to offset administrative (10%) and technical service (15%) costs. Pre-project assistance would be limited to a maximum of two hours before a formal application is required. Motion by Weir, second by Guenthner to approve the proposed policy, effective January 1, 2021. *Motion carried unanimously.*

VI. Old Business.

VII. New Business.

VIII. Communications.

A. September Staff Report.*

B. August Project Updates – no report.

C. Earlier today the Commission received an email from an anonymous Medina resident regarding a church that is proposed to be built in the City of Corcoran at Highway 101 and 47. The writer lives in the Wild Meadows development and is concerned about the additional traffic, associated noise and salt pollution, and safety concerns this project will create. Weir and Guenthner, as representatives from Medina and Corcoran, spoke to the resident's concerns. Area development is under the purview of Metropolitan Council and the City. The Commission will not respond but will forward this correspondence on to the cities affected.

IX. Education and Public Outreach.

WMWA. The **West Metro Water Alliance's** September 8, 2020 meeting was cancelled. Their next meeting will be held via Zoom on Tuesday, October 13, 2020, at 8:30 a.m. The Zoom number is provided here so that Commissioners and TAC members can participate. It is https://us02web.zoom.us/j/922390839 or call in at any of these numbers using meeting ID: 922 390 839: (1) +1 301 715 8592 US (Germantown); (2) +1 312 626 6799 US (Chicago); (3) +1 929 205 6099 US (New York); or (4) +1 253 215 8782 US (Tacoma)

Creation of the roots displays continues.

X. Grant Opportunities and Project Updates.

XI. Other Business.

A. The **projects** listed on the following page are discussed in the September Staff Report.

B. Adjournment. There being no further business, motion by Weir, second by Trainor to adjourn. *Motion carried unanimously.* The meeting was adjourned at 1:14 p.m.

Respectfully submitted,

Judie A.Anderson
Recording Secretary
JAA:tim

Z:\Elm Creek\Meetings\Meetings 2020\September 9, 2020 Regular meeting and public hearing minutes.docx

Item No.	A	E	I|RPFI RP|D	AR	Project No.	Project Name
					W Denotes wetland project	
ah.				AR	2014-015	Rogers Drive Extension, Rogers.
ai.				AR	2015-030	Kiddiegarten Child Care Center, Maple Grove.
aj.				AR	2016-002	The Markets at Rush Creek, Maple Grove.
ak.				AR	2016-005W	Ravinia Wetland Bank Plan, Corcoran.
al.				AR	2016-047	Hy-Vee North, Maple Grove.
am.				AR	2017-014	Laurel Creek, Rogers.
an.				AR	2017-029	Brayburn Trails, Dayton.
ao.				AR	2017-039	Rush Creek Apartments, Maple Grove.
a.					2017-050W	Ernie Mayers Wetland/floodplain violation, Corcoran.
b.					2018-020	North 101 Storage, Rogers.
ap.				AR	2018-026	Windrose, Maple Grove.
aq.				AR	2018-028	Tricare Third Addition, Maple Grove.
c.					2018-046	Graco, Rogers
ar.				AR	2018-048	Faithbrook Church Phase 2, Dayton.
as.				AR	2019-001	Fernbrook View Apartments, Maple Grove.
at.				AR	2019-002	Parkside Villas, Champlin.
au.				AR	2019-021	Brenly Meadows, Rogers.
d.					2019-024	Boston Scientific, Maple Grove.
av.				AR	2019-027	Havenwood at Maple Grove.
aw.				AR	2019-032	OSI Expansion, Medina.
e.					2020-001	Outlot L, Markets at Rush Creek, Maple Grove.
f.					2020-002	Project 100, Maple Grove.
g.					2020-008	Ione Gardens, Dayton.
ax.				AR	2020-009	Stetler Barn, Medina.
h.					2020-013	Territorial Greens Residential (West), Maple Grove.
i.					2020-014	Territorial Greens Residential (East), Maple Grove.
j.					2020-015	Dayton Interchange Business Center, Dayton.
k.					2020-016	Lennar Terr Road Development (Skye Meadow), Rogers.
l.					2020-017	Meadow View Townhomes, Medina.
m.					2020-021	Industrial Boulevard Extension Project, Rogers.
n.					2020-022	Elm Road Area Street & Utility Project, Maple Grove.
o.					2020-023	Ziegler Dayton Site Upgrades, Dayton.
p.					2020-024	Walti Culvert Exchange, Corcoran.
q.		E			2020-025	Paulsen Farms, Corcoran.
r.		E			2020-026	Rogers HS Addition and Renovation, Rogers.
s.	A	E			2020-027	Kariniemi Addition, Corcoran.
t.		E			2020-028	Perl Gardens, Plymouth.
u.					2020-029	Sundance Greens 5th Addition, Dayton.

A= Action item E = Enclosure provided I = Informational update will be provided at meeting RPFI - removed pending further information
R = Will be removed RP= Information will be provided in revised meeting packet….. D = Project is denied AR awaiting recordation

Elm Creek Watershed Management Commission Treasurer's Report

		2020 Budget	Sept 2020	Oct 2020	2020 Budget YTD
EXPENSES					
Administrative		90,000	9,123.57	8,515.98	79,112.37
Watershed-wide TMDL Admin		300			0.00
Grant Writing		1,000			0.00
Website		3,000	87.10	81.25	2,824.25
Legal		2,000			139.50
Audit		5,000			6,000.00
Insurance		3,900			3,644.00
Miscellaneous/Contingency		1,000			0.00
Technical Support - HCEE		15,000			0.00
Floodplain Mapping		39,360	12,403.00	7,365.50	76,042.00
Project Review Technical (Job 300)		185,000	6,649.50	8,107.50	52,461.99
Other Technical (Jobs 100 & 200)			5,548.00	7,393.00	55,929.50
Project Reviews - Admin		15,000	646.71	893.13	6,346.73
WCA - Technical		3,000			0.00
WCA - Legal		500			0.00
WCA - Admin		1,000			0.00
Stream Monitoring USGS		24,000		5,235.00	20,940.00
Stream Monitoring TRPD		7,200			0.00
DO Longitudinal Survey		1,000			0.00
TMDL Follow-up - TRPD		1,000			0.00
Rain Gauge		250	30.97	34.24	274.04
Rain Gauge Network		100			0.00
Lakes Monitoring - CAMP		760			0.00
Lakes Monitoring - TRPD					
Sentinel Lakes		8,100			0.00
Additional Lake		2,500			0.00
Aquatic Vegetation Surveys		1,100			0.00
Wetland Monitoring (WHEP)		4,000			0.00
Education		3,000	175.00	575.60	1,758.49
WMWA General Activities		5,000			3,000.00
WMWA Educators/Watershed Prep		4,500			2,000.00
WMWA Special Projects		2,000			1,000.00
Rain Garden Workshops/Intensive BMPs		3,000		875.00	1,500.00
Education Grants		1,000			0.00
Macroinvertebrate Monitoring-River Watch		3,000			0.00
Projects ineligible for ad valorem		0			0.00
Studies / Project ID / SWA		0	1,277.07	849.68	3,035.42
Plan Amendment		2,000			1,409.24
Transfer to (from) Encumbered Funds (see below)					0.00
Transfer to (from) Capital Projects (see CIP Tr		*448,935*	*443.00*		443.00
Transfer to (from) Cash Sureties (see below)					2,386.70
Transfer to (from) Grants (see below)		*125,000*	-	-	0.00
To Fund Balance					0.00
TOTAL - Month			**36,383.92**	**39,925.88**	**320,247.23**
TOTAL Paid in 2020, incl late 2019 Expenses		**1,012,505.00**	**402,405.67**	**442,331.55**	**2020 Paid**

Elm Creek Watershed Management Commission Treasurer's Report

		2020 Budget	Sept 2020	Oct 2020	2020 Budget YTD
INCOME					
From Fund Balance					
Floodplain Modeling		39,360			
Project Review Fee		80,000	11,975.00		78,229.00
Return Project Fee					0.00
Water Monitoring - TRPD Co-op Agmt		5,500			0.00
WCA Fees		0			0.00
Return WCA Fee					0.00
Reimbursement for WCA Expense					0.00
WCA Escrow Earned					0.00
Member Dues		237,300			237,300.00
Interest/Dividends Earned		8,250	24.17		5,269.59
Transfer to (from) Capital Projects (see CIP Tr		448,935			155,012.64
Transfer to (from) Cash Sureties (see below)					
Transfer to (from) Grants (see below)		100,000	*41,890.21*	-	100,137.21
Misc Income					0.00
Total - Month			**53,889.38**	**0.00**	**575,948.44**
TOTAL Rec'd 2020, incl late 2019 Income		**919,345.00**	**624,531.84**	**624,531.84**	**2020 Received**
CASH SUMMARY		**Balance Fwd**			
Checking		0.00			
4M Fund		1,263,863.98	1,485,990.15	1,446,064.27	
Cash on Hand			**1,485,990.15**	**1,446,064.27**	
CASH SURETIES HELD		**Balance Fwd**			**Activity 2020**
WCA Escrows Received		11,494.47			0.00
WCA Escrow Reduced					2,386.70
Total Cash Sureties Held		**11,494.47**	**9,107.77**	**9,107.77**	
RESTRICTED / ENCUMBERED FUNDS		**Balance Fwd**			
Restricted for CIPs		765,131			765,131.00
Enc. Studies / Project Identification / SWA		205,437			205,437.00
Total Restricted / Encumbered Funds		**970,568**	**970,568.00**	**970,568.00**	
			Sept 2020	**Oct 2020**	**2020 Budget YTD**
GRANTS					
Fish Lake Alum Trmt Phase 2					
Revenue			41,890.21		41,890.21
Expense					-
Balance			41,890.21	-	41,890.21
BWSR Watershed-based Funding					
Revenue					-
Expense					-
Balance			-	-	-
DNR Floodplain Data					
Revenue					58,247.00
Expense					-
Balance			-	-	58,247.00
TOTAL GRANTS					
Revenue			41,890.21	-	**100,137.21**
Expense			-	-	**-**
Balance			**41,890.21**	**-**	**100,137.21**

Elm Creek Watershed Management Commission Treasurer's Report

Claims Presented		General Ledger Account No	September	October	TOTAL
Campbell Knutson - Legal		521000			**0.00**
Connexus - Rain Gauge		551100		34.24	**34.24**
Barr Engineering					**22,866.00**
Floodplain Mapping		580440		7,365.50	
Project Review Technical (Job 300)		578050		8,107.50	
Other Technical (Jobs 100 & 200)		578050		7,393.00	
Ravinia Wetland Mitigation		240201			
Blue Thumb-Champlin Workshop Pmt 2		590002		875.00	**875.00**
U S Geological Survey - Stream Monitoring		551000		5,235.00	**5,235.00**
Watershed Partners -Membership		590000		500.00	**500.00**
JASS					**10,415.64**
Administration		511000		8,026.76	
TAC Support		511000		489.22	
Website		581000		81.25	
Project Reviews		578100		893.13	
Education		590000		75.60	
CIPs General		563001		849.68	
TOTAL CLAIMS					**39,925.88**

CONNEXUS® ENERGY
Your Community Energy Partner

Account Number: item 02b
481113-238425
ELM CREEK WATERSHED MGMT ORG

Monthly Statement

Service Address
ELM CREEK RD
DAYTON MN

Total Amount Due	Due Date
$34.24	October 13, 2020

Billing Summary

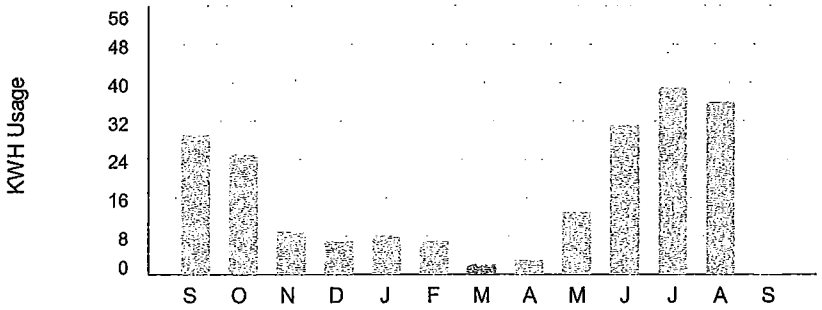
Billing Date: Sep 17, 2020

Previous Balance	$30.97
Payments - Thank You!	$30.97
Balance Forward	**$0.00**
New Charges	**$34.24**
Total Amount Due	**$34.24**

Payment must be received on or before October 13, 2020

Energy Comparison

Previous Months' Usage Current Month's Usage



How to contact us

Member Services / Moving - 763-323-2650
Outages and Emergencies - 763-323-2660
Hearing/Speech Impaired Call - 711 or 800-627-3529
Email: info@connexusenergy.com
www.connexusenergy.com
Gopher State One Call - 811
14601 Ramsey Boulevard, Ramsey, MN 55303

Message Center

Cold Weather Rule (CWR)
We have been working with members who have been financially impacted by the virus ever since this pandemic began. We will continue to do that. However, you need to let us know you are struggling. Help is out there for the winter months. The CWR helps protect residential energy customers from service disconnection from October 15 through April 15. To meet the CWR requirements, all accounts must be up to date by October 15. Resources are available from the county to help you with your utility bills. T*he CWR does not relieve you of your responsibility to pay your utility bills.*

Information about the CWR and available resources, go to connexusenergy.com or call Member Service at 763.323.2650.

▼ *Please detach at perforation and return this portion with a check or money order made payable to Connexus Energy* ▼

TRA3-D-000004/000009 AGYP0U S1-ET-M1-C00001 1

CONNEXUS® ENERGY
Your Community Energy Partner

Account Number: **481113-238425**
Total Amount Due **$34.24**
Payment Due By October 13, 2020

000004 1 AB 0.416 000004/000004/000009 002 02 AGYP0U
ELM CREEK WATERSHED MGMT ORG
3235 FERNBROOK LN N
PLYMOUTH MN 55447-5325

Connexus Energy
PO Box 1808
Minneapolis, MN 55480-1808

00003424 0004811130238425 000000 00000 00000000000 0000008

INVOICE

Barr Engineering Co.
4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
Phone: 952-832-2600; Fax: 952-832-2601
FEIN #: 41-0905995 Inc: 1966

Ms. Judie Anderson
Elm Creek Watershed Management Commission
JASS-Watershed Administrators
3235 Fernbrook Lane
Plymouth, MN 55447

October 5, 2020
Invoice No: 23271759.00 - 11

Total this Invoice $7,365.50

Regarding: Elm Creek Floodplain Mapping

This invoice is for professional services, which include the following:

- Incorporated effective HEC-2 and CLOMR/LOMR bathymetry and crossing data into the updated HEC-RAS hydraulic model
- Identified additional survey needs and sent second data request to the MnDNR
- Incorporated preliminary survey data provided during hydrology model development
- Delineated additional cross-sections for non-detailed areas

Total Contract Budget	Total Prior Billing	Billing this Invoice	Total Billing to Date	Budget Remaining
$90,945.00	$70,650.00	$7,365.50	$78,015.50	$12,929.50

Professional Services from August 22, 2020 to September 25, 2020

Job: 100 Meetings

Labor Charges

	Hours	Rate	Amount	
Principal				
Campeau, Nathan	1.00	170.00	170.00	
Engineer / Scientist / Specialist IV				
Waln, Joseph	.50	155.00	77.50	
Support Personnel II				
Nypan, Nyssa	.80	95.00	76.00	
	2.30		323.50	
Subtotal Labor				**323.50**
			Job Subtotal	**$323.50**

Job: 300 Survey Locations and Idenification

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist II				
Hlavaty, Heather	1.60	110.00	176.00	
	1.60		176.00	
Subtotal Labor				**176.00**

PLEASE REMIT TO ABOVE ADDRESS and INCLUDE INVOICE NUMBER ON CHECK.
Terms: Due upon receipt. 1 1/2% per month after 30 days. Please refer to the contract if other terms apply.

Job Subtotal	**$176.00**

Job: 500 Hydraulic Modeling - Detailed Studies

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist IV				
Waln, Joseph	2.90	155.00	449.50	
Engineer / Scientist / Specialist II				
Hlavaty, Heather	9.60	110.00	1,056.00	
Vecchi, Anthony	20.50	100.00	2,050.00	
Engineer / Scientist / Specialist I				
Brown, Aaron	2.60	85.00	221.00	
	35.60		3,776.50	
Subtotal Labor				**3,776.50**
			Job Subtotal	**$3,776.50**

Job: 600 Hydraulic Analysis - Non Detailed

Labor Charges

	Hours	Rate	Amount	
Principal				
Campeau, Nathan	.50	170.00	85.00	
Engineer / Scientist / Specialist IV				
Waln, Joseph	1.90	155.00	294.50	
Engineer / Scientist / Specialist II				
Hlavaty, Heather	18.60	110.00	2,046.00	
Vecchi, Anthony	4.00	100.00	400.00	
	25.00		2,825.50	
Subtotal Labor				**2,825.50**
			Job Subtotal	**$2,825.50**

Job: 900 Out-of-Scope

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist II				
Hlavaty, Heather	2.40	110.00	264.00	
	2.40		264.00	
Subtotal Labor				**264.00**
			Job Subtotal	**$264.00**
			Total this Invoice	**$7,365.50**

	Current	Prior	Total	Received	A/R Balance
Invoiced to Date	**7,365.50**	**70,650.00**	**78,015.50**	**70,650.00**	**7,365.50**

Thank you in advance for your prompt processing of this invoice. If you have any questions, please contact Heather Hlavaty, your Barr project manager at 952.842.3613 or email at hhlavaty@barr.com.

INVOICE

Barr Engineering Co.
4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
Phone: 952-832-2600; Fax: 952-832-2601
FEIN #: 41-0905995 Inc: 1966

Ms. Judie Anderson
Elm Creek Watershed Management Commission
JASS-Watershed Administrators
3235 Fernbrook Lane
Plymouth, MN 55447

October 5, 2020
Invoice No: 23270F55.20 - 8

Total this Invoice $15,500.50

Regarding: Review of development permits for compliance with the Elm Creek Watershed Management Plan

This invoice is for professional services, which include the following:

Job 100 - Technical Services

- Meetings
  - preparing for TAC and WMC meetings
  - attending TAC and WMC meetings
  - updating staff report
  - meeting with Administrator
- Pre-Project Review
  - communicating with potential permit applicants regarding the following projects:
    - Plymouth Boardwalk/Trail
    - Tavera Comp plan amendment
    - Boston Scientific SWMP
- Wetland Issues
  - responding to TEP meeting coordination emails
- General administrative tasks
  - coordinating with administrator

Job 200 – Other Assistance

- MTDs
  - none

Job 300 – Project Reviews

- Reviewing the following projects for compliance with stormwater and erosion control rules:
  - 2019-001 Fernbrook View Apt
  - 2020-008 Ione Gardens, Dayton
  - 2020-015 Interchange Business Center, Dayton
  - 2020-016 Lennar Territorial Rd Development (Skye Meadows), Rogers
  - 2020-017 Meadow View Town Homes, Medina
  - 2020-024 Paul Alti Culvert Replacement, Corcoran
  - 2020-025 Paulsen Farms, Corcoran
  - 2020-026 Rogers High School Addition and Renovations, Rogers
  - 2020-027 Kariniemi, Corcoran
  - 2020-028 Perl Gardens, Plymouth
  - 2020-029 Sundance Greens 5th Addition, Dayton
  - 2020-030 Nelson International, Corcoran
  - 2020-031 Chippewa Rd Ext Weston Woods EA, Statutory Review

Professional Services from August 22, 2020 to September 25, 2020

Job:	100	Technical Services

PLEASE REMIT TO ABOVE ADDRESS and INCLUDE INVOICE NUMBER ON CHECK.
Terms: Due upon receipt. 1 1/2% per month after 30 days. Please refer to the contract if other terms apply.

Task: 010 Meetings

Labor Charges

	Hours	Rate	Amount	
Principal				
Herbert, James	17.50	200.00	3,500.00	
Engineer / Scientist / Specialist IV				
Waln, Joseph	7.90	155.00	1,224.50	
	25.40		4,724.50	
Subtotal Labor				**4,724.50**
Subconsultant Charges				
Subconsultants			632.50	
Subtotal Subconsultant				**632.50**
			Task Subtotal	**$5,357.00**

Task: 020 Pre-Project Review

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist IV				
Waln, Joseph	1.50	155.00	232.50	
	1.50		232.50	
Subtotal Labor				**232.50**
Subconsultant Charges				
Subconsultants			302.50	
Subtotal Subconsultant				**302.50**
			Task Subtotal	**$535.00**

Task: 030 Wetland Issues

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist III				
Wold, Karen	.40	135.00	54.00	
	.40		54.00	
Subtotal Labor				**54.00**
Subconsultant Charges				
Subconsultants			55.00	
Subtotal Subconsultant				**55.00**
			Task Subtotal	**$109.00**

Task: 040 General

Labor Charges

	Hours	Rate	Amount
Principal			
Herbert, James	4.50	200.00	900.00
Engineer / Scientist / Specialist IV			
Waln, Joseph	1.50	155.00	232.50

Support Personnel II				
Burt, Deborah	.10	100.00	10.00	
Nypan, Nyssa	.60	95.00	57.00	
	6.70		1,199.50	
Subtotal Labor				**1,199.50**
Subconsultant Charges				
Subconsultants			192.50	
Subtotal Subconsultant				**192.50**
			Task Subtotal	**$1,392.00**
			Job Subtotal	**$7,393.00**

Job: 300 Project Reviews

Task: 1901 2019-001 Fernbrook View Apt

Subconsultant Charges				
Subconsultants			82.50	
Subtotal Subconsultant				**82.50**
			Task Subtotal	**$82.50**

Task: 2008 2020-008 Ione Gardens

Labor Charges				
	Hours	**Rate**	**Amount**	
Engineer / Scientist / Specialist IV				
Waln, Joseph	.50	155.00	77.50	
	.50		77.50	
Subtotal Labor				**77.50**
Subconsultant Charges				
Subconsultants			1,072.50	
Subtotal Subconsultant				**1,072.50**
			Task Subtotal	**$1,150.00**

Task: 2015 2020-015 Dayton Interchange Business Center

Subconsultant Charges				
Subconsultants			110.00	
Subtotal Subconsultant				**110.00**
			Task Subtotal	**$110.00**

Task: 2016 2020-016 Lennar Territorial Rd Development

Labor Charges				
	Hours	**Rate**	**Amount**	
Engineer / Scientist / Specialist IV				
Waln, Joseph	1.20	155.00	186.00	
	1.20		186.00	
Subtotal Labor				**186.00**

Subconsultant Charges

Subconsultants	2,117.50	
Subtotal Subconsultant		**2,117.50**
	Task Subtotal	**$2,303.50**

Task: 2017 2020-017 Meadow View Townhomes

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist IV				
Waln, Joseph	.50	155.00	77.50	
	.50		77.50	
Subtotal Labor				**77.50**

Subconsultant Charges

Subconsultants	660.00	
Subtotal Subconsultant		**660.00**
	Task Subtotal	**$737.50**

Task: 2024 2020-024 Walti Culvert Exchange

Subconsultant Charges

Subconsultants	137.50	
Subtotal Subconsultant		**137.50**
	Task Subtotal	**$137.50**

Task: 2025 2020-025 Paulsen Farms

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist IV				
Waln, Joseph	2.40	155.00	372.00	
	2.40		372.00	
Subtotal Labor				**372.00**

Subconsultant Charges

Subconsultants	632.50	
Subtotal Subconsultant		**632.50**
	Task Subtotal	**$1,004.50**

Task: 2026 2020-026 Rogers High School Addition and Renovations

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist IV				
Waln, Joseph	.50	155.00	77.50	
	.50		77.50	
Subtotal Labor				**77.50**

Subconsultant Charges

Subconsultants	291.50	
Subtotal Subconsultant		**291.50**

				Task Subtotal	**$369.00**

Task: 2027 2020-027 Kariniemi Addition

Labor Charges

	Hours	**Rate**	**Amount**	
Engineer / Scientist / Specialist IV				
Waln, Joseph	1.00	155.00	155.00	
	1.00		155.00	
Subtotal Labor				**155.00**
Subconsultant Charges				
Subconsultants			264.00	
Subtotal Subconsultant				**264.00**
			Task Subtotal	**$419.00**

Task: 2028 2020-028 Perl Gardens

Labor Charges

	Hours	**Rate**	**Amount**	
Principal				
Herbert, James	1.00	200.00	200.00	
Engineer / Scientist / Specialist IV				
Waln, Joseph	.80	155.00	124.00	
	1.80		324.00	
Subtotal Labor				**324.00**
Subconsultant Charges				
Subconsultants			1,237.50	
Subtotal Subconsultant				**1,237.50**
			Task Subtotal	**$1,561.50**

Task: 2029 2020-029 Sundance Greens 5th Addition

Labor Charges

	Hours	**Rate**	**Amount**	
Engineer / Scientist / Specialist IV				
Waln, Joseph	.20	155.00	31.00	
	.20		31.00	
Subtotal Labor				**31.00**
			Task Subtotal	**$31.00**

Task: 2030 2020-030 Nelson International

Labor Charges

	Hours	**Rate**	**Amount**	
Engineer / Scientist / Specialist IV				
Waln, Joseph	1.10	155.00	170.50	
	1.10		170.50	
Subtotal Labor				**170.50**
			Task Subtotal	**$170.50**

Task: 2031 2020-031 Chippewa Rd Ext Weston Woods EA

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist IV				
Waln, Joseph	.20	155.00	31.00	
	.20		31.00	
Subtotal Labor				**31.00**
			Task Subtotal	**$31.00**
			Job Subtotal	**$8,107.50**
			Total this Invoice	**$15,500.50**

	Current	Prior	Total	Received	A/R Balance
Invoiced to Date	**15,500.50**	**92,771.00**	**108,271.50**	**92,771.00**	**15,500.50**

Thank you in advance for the prompt processing of this invoice. If you have any questions, please contact Joe Waln, your Barr project manager at 952.832.2984 or email at jwaln@barr.com.

Metro Blooms

PO Box 17099
Minneapolis, MN 55417
651-699-2426
www.metroblooms.org

Invoice

INVOICE # 1163
DATE 4/15/2020
DUE DATE 5/15/2020
TERMS Net 30

BILL TO

Elm Creek Watershed Management Commission
Attn: Judie Anderson

PO NO:

Champlin workshop: Remainder due	875.00
MN Sales Tax	0.00

Please remit by check or credit card to:

Metro Blooms
PO Box 17099
Minneapolis, MN 55417

Questions or payments? (651) 699-2426

Total	$875.00
Payments/Credits	$0.00
Total Due	**$875.00**

item 02b

DI-1040

UNITED STATES DEPARTMENT OF THE INTERIOR
DOWN PAYMENT (BILL) REQUEST

Bill #: 90843489
Customer: 6000001534
Date: 09/15/2020
Due Date: 11/14/2020

Make Remittance Payable To: U.S. Geological Survey
Billing Contact: Angie Hughes,amhughes@usgs.gov Phone: 651-280-5735

Remit Payment To: United States Geological Survey
P.O. Box 6200-27
Portland, OR 97228-6200

Payer: Elm Creek Conservation Mgmt. & PC
Judie Anderson
3235 Fernbrook Lane
Plymouth MN 55447

Additional forms of payment may be accepted. Please email GS-A-HQ_RMS@USGS.GOV or call 703-648-7683 for additional information.

To pay through Pay.gov go to https://www.pay.gov.

Checks must be made payable to U.S. Geological Survey. Please detach the top portion or include bill number on all remittances.

Amount of Payment: $ _____

Date	Description	Qty	Unit Price		Amount
			Cost	Per	
09/15/2020	Billing for the operation and maintenance of a gaging station and water-quality sampling on Elm Creek near Champlin. 20NKJFA209	1	5,235.00	1	5,235.00
				Amount Due this Bill:	5,235.00

Accounting Classification:
Sales Order: 91057
Sales Office: GENK
Customer: 6000001534
Accounting #: 10998199

TIN: *****6985

METRO WATERSHED PARTNERS

MINNESOTA WATER
LET'S KEEP IT CLEAN

INVOICE

651-523-2812
jlarson25@hamline.edu

Metro Watershed Partners
Hamline University
1536 Hewitt Ave. MS-A1760
Saint Paul, MN 55104

Attention: Amy Juntunen
Elm Creek Watershed Management Commission
3235 Fernbrook Lane N.
Plymouth, MN 55448
Date: 9/23/20

Project Title: Clean Water Minnesota & Adopt-a-Drain
Terms: 30 Days

Description	Cost
2020 Membership: Clean Water MN & Adopt-a-Drain	$500.00
TOTAL	$500.00

Thanks for your membership in Clean Water MN. Your dollars support:

- Monthly blog posts with timely, consistent messages to encourage behaviors that improve water quality.
- New photographs that feature local residents taking action to protect lakes and rivers.
- Monthly meetings with information on partner activities, presentations by informative speakers, and updates on WSP activities.
- Maintenance of the Watershed Partners listserv.
- Development and implementation of a clean water exhibit at the Minnesota State Fair in the Eco-experience building.
- Site license to use Adopt-a-Drain.
- Recognition as a supporting partner of Adopt-a-Drain for residents in your service area.
- Access to an administrative interface on Adopt-a-Drain.org that includes access to reporting and other information useful for MS4 reporting and communications.
- Access to purchase print promotional resources with partner logo.
- Access to purchase mailed packets and yard signs for participants.

Duration of service: January 1 - December 31st, 2020. Unspent funds will rollover to support program activities in 2021.

JASS
Your Virtual Administrator

3235 Fernbrook Lane
Plymouth MN 55447

Elm Creek Watershed Management Commission
3235 Fernbrook Lane
Plymouth, MN 55447

5-Oct-20

				Total by Project Area
Administrative	1.75	60.00	105.00	
Administrative	75.73	65.00	4,922.45	
Admin - virtual	2.47	70.00	172.90	
Office Support	12.00	200.00	2,400.00	
Storage Unit	1.00	144.76	144.76	
Data Processing/File Mgmt	0.44	60.00	26.40	
File Management		60.00	0.00	
Archiving		60.00	0.00	
Admin - Reimbursable Expense	255.25	1.00	255.25	8,026.760
Admin - TAC support		60.00	0.00	
Admin - TAC support	7.50	65.00	487.50	
Admin - TAC support virtual		70.00	0.00	
TAC Support - Reimbursable Expense	1.72	1.00	1.72	489.220
Website		60.00	0.00	
Website	1.25	65.00	81.25	
Web Domain, hosting		1.00	0.00	81.250
Project Reviews - Secre		60.00	0.00	
Project Reviews - Admin	9.32	65.00	605.80	
Project Reviews - Admin offiste		70.00	0.00	
Project Reviews - Admin - File Mgmt		55.00	0.00	
Project Reviews - Reimbursable Expense	287.33	1.00	287.33	893.130
Education - Secretarial		60.00	0.00	
Education - Admin		65.00	0.00	
Education - Admin virtual - Blue Thumb Partner Event	1.08	70.00	75.60	
Education - Reimbursable Expense		1.00	0.00	75.600
CIPs - General - Secretarial		60.00	0.00	
CIPs - Administrative	12.06	65.00	783.90	
CIPs- Offsite Admin		70.00	0.00	
CIPs - reimbursables	65.78	1.00	65.78	849.680
		Invoice Total		**10,415.640**

elm creek
Watershed Management Commission

ADMINISTRATIVE OFFICE
3235 Fernbrook Lane
Plymouth, MN 55447
PH: 763.553.1144
email: judie@jass.biz
www.elmcreekwatershed.org

TECHNICAL OFFICE
Barr Engineering
4300 Market Point Drive, Suite 200
Minneapolis, MN 55435
PH: **612.834.1060**
email: jherbert**@barr.com**

STAFF REPORT
October 7, 2020

a. 2017-050W Ernie Mayers Wetland/floodplain violation, Corcoran. The City of Corcoran contacted the Commission in December 2017 concerning drainage complaints on Mayers' property. Technical Evaluation Panels (TEPs) were held in 2017 and 2018 to assess the nature and extent of the violations and a restoration order was issued to Mayers. On October 30, 2018, an appeal of the restoration order was received by BWSR. BWSR placed an order of abeyance (stay) on the appeal looking for a resolution between the LGU and Mayers. *Because a resolution was not forthcoming, BWSR has granted the request for appeal. It will hold a pre-hearing conference after a copy of the record of decision has been provided. The purpose of the pre-hearing conference is to seek informal settlement if possible, define who the active parties are, define what the WCA issues under appeal are, define what constitutes the record, establish a schedule for filing written briefs, and set a time and date for oral arguments. Basically, the first written brief is filed by the appellant, the responding brief is filed by the City of Corcoran, and the final reply brief is filed by the appellant. Then oral arguments, in much the same order as the written briefs, will be heard by the BWSR's Dispute Resolution Committee. The Dispute Resolution Committee's recommendation will be brought to the full BWSR board for decision.*

b. 2018-020 North 101 Storage, Rogers. This is an existing 3-acre lot in the northwest corner of Highway 101 and CR144. The current land use is a combination of mini-storage units and outdoor storage. The site is proposed for complete demolition and construction of seven new mini-storage buildings. At their July meeting the Commission approved Staff findings dated July 9, 2018, pending four items relating to abstration requirements and the infiltration system. The applicant requested and was granted an extension to December 31, 2020, provided the review process with the City of Rogers does not expire. *No updates this month.*

c. 2018-046 Graco Expansion, Rogers. This project is the expansion of an existing building. The site is located in an area that has regional ponding provided for rate control purposes, but needs to account for water quality and abstraction requirements on site prior to discharging offsite as part of the improvements. The Commission granted conditional approval at their October 2018 meeting. Conditions of approval were to submit a SWPPP plan meeting requirements, clarify maintenance responsibilities for the iron enhanced sand filter, and a letter from the City of Rogers stating their intentions to provide the water quality deficit in an upcoming project. Staff confirmed several minor plan revisions remain in conformance with the original approval. This item will remain on the Staff report until such time as the water quality deficit has been made up.

d. 2019-024 Boston Scientific Weaver Lake Road, Building 2 East Addition, Maple Grove. Boston Scientific is building an addition on the east side of Building 2 to provide more production and office space for their existing facility. The project includes moving the existing service drive and site utilities on the east side of Building 2 to the east within the BS property to create space for the addition. About 1.9 acres of the site will be disturbed and 1.06 acres of impervious surface will be added. This project was being reviewed for compliance to Rules D, E, F, and I. Based on Staff findings dated September 11, 2019, at their September 11,

2019 meeting the Commission approved the project contingent upon: (1) a site plan providing the irrigation areas to be irrigated by the new system and (2) an operation and maintenance plan for the irrigation system approved by the City and the Commission and recorded on the land title. *The applicant and their engineer have developed an overall stormwater management alternatives for this and potential future projects. They are still deciding the best approach to move forward before providing us the final stormwater management plans. Staff made preliminary comments on the draft plans and await the final submittal to determine compliance with this project and their future expansions.*

e. 2020-001 Outlot L, Markets at Rush Creek, Maple Grove. Outlot L is a 1.55-acre lot located in The Markets at Rush Creek (Hy-Vee South) PUD development. This project is located just west of the Hy-Vee gas station and south of CR10. A 12,000 SF multi-tenant building and associated parking is proposed for this site. Stormwater management for this lot is part of the regional stormwater system approved by the Commission for project 2016-002. Commission rules require compliance with Rules D and E. On January 23, 2020, Staff administratively approved this project contingent upon receipt of a dated and signed set of final development stage plans. This information has not been received to date.

f. 2020-002 Project 100, Maple Grove, renamed ***Minnesota Health Village (MHV).*** Ryan Companies is proposing to develop 100.6 acres of agricultural land into a mixed-use development consisting of office, medical, hospital, multi-family residential and senior living facilities. This site is situated between I-610 to the north, I-94 to the west and the Maple Grove Hospital to the east. The applicant is looking for approval of a regional stormwater management system to address the Commission's present-day requirements throughout the timeline for all the phases of this development. Additionally, they are requesting grading and erosion control approvals for Phase I of the development.

Phase I site plans consists of mass grading of approximately 35 acres in the southeast portion of the site to accommodate street and utilities, 383 parking stalls for the existing hospital and future building in this area. The Commission reviewed the concept plan for compliance with Rule D. In addition, it reviewed Phase I for compliance with Rules D, E, G and I. At their March 2020 meeting the Commission approved this project contingent upon the following conditions: Phase I site plans: (1) Feasibility to infiltrate stormwater in the filter bench areas of ponds 1 and 2 must be determined. If infiltration is considered feasible, design revisions and compliance with MPCA infiltration design criteria is required and (2) City, MN WCA, and Commission compliance on any wetland impacts must be adhered to. These two items remain outstanding.

Concept Site Plans: The overall stormwater management concept plan design meets the Commission's standards provided. (1) Feasibility to infiltrate stormwater in the future filter bench areas and biofiltration basins is determined. If infiltration is considered feasible, design revisions and compliance with MPCA infiltration design criteria is required. (2) Commission Project review and approval are required when future site development triggers a review. These two items are considered on-going and will come forward as this site develops. No other information is necessary at this time.

For Phase I and the Concept Plans: The Commission recommends the management of stormwater runoff to minimize the impacts of the application of chloride compounds on water resources by minimizing their use on roads, parking lots, sidewalks and other impervious surfaces. Toward that end, the Commission requests that existing and future landowners develop and implement a chloride management plan on all private parking and walking areas within this project to minimize chloride runoff into surface water on site. The primary element of such a plan is implementation and application of salt to these surfaces by an applicator with MPCA Level 1 Certification in Snow & Ice Control Best Practices.

Note: The City of Maple Grove is looking at the feasibility to consolidate as many of the regional ponds for this site as possible while continuing to meet the regulations and goals of the approved plans. Commission staff will work with the City to ensure the Commission's requirements and approvals are compliant with any changes. This will be on-going as the site develops. *No new information was received in September project.*

g. 2020-008 Ione Gardens, Dayton. This project is located at the northwest intersection of CSAH 144 (Diamond Lake North) and 12 (Dayton River Road). The site is three agricultural properties totaling 48.29 acres. 112 new single-family residential lots creating 16.84 acres of new impervious surface area are proposed for this development. The Commission's review will be for compliance with Rules D, E, G, and I. Initial findings with no recommendations were provided in the April 2020. The applicant requested and was granted an extension to October 21, 2020. *Findings are included in this month's packet. Staff gave administrative approval for phase I grading and erosion controls on September 8, 2020, contingent upon: (a) the applicant accepting any and all risks for any changes required to obtain final approval by the Commission and (b) that the City of Dayton grants approvals for said grading. Staff recommends approval contingent upon the following conditions. (1) Future wetland alteration and buffer strip plans meet Commission and Dayton wetland requirements; (2) Appropriate separation between the low floor and high-water elevation on Lot 1, Block 1, and Pond 1P is provided; (3) The pipe size between ponds 2P and 2iP on the site plans is consistent with hydrology sizing; and, (4) Post-development percolation tests are provided on infiltration basins to demonstrate the constructed infiltration rate meets or exceeds the design infiltration rates.*

h. 2020-015 Dayton Interchange Business Center, Dayton. Scannell Properties is proposing to develop a 12-acre parcel of agricultural land into a 124,000 SF office/warehouse building with related infrastructure, creating 6.2 acres of new impervious area. This site is located west of CR 81 and north of Territorial Road near Holly Lane. The site plan triggers a Commission review for conformance with Rules D, E, G, and I. No recommendations are provided to the Commission at this time. *The project review deadline was extended by the applicant to November 30, 2020.*

i. 2020-016 Skye Meadows, Rogers. Lennar Corporation is proposing to construct a residential development on 130 acres along Territorial Road. The site consists of six separate parcels located both north and south of Territorial Road (CR116) just west of Tilton Trail. 363 single-family residential units are proposed, creating 38.73 acres of new impervious areas in seven phases. The Commission's review will be for conformance to Rules D, E, F, G, and I for all seven phases. Informational findings are included in this month's packet. The applicant requested administrative approval for the grading and erosion control approvals on Phase 1A. Phase 1A does meet the Commission's requirement but the overall development site plans do not. Technical staff approved Phase 1A grading and erosion control contingent upon: (a) the applicant accepting all risks for any changes required to obtain final approval by the Commission, and (b) the City of Rogers granting approvals for said grading. *The applicant has extended the deadline to October 20, 2020, per MN Statute 15.99.*

j. 2020-017 Meadow View Townhomes, Medina. This is a 22-acre site located south of Meander Road and north of Highway 55. Lennar Homes is proposing to build 125 townhomes with their necessary infrastructure on this site. A complete application was received May 29, 2020. The plans call for 7.64 acres of new impervious areas. The Commission's review will be for conformance to Rules D, E, F, G, and I. The applicant extended the decision deadline to October 20, 2020. *Findings are included in this month's packet. Grading was administratively approved by Commission staff conditioned that (a) the applicant accepts all risks for any changes required to obtain final approval by the Commission, and (b) the City of Medina grants approvals for said grading.*

k. 2020-022 Elm Road Street and Utility Project, Maple Grove. This project encompasses the street and utility work for the Elm Road Development and street improvements for Elm Road between Vicksburg and Lawndale Lanes. The Commission approved the site plans and street and utility work for the Elm Road Development under project 2020-004. Elm Road construction from Vicksburg to Comstock Lane (stations 159+92-133+00) was part of 2020-004 approvals. This project review covers the Elm Road street and storm sewer work proposed by the City of Maple Grove between Comstock and Lawndale Lanes (Stations 133+00-100+85) and triggers Commission rules D, E, F, G and H. Project review and findings were approved by the Commission at their August 2020 meeting. Approval is contingent upon the DNR permitting of the new Elm Creek culverts and an accounting of the net decrease in floodplain storage. The floodplain storage numbers have been received, but the DNR permit is still under review.

l. 2020-023 Ziegler, Dayton. This is an existing 4.73-acre commercial parcel located on Territorial Road near Holly Lane close to the Maple Grove/Dayton border. Currently the property consists of a building with bituminous drive and parking areas and a large gravel storage yard. The applicant is proposing to utilize the existing building, construct an additional commercial building, expand the bituminous parking lot, and add gravel lots for merchandise display and storage. It triggers Commission rules D, E, G, and I. The Commission approved this project at their August 2020 meeting contingent upon wetland permitting being obtained and an Operation & Maintenance agreement per the Commission's standards being recorded on the land title. *As of this update, the wetland permit has been approved, but the O&M plan has yet to be received. This item will be moved to the O&M approval section of this report.*

m. 2020-024 Paul Walti Culvert Replacement, Corcoran. This is an existing driveway culvert on the North Branch of Rush Creek at 10420 Cain Road. An in-kind culvert replacement is proposed. This project triggers Commission Rule H. *The DNR determined they will not require a permit for this project because it is an in-kind replacement. Staff approved the project per the permit conditions dated September 8, 2020 included in this month's packet. No additional approvals are necessary from the Commission. This item will be removed from the agenda.*

n. 2020-025 Paulsen Farms, Corcoran. This is an 88-acre parcel located south of CR 30 and east of Bechtold Road. Twenty (20) single family rural residential lots with 5.2 acres of new impervious areas are proposed on this site. This project triggers Rules D, E and I. Findings are included in this month's packet. Staff recommends approval *contingent upon: (1) Grading is administratively approved by technical staff on the condition that: (a) the applicant accepts any and all risks for any changes required to obtain final approval by the Commission, and (b) that the City of Corcoran grants approvals for said grading; (2) Rate control at culvert #3 must be equal to or less than pre-development rates for all storm events; (3) Buffer strip monumentation conforms to the Commission's requirements; and (4) An operation and maintenance agreement must be created and approved by the City and the Commission. Said agreement must be recorded on the property title with a copy of the recorded document provided to the Commission.*

o. 2020-026 Rogers High School 2020 Addition and Renovations, Rogers. This project will disturb 3.35 acres and increase impervious coverage by 0.82 acres. A 35,000 SF building addition is proposed for the north side of the existing school. The applicant proposes to utilize the existing regional infiltration pond constructed in 2002 to accommodate these improvements. This project triggers the Commission's Rules D and E. *Findings are included in this month's packet. Staff recommends approval with no conditions.*

p. 2020-027 Kariniemi Addition, Corcoran. This is a 12.7-acre parcel located on Lot 3, Block 1 of the Rolling Hills Acres subdivision (ECWMC Project 2019-030) about a mile north of Highway. 55 on the east side

of Rolling Hills Road. The applicant proposes to create three lots with a shared driveway for access along the northerly portion of the property. Project work will disturb 2.6 acres and create 0.83 acres of new impervious areas. *This project was approved by the Commission pending O & M plans, at their September 2020 meeting. This item will be moved to the O&M pending approval section.*

q. 2020-028 Perl Gardens, Plymouth. This is two parcels, 9.56 acres in size, located in the northwest corner of County Road 101 and Medina Road. Based on the Elm Creek Watershed jurisdictional boundaries, the Elm Creek Watershed jurisdiction bisects this project. The northerly 7.06-acre parcel is within the Elm Creek watershed and the southerly 2.46-acre parcel is within the Bassett Creek Watershed. Forty-three (43) single family twin homes creating 4.56 acres of new impervious areas are proposed on this site. *Staff recommends approval with no conditions.*

r. 2020-029 Sundance Greens 5th Addition. This project is part of a larger residential development that was reviewed and approved as the Sundance Greens Development (Project #2018-005). The full development covers 310 acres west of County Road 121 (Fernbrook Lane N.) in and around the Sundance Green Golf Course. The full development will construct 645 new single-family homes with 100 units proposed as a senior housing facility. The 5th Addition will grade 75 acres for 212 lots. This review will check consistency of the stormwater management plans that were previously approved and erosion controls. This project can be administratively approved by Staff. *As of this update, additional erosion and sediment controls are necessary before Staff can approve the project. Projects findings are included in this month's packet as an informational item.*

***s. 2020-030 Nelson International, Corcoran**. This project would construct a new semi-truck and trailer dealership and center on a 22.4-acre site. The project will disturb 9.5 acres and create 6.6 acres of impervious surface. The existing condition is a single-family residence with 0.4 acres of impervious. A complete application was not received in time to include findings in this month's packet.*

***t. 2020-031 Chippewa Road Extension and Weston Woods EAW, Medina**. This is a statutory review of Environmental Assessment Worksheet (EAW) for the extension of Chippewa Road, the development of 150 residential units, and construction of a 30,000-square-foot commercial building. The site is 139 acres. The existing condition is mostly undeveloped agricultural fields with a single residence and farm outbuildings. Comments on the EAW were provided to the City of Medina on October 6, 2020. A copy of Staff's comments are included in this month's packet. This item will be removed from the agenda.*

***u. 2020-032 Enclave Rogers – Commerce Blvd., Rogers**. This project would create an apartment complex on a 3.3-acre site. The existing condition is undeveloped. The project will disturb the entire site and create 2.3 acres of impervious surface. A complete application was not received in time to include findings in this month's packet.*

***v. 2020-033 Weston Woods, Medina**. This project would create 150 residential units on a 135-acre site. The existing condition is undeveloped. The project will disturb 49.2 acres and create 17.4 acres of impervious area. A complete application was not received in time to include findings in this month's packet.*

***w. 2020-034 Strehler Road, Corcoran**. This project would create a single residence on a 60-acre site in the Strehler Estates development (ECWMC project #2015-02). The project will disturb 5 acres. The original plan review for project 2015-020 met the Commission's current standards and took into account the impervious areas created for this building site. The applicant's application will be for grading and erosion controls only. A complete application was not received in time to include findings in this month's packet.*

FINAL RECORDINGS OR OTHER DOCUMENTATION ARE DUE ON THE FOLLOWING PROJECTS: *(Staff reached out to the cities for updates on these projects on October 7, 2020.)*

ah. 2014-015 Rogers Drive Extension, Rogers. This project involves improvements along Rogers Drive from Vevea Lane to Brockton Lane. The project is located east of I-94, south of the Cabela development. The total project area is 8.0 acres; proposed impervious surfaces total 5.6 acres. Site plans received July 1, 2014 met the requirements of the Commission with the exception of the nutrient control. The Commission approved the site plan contingent upon the City deferring 4.6 lbs. of phosphorus for treatment in future ponding opportunities as the easterly corridor of Rogers Drive develops. 2.3 lbs. will be accounted for in the Kinghorn Spec. Building site plan, with 2.3 lbs. still outstanding. This item will remain on the report until the total deferral is accounted for.

ai. 2015-030 Kiddiegarten Child Care Center, Maple Grove. Approved December 9, 2015. If the City does not take over the operation and maintenance of the underground system and the sump catch basins, an O&M agreement for the underground trench/pond system must be approved by the Commission and the City and recorded with the title. On February 5, 2019 Derek Asche contacted the owner requesting a copy of the recorded maintenance agreement. No update was available on July 2, 2019.

aj. 2016-002 The Markets at Rush Creek, Maple Grove. This is a proposal to develop 40 acres of a 123-acre PUD located in the southwest quadrant of the intersection of CSAH 101 and CSAH 10. In 2016 the Commission granted Staff authority to administratively approve the project and report any updates. Updated plans with minor layout revisions were reviewed by Staff and administratively approved on July 24, 2018, contingent upon the Operations Manager requesting a copy of the recorded maintenance agreement. On March 4, 2020, Derek Asche reported that the agreement has been signed but not yet recorded. The City will have the document recorded to satisfy the final condition of this project.

ak. 2016-005W Ravinia Wetland Replacement Plan, Corcoran. In December 2016 the Commission approved Staff's recommendations on this wetland replacement plan. Final wetland impacts are 1.22 acres. Wetland credits created on site will be 4.01 acres. Excess credits of 0.75 acres are proposed to be used on Lennar's Laurel Creek development in Rogers (2017-014). All approval contingencies have been met and construction is completed.. Vegetation planting and management took place throughout 2017. Barr Engineering is providing monitoring to ensure the replacement meets the performance standards of the approved plans. Their first annual report was submitted to the US Army Corps of Engineers on February 7, 2019. Kevin Mattson indicated on October 2, 2019 that no further updates are available.

al. 2016-047 Hy-Vee North Maple Grove. The applicant is proposing to disturb 13 acres of a 20.4-acre site located at the northeast corner of Maple Grove Parkway and 99th Avenue for the purpose of constructing a grocery store, fuel station, convenience store and parking facilities. In findings dated January 10, 2017, Staff recommended approval of this project subject to three conditions. The Commission approved Staff's recommendations at their January 2017 meeting with the additional requirement that the Commission receive and comment on a WCA impact notice. (Also see Project 2019-023 99th Avenue Apartments. That project is part of this PUD and had the same requirements prior to approval.) WCA, Buffer easement protection and updated grading plans were received and approved by the Commission in February 2017. As of this update, the final outstanding item is the operation and maintenance agreement.

am. 2017-014 Laurel Creek, Rogers. In June 2017 the Commission approved this project with four conditions. All contingency items have been provided with the exception of the O&M agreement which is being negotiated by the City as to whether the City or the HOA will be responsible for the operation and maintenance of the stormwater management facility. On August 31, 2017, Andrew Simmons responded that the O&M agreement is still being negotiated.

an. 2017-029 Brayburn Trails, Dayton. At their August 2017 meeting the Commission approved Staff's findings dated August 2, 2017 with five conditions. All of the conditions have been met except for the final recordings of the O&M agreements and easements. On March 7, 2018, the City reported: final plat approval has not been granted, easements will be recorded as plats are approved. Ponds will be maintained by the City of Dayton. An agreement, and additional easement, will be required for a water re-use system within one of the ponds (between the City and HOA). This system is not part of the first

addition – the timing of said improvements/agreement is unknown. Construction had been expected to start in 2018.

On February 7, 2019, Jason Quisberg provided the following information: The 1st Addition was scaled back from what was proposed; associated construction activity is significantly completed. Extension of trunk utilities through Sundance Golf Course are complete. The proposed 2nd Addition is under review. Improvements to 117th Avenue (East French Lake Road to Fernbrook Lane) will be part of the work done with the 2nd Addition. Construction is anticipated to start spring 2019. Pond easements are being recorded with the platting process for each addition (those [that are] part of the 1st Addition are in place). The water re-use system is not part of the 2nd Addition (will be with future additions).

ao. 2017-039 Rush Creek Apartments, Maple Grove. At their May 13, 2020 meeting the Commission accepted Staff's findings dated April 29, 2020 and approved this project contingent upon: (a) Maintenance access to the stormwater ponds must be provided and (b) The O&M plan for the stormwater management systems (biofiltration basin) must be provided for the Commission's approval. Said plans must be recorded on the property title and a copy of the recorded document must be provided to the Commission. Item (a) has been resolved.

ap. 2018-026 Windrose, Maple Grove. The Commission approved Staff's finding and recommendations dated July 20, 2018. Final plan approval is contingent upon verification of the wetland approvals by the City and the approval and recording of the operation and maintenance plan on the filter basins. On February 5, 2019 Derek Asche reported that the City will receive the agreement for the filter basins with the grading permit application.

aq. 2018-048 Faithbrook Church, Phase 2, Dayton. This is an application for review of an expansion of an existing church located northeast of the intersection of Fernbrook Lane and Elm Creek Road. The Commission approved this project at their November 2018 meeting conditioned upon receipt of a SWPPP meeting NPDES requirements and the City accepting maintenance responsibility or recording a modified O&M plan for the stormwater features on the site in a form acceptable to the Commission. On February 7, 2019, Jason Quisberg reported that this project has gone idle; it is believed to be due to funding needs of the applicant. It was expected activity would resume in Spring 2019.

ar. 2019-001 Fernbrook View Apartments, Maple Grove. This is a 4.85-acre rural residential lot located at the northeast intersection of CSAH 81 and Fernbrook Lane. The applicant proposes to construct a 2-story, 42-unit apartment building. This project was approved at the February 2019 Commission meeting with the following conditions: (1) the applicant pursue utilizing water from the NURP pond for irrigation needs for this property; (2) long term operation and maintenance on the stormwater basin must be addressed: (3) mean average pond depth must meet the Commission standard: (4) pond filter bench details must be provided. With the exception of the O&M plans, these condtions have been met by the applicant. This project was approved by the Commission's technical advisor per the updated project review dated February 5, 2020.

as. 2019-002 Parkside Villas, Champlin. This is two adjacent rural parcels totaling 13.9 acres that are proposed to be split into 56 single-family residential lots. It is located on the east side of Goose Lake Road just south of its intersection with Elm Road (CR 202). The review is for compliance with Commission Rules D and E. At their February 2019 meeting the Commis sioners approved Staff's findings dated January 29, 2019, contingent on (1) a long term O&M agreement on the stormwater basin and irrigation system being provided and recorded on the property title and (2) the applicant working with the City and Three Rivers Park District to safely outlet the pond water below the trail system adjacent to the proerty line.

at. 2019-021 Brenly Meadows, Rogers. This is a 38-unit townhome project proposed on 6.9 acres north of 129th Avenue about one-third mile west of Main Street. It triggered the Commission's review for Rules D, and E. This item was approved by the Commission at their August 2019 meeting, contingent upon O & M plan requirements for the stormwater pond and irrigation system.

au. 2019-027 Havenwood at Maple Grove. This is a 5.6-acre site located at the northwest intersection of Bass Lake Road (CR10) and Troy Lane (CR101). The site is proposed to be subdivided into two lots. The southerly lot will be 4.5-acres with a 150-unit senior living facility. The remaining outlot (~1.3 acres) is anticipated to be a daycare facility. In their findings dated October 17, 2019, Staff recommended approval contingent upon the irrigation pond and system having an operation and maintenance plan approved by the City and Commission and recorded on the title for this property. A copy

of the recorded document must be provided to the Commission.

av. 2019-032 OSI Expansion, Medina. This an existing business located in the northwest corner of Highway 55 and Arrowhead Drive. The applicant is proposing to build an addition on the south side of the building and add parking to the north side of the site, creating an additional 3.6 acres of new impervious area. In their findings dated February 4, 2020, Staff recommended approval contingent upon receipt of O& M plans on the stormwater facilities that meet the Commission's requirements. *Dusty Finke reported on March 4, 2020, that recordation of the O&M plans is still pending.*

aw. 2020-009 Stetler Barn, Medina. This site disturbs approximately 3.5 acres and must meet Commission Rules D, E, and I. Because of the limited available space for pasture, paddocks and land application of manure, understanding how these components will be managed is also an important part of the review. A complete plan was received on April 22, 2020. *At their May 13, 2020 meeting the Commission approved this project* contingent upon: 1) The landowner continuing to work with the U of M Extension Office and Hennepin County Rural Conservationist to finalize composting, pasture and paddock management plans and 2) A long-term pond/basin operation and maintenance plan and agreement with the City of Medina being approved by the City of Medina and the Commission. The agreement must be recorded on the land title with a copy of the recorded agreement provided to the Commission.

ELM CREEK FLOODPLAIN MAPPING PROJECT

Heather Hlavaty at Barr Engineering provided the following update for September:

Work conducted over the last month:

1. Incorporated effective HEC-2 and CLOMR/LOMR bathymetry and crossing data into the updated HEC-RAS hydraulic model
2. Identified additional survey needs and sent second data request to the MnDNR
3. Incorporated preliminary survey data provided during hydrology model development
4. Delineated additional cross-sections for non-detailed areas

Work that is anticipated to occur over the month:

5. Review of as-builts and survey from member cities (gathered and provided by the MnDNR)
6. Survey of additional bathymetry or crossings needs (by Barr, MnDNR, or other)
7. Internal QAQC of draft HEC-RAS hydraulic model
8. Development of hydraulic submittal memo

Data/input we are waiting on from others

- As-builts and survey data from member cities collected by the MnDNR
- Input from the MnDNR on bathymetry requirements for cross-sections in detailed areas without effective model bathymetry

Budget spent through 9/25/2020: $78,016 (14% remaining)

- Requesting additional budget from MnDNR to cover extra work on hydrologic modeling

elm creek
Watershed Management Commission

ADMINISTRATIVE OFFICE
3235 Fernbrook Lane
Plymouth, MN 55447
PH: 763.553.1144
email: judie@jass.biz
www.elmcreekwatershed.org

TECHNICAL OFFICE
Barr Engineering
4300 Market Point Drive, Suite 200
Minneapolis, MN 55435
PH: 612.834.1060
Email; jHerbert@barr.com

October 14, 2020

Mr. Jeff Weiss, PE
Floodplain and Surface Water Engineer
Minnesota Department of Natural Resources
500 Lafayette Road
Saint Paul, MN 55155

SUBJECT: ELM CREEK WATERSHED FLOODPLAIN MODELING AND MAPPING PROJECT

Dear Mr. Weiss:

The Minnesota Department of Natural Resources (DNR) and the Elm Creek Watershed Management Commission (Commission) are under contract to complete floodplain mapping of the Elm Creek Watershed. The Commission originally contracted with Hennepin County to complete this work on behalf of the DNR; however, due to staff changes at the County, the Commission has now entered into a contract with Barr Engineering (Barr).

Barr has notified the Commission of a cost overrun totaling $25,000. The overrun is limited to the Hydrologic Analysis task and is a result of addressing comments from the DNR that are outside of the scope and contract for this work between the Commission and Barr. Attached is documentation from Barr which provides details on this issue.

We are requesting an amendment to the contract between the DNR and Commission to increase reimbursement to the Commission to $115,945.00. This would allow the Commission to reimburse Barr for the out-of-scope work requested by the DNR. Alternatively, Barr has offered to coordinate with the DNR to have DNR staff complete some of the remaining tasks which would reduce or eliminate the requested increase in reimbursement to the Commission.

Also, because Hennepin County was originally under contract to complete this work and we are now under contract with Barr, we are requesting an extension of the project schedule to June 30, 2021.

Please feel free to reach out with any questions. We look forward to hearing from you.

Sincerely,

Doug Baines
Chair
DB:DA:jaa
Attachments: September 24, 2020 Letter from Barr Engineering w/attachments

1. Letter Agreement between ECWMC and Barr
2. MnDNR Memo April 24, 2020: IAHRC Comments
3. MnDNR Email May 20, 2020

Z:\Elm Creek\Grant Opportunities\Floodplain modeling 2018\L-Requesting addl funding.docx

resourceful. naturally.
engineering and environmental consultants

BARR

September 24, 2020

Mr. Doug Baines, Chair
Elm Creek Watershed Management Commission
3235 Fernbrook Lane
Plymouth, MN 55447

Re: FEMA Floodplain Modeling and Mapping

Dear Mr. Baines:

The purpose of this letter is to request modifications to the budget and schedule for the Elm Creek floodplain modeling and mapping project.

Background

The Elm Creek Watershed Management Commission (ECWMC) has a contract with the Minnesota Department of Natural Resources (MnDNR) for grant funding to complete improved floodplain modeling and mapping for Elm Creek and its tributaries. Originally, Hennepin County was providing technical services to the ECWMC to complete the MnDNR work scope for the grant funding. Staffing changes at the county prevented the county from completing the work. The ECWMC retained Barr Engineering Co. (Barr) to complete the technical services required for the contract with the MnDNR (Attachment 1).

The objective of the floodplain update project is to perform a new hydrologic analysis of the Elm Creek watershed and develop updated floodplain elevations and mapping. Major tasks include:

- Hydrologic Modeling
- Hydraulic Modeling
- Mapping
- Summary Report

Hydrologic Modeling

MnDNR approved the Elm Creek hydrology submittal prepared by Barr, on behalf of the ECWMC, on August 17, 2020. However, the Hydrologic Modeling task took a much greater effort than estimated in Barr's initial budget for that task. Barr performed the following additional work that resulted in a budget overrun on this task.

1. An April 24, 2000 MnDNR memo summarized review comments on the hydrologic modeling (Attachment 2). Comments that led to additional effort are highlighted in the attachment. On April 30, 2020 Barr and the MnDNR had a conference call to discuss the comments in the April 24, 2020 memorandum. While some rework was expected from the MnDNR review process, the level of effort exceeded what was assumed in the original scope of work. Tasks that required a larger than expected level of effort include:

a. Request for a comparison of new flows to current effective model flows. This added to the documentation effort.
b. Request for a spot check of impervious areas with aerial imagery. This added to the quality control effort.
c. Request for quality control documentation for areas where storage areas will be used to define water levels. Several of these areas are significantly lower in elevation than currently mapped special flood hazard areas. A review of storage areas resulted in additional work to add new storage areas and additional scrutiny of the modeling approach to verify that the changes in elevations and flow rates from publish FEMA values are reasonable and substantiated.
    i. The initial hydrologic model had 29 storage areas for mapping ponds and lakes. MnDNR requested an additional 21 storage areas for shallow depressions that may accumulate water during wet periods. Barr's scope assumed the shallow areas would be modeled with cross sections in the hydraulic model.
    ii. Substantial changes in the regulatory flow rates and flood elevations (particularly a significant REDUCTION in several locations) was unexpected given that generally flood flow rates have increased in the past decades and prompted extra scrutiny by Barr staff. This additional scrutiny was critical because adopting lower flows and flood elevations would allow development closer to water bodies and with lower floor elevations, potentially increasing the flood risk for the community. Additional work to verify the updated flows included:
        - Reviewing methodology of FEMA's original hydrologic analysis.
        - Performing a flow frequency analysis on the Elm Creek stream gage to verify that the results from the HEC-HMS model results were reasonably similar to recurrence interval flows based on the historic record.
        - Ultimately, Barr staff concluded that the lower flows were justified, and the MnDNR agreed through the hydrology review process.
d. Request for a comparison of how calibrated flows compare to gaged flows. This added to the quality control effort.
e. Request to update watershed divides such that all individual special flood hazard areas have their own unique drainage area. This added to the modeling effort and required recalibration of the model.
f. The combination of the above listed changes to the HEC-HMS hydrologic required significant effort, above and beyond what was assumed in Barr's scope.
    - Developing of hydrologic inputs for the subdivided watersheds.
    - Defining storage area parameters.
    - Recalibrating the hydrologic model.

2. A May 20, 2020 MnDNR email provided a link to download survey and as-builts data for updating the draft hydrology model (Attachment 3). The information received required sifting through more than 30 pages of handwritten notes on crossings and locating the crossing in the HEC-HMS

model. This information came after the draft model was submitted to the MnDNR for review. The timing and format of the data led to more time than expected for incorporating the information into the HEC-HMS model.

The work requested by the MnDNR was valuable and will provide greater benefit to the residents of the Elm Creek Watershed, giving the residents a better understanding of their flood risk, helping them make better risk-informed decisions. However, the cost of the additional and out of scope hydrologic modeling work was **$25,000** more than was budgeted for the task. Table 1 shows the original and requested revised task budgets.

Table 1 Elm Creek Flood Mapping Task Budgets

Task	Description	Original Budget	Requested Revised Budget
1	Meetings	$2,315	$2,315
2	Data Collection and Organization	$1,965	$1,965
3	Survey Locations and Identification	$1,970	$1,970
4	Hydrologic Analysis	$23,900	$48,900
5	Hydraulic Analysis – Detailed	$27,050	$27,050
6	Hydraulic Analysis – Non-Detailed	$10,025	$10,025
7	Mapping Products	$12,670	$12,670
8	Narrative	$11,050	$11,050
	Total	**$90,945**	**$115,945**

Schedule

In early May 2020, Barr informed the commission that the floodplain mapping study was two months behind schedule. The additional hydrologic modeling and longer than expected times for MnDNR reviews have pushed the schedule to three months behind. With no further delays, Barr estimates that the project will finish in May 2021. Our understanding is that this schedule may be optimistic given MnDNR's many competing priorities and limited capacity to review and approve technical submittals within the timeframes assumed in the project scope.

Request

We recommend that the ECWMC request the following from the MnDNR:

- Allocate $25,000 in additional funds to cover the additional and out of scope work required to complete the hydrologic modeling, and/or
- Coordinate with Barr to have MnDNR staff perform some of the remaining tasks in the original scope of work (e.g., MnDNR could complete some hydraulic modeling or mapping tasks).
- Coordinate with FEMA to extend the project schedule to allow for completion of the project at a later date (e.g., June 2021) that is consistent with the MnDNR's current workload. A June 2021

completion date would keep the project work in the current fiscal year and would allow additional time for MnDNR technical review of remaining work products.

Thank you for your consideration of this matter. Please contact me or Joe Waln regarding any questions.

Sincerely,

Nathan Campeau
Vice President

Attachments

1. Letter Agreement between ECWMC and Barr
2. MnDNR Memo April 24, 2020: IAHRC Comments – Elm Creek Watershed Management Commission HEC-HMS Model
3. MnDNR Email May 20, 2020

resourceful. naturally.
engineering and environmental consultants

BARR

March 5, 2020

Doug Baines, Chair
Elm Creek Watershed Management Commission
3235 Fernbrook Lane
Plymouth, Minnesota 55447

Re: Agreement for FEMA floodplain modeling and mapping

Dear Mr. Baines:

Thank you for retaining us. We will do our best to justify your expression of confidence in us. This letter, together with our Standard Terms (attached) sets forth the Agreement between Elm Creek Watershed Management Commission (ECWMC) and Barr Engineering Co. (Barr) regarding FEMA floodplain modeling and mapping services for the ECWMC.

The scope of professional consulting services we will provide for your project is described in the *Project Understanding and Scope of Work* section of the October 9, 2019, proposal. The estimated schedule for the services is described in the *Schedule* section of the proposal.

This Agreement will be effective for the duration of the services, unless terminated earlier by either you or us. The proposal is not a part of this Agreement except as specifically indicated or referred to in this letter Agreement. The work has commenced based on the ECWMC approval at its October 9, 2019 meeting.

We will inform you of our progress by periodic progress reports.

For the services provided, you will pay us according to the attached Standard Terms. We will bill you monthly. The cost of the services will not exceed $90,945 (USD) without prior approval by you.

We understand Judie Anderson, Watershed Administrator has the authority to direct us. We will direct communications to you at the address on this letter. Direction should be provided to me at the letterhead address.

Barr and ECWMC waive all rights, including their insurers' subrogation rights, against each other, their subcontractors, agents, and employees, and the other's consultants, separate contractors, and their subcontractors, agents, and employees for losses or damages covered by their respective property or casualty insurance, commercial general liability, or Builder's Risk insurance. This waiver of subrogation is effective notwithstanding any duty of indemnity.

If this Agreement is satisfactory, please sign the enclosed copy of this letter in the space provided, and return it to us.

Sincerely yours,

BARR ENGINEERING CO.

Nathan Campeau

Its Vice President

Accepted this 11 day of March, 2020

ELM CREEK WATERSHED MANAGEMENT COMMISSION

By Elizabeth Weir

Its Vice Chair

Attachments
Standard Terms—Professional Services
Fee Schedule

STANDARD TERMS—PROFESSIONAL SERVICES

Our Agreement with you consists of the accompanying letter or other authorization, Work Orders, and these Standard Terms – Professional Services.

Section 1: Our Responsibilities

1.1 We will provide the professional services ("Services") described in this Agreement. We will use that degree of care and skill ordinarily exercised under similar circumstances by reputable members of our profession practicing in the same locality.

1.2 We will select the means, methods, techniques, sequences, or procedures used in providing our Services. If you direct us to deviate from our selections, you agree to hold us harmless from claims, damages, and expenses arising out of your direction.

1.3 We will acquire all licenses applicable to our Services and we will comply with applicable law.

1.4 Our duties do not include supervising your contractors or commenting on, supervising, or providing the means and methods of their work unless we accept any such duty in writing. We will not be responsible for the failure of your contractors to perform in accordance with their undertakings.

1.5 We will provide a health and safety program for our employees, but we will not be responsible for contractor, job, or site health or safety unless we accept that duty in writing.

1.6 Estimates of our fees or other project costs will be based on information available to us and on our experience and knowledge. Such estimates are an exercise of our professional judgment and are not guaranteed or warranted. Actual costs may vary. You should add a contingency.

1.7 The information you provide to us will be maintained in confidence except as required by law.

Section 2: Your Responsibilities

2.1 You will provide access to property.

2.2 You will provide us with prior reports, specifications, plans, changes in plans, and other information about the project that may affect the delivery of our Services. You will hold us harmless from claims, damages, and related expenses, including reasonable attorneys' fees, involving information not timely called to our attention or not correctly shown on documents you furnish to us.

2.3 You agree to provide us with information on contamination and dangerous and hazardous substances and processes we may encounter in performing the Services and related emergency procedure information.

2.4 You agree to hold us harmless as to claims that we are an owner, operator, generator, transporter, treater, storer, or a disposal facility within the meaning of any law governing the handling, treatment, storage, or disposal of dangerous or hazardous materials.

2.5 Site remediation services may involve risk of contamination of previously uncontaminated air, soil, or water. If you are requesting that we provide services that include this risk, you agree to hold us harmless from such contamination claims, damages, and expenses, including reasonable attorneys' fees, unless and to the extent the loss is caused by our negligence.

2.6 You agree to make disclosures required by law. If we are required by law or legal process to make such disclosures, you agree to hold us harmless and indemnify us from related claims and costs, including reasonable attorneys' fees.

Section 3: Reports and Records

3.1 We will retain analytical data relating to the Services for seven years and financial data for three years.

3.2 Monitoring wells are your property and you are responsible for their permitting, maintenance and abandonment unless we accept that duty in writing. Samples remaining after tests are conducted and field and laboratory equipment that cannot be adequately cleansed of contaminants are your property. They will be discarded or returned to you, at our discretion, unless within 15 days of the report date you give written direction to store or transfer the materials at your expense.

3.3 Our reports, notes, calculations, and other documents, and our computer software, programs, models, and data are instruments of our Services, and they remain our property, subject to a license to you for your use in the related project for the purposes disclosed to us. You may not use or transfer such information and documents to others for a purpose for which they were not prepared without our written approval. You agree to indemnify and hold us harmless from claims, damages, and expenses, including reasonable attorneys' fees, arising out of any unauthorized transfer or use.

3.4 Because electronic documents may be modified intentionally or inadvertently, you agree that we will not be liable for damages resulting from change in an electronic document occurring after we transmit it to you. In case of any difference or ambiguity between an electronic and a paper document, the paper document shall govern. When accepting document transfer in electronic media format, you accept exclusive risk relating to long-term capability, usability, and readability of documents, software application packages, operating systems, and computer hardware.

3.5 If you do not pay for the Services in full as agreed, we may retain reports and work not yet delivered to you and you agree to return to us our reports and other work in your possession or under your control. You agree not to use or rely upon our work for any purpose until it is paid for in full.

Section 4: Compensation

4.1 You will pay for the Services as agreed or according to our then current fee schedules if there is no other written agreement as to price. An estimated cost is not a firm figure unless stated as such and you should allow for a contingency in addition to estimated costs.

4.2 You agree to notify us of billing disputes within 15 days and to pay undisputed portions of invoices within 30 days of invoice date. For balances not paid under these terms, you agree to pay interest on unpaid balances beginning 10 days after invoice date at the rate of 1.5% per month, but not to exceed the maximum rate allowed by law.

4.3 If you direct us to invoice another, we will do so, but you agree to be responsible for our compensation unless you provide us with that person's written acceptance of the terms of our Agreement and we agree to extend credit to that person.

4.4 You agree to compensate us in accordance with our fee schedule if we are asked or required to respond to legal process arising out of a proceeding to which we are not a party.

4.5 If we are delayed by factors beyond our control, or if the project conditions or the scope of work change, or if the standards change, we will receive an equitable adjustment of our compensation.

4.6 In consideration of our providing insurance to cover claims made by you, you hereby waive any right of offset as to payment otherwise due us.

Section 5: Disputes, Damage, and Risk Allocation

5.1 Each of us will exercise good faith efforts to resolve disputes without litigation. Such efforts will include a meeting attended by each party's representative empowered to resolve the dispute. Disputes (except collections) will be submitted to mediation as a condition precedent to litigation.

5.2 We will not be liable for special, incidental, consequential, or punitive damages, including but not limited to those arising from delay, loss of use, loss of profits or revenue, loss of financing commitments or fees, or the cost of capital. Each of us waives against the other and its subcontractors, agents, and employees all rights to recover for losses covered by our respective property/casualty or auto insurance policies.

5.3 We will not be liable for damages unless you have notified us of your claim within 30 days of the date of your discovery of it and unless you have given us an opportunity to investigate and to recommend ways of mitigating damages, and unless suit is commenced within two years of the earlier of the date of injury or loss and the date of completion of the Services.

5.4 For you to obtain the benefit of a fee which includes a reasonable allowance for risks, you agree that our aggregate liability will not exceed the fee paid for our services, but not less than $50,000, and you agree to indemnify us from all liability to others in excess of that amount. If you are unwilling to accept this allocation of risk, we will increase our aggregate liability to $100,000 provided that, within 10 days of the date of our Agreement, you provide payment in an amount that will increase our fees by 10%, but not less than $500, to compensate us for the greater risk undertaken. This increased fee is not the purchase of insurance.

5.5 If you fail to pay us within 60 days following invoice date, we may consider the default a total breach of our Agreement and, at our option, we may terminate all of our duties without liability to you or to others.

5.6 If we are involved in legal action to collect our compensation, you agree to pay our collection expenses, including reasonable attorneys' fees.

5.7 The law of the state in which the project site is located will govern all disputes. Each of us waives trial by jury. No employee acting within the scope of employment will have any individual liability for his or her acts or omissions and you agree not to make any claim against individual employees.

Section 6: Miscellaneous Provisions

6.1 We will provide a certificate of insurance to you upon request. Any claim as an Additional Insured will be limited to losses caused by our sole negligence.

6.2 This Agreement is our entire agreement, and it supersedes prior agreements. Only a writing signed by an authorized representative for each of us making specific reference to the provision modified may modify it.

6.3 Neither of us will assign this Agreement without the written approval of the other. No other person has any rights under this Agreement.

6.4 Only a writing may terminate this Agreement. We will receive an equitable adjustment of our compensation as well as our earned fees and expenses if our work is terminated prior to completion.

6.5 We will not discriminate against any employee or applicant for employment because of race, color, creed, ancestry, national origin, sex, religion, age, marital status, affectional preference, disability, status with regard to public assistance, membership or activity in a local human-rights commission, or status as a specially disabled, Vietnam-era, or other eligible veteran. We will take affirmative action to ensure that applicants are considered, and employees are treated during their employment, without regard to those factors. Our actions will include, but are not limited to notifications, hiring, promotion or employment upgrading, demotion, transfer, recruitment or recruitment advertising, layoffs or terminations, rates of pay and other forms of compensation, and selection for training or apprenticeship.

6.6 Neither we nor you, including our officers, employees, and agents, are agents of the other, except as agreed in writing. Except as agreed in writing, nothing in this Agreement creates in either party any right or authority to incur any obligations on behalf of, or to bind in any respect, the other party. Nothing contained herein will prevent either party from procuring or providing the same or similar products or services from or to any third person, provided that there is no breach of any obligations pertaining to confidentiality.

End of Standard Terms

Fee Schedule—2020

Rev. 12/28/19

Description	Rate* (U.S. dollars)
Principal	$145-295
Consultant/Advisor	$185-250
Engineer/Scientist/Specialist IV	$155-180
Engineer/Scientist/Specialist III	$125-150
Engineer/Scientist/Specialist II	$95-120
Engineer/Scientist/Specialist I	$65-90
Technician III	$125-150
Technician II	$95-120
Technician I	$60-90
Support Personnel II	$95-150
Support Personnel I	$50-90

Rates for litigation support services will include a 30% surcharge.

A ten percent (10%) markup will be added to subcontracts for professional support and construction services to cover overhead and insurance surcharge expenses.

Invoices are payable within 30 days of the date of the invoice. Any amount not paid within 30 days shall bear interest from the date 10 days after the date of the invoice at a rate equal to the lesser of 18 percent per annum or the highest rate allowed by applicable law.

For travel destinations within the continental U.S. (CONUS) and Canada, meals will be reimbursed on a per diem basis. The per diem rate will be as published by the U.S. Internal Revenue Service (IRS) based on the High-Low method. Full day per diem rates will be pro-rated on travel days. For travel destinations outside the continental U.S. (CONUS) and Canada, meals will be reimbursed based on actual expenses incurred.

All other reimbursable expenses including, but not limited to, costs of transportation, lodging, parking, postage, shipping and incidental charges will be billed at actual reasonable cost. Mileage will be billed at the IRS-allowable rate.

Materials and supplies charges, printing charges, and equipment rental charges will be billed in accordance with Barr's standard rate schedules.

Principal category includes consultants, advisors, engineers, scientists, and specialists who are officers of the company.

Consultant/Advisor category includes experienced personnel in a variety of fields. These professionals typically have advanced background in their areas of practice and include engineers, engineering specialists, scientists, related technical professionals, and professionals in complementary service areas such as communications and public affairs.

Engineer/Scientist/Specialist categories include registered professionals and professionals in training (e.g. engineers, geologists, and landscape architects), and graduates of engineering and science degree programs.

Technician category includes CADD operators, construction observers, cost estimators, data management technicians, designers, drafters, engineering technicians, interns, safety technicians, surveyors, and water, air, and waste samplers.

Support Personnel category includes information management, project accounting, report production, word processing, and other project support personnel.

*Rates do not include sales tax on services that may be required in some jurisdictions.

resourceful. naturally.
engineering and environmental consultants

BARR

October 1, 2019

Mr. Doug Baines, Chair
Elm Creek Watershed Management Commission
3235 Fernbrook Lane
Plymouth, Minnesota 55447

re: proposal to provide FEMA floodplain modeling and mapping

Dear Mr. Baines:

Barr is pleased to provide this proposal to provide FEMA floodplain modeling and mapping services for the Elm Creek Watershed Management Commission (ECWMC). The ECWMC will benefit from Barr's extensive experience with floodplain modeling and mapping; our current projects with a similar scope of work to map floodplains in other watersheds in the metro area; and our understanding of the Elm Creek watershed.

Barr has a long history of completing floodplain modeling and mapping services for many public entities. Barr helped develop the first floodplain map in Minnesota in 1961 by modeling the Nine Mile Creek Watershed and mapping a floodplain for the Nine Mile Creek Watershed District. Since then, hydrologic and hydraulic (H&H) modeling has been one of our specialties as we have helped to model and map floodplains throughout the Midwest. Through this long history, we have developed deep institutional knowledge about the best ways to complete the models efficiently and accurately.

Barr is currently working with the Minnesota Department of Natural Resources (DNR) on other floodplain mapping efforts. Our scope of work for other watershed management organizations (WMOs), including neighboring Bassett Creek Watershed Management Commission, is in the second year of the anticipated two-year schedule. We work closely with DNR staff to understand the details of their specific wants and needs for floodplain modeling and mapping efforts, and we will use this experience to bring added efficiency to the ECWMC modeling effort.

We have a thorough understanding of both the Elm Creek watershed and the need to engage the member cities in the modeling and mapping process. Flooding is an important issue and accurate models help Cities and WMO's understand current flooding risks as well as minimizing flooding risk associated with future development. We will work closely with the member cities to review known flooding "hotspots" and to review the modeling and mapping results for accuracy.

Finally, through discussions with the DNR on the other projects, we understand the DNR may wish to modify the negotiated scope of work to include developing a Digital Flood Insurance Rate Map (DFIRM). If the DNR chooses to modify the contract with ECWMC in a similar manner, Barr is prepared to complete this task. We have completed the development for DFIRMs for several counties in Minnesota and we have the experience necessary to complete this task to meet FEMA requirements.

Project Understanding and Scope of Work

We understand ECWMC has already negotiated a contract with the DNR that includes a defined scope of work and budget. The associated March 7, 2018 scope of work (Attachment A) prepared by Hennepin

County is attached to this proposal as a reference. Barr proposes making the following additions or clarifications to the scope of work provided as Attachment A:

General

- Replace "Hennepin County" with "Barr Engineering Co". Referenced work assumed to be completed by Hennepin County will be completed by Barr Engineering Co.

Task 1: Meetings

- Scope includes up to three meeting as defined in the original scope. Barr assumes meetings will be scheduled to meet one of the following scenarios:
    a. Immediately adjacent to ECWMC meetings
    b. Located at Barr's office
    c. Conducted via WebEx or Conference Call
- Scheduling meetings as such will minimize travel time and costs for Barr, city, and DNR staff.

Task 2: Data Collection and Organization

- We understand that Hennepin County had already completed at least some of this task and compiled data will be provided to Barr. We will re-engage with the cities during the kickoff meeting regarding additional data requests.

Task 3: Provide Required Survey Locations for others

- No changes necessary

Task 4: Hydrology Update

We understand that a "first draft" of the hydrology was previously completed, and that may ultimately provide efficiencies for completing this task. Getting the hydrologic modeling right is critical for accurate floodplain modeling and mapping. Inaccurate flows in the hydraulic model can result in a significant over- or under-prediction of the extents of the floodplain. As such, the hydrology task will address the uncertainty regarding whether the critical runoff event is a rainfall event or a snowmelt event by completing the following tasks:

- Use HEC-HMS to model the watershed hydrology.
- Calibrate the hydrology using the USGS gage (as specified in the contract).
- Use two rain storm and two snowmelt events to calibrate the HEC-HMS model
- Use NEXRAD data to accurately distribute rainfall across the watershed for the calibration events. Barr has allocated up to 40 hours to complete the calibration to these events.
- Use the National Weather Service (NWS) snow water equivalent (SWE) gridded data to simulate snowmelt for calibration of snowmelt events.
- Barr has allocated up to 40 hours to complete the calibration to these events.
- Barr assumes one hydrologic modeling iteration to address comments from the DNR.

Task 5: Hydraulics Update (Detailed Study Areas)

- The model cross sections will be limited to existing cross section locations and the necessary two cross sections upstream and downstream of each creek crossing.
- Barr assumes one detailed hydraulic modeling iteration to address comments from the DNR.

Task 6: Hydraulics Update (Non-Detailed Study Areas)

- Barr assumes one non-detailed hydraulic modeling iteration to address comments from the DNR.

Task 7: Mapping Products

- Barr assumes preparation of final DFIRM will be completed by the DNR.

Task 8: Narrative Products

- Barr assumes one review iteration for each for the 60% and 90% submittals.

Barr's Team

Key technical staff that will be working on this project are:

- Jeff Weiss, PE – Jeff will serve as the overall project manager and primary point of contact between Barr, the member cities and the DNR. Jeff has worked on numerous FEMA mapping projects, including modeling and mapping over 100 miles of rivers in multiple Minnesota counties. He has also provided QA/QC for several modeling and mapping projects.
- Joe Waln, PE, CFM – Joe is a Certified Floodplain Manager (CFM) and will perform QA/QC for the project in accordance to the scope. Joe has worked on several FEMA mapping projects and has been helping the City of Rochester develop Atlas 14 based floodplain maps so they can regulate development to a higher standard than the effective FEMA maps.
- Anthony Vecchi, Water Resources Engineer – Anthony will lead both the HEC-HMS and HEC-RAS. He has completed multiple projects using HEC-HMS to determine design flows and HEC-RAS to complete flood modeling for flood control systems to reduce flood risk in municipal systems.
- Brandon Barnes, PE and Ross Mullen, CFM, PE – Brandon and Ross are leading parallel efforts to model and map floodplains for the Ramsey-Washington Metro Watershed District (RWMWD) and for the Bassett Creek Watershed Management Commission (BCWMC), respectively. They will be technical resources and provide lessons learned from the parallel modeling and mapping efforts.
- Josh Vosejpka, GIS Specialist – Josh will lead the GIS work tasks and is completing the mapping for the RWMWD and BCWMC projects.

Budget

We understand the budget has already been negotiated between the ECWMC and the DNR. The total proposed budget and the estimated hours and budget for each task is summarized in the following table:

Task	Description	Hours	Cost
1	Meetings	17	$2,315
2	Data Collection and Organization	17	$1,965
3	Survey Locations and Identification	16	$1,970
4	Hydrologic Analysis	236	$23,900
5	Hydraulic Analysis – Detailed	266	$27,050
6	Hydraulic Analysis – Non-Detailed	91	$10,025
7	Mapping Products	138	$12,670
8	Narrative	102	$11,050
	Total	**883**	**$90,945**

Schedule

The original schedule includes a timeline that spans approximately two years. Our proposed schedule assumes a more condensed timeline to complete the project more quickly and efficiently. Meeting this schedule will depend in part on the ability of the DNR to complete reviews in a timely manner.

Task	Estimated Completion Date
Kick-off Meeting	November 2019
Draft Hydrology to interagency hydrology review committee	January 2020
Receive comments on Hydrology	February 2020
Final Hydrology Completed	March 2020
Hydraulic models submitted to DNR for review	June 2020
Receive comments back from DNR	July 2020
Final models submitted to DNR	August 2020
Draft Shapefiles to DNR	October 2020
60% Narrative to DNR and cities for comment	November 2020
90% Narrative to DNR and cities for comment	January 2021
Final Files submitted to DNR	February 2021

Thank you for your consideration to complete this work for the Commission. If you have any questions or require further information, please contact me (952-832-2784, jherbert@barr.com) or project manager Jeff Weiss (952-832-2706, jweiss@barr.com). We look forward to continuing our successful working relationship.

Sincerely,

Jim Herbert, PE
Vice President, Principal in Charge

Jeff Weiss, PE
Project Manager

141447 / 3000131351

STATE OF MINNESOTA GRANT CONTRACT WITH THE ELM CREEK WATERSHED MANAGEMENT COMMISSION FOR IMPROVED FLOODPLAIN MODELING AND MAPPING

This grant contract is between the State of Minnesota, acting through its Commissioner of Natural Resources, ("State") and the Elm Creek Watershed Management Commission, 3235 Fernbrook Lane, Plymouth, Minnesota 55447 ("Grantee").

Recitals

1. Under Minn. Stat. Section 84.026, Subdivision 2, the State is empowered to enter into this grant agreement.
2. The State agrees that updating and improving floodplain data is in the interest of the State.
3. The Grantee represents that it is duly qualified and agrees to perform all services described in this grant contract to the satisfaction of the State. Pursuant to Minnesota Statutes §16B.98 Subdivision 1, the Grantee agrees to minimize administrative costs as a condition of this grant contract.

Grant Contract

1 Term of Grant Contract

1.1 ***Effective date***: May 15, 2018, or the date the State obtains all required signatures under Minnesota Statutes §16C.05, subdivision 2, whichever is later. Per Minn.Stat.§16B.98 Subd. 7, no payments will be made to the Grantee until this grant contract is fully executed. **The Grantee must not begin work under this grant contract until this contract is fully executed and the Grantee has been notified by the State's Authorized Representative to begin the work.**

1.2 ***Expiration date***: April 30, 2020, or until all obligations have been satisfactorily fulfilled, whichever occurs first.

1.3 ***Survival of Terms.*** The following clauses survive the expiration or cancellation of this grant contract: 8. Liability; 9. State Audits; 10. Government Data Practices and Intellectual Property; 13. Publicity and Endorsement; 14. Governing Law, Jurisdiction, and Venue; and 16. Data Disclosure.

2 Grantee's Duties

The Grantee, who is not a state employee, will be responsible for tasks generalized below, consistent with the details included in Attachment A – *Hennepin County Proposal to Provide FEMA Floodplain Modeling and Mapping,* dated March 7, 2018, attached and incorporated hereto:

- Submit updated hydrology modeling for the watershed using either HEC-HMS or SWMM
- Submit updated stream hydraulics using HEC-RAS
- Create and submit floodway and floodplain shapefiles using HEC-RAS mapper
- Create and submit depth grids using the RAS Mapper built in to HEC-RAS
- Create and submit new work maps illustrating new SFHA and other information required by the State
- Attend kickoff, data review, and 90% progress meetings
- Prepare and submit reports documenting hydrology, hydraulics, and mapping methods and results

All work shall comply with required grants management policies and procedures set forth in Minn.Stat.§16B.97, Subd. 4 (a)(1).

3 Time

The Grantee must comply with all the time requirements described in this grant contract. In the performance of this grant contract, time is of the essence.

4 Consideration and Payment

4.1 *Consideration*. The State will reimburse Grantee for all eligible products received and services performed by the Grantee under this grant contract as follows:

(a) Compensation. The Grantee will be reimbursed 100% for eligible project expenses, not to exceed $92,773.00. This grant does not require a local match.

(b) Travel Expenses. Grantee shall not be reimbursed for travel and subsistence expenses incurred as a result of this grant contract.

(c) Total Obligation

The total obligation of the State for all compensation and reimbursements to the Grantee under this grant contract will not exceed $92,773.00.

4.2. *Payment*

(a) Invoices/Deliverables

The State will pay the Grantee after the Grantee submits itemized invoices for deliverables produced or the services actually performed and the State's Authorized Representative accepts the invoices. Invoices must include the billing period of work performed and be submitted timely and with project deliverables. Reimbursement will be made in accordance with the following schedule:

- upon receipt and acceptance of Grantee's updated/new hydrologic model and technical memorandum describing assumptions and methods used.
- upon receipt and acceptance of Grantee's HEC-RAS models and documentation for detailed and non-detailed areas.
- upon receipt and acceptance of Grantee's GIS work and mapping, including depth grids, shapefiles for flood innundation areas, cross-sections, and stream centerlines.
- upon receipt and acceptance of invoice for data organization and survey location review.
- upon receipt and acceptance of completed project reporting.
- upon documentation of meeting participation and invoice for time.
- final financial reconciliation for any outstanding eligible project reimburseables.

Requested reimbursement amounts for each work task shall not exceed 120% of the amount identified for each work task in the estimated budget contained in Attachment A of this agreement. Upon project completion, financial reconciliation will be done to ensure Grantee is reimbursed for all actual costs of services and deliverables, not to exceed $92,773.00.

(b) Federal funds

Payments under this grant contract will be made from federal funds obtained by the State through FEMA Cooperating Technical Partners Program, CFDA number 97.045. The Grantee is responsible for compliance with all federal requirements imposed on these funds and accepts full financial responsibility for any requirements imposed by the Grantee's failure to comply with federal requirements.

(c) Unexpended Funds

The Grantee must promptly return to the State any unexpended funds that have not been accounted for annually in a financial report to the State due at grant closeout.

4.3 *Contracting and Bidding Requirements*
Grantees that are municipalities as defined in state statute must comply with the contracting provisions of Minn. Stat.§471.345.

5 Conditions of Payment
All services provided by the Grantee under this grant contract must be performed to the State's satisfaction, as determined at the sole discretion of the State's Authorized Representative and in accordance with all applicable federal, state, and local laws, ordinances, rules, and regulations. The Grantee will not receive payment for work found by the State to be unsatisfactory or performed in violation of federal, state, or local law.

6 Authorized Representative
The State's Authorized Representative is Patrick Lynch, Floodplain Hydrologist, Department of Natural Resources, 500 Lafayette Road, St. Paul, Minnesota, 55155, 651-259-5691, pat.lynch@state.mn.us , or his/her successor, and has the responsibility to monitor the Grantee's performance and the authority to accept or reject the services provided under this grant contract. If the services are satisfactory, the State's Authorized Representative will certify acceptance on each invoice submitted for payment.

The Grantee's Authorized Representative is Judie Anderson, Administrator, Elm Creek Watershed Management Commission, 3235 Fernbrook Lane North, Plymouth, Minnesota 55447, (763)553-1144, judie@jass.biz . If the Grantee's Authorized Representative changes at any time during this grant contract, the Grantee must immediately notify the State.

7 Assignment, Amendments, Waiver, and Grant Contract Complete
7.1 ***Assignment.*** The Grantee shall neither assign nor transfer any rights or obligations under this grant contract without the prior written consent of the State, approved by the same parties who executed and approved this grant contract, or their successors in office.
7.2 ***Amendments.*** Any amendments to this grant contract must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original grant contract, or their successors in office.
7.3 ***Waiver.*** If the State fails to enforce any provision of this grant contract, that failure does not waive the provision or the State's right to enforce it.
7.4 ***Grant Contract Complete.*** This grant contract contains all negotiations and agreements between the State and the Grantee. No other understanding regarding this grant contract, whether written or oral, may be used to bind either party.

8 Liability
The Grantee must indemnify, save, and hold the State, its agents, and employees harmless from any claims or causes of action, including attorney's fees incurred by the State, arising from the performance of this grant contract by the Grantee or the Grantee's agents or employees. This clause will not be construed to bar any legal remedies the Grantee may have for the State's failure to fulfill its obligations under this grant contract.

9 State Audits
Under Minn. Stat. §16B.98, Subd.8, the Grantee's books, records, documents, and accounting procedures and practices of the Grantee or other party relevant to this grant agreement or transaction are subject to examination by the State and/or the State Auditor or Legislative Auditor, as appropriate, for a minimum of six years from the end of this grant agreement, receipt and approval of all final reports, or

the required period of time to satisfy all state and program retention requirements, whichever is later.

10 Government Data Practices

The Grantee and State must comply with the Minnesota Government Data Practices Act, Minn. Stat. Ch. 13, as it applies to all data provided by the State under this grant contract, and as it applies to all data created, collected, received, stored, used, maintained, or disseminated by the Grantee under this grant contract. The civil remedies of Minn. Stat. § 13.08 apply to the release of the data referred to in this clause by either the Grantee or the State.

If the Grantee receives a request to release the data referred to in this Clause, the Grantee must immediately notify the State. The State will give the Grantee instructions concerning the release of the data to the requesting party before the data is released. The Grantee's response to the request shall comply with applicable law.

11 Workers' Compensation

The Grantee certifies that it is in compliance with Minn. Stat. § 176.181, subd. 2, pertaining to workers' compensation insurance coverage. The Grantee's employees and agents will not be considered State employees. Any claims that may arise under the Minnesota Workers' Compensation Act on behalf of these employees and any claims made by any third party as a consequence of any act or omission on the part of these employees are in no way the State's obligation or responsibility.

12 Prevailing Wages

Grantee agrees to comply with all of the applicable provisions contained in Chapter 177 of the Minnesota Statutes, and specifically those provisions contained in Minn. Stat. §§ 177.41 through 177.435, as they may be amended, modified or replaced from time to time with respect to the Project.

13 Publicity and Endorsement

12.1 *Publicity*

Any publicity regarding the subject matter of this grant contract must identify the State as the sponsoring agency and must not be released without prior written approval from the State's Authorized Representative. For purposes of this provision, publicity includes notices, informational pamphlets, press releases, research, reports, signs, and similar public notices prepared by or for the Grantee individually or jointly with others, or any subcontractors, with respect to the program, publications, or services provided resulting from this grant contract. All projects primarily funded by state grant appropriation must publicly credit the State of Minnesota, including on the grantee's website when practicable.

12.2 ***Endorsement***

The Grantee must not claim that the State endorses its products or services.

14 Governing Law, Jurisdiction, and Venue

Minnesota law, without regard to its choice-of-law provisions, governs this grant contract. Venue for all legal proceedings out of this grant contract, or its breach, must be in the appropriate state or federal court with competent jurisdiction in Ramsey County, Minnesota.

15 Termination

15.1 ***Termination by the State.*** The State may immediately terminate this grant contract with or without

cause, upon 30 days' written notice to the Grantee. Upon termination, the Grantee will be entitled to payment, determined on a pro rata basis, for services satisfactorily performed.

15.2 ***Termination for Cause.*** The State may immediately terminate this grant contract if the State finds that there has been a failure to comply with the provisions of this grant contract, that reasonable progress has not been made or that the purposes for which the funds were granted have not been or will not be fulfilled. The State may take action to protect the interests of the State of Minnesota, including the refusal to disburse additional funds and requiring the return of all or part of the funds already disbursed.

16 Data Disclosure

Under Minn. Stat. § 270C.65, Subd. 3, and other applicable law, the Grantee consents to disclosure of its social security number, federal employer tax identification number, and/or Minnesota tax identification number, already provided to the State, to federal and state tax agencies and state personnel involved in the payment of state obligations. These identification numbers may be used in the enforcement of federal and state tax laws which could result in action requiring the Grantee to file state tax returns and pay delinquent state tax liabilities, if any.

1. STATE ENCUMBRANCE VERIFICATION
*Individual certifies that funds have been encumbered as required by Minn. Stat. §§*16A.15 and 16C.05.

Signed: Felicia Barnes
(with delegated authority)

Date: 5/4/2018

SWIFT Contract/PO No(s). 141447/3000131351

3. STATE AGENCY
Individual certifies the applicable provisions of Minn. Stat. §16C.08, subdivisions 2 and 3 are reaffirmed.

By:

Title: Director, Ecological & Water Resources

Date: 5-22-18

2. GRANTEE

The Grantee certifies that the appropriate person(s) have executed the grant contract on behalf of the Grantee as required by applicable articles, bylaws, resolutions, or ordinances.

By: Doug Bruins
Title: Chair
Date: 05-09-18

By: Judy A Gleason
Title: Admin
Date: 05-09-18

Distribution:
Agency
Grantee
State's Authorized Representative - Photo Copy

ATTACHMENT A
ELM CREEK WATERSHED MANAGEMENT COMMISSION

Hennepin County Proposal to Provide FEMA Floodplain Modeling and Mapping

March 7, 2018

Project Understanding and Approach

The purpose of this project is to update the Special Flood Hazard Areas shown on the FEMA Floodplain maps that are located within the Elm Creek Watershed. In order to accomplish this, the existing Elm Creek Hydrologic and Hydraulic models will be created/updated in current modeling packages acceptable to the Minnesota DNR. The areas to be studied are those presented to us by the Minnesota DNR in their figure for the Elm Creek Watershed as attached. There are both detailed and non-detailed areas that require work under this scope to be included in this project.

In general, the scope of this proposal is to:

1. Update the Hydrology modeling for the watershed using either HEC-HMS or SWMM.
2. Update Creek Hydraulics using HEC-RAS
3. Create Floodway and Floodplain shapefiles using HEC-RAS mapper
4. Create Depth Grids using the RAS Mapper built into HEC-RAS
5. Create New Work Maps showing the new SFHA and other information required by the DNR
6. Other reports and documentation of the work

Task 1: Meetings

Several Meetings will be required at various states between project partners. We assume the Minnesota DNR will provide meeting agendas and notes for each of these meetings. We anticipate the following meetings:

1. Kickoff Meeting: An overall meeting to introduce the project. Attendees would include representatives from Elm Creek, Hennepin County, the Minnesota DNR, and a representative of the cities. The purpose of the meeting will be to introduce the overall project tasks and schedule and get all expectations on the table.
2. Meeting with all cities in the watershed: The purpose of this meeting will be to review data needs to complete the studies as required. Specific topics will include availability of data and identification of any specific areas of concern from the cities representatives.
3. 90% Progress Meeting / Flood Risk Review Meeting (FRR): This meeting is to present near final work products, discuss any outstanding issues, and determine the final scheduling.

Task 2: Data Collection and Organization

Hennepin County will provide each City a data request for all record plan information required for their particular city in addition to any information the Minnesota DNR may request. Hennepin County proposes to provide this list at the meeting under Task 1 where the project is introduced to the Cities.

Specifically, Hennepin County will request:

- Any drainage system maps showing all stormwater features such as ponds and pipes.
- Land use mapping showing existing and proposed land uses
- Any information including construction plans and as-built plans for any crossing locations of the special flood hazard areas identified on mapping.

In addition, Hennepin County will compile:

- USGS Gauging station data
- LIDAR Data from the MNDNR and prepare for use in modeling
- Previous TR-20 and HEC-2 Modeling for Elm Creek.

Hennepin County will review the compiled data and identify areas that require further investigation, whether that is digging deeper to find information or identifying areas where others may need to conduct a survey to obtain the information.

Task 3: Provide Required Survey Locations for others to complete survey

Hennepin County will work with the Minnesota DNR to identify all locations where a detailed site survey is required to comply with the Minnesota DNR's required scope of work for crossings. The information will be provided to the Minnesota DNR or a contractor of the DNR's choosing to collect the survey data. Hennepin County will review all supplied survey data for errors and provide direction for additional survey as needed as a result of errors and or omissions.

Deliverables:

- Survey location figures

Task 4: Hydrology Update

This task will result in an updated model of the Elm Creek Watershed, better reflecting current conditions as opposed to the present modeling dating back to the 1970's. This effort will build upon the existing modeling that currently exists for the watershed which includes the original TR-20 modeling from the 1970's and the HydroCAD model created from the TR-20 model as part of the Elm Creek Channel study conducted in the mid 2000's.

A new model, using either HEC-HMS or SWMM will be created. The previous watershed boundaries will be reviewed for consistency with the 2011 LIDAR data collected by the DNR, as well as information on storm drainage systems provided by each of the cities. Non-detailed areas will also be analyzed at a level to permit the non-detailed hydraulic analysis to occur.

Runoff will be determined using a method agreeable to the Minnesota DNR. While the current models use a curve number approach, other methods will be discussed and an agreement reached on one to use that meets the needs of this project as well as furthers the potential of future studies. Rainfall distributions will also be reviewed, including for snowmelt to ensure the proper method is selected.

Peak runoff rates for the 10%, 4%, 2%, 1% and 0.2% annual chance flood events will be determined for both detailed and non-detailed study areas. Peak flows will calibrated with the flow data available from the USGS gauging station located on Elm Creek near Champlin.

Calibration to known flows at the USGS stream guage on Elm Creek near Champlin will be provided as part of this task.

Internal QA/QC on the hydrology modeling will be done using internal Hennepin County staff to verify input data and output results.

Deliverables:

- An updated/new hydrologic model of the Elm Creek Watershed in HEC-HMS or SWMM
- A technical memorandum describing the assumptions and methods used to create the model and results
- Documentation of the QA/QC analysis from Hennepin County and the DNR.

Task 5: Hydraulics Update (Detailed Study Areas)

This task will create a revised hydraulic model of the Elm Creek Watershed in HEC-RAS. The proposed models will be a completely new model created from scratch instead of trying to replicate the previous HEC-2 models created in the 1970's. This will be done for all detailed areas shown in the DNR figure for the Elm Creek Watershed. The Hydraulic analysis will be done for the 10%, 4%, 2%, 1%, and 0.2% peak flood events. In order to create this model, the following tasks will be performed:

- Cut new cross sections at all old cross section locations (cross section locations already available in GIS) using the DNR's LIDAR data for overbank areas. Inchannel geometry will be created from the DNR requested survey bridge crossings, other channel survey locations, and as-builtsDetermine Manning's N values based on current conditions for overbank and channel areas,
- Run the models and review, revise, and troubleshoot.

Floodway analysis would be conducted on all detailed study areas as identified in the figure supplied by the DNR.

Similar to the Hydrology task, the initial QA/QC will be provided by internal Hennepin County staff who will review inputs and model outputs.

Deliverables:

- HEC-RAS models for each stage of the analysis and flood events.
- Documentation of responses to the QA/QC review process.

Task 6: Hydraulic Update (Non Detailed Study Areas)

Non-detailed study areas will be analyzed in a different manner. Areas identified on the figure supplied by the DNR as non-detailed study areas will still be analyzed with HEC-RAS where appropriate, and for all storm events as done in the detailed study areas. However, cross sections will be based solely on cross sections cut using the DNR's LIDAR data. No channel data will be collected or determined for this modeling. In addition, only as-builts or construction plans will be used to determine information for all culverts or bridge crossings.

QA/QC will be provided by the Hennepin County internal staff.

Deliverables:

- HEC-RAS model(s)
- Cross Sections data and locations where not previously identified
- Documentation of QA/QC has been resolved

Task 7 – Mapping Products

For detailed study areas, inundation maps for the 1%, 0.2% and floodway scenarios will be developed and produced using the RAS mapper functions of HEC-RAS and then edited in the Arc-GIS environment. For non-detailed study areas, only the 1% events will be mapped.

The maps produced by the RAS mapper package and then edited in Arc-GIS will be QA/QC'd for conformance with the model results. This step can be done internally by Hennepin County staff and documentation of all QA/QC processes and steps will be provided.

The information from these steps will then be imported into the required shapefile format provided by the DNR.

Depth Grids will also be generated in the same fashion and events as documented above. QA/QC and documentation will also be provided.

Deliverables:

- ~~Final Work Maps in digital format (PDF)~~
- Final Depth Grids for all return intervals as documented above.
- Final shapefiles for flood indunation areas, cross sections, and stream centerlines.
- Documentation of the QA/QC process

Task 8 – Narrative Products

Elm Creek/Hennepin County will provide written narrative documentation at the 60, 90 and 100% levels. All steps will be distributed to the DNR and all cities in the watershed for comment and review. The 90% document will reflect the comments and changes from the 60% review, and the final document will address and additional comments from the 90% stage.

The summary report will document the process of creating the hydrology, hydraulics, and mapping products.

Budget:

The total budget proposed for this task is $92,772.45. This is based on a rate of $71.09 per hour from Hennepin County.

Task	Task Description	Hours	Cost
1	Meetings	35	$2,488.15
2	Data Collection and Organization	40	$2,843.60
3	Survey Location Identification	30	$2,132.70
4	Hydrologic Analysis	275	$19,549.75
5	Hydraulic Analysis – Detailed	425	$30,213.25
6	Hydraulic Analysis – Non-Detailed	175	$12,440.75
7	Mapping Products	225	$15,995.25
8	Narrative	100	$7,109.00
	Grand Total:	**1305**	**$92, 772.45**

Schedule:

Kickoff Meeting: March 2018

Hydrology to IAHRC: June 2018

Hydraulic Model Submittal to DNR for Review: December 2018

Revised Model Submittal to DNR: May 2019

Draft Floodplain Shapefiles and Depth Grids to DNR: September 2019

60% Narrative to DNR for Review and Comment: October 2019

All Final Files to DNR: February 2020

Note that this schedule is shifted later than the suggested DNR schedule due to staffing constraints and timing of starting the project.

Attachment 2 MnDNR Memo April 24, 2020: IAHRC Comments – Elm Creek Watershed Management Commission HEC-HMS Model

DEPARTMENT OF NATURAL RESOURCES

Memorandum

Date: 04/24/2020

To: Judie Anderson, Elm Creek Watershed Management Commission

From: Interagency Hydrology Review Committee (IAHRC), via Stacy Harwell, MnDNR

CC: Heather Hlavaty, Barr Engineering

RE: IAHRC Comments – Elm Creek Watershed Management Commission HEC-HMS Model

The State of Minnesota requires that all changes to hydrology in FEMA flood zones undergo a review by the Interagency Hydrology Review Committee (IAHRC). This memorandum summarizes our review approach and provides comments and/or questions on the Elm Creek Watershed Management Commission HEC-HMS model. Once comments have been resolved the IAHRC will send an approval letter to the applicant and copy FEMA for their records.

Barr Engineering Company provided the following items for our review:

- Elm Creek Watershed Model – HEC-HMS
- Technical Memorandum and Addendum – Hydrology Narrative and QAQC Documentation (dated March 3, 2020)
- GIS shapefiles to support the hydrologic modeling

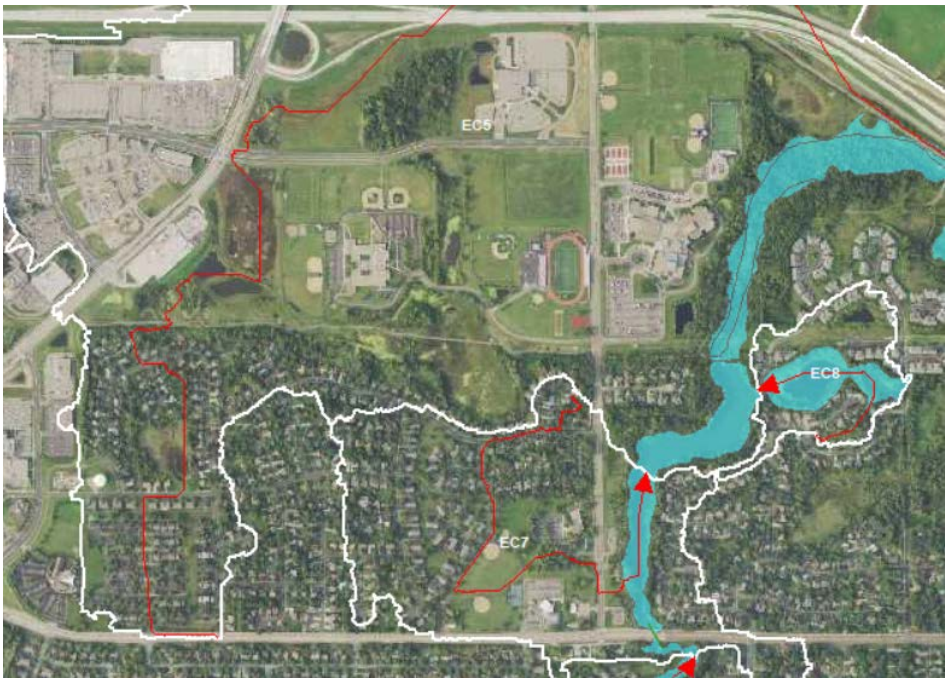
The IAHRC review includes, but is not limited to, evaluating the following:

- Overall methodology relating to rainfall events, infiltration, runoff routing and calibration
- Soils data and related infiltration rates
- Watershed longest flow paths, slopes and time of concentration calculation
- Percent impervious areas for individual land uses and how they are applied to each subwatershed
- Depression storage assumptions for impervious and pervious areas
- Manning's 'n' assumptions for overland flow in impervious and pervious areas
- Runoff volume for each subcatchment compared to the land use
- Reasonableness for time to peak in hydrographs
- Model modifications during calibration and the calibration results

The IAHRC has the following comments which we would like you to provide responses to:

- The description of the current effective FEMA hydrology is inaccurate. Please look into further and make correction.
- Was the SCS shape factor of 484 a part of the calibration process?
- The report mentioned a discrepancy with the NSE values of 0.6 and 0.76 from the model. Was there any further analysis that addressed this difference or adjustments made?
- Please include what the current effective model uses for flows in the report. The table on Page 11 summarizes the flows for different events and it would be helpful to show a comparison.
- Composite curve numbers were calculated for each watershed based on land use and hydrologic soil group. The curve number values provided in Table 1 of the addendum already have impervious surfaces factored in. Please provide explanation on how the percent impervious inputs were used in combination with the CN values shown in Table 1 of the report. In addition, please spot check impervious areas with aerial imagery similar to what is shown below.

- Please describe how piped flows were factored in to the time of concentration calculation. There are developed areas where the velocity in the pipe will be significantly higher than overland flows. The graphic below shows an example of an area like this:



- The memo indicated that a Manning's n value of 0.30 was used in the time of concentration calculations for all channels. Was there a consideration for different Manning's n values for street flows or other surfaces? Please provide clarification.
- The memo addendum shows storage areas where the HEC-HMS water levels will be used for mapping. Please provide QAQC documentation for these areas. We found that several of the areas were significantly lower than the currently mapped SFHAs. An example of this is the modeled DC4 high water elevation for the 1% storm.
- Table 1 in the technical memo shows modeled flows that were an outcome of the calibration process. Please add a column to the table that shows how these flows compare to gaged flows used for calibration.
- Please describe how the 20% estimated initial abstraction value was determined.
- Please update watershed divides such that all individual SFHA areas have their own unique drainage area. An example of where an update is needed is shown below:

Please respond to each comment in this memo and we will continue our review/acceptance for the Elm Creek Hydrology. Any questions can be sent to the DNR via e-mail or phone conversation.

Attachment 3 MnDNR Email May 20, 2020

Joe J. Waln

From: Harwell, Stacy (DNR) <Stacy.Harwell@state.mn.us>
Sent: Wednesday, May 20, 2020 11:54
To: Heather N. Hlavaty
Cc: Weiss, Jeff (DNR); Jiwani, Suzanne (DNR); Anthony P. Vecchi; Joe J. Waln; Nathan Campeau
Subject: RE: Elm Creek FEMA Modeling

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Here is the link to the ftp site with survey and as-builts:

ftp://ftp.dnr.state.mn.us/pub/outgoing/Elm%20Creek/

Please let me know if you have any questions or issues with the download.

Stacy

From: Heather N. Hlavaty <HHlavaty@barr.com>
Sent: Monday, May 18, 2020 8:40 AM
To: Harwell, Stacy (DNR) <Stacy.Harwell@state.mn.us>
Cc: Weiss, Jeff (DNR) <Jeff.Weiss@state.mn.us>; Jiwani, Suzanne (DNR) <suzanne.jiwani@state.mn.us>; Anthony P. Vecchi <AVecchi@barr.com>; Joe J. Waln <JWaln@barr.com>; Nathan Campeau <NCampeau@barr.com>
Subject: RE: Elm Creek FEMA Modeling

Hi Stacy,

That sounds great! In the past, Suzanne posted files to the DNR ftp site, and that has worked well. Alternatively, you can upload to Nathan's ftp site:

FTP:\user.barr.com
Username: NDC
Password: ftpndc

Either method works for me!

Heather N. Hlavaty

Water Resources Engineer
Minneapolis, MN office: 952.842.3613
HHlavaty@barr.com
www.barr.com

resourceful. naturally. BARR

If you no longer wish to receive marketing e-mails from Barr, respond to communications@barr.com and we will be happy to honor your request.

From: Harwell, Stacy (DNR) <Stacy.Harwell@state.mn.us>
Sent: Monday, May 18, 2020 7:47 AM
To: Heather N. Hlavaty <HHlavaty@barr.com>
Cc: Weiss, Jeff (DNR) <Jeff.Weiss@state.mn.us>; Jiwani, Suzanne (DNR) <suzanne.jiwani@state.mn.us>; Anthony P. Vecchi <AVecchi@barr.com>; Joe J. Waln <JWaln@barr.com>; Nathan Campeau <NCampeau@barr.com>
Subject: RE: Elm Creek FEMA Modeling

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hi Heather – thank you for the map, I will take a look at and get back to you with any questions or comments. What is the best way to send you the as-builts/survey data? There are several files that may be too large to send via e-mail.

Thanks,
Stacy

From: Heather N. Hlavaty <HHlavaty@barr.com>
Sent: Friday, May 15, 2020 3:40 PM
To: Harwell, Stacy (DNR) <Stacy.Harwell@state.mn.us>
Cc: Weiss, Jeff (DNR) <Jeff.Weiss@state.mn.us>; Jiwani, Suzanne (DNR) <suzanne.jiwani@state.mn.us>; Anthony P. Vecchi <AVecchi@barr.com>; Joe J. Waln <JWaln@barr.com>; Nathan Campeau <NCampeau@barr.com>
Subject: Elm Creek FEMA Modeling

This message may be from an external email source.
Do not select links or open attachments unless verified. Report all suspicious emails to Minnesota IT Services Security Operations Center.

Hello Stacy (and others),

We are in the process of reviewing your hydrology comments, specifically pertaining to subwatershed divides for the HEC-HMS model. I have attached a figure of the final subwatershed divides and indicate which ones we are planning to map in HEC-HMS. This map also has the detailed and non-detailed effective FIS areas overlaid. There are a few callouts on this map indicating some non-detailed reaches that, in the future, might be worth detailed studies. These reaches were identified as significant segments of Rush Creek and Diamond Creek just upstream of detailed segments of the creeks. Though these areas currently consist of primarily farm fields and undeveloped land, my guess is that future development in these areas is likely, so it might be advantageous to have more detailed delineation of the floodplain. We thought it would be helpful to flag these areas.

In addition, I wanted to follow up about the survey request as part of our hydrology submittal. Have you had a chance to locate as-builts and pull together the survey data?

I hope you have a nice weekend,
Thank you!

Heather N. Hlavaty

Water Resources Engineer
Minneapolis, MN office: 952.842.3613
HHlavaty@barr.com
www.barr.com

resourceful. naturally. BARR

If you no longer wish to receive marketing e-mails from Barr, respond to communications@barr.com and we will be happy to honor your request.

From: Harwell, Stacy (DNR) <Stacy.Harwell@state.mn.us>
Sent: Thursday, April 30, 2020 11:38 AM
To: Heather N. Hlavaty <HHlavaty@barr.com>
Cc: Jiwani, Suzanne (DNR) <suzanne.jiwani@state.mn.us>; Weiss, Jeff (DNR) <Jeff.Weiss@state.mn.us>
Subject: Survey Data - Elm Creek

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Heather,

I believe I still owe you survey data and as-builts. I'll pull them together and get them to you next week. Just giving you a heads up. Let me know if you have questions. Thanks for the call today.

Stacy

Stacy Harwell

Floodplain Hydrologist | Division of Ecological and Water Resources

Minnesota Department of Natural Resources
500 Lafayette Road
St. Paul, MN 55155-4044
Phone: 651-259-5088
Email: stacy.harwell@state.mn.us
mndnr.gov

DEPARTMENT OF NATURAL RESOURCES

elm creek
Watershed Management Commission

ADMINISTRATIVE OFFICE
3235 Fernbrook Lane
Plymouth, MN 55447
PH: 763.553.1144
email: judie@jass.biz
www.elmcreekwatershed.org

TECHNICAL OFFICE
Barr Engineering
4300 Market Point Drive, Suite 200
Minneapolis, MN 55435
PH: 612.834.1060
Email; jHerbert@barr.com

Ione Gardens
Dayton, Project #2020-008

(August and September revision updates)

Project Overview: This project is located at the NW intersection of CSAH 144 (Diamond Lake North) and 12 (Dayton River Road) in Dayton. It is three agricultural properties totaling 48.29 acres in size. The project will develop 112 new single-family residential lots creating 16.84 acres of new impervious surface area. This project review covers the stormwater management plan for the complete site area and erosion controls for phase 1 grading on the northerly 14 acres of the site. Preliminary review and comments are provided on the wetland alterations and buffer stirps. Future ECWMC reviews for conformance to the approved stormwater management plans, erosion controls, wetland alterations and buffer strips will be required on all future phases of this development.

This project will trigger the Commission's Appendix C Rules and Standards as indicated below.

X	Rule D	Stormwater Management
X	Rule E	Erosion and Sediment Control
	Rule F	Floodplain Alterations
X	Rule G	Wetland Alteration
	Rule H	Bridge and Culvert Crossings
X	Rule I	Buffer Strips

Applicant: Dehn Development LLC, Attention Tom Dehn, 6781 Highway 10, Ramsey, MN 55303. Phone: 612-328-2215. Email: tom.dehn@powerlodge.com

Agent: Campion Engineering, Attention Marty Campion, 1800 Pioneer Creek Center, Maple Plain, MN 55359. Phone: 763-479-5172. Email: mcampion@campioneng.com

Exhibits:

1) ECWMC Request for Plan Review and Approval dated March 4, 2020. $4,000 project review fee received March 10, 2020.
2) Ione Gardens Grading Set by Campion Engineering Services dated March 4, 2020 revised August 12, 2020
    a. Sheet 1 of 16, Cover Sheet
    b. Sheet 2 of 16, Existing Conditions
    c. Sheets 3 to 5 of 16, Grading Plans
    d. Sheets 6 to 8 of 16, Storm Water Pollution Prevention Plans
    e. Sheet 9 to 13 of 16, Tree Inventory and Removal Plans.
    f. Sheet 14 of 16, Grading & SWPPP Notes

   g. Sheet 15 of 16, Details
   h. Sheet 16 of 16, Hold Down Details
3) Ione Gardens Construction Set by Campion Engineering Services dated August 14, 2020.
   a. Sheet 1 of 20, Cover Sheet
   b. Sheet 2 of 20, Existing Conditions
   c. Sheet 23 of 20, Composite Utility Plan
   d. Sheets 4 to 7 of 20, Sanitary Sewer & Watermain Plans
   e. Sheets 8 to 12 of 20, Street and Storm Sewer Plans and Details
   f. Sheets 13 to 15 of 20, Storm Water Pollution Prevention Plans
   g. Sheets 15 to 20 of 20, Plan Notes and Details
4) Ione Gardens Stormwater Management Plan by Civil Methods Inc. updated September 2, 2020.
5) Ione Gardens geotechnical exploration report by Haugo GeoTechnical Services dated March 2, 2020 with additional soil infiltration tests for borings holes 5, 12 and 13, by Haugo GeoTechnical Services dated March 5, 2020.
6) Cloquet Island Estates ECWMC project file 2018-033.

Findings:

1) A complete application was received on March 10, 2020. Decision deadlines per MN 15.99 has been extended to October 21, 2020.
2) The existing land use is primarily agriculture cropland (37 acres) with approximately 4.5 acres of farmsteads/homesites and the remainder being trees/grassland (~6.0 acres) and one wetland basin 0.5 acres in size.
3) The drainage patterns consist of:
   a. The east 24 acres drain into depressional landlocked areas with no runoff.
   b. The north 14 acres drain into depressional areas with no runoff except during a 100-year storm event.
   c. The remaining 15 acres drains into the existing wetland in the SW corner of this development.
   d. Water that does flow from this site will enter the Mississippi River about 800' east of CSAH 12.
   e. Pre- and post-development drainage patterns will generally stay the same.
   f. Most soils on this site have high (>2.0 inches/hour) infiltration rates.

Stormwater Management (Rule D)

1) To manage the stormwater on this site, the applicant proposes the following:
   a. Construct one wet detention pond in the SW corner of this project that will drain into the existing wetland. This wetland outlets into an existing storm sewer system located in the adjacent development. That pipe has been designed to receive water from this site and flow north into an existing stormwater system.
   b. Construct one wet-detention pond that will route low flows (< 10-year events) to an infiltration pond along CSAH 12. Higher storm flows (>10-year events) will be routed east into the infiltration pond, with some overflow west into the storm sewer system in the existing development west of this site.
   c. Construct an infiltration pond on the north side of the site that will outlet into an existing drainage swale that runs under CSAH 12 before running into the

Mississippi River. This pond is landlocked until approximately a 50- to 100-year storm event

d. Infiltration basins will have pre-treatment of sediment by the design and construction of forebays, vegetated swales, and sump/baffle structures.

2) The City of Dayton will provide the long-term operation and maintenance on the stormwater facilities for this site. No additional agreements will be necessary.

3) Pipe size between ponds 2P and 2iP are not consistent between the plan and hydrology. Hydrology shows 24", site plan has 18".

Abstraction Controls

1) Plans **meet** the Commission's requirements for abstraction volume controls

2) Development creates 16.84 acres of new impervious area.

3) Abstraction volume requirements will be 16,232 cubic feet.

4) Actual abstraction proposed will be by infiltrating 132,237 cubic feet in infiltration basins 2iP and 3iP.
   a. Ground water was not encountered in the soil borings (21' depth) on the basins.
   b. Drawdown times will be less than 1.0 hours on both infiltration basins.

5) Abstraction controls are summarized in Table 1 below.

Water Quality Controls

1) Water quality controls **meet** the Commission's requirements for water quality.

2) Water quality will be provided through a combination of wet detention (NURP) ponds and the infiltration basins.

3) To compare pre- vs post-development conditions water quality the MPCA MIDS calculator was used.
   a. Pre-development conditions considered the following:
      i. That there is no discharge of phosphorus or suspended solids from 36.8 acres on this site because of existing landlocked areas and infiltration.
      ii. There will be discharge of phosphorus and suspended solids on the remaining 15.2 acres that drain into the existing wetland in the SW corner on this site.
   b. Post-development conditions considered the following:
      i. Because of infiltration, there will be no discharge for the water quality storm events for 35.4 acres of this site directed to the north and east infiltration basin.
      ii. Water quality modeling was analyzed for the remaining16.53 acres that drain southwest and west from this project.

4) Water quality controls are summarized in Table 1 below.

Table 1 Stormwater Summary

Condition (52 Acres)	TP load (lbs/year)	TSS load (lbs/year)	Abstraction (cubic feet) (1)	Annual volume (acre-feet) (2)
Pre-development (baseline)	8.8	2380	N/A	N/A
Post-development without BMPs	11.2	2038	67,232	6.04
Post-development with BMPs	8.2	1092	132,237	13.75
Net Change	**-0.6**	**-1,288**	**+65,005**	**+7.71**

(1) 16.84 acres new impervious.
(2) 15.14 acres pre-development vs 16.53 acres post-development

Rate Controls

1) Rate Controls will **meet** the Commission's requirements.
2) A summary of peak flows for the 2, 10 and 100-year storm events is provided below in Table 2.

Table 2 Rate Control Summary

Discharge Offsite Drainage Areas	Area (Acres)	Condition	2-year (cfs)	10-year (cfs)	100-year (cfs)
West	28.3	Existing	2.8	11.2	30.0
	29.7	Proposed	2.9	9.5	29.4
	+1.4	**Change**	**+0.1**	**-1.7**	**-0.6**
North	14.3	Existing	0	0	2.7
	5.1	Proposed	0	0	0.1
	-9.2	**Change**	**0**	**0**	**-2.6**
East	22.6	Existing	**0**	**0**	**0**
	30.4	Proposed	**0**	**0**	**0**
	+7.8	**Change**	**0**	**0**	**0**

Pond and High-Water Elevations

1) The lowest floor elevation on the existing home on Lot 1, Block 1 appears be lower than two feet above the critical event 100-year elevation for Pond Basin 1P and the southwest wetland basin. This will **not meet** the Commission's stormwater requirements.
2) All other proposed basement elevations provide 2.0' freeboard necessary above the adjacent pond 100-year elevations.

3) Note; Because high water levels are determined by the rate of infiltration in the stormwater basins, a post development percolation test must be performed on each infiltration basin to demonstrate the constructed infiltration rate meets or exceeds the design infiltration rates.
4) Critical high-water elevations are summarized in Table 3 below.

Table 3 Critical Basin Elevations Summary

Basin	Pond Elevation 100 Year Event	Lowest Most Floor Allowed
SW Wetland	**865.7**	**867.7**
Basin 1P	**865.9**	**867.9**
Basin 2P	**863.0**	**865.0**
Basin 2iP	**861.0**	**863.0**
Basin 3iP	**864.2**	**866.2**

Wetland Alterations (Rule G)

1) Wetland alterations do **not meet** the Commission's requirements.
2) The City of Dayton is the Local Unit Government (LGU) in charge of administering the Wetland Conservation Act on this site.
    a. Approximately 12,750 sq. ft. of impacts are proposed to occur on the existing wetland in the SW corner of this site.
    b. To date, no wetland replacement plan has been received by the ECWMC for these impacts. When this phase of the project is constructed, wetland permitting will be required.
    c. The City of Dayton stormwater management plan, rules and ordinances are compliant with the ECWMC wetland alterations rule G

Buffer Strips (Rule I)

1) Buffer strips do **not meet** the Commission's requirements.
2) A 25' buffer is proposed outside of the right-of-way on the remaining wetland proposed for the SW corner of this project.
    a. Preliminary wetland buffers widths meet the Commissions requirements
    b. Wetland buffer monumentation must be provided to comply with Commission requirements.
    c. Final wetland replacement plan details will determine exact location of the wetland buffer and monuments.

Erosion and sediment control plans (Rule E)

1) Grading is proposed for approximately 14 acres in the northerly section of this site plan.
2) Proposed phase I grading will **meet** the Commission's erosion and sediment control rules.

Recommendations: Approval contingent upon the following conditions.

1) Phase I grading on the north 14 acre area is administratively approved by technical staff on the condition that: a) the applicant accepts any and all risks for any changes required to obtain final approval by the ECWMC and b) that the City of Dayton grants approvals for said grading.
2) Future wetland alteration and buffer strip plans meet ECWMC and Dayton wetland requirements.
3) Appropriate separation between the low floor and high-water elevation on Lot 1, Block 1 and Pond 1P is provided.
4) The pipe size between ponds 2P and 2iP on site plans must be consistent with hydrology sizing.
5) Post-development percolation tests are provided on infiltration basins to demonstrate the constructed infiltration rate meets or exceeds the design infiltration rates.

On Behalf of Barr Engineering
Advisor to the Commission

September 8, 2020
Date

James C. Kujawa
Surface Water Solutions LLC

Attachments:

Figure 1 Location Maps
Figure 2 2018 Aerial Photograph
Figure 3 Overall Site/Grading Plan

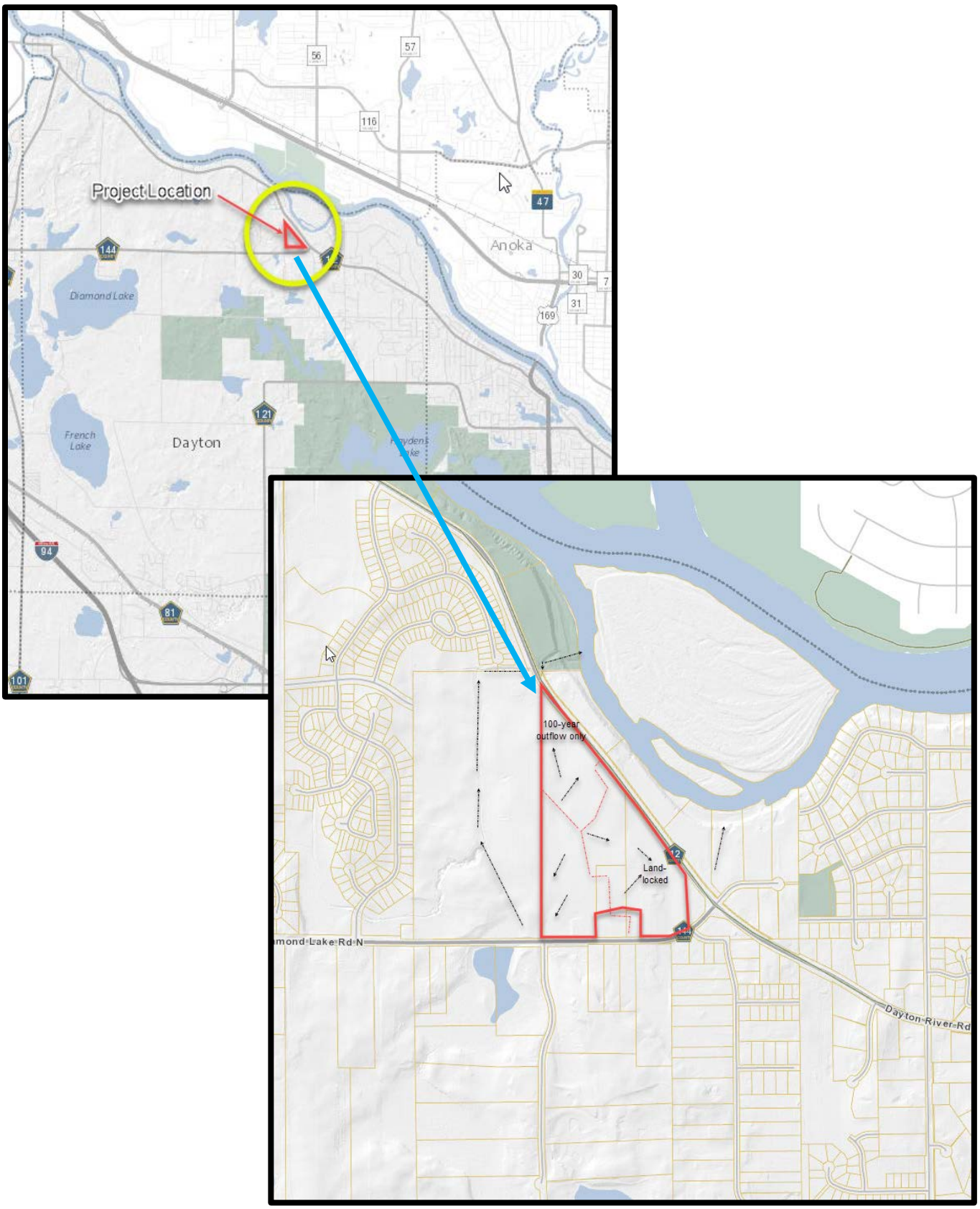
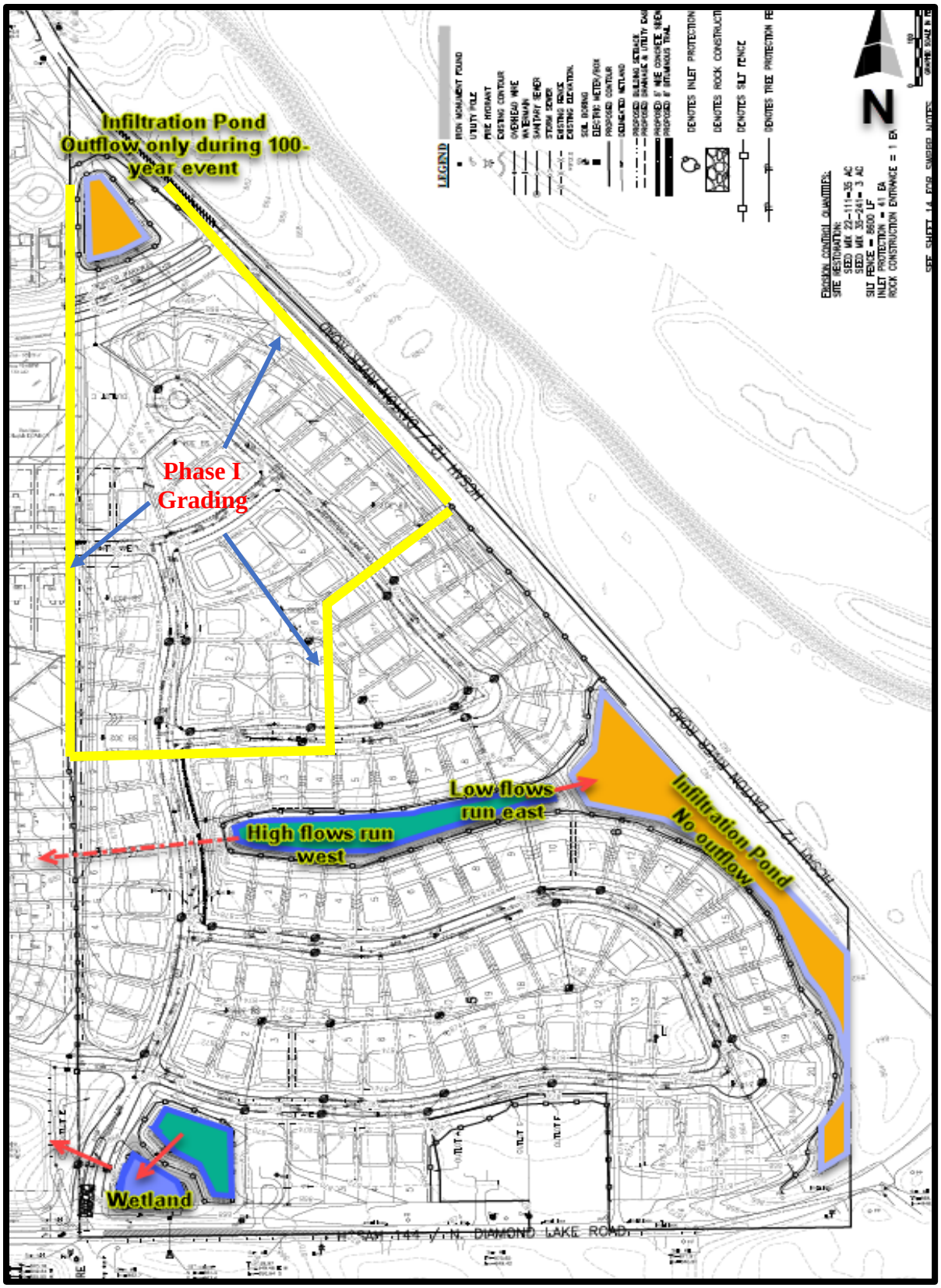


Figure 1 Location Maps

Figure 2 **2018 Aerial Photograph**


Infiltration Pond
Outflow only during 100-year event
Phase I Grading
Low flows run east
High flows run west
Infiltration Pond
No outflow
Wetland
N

elm creek
Watershed Management Commission

ADMINISTRATIVE OFFICE
3235 Fernbrook Lane
Plymouth, MN 55447
PH: 763.553.1144
email: judie@jass.biz
www.elmcreekwatershed.org

TECHNICAL OFFICE
Barr Engineering
4300 Market Point Drive, Suite 200
Minneapolis, MN 55435
PH: 612.834.1060
Email; jHerbert@barr.com

Skye Meadows
Rogers, Project #2020-016

Project Overview: Lennar Corporation is proposing to construct a residential development on 130 acres along Territorial Road. Currently, this site consists of 6 separate parcels located on both sides of Territorial Road (CR116) just to the west of Tilton Trail. There are 363 single family residential units proposed creating 38.73 acres of new impervious areas in seven phases. This review will cover stormwater management, floodplain alterations, wetland alterations, and buffer strips for all phases. It will review compliance for erosion and sediment controls (Rule E) for Phase 1A (initial grading proposed). Future site development must be reviewed for compliance to the approvals on this project plus future erosion and sediment controls.

This project will trigger the Commission's Appendix C Rules and Standards as indicated below.

X	Rule D	Stormwater Management
X	Rule E	Erosion and Sediment Control Phase 1A
X	Rule F	Floodplain Alterations
X	Rule G	Wetland Alteration
	Rule H	Bridge and Culvert Crossings
X	Rule I	Buffer Strips

Applicant & Agent: Lennar Homes, Attention Paul Tabone, 16305 36th Ave. N. Suite 600, Plymouth, MN 55443. Phone: 952-249-3075. Email: paul.tabone@lennar.com

Agent/Engineer: ISG, Attention Jerremy Foss, 7900 International Drive, Suite 550, Minneapolis, MN 55425. Phone: 952-426-0699. Email: Jerremy.foss@ISGInc.com

Exhibits:

1) ECWMC Request for Plan Review and Approval dated April 13, 2020, received May 12, 2020.
2) Project review fees, $9,130.00 received May 14, 2020.
3) Lennar Homes Skye Meadows Development Preliminary Site Plans by ISG. Original Issue Date March 27, 2020 with latest revision date of September 2, 2020 except as noted.
    a. Sheet 1 of 56 Title Sheet
    b. Sheet 2 of 56, Phasing Plan
    c. Sheet 3 of 56, Typical Street Section

d. Sheet 4-8 of 56, Site Details
e. Sheets 9-15 of 56, Stormwater Pollution Prevention Plan
f. Sheets 16-20 of 56, Existing & Removals Plan
g. Sheets 21-25 of 56, Preliminary Plat
h. Sheet 26 of 56, Overall PUD Master Site Plan
i. Sheets 27-30 of 56, Site Plan
j. Sheets 31-39 of 56 Utility Plans
k. Sheets 40-44 of 56, Grading Plan
l. Sheets 45-50 of 56, September 29, 2020 updates to Wetland Buffer & Impact Plan
m. Sheets 50-54 of 56, Landscaping Plan
n. Sheet 55 of 56, Entry Monument Enlargement
o. Sheet 56 of 56, Tree Preservation Plan.
p. Stormwater Detail sheets A through G received on June 15, 2020 updates

4) Lennar Territorial Road Development Stormwater Management Report by ISG dated September 11, 2020. Including HydroCAD report existing conditions print date August 18, 2020 and proposed conditions print date September 11, 2020, existing and proposed drainage maps, Geotechnical Evaluation Report by Braun Intertec dated December 17, 2019, and MIDS Calculations.

5) Skye Meadows Wetland Permit Application by Westwood dated May 18, 2020.

6) Skye Meadows MN WCA Notice of Decision for wetland replacement plans from City of Roger (WCA LGU) dated September 29, 2020

7) September 11, August 24, and June 12, 2020 correspondence from Emily Shaw, ISG, regarding response to ECWMC findings and reviews.

Phase IA Exhibits

1) Sheets 45 to 50 of 57 dated September 29, 2020, Wetland Buffer, and Impact Plans
2) September 30, 2020 ISG Response to ECWMC September 24, 2020 findings
3) ISG Phase 1A Stormwater Management Memo dated September 30, 2020.
4) Plan Sheets for Skye Meadows Development (Phase 1A) receive via email September 30, 2020. No signature. No Date.
    a. Sheets 9 and 10, Site Details (Phase 1A)
    b. Sheet 17, Stormwater Pollution Prevention Plan (Phase 1A)
    c. Sheet 34, Utility Construction, Storm Sewer (Phase IA)
    d. Sheet 39 to 42, Grading Plans (Phase 1A)
    e. Sheet 43, Intersection Details (Phase 1A)
    f. Sheet 45, Site Restoration Plan (Phase 1A)

Findings:

General

1) A complete application was received on May 14, 2020. The decision period per MN Statute 15.99 has been extended to October 20, 2020.
2) Drainage on this site will flow into two major watersheds, the Elm Creek Watershed, and the Crow River Watershed.
    a. Existing Flows: The south 44 acres flows to the south into a series of large wetland/floodplain/ditched areas before entering the North Fork of Rush Creek just

north of the CR 117 and 116 intersection in Rogers. The northerly 76 acres flows north, eventually making its way into Fox Creek approximately ¾ of a mile north of this site. Fox Creek flows for about 2 miles before entering the Crow River just north of CR 44 near the railroad track west of I94.

b. Proposed Flows: The project will route 58 acres south into the Rush Creek Basin and 63 acres north into the Crow River Basin.

3) Existing soils are Nessel/Cordova/Angus/Lester loams. Geotechnical soil borings and analysis show high clay contents and high-water tables, unsuitable for infiltration.
4) The City of Rogers assumes responsibility for the long-term operation and maintenance of the stormwater basins on residential sites where water reuse (irrigation) is not utilized as a stormwater component. Water reuse is not proposed in the stormwater management plan so no other O & M agreements will be required from the Commission.
5) Elm Creek Watershed technical administrative grading and erosion control approvals on Phase 1A has been requested by the applicant.
    a. Conformance to the Commission's rules and standards are separated out based on the overall conformance vs conformance on Phase 1A.

Stormwater Management (Rule D)

General

1) Stormwater management **does not meet** the Commission's requirements for the overall site plan.
    a. ACTION REQUIRED: Stormwater management plans are under development on future phases to comply with the Commission's low floor/100-year elevation requirements.
2) To manage stormwater for all seven phases (120 acres) the applicant proposes to construct 5 wet detention ponds and 4 biofiltration basins.
3) Phase 1A (11.6 acres) stormwater management will be provided by two biofiltration ponds.
4) Pipe outlets will be submerged for skimming of floatables and oils.
5) ACTION REQUIRED: Storm pipe inlets FES 205 and FES 212 on basins H and I, must be extended to the NWL of the basin.
6) Homes adjacent to wetlands and ponding basins must have their lowest most floor elevations (not openings) 2.0' or higher than the 100-year water elevation. Lowest most floor elevations (based on HydroCAD 7.13" rainfall event) must be as shown in Table 1.
7) ACTION REQUIRED: Overall site plan low floor elevations **do not meet** the Commission's requirement.
8) Lowest most floor elevations for Phase 1A meet the Commission standards
    a. RECOMMENDATION: The existing low floor elevation on the home west of Basin D has not been provided. The City should determine this lot has a margin of safety acceptable to Rogers.
9) Wet detention ponds will comply with the Commission's guidelines.
10) 100-year high water and lowest most floor elevations must be determined on Wetland 13.

Table 1 Minimum Lowest Floor Elevations

Basin	100-year Elevation	Minimum Lowest Floor Elevation	Phase
Basin A	940.4	942.7	1B
Pond B/Basin B	942.75	944.75	1A
Basin D	950.4	952.4	1A
Pond E/Basin E	955.8	957.8	Future
Pond F	956.6	958.6	Future
Basin G	956.5	958.5	Future
Ponds H &1/Basin J	948.1	950.1	Future
Pond K	944.1	946.1	Future
Basin K.2	941.3	943.3	Future
Pond L	941.6	943.6	Future
Pond M	933.5	935.5	Future
Wetland 7	938.9	940.8	1B
Wetland 8	939.3	941.3	1B
Wetland 13	Not determined	Not determined	Future

Rate Controls

1) Overall site plans **do not meet** the Commission's standards for rate controls.
2) Overall peak flows will be controlled at the discharge points from this site by the proposed ponds and biofiltration basins and their outlet controls. Table 2 summarizes the flows from this site based on the major watershed divisions.
3) Phase 1A rate control requirements for grading **meet** the Commission's requirements. Table 2A summarizes the flows from this site on phase 1A.

Table 2 Overall Site Plan Preliminary Rate Control Summary

Primary Discharge Points	Area (Acres)	Conditions	2-yr (cfs)	10-yr (cfs)	100-yr (cfs)
North to Fox Creek/Crow River	76.0	Existing	99.8	169.5	311.9
	60.9	Proposed	60.2	122.2	245.8
	-15.1	Change	-39.6	-47.3	-66.1
South to Rush Creek/Elm Creek	46.0	Existing	94.3	159.8	294.0
	61.1	Proposed	37.6	72.6	153.5
	+15.1	Change	-56.7	-87.2	-140.6

Table 2A Phase 1A Rate Control Summary

Primary Discharge Points	Area (Acres)	Conditions	2-yr (cfs)	10-yr (cfs)	100-yr (cfs)
North to Fox Creek/Crow River	11.6	Existing	25.7	43.7	80.5
	11.6	Proposed	6.6	17.0	31.5
	0	Change	-19.1	-26.7	-59.0

Abstraction Controls (38.73 acres new impervious areas).

1) Overall site plan abstraction controls **do not meet** the Commission's requirements.
2) Phase 1A abstraction control grading **meets** the Commission's requirements.
    a. See Table 3A for a summary of Phase 1A abstraction controls.
    b. There is 4.5 acres of new impervious areas in Phase 1A
    c. Phase 1A will have one biofiltration pond with a forebay
    d. ACTION REQUIRED: Basin B subdrain must be appropriately marked for future location purposes
    e. ACTION REQUIRED: Basin B subdrain outlet must be provided with a rodent guard.
3) There are 5.38 acres of existing impervious areas on the overall site. After development there will be 44.11 acres of impervious areas. To meet the ECWMC requirements, new impervious area water volume must be abstracted. There are 38.73 acres of new impervious areas.
4) True abstraction will not occur because soil infiltration rates (based on geotechnical report) are too low to absorb a 1.1" rainfall event over 48 hours.
5) In lieu of true abstraction, five (5) biofiltration basins will be installed throughout the project to filter the required 1.1" volume of runoff from all new imperious areas (38.73 acres).
6) For pre-treatment, raw water from impervious areas will be directed into wet-detention ponds, forebays or vegetated swales prior to flowing into biofiltration basins.
7) Table 3 summarizes the preliminary volume of filtration that is credited toward abstraction controls.

Water Quality Controls

1) Overall water quality controls **do not meet** the Commission's requirements.
    a. Table 3 summarizes the overall preliminary phosphorus and total suspended solids leaving the site before and after development.
2) Phase 1A water quality controls **meet** the Commission's requirements.
    a. Table 3A summarizes Phase 1A stormwater quality before and after site grading.

Table 3 Overall Site Plan Preliminary Stormwater Summary

CONDITION (122.1 AC.)	TP LOAD (LBS/YR)	TSS LOAD (LBS/YR)	FILTRATION (CU. FT.) (1)	ANNUAL VOLUME (AC. FT.)
Pre-development (baseline)	103.2	17,548	N/A	75.9
Post-development without BMPs	139.4	24,942	154,649	134.9
Post-development with BMPs	81.9	10,691	177,202	126.9
Net Change	-21.3	-6,857	+22,553	+50.8

(1) 38.73 acres new impervious

Table 3A Phase 1A Stormwater Summary (1)

CONDITION (11.6 AC.)	TP LOAD (LBS/YR)	TSS LOAD (LBS/YR)	FILTRATION (CU. FT.) (2)	ANNUAL VOLUME (AC. FT.)
Pre-development (baseline)	7.8	1536	N/A	5.7
Post-development without BMPs	11.0	2005	17,850	13.5
Post-development with BMPs	4.0	626	39,600	10.3
Net Change	-3.8	-910	+21,750	+4.6

(1) ECWMC technical staff MIDS analysis
(2) 4.47 acres impervious area

Buffer Strips (Rule I).

1) Overall preliminary site plan area and Phase 1 wetland buffer strips **meet** the Commission's requirements.
2) The ECWMC requires a 25' average and 10' minimum buffer width for all wetlands.
    a. Where slopes within a buffer are graded, any final slope steeper than 6:1 must increase buffer widths 5 feet horizontally for every 1-foot vertical increase (i.e., 5:1=30 feet, 3:1 = 45 feet average).
    b. Linear roadways and trails must have buffers established to the extent practicable, but are generally exempt from buffer averages
3) Wetland vegetation and monumentation will meet the Commission's requirements on all phases of this site plan.

Wetland Alterations (Rule G)

1) Overall preliminary site plan areas and Phase 1A wetland alterations **meet** the Commission's requirements.
2) The City of Rogers is the LGU in charge of administering the MN Wetland Conservation Act. Impacts of 1.77 acres are proposed throughout all 7 phases of the development.
    a. The City of Rogers wetland and zoning codes follow the ECWMC wetland alteration rules.

b. A technical evaluation panel (TEP) meeting was held June 19, 2020. ECWMC provided comments to the TEP per item 5 above.
c. The final wetland replacement plan was approved on September 29, 2020. The City of Rogers (WCA LGU) approved the revised wetland replacement plan application and supporting documentation dated September 2, 2020.
d. Wetland replacement credits of 3.55 acres will be purchased from BWSR bank account #1546 (Ball Bank)

Floodplain (Rule F)

1) Floodplain impacts **do not meet** the Commission's requirements.
2) Phase 1A does not have a floodplain impact area.
3) The stormwater management plan interprets the base flood elevation (BFE) in the wetland basin south of CR116 at 932.0 using LIDAR elevations in relation to the FEMA overlay maps.
    a. One small area of floodplain encroachment in future phases will occur on the trail section near Basin M.
    b. ACTION REQUIRED: Floodplain fill and mitigation volumes must be provided for the Commission's analysis and decision.

Erosion and Sediment Controls for Phase 1A. (Rule E)

1) Phase 1A erosion and sediment controls **meet** the Commission's requirements.

Recommendation: None currently

Phase 1A grading and erosion control approval contingent upon:
1) Grading is administratively approved by technical staff on the condition that:
    a. the applicant accepts all risks for any changes required to obtain final approval by the ECWMC, and
    b. the City of Rogers grants approvals for said grading.

On Behalf of Barr Engineering
Advisor to the Commission

October 2, 2020
Date

James C. Kujawa
Surface Water Solutions LLC

Attachments

Figure 1 Location Maps
Figure 2 2018 Aerial Photograph
Figure 3 Phasing and Overall Plan
Figure 4 Grading and Drainage Plan
Figure 5 Phase 1A Grading and Drainage Plan

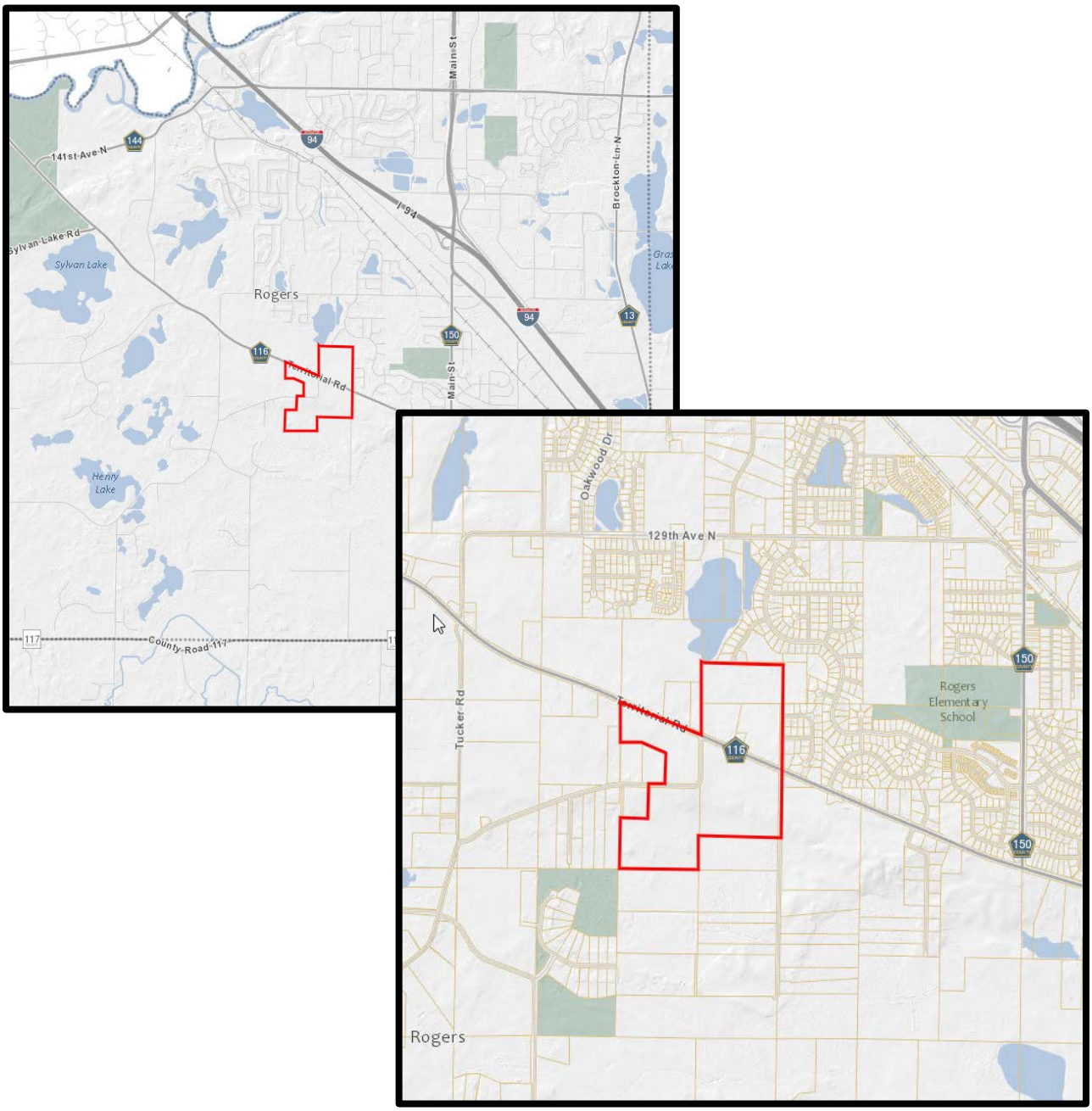


Figure 1 Location Maps

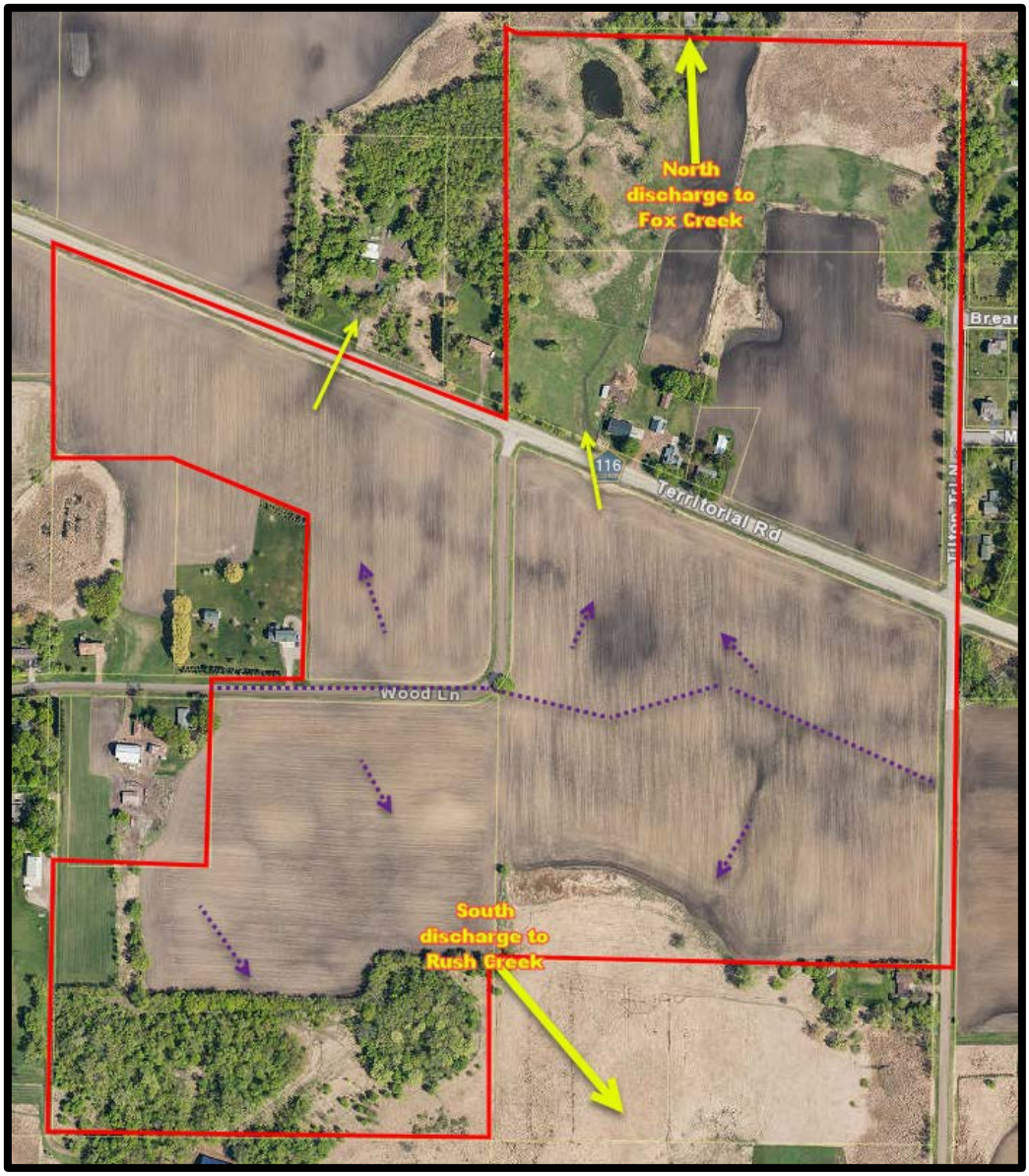


Figure 2 2018 Aerial Photograph

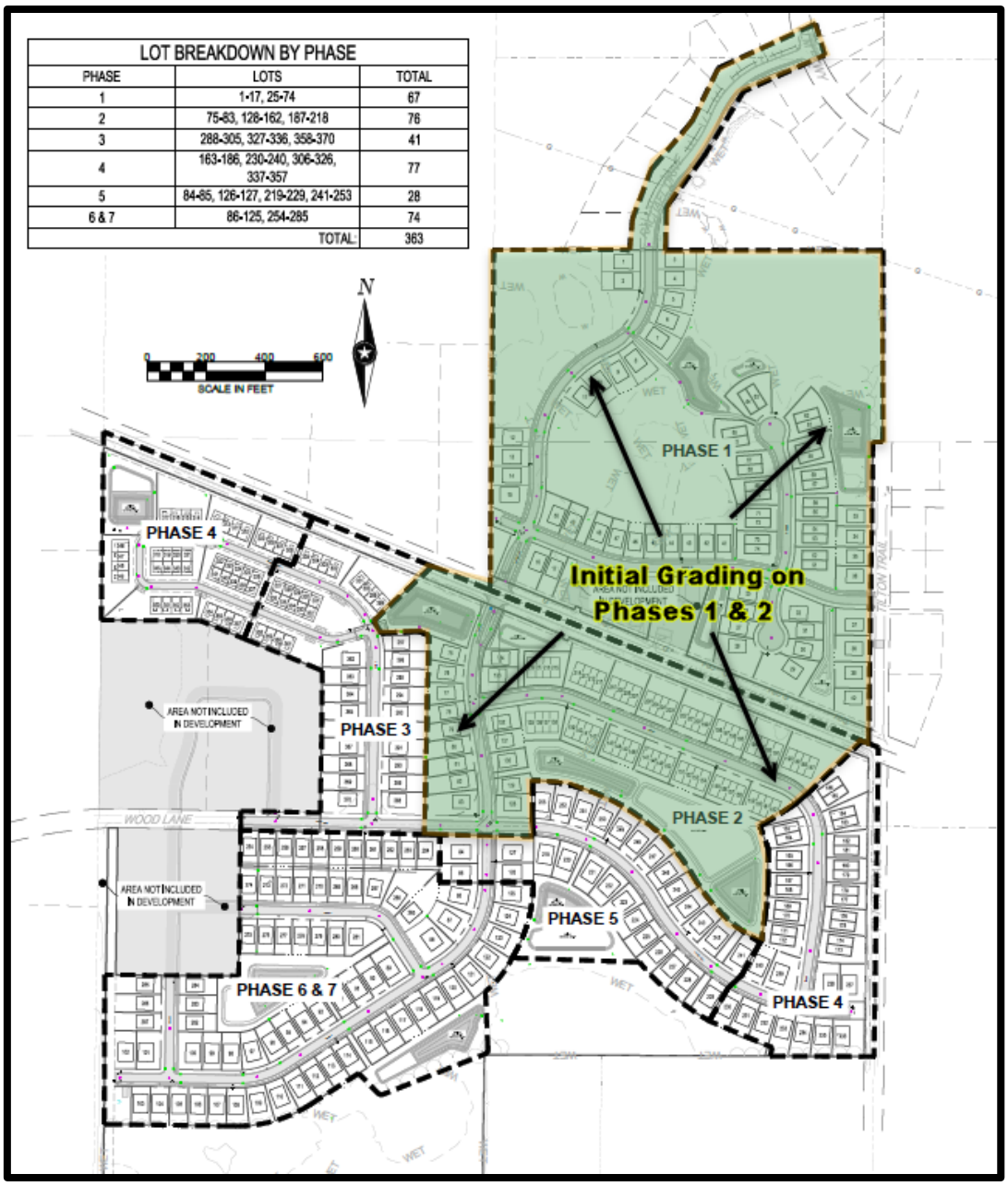


Figure 3 Overall Lot Layout and Phasing Plan

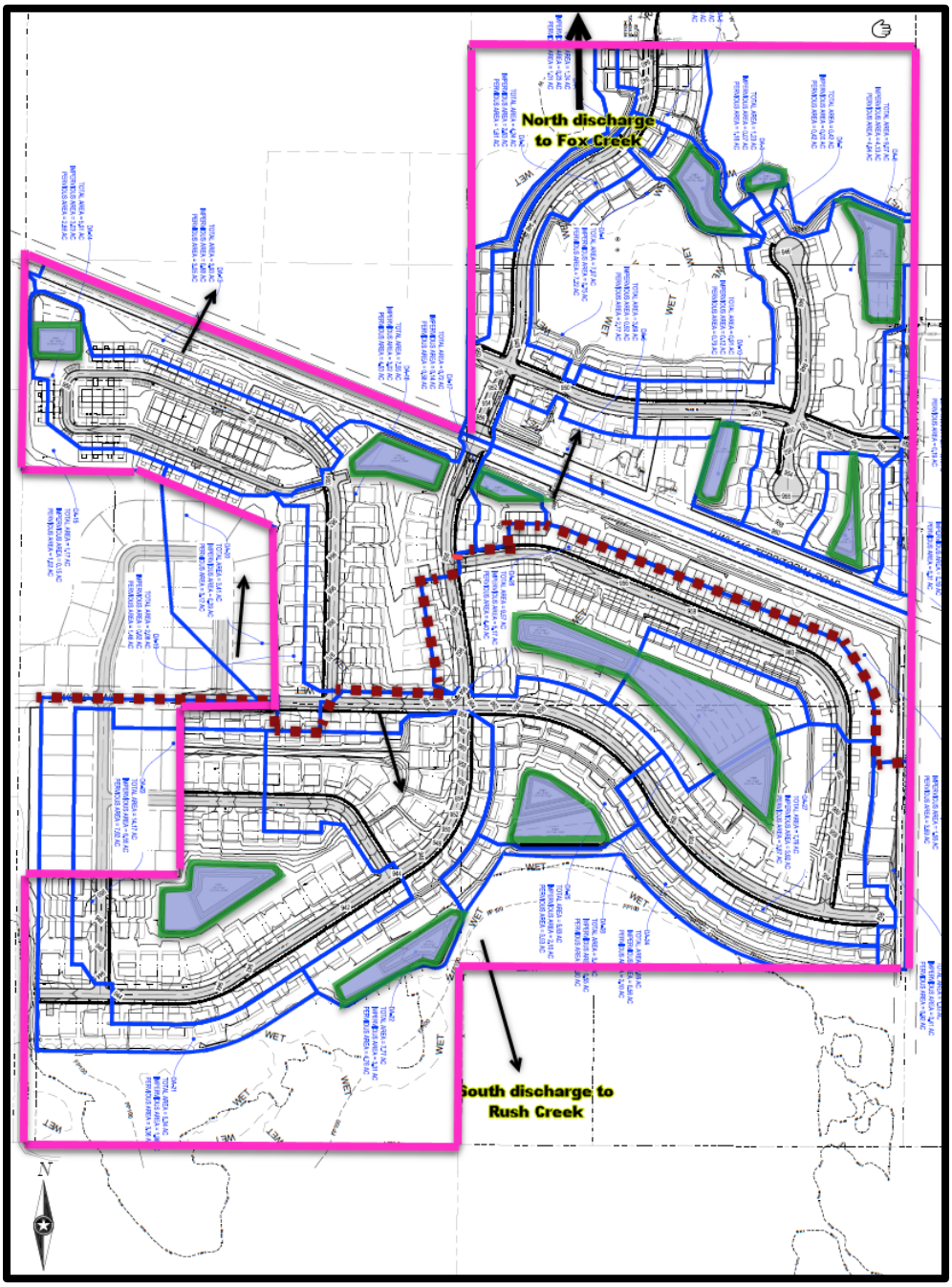


Figure 4 Grading and Drainage Plan

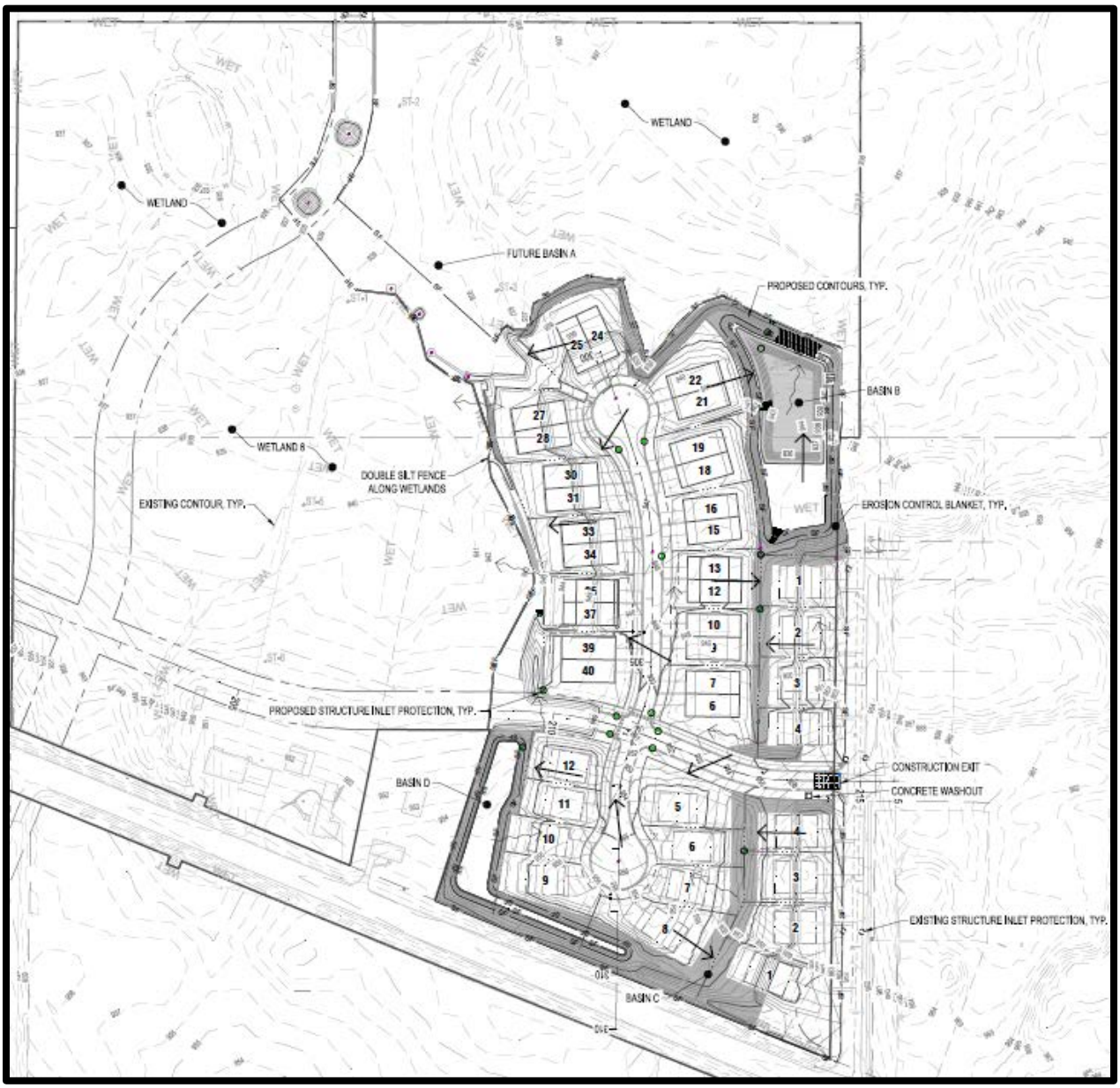


Figure 5 **Phase 1A Grading and Drainage Plan**

elm creek
Watershed Management Commission

ADMINISTRATIVE OFFICE
3235 Fernbrook Lane
Plymouth, MN 55447
PH: 763.553.1144
email: judie@jass.biz
www.elmcreekwatershed.org

TECHNICAL OFFICE
Barr Engineering
4300 Market Point Drive, Suite 200
Minneapolis, MN 55435
PH: 612.834.1060
Email; jHerbert@barr.com

Meadow View
Medina, Project #2020-017

Project Overview: This is a 22-acre project located south of Meander Road and north of Hwy 55. Lennar Homes is proposing to build 125 townhomes with their necessary infrastructure on this site. The plans call for 7.78 acres of new impervious areas.

This project will trigger the Commission's Appendix C Rules and Standards as indicated below.

X	Rule D	Stormwater Management
X	Rule E	Erosion and Sediment Control
X	Rule F	Floodplain Alterations
X	Rule G	Wetland Alteration
	Rule H	Bridge and Culvert Crossings
X	Rule I	Buffer Strips

Applicant & Agent: Lennar Homes, Attention Paul Tabone, 16305 36th Ave. N. Suite 600, Plymouth, MN 55443. Phone: 952-249-3075. Email: paul.tabone@lennar.com

Agent/Engineer: ISG, Attention Jerremy Foss, 7900 International Drive, Suite 550, Minneapolis, MN 55425. Phone: 952-426-0699. Email: Jerremy.foss@ISGInc.com

Exhibits:

1) ECWMC Request for Plan Review and Approval dated and received May 19, 2020
2) Authorization to review received via email by the City of Medina May 18, 2020
3) Project review fees, $2,375.00 received May 29, 2020
4) Lennar Homes Meadow View Preliminary Plat site plan submittal by ISG. Dated August 12, 2020, received September 25, 2020
    a. Sheet 1 of 49 Title Sheet
    b. Sheet 2 of 49, Phasing Plan
    c. Sheet 3 of 49, Estimated Quantities
    d. Sheets 4 to 12 of 49, Construction Notes and Site Details
    e. Sheets 13 to 15 of 49, Utility Schedule
    f. Sheet 16 of 49, not with plan set
    g. Sheets 17 to 21 of 49, Stormwater Pollution Prevention Plan SWPPP Notes and Details

   h. Sheet 22 of 49, Existing Site Removal Plan
   i. Sheets 23 to 25 of 49, Site Utility Plans
   j. Sheet 26 of 29, Hydrant Coverage and Fire Truck Plan
   k. Sheets 27 to 36 of 49, Planned Street and Utility Construction.
   l. Sheets 37 to 39 of 49, Storm Drain Details
   m. Sheets 40 to 42 of 49, Grading Plan
   n. Sheet 43 of 49, Wetland Buffer Plan
   o. Sheet 44 of 49, Signage Plan
   p. Sheets 45 to 49 of 49, Landscape Plan
5) Lennar Homes Meadowview Development Stormwater Management Report by ISG dated August 11, 2020, received September 25, 2020
   a. HydroCAD existing conditions (print date August 4, 2020) and proposed conditions (print date August 11, 2020) with existing and proposed drainage maps
   b. Geotechnical Evaluation Report by STS Consultants dated May 7, 2020
   c. MPCA Wet Basin Sizing
   d. Ramsey Washington Metro Watershed District Stormwater Reuse Calculator
   e. MIDS Calculations
6) LGU MN WCA Notices
   a. Meadow View Replacement Plan Decision dated September 21, 2020
   b. Rolling Green Property, Wetland Boundary/Type Decision dated July 13, 2020
   c. Meadow View Wetland Replacement Plan Notice of Application dated August 12, 2020
   d. Meadow View Wetland Boundary/Type Decision dated May 4, 2020
7) Meadow View Compensatory Storage Exhibit received via email September 14, 2020

Findings:

General

1) A complete application was received on May 29, 2020. The decision period per MN Statute 15.99 has been extended to October 20, 2020.
2) Drainage on this site flows into Elm Creek in the NW corner of the intersection of CR 116 and Hwy 55.
3) The Hennepin County Soil Survey shows Shorewood silty clay loams and Hamel complex in this area. Geotechnical soil borings show clay loam soils with poor infiltration capabilities and high-water tables.
4) The City of Medina requires that landowners assume responsibility for the long-term operation and maintenance of the stormwater basins. An O & M agreement must be approved by the City and Watershed and recorded within 90-days after final plat approval on the title to this property. A copy of the recorded agreements must be provided to the Commission.
5) Three wetland impacts will occur on this development. Filling 6,867 square feet of wetlands in three areas has been approved by the City of Medina (LGU) for this site plan.

Stormwater Management (Rule D)

General

1) Existing Site Area = 22.58 acres of agriculture uses
    a. no impervious areas
    b. ~17 acres cropland and 5 acres meadow/hay/wetland
2) Proposed Site Area = 22.58 acres of residential townhomes
    a. 7.78 acres impervious areas
    b. 14.80 acres grass cover.
3) All homes on site are proposed as slab-on-grade construction. Lowest most floors will meet the Commission's requirements for 2.0-foot freeboard above the 100-year elevations on adjacent ponds, wetlands, and storm basins.
4) To manage stormwater one biofiltration basin and one wet detention pond will be constructed. The westerly basin will be constructed as a wet detention pond with stormwater used for irrigation on the homeowner's association property. The east basin will be a biofiltration basin with a forebay.

Rate Controls

1) Rate controls **meet** the Commission's requirements.
2) Overall peak flows will be controlled at the two pond discharge points. These flow south and east into the Elm Creek floodplain wetland for about 300 feet before entering the creek.
3) Table 1 shows the existing and proposed flow rates from this site.

Table 1 Rate Control Summary

		2-yr (cfs)	10-yr (cfs)	100-yr (cfs)
South/East to Elm Creek (22.58 Acres)	Pre-Development	38.5	77.1	140.8
	Post-Development	7.6	28.2	66.4
	Change	**-30.9**	**-48.9**	**-74.4**

Abstraction Controls

1) Abstraction controls **meet** the Commission's requirement.
2) After development there will be 7.78 acres of new impervious area.
3) True abstraction will not occur because soil infiltration rates (based on geotechnical report) are too low to absorb a 1.1-inch rainfall event over 48 hours.
4) In lieu of true abstraction, the east biofiltration basin will be utilized for filtering the first 0.16 acre feet of water that enter it and the west wet detention pond will be used for irrigation water on 7.8 acres of the homeowners association property.
    a. The east biofiltration basin will provide abstraction for 6,874 cubic feet (0.16 acre feet) of water through its soil media.

b. The west wet-detention pond will provide irrigation volume of 59,808 cubic feet (1.37-acre feet) per year based on the Ramsey-Washington Metro Watershed Organization Reuse Credit Calculator.
c. Drawdown on abstraction volumes will occur in 24 hours on the east basin.

5) Table 2 summarizes the abstraction controls provided on this site plan.

Water Quality Controls

1) Water quality controls **do not meet** the Commission's requirements.
2) ACTION REQUIRED: The mean (average) depth of the wet detention pond is 3.0 feet. It must be 4.0 feet or deeper to meet the Commission's requirements for NURP ponds.
3) Table 2 summarizes the total phosphorus (TP) and total suspended solids (TSS) leaving this site before and after development.

Table 2 Stormwater Summary

CONDITION (22.6 AC.)	TP LOAD (LBS/YR)	TSS LOAD (LBS/YR)	ABSTRATION (CU. FT.) (1)	ANNUAL VOLUME (2) (AC. FT.)
Pre-development (baseline)	17.9	3,382	N/A	12.45
Post-development without BMPs	20.0	3,625	31,066	24.95
Post-development with BMPs	4.1	524	38,246 (3)	13.21
Net Change	**-13.8**	**-2,858**	**+7,180**	**+0.76**

(1) 7.78 acres impervious areas
(2) Based on ECWMC staff analysis
(3) 31,363 cubic feet irrigation reuse, 6,874 cubic feet biofiltration.

Buffer Strips (Rule I).

1) Buffer strips **do not meet** the Commission requirements.
2) The ECWMC requires a 25-feet average and 10-feet minimum buffer width for all wetlands.
    a. Where slopes within a buffer are graded, any final slope steeper than 6:1 must increase buffer widths 5 feet horizontally for every 1 foot vertical increase (i.e., 5:1=30 feet, 3:1 = 45 feet average).
3) Wetland buffers average 35 feet wide along the Elm Creek wetland basin and 25 feet on the interior wetland basin. This complies with the Commission's buffer width requirement.
4) Wetland buffer areas are shown to be restored and maintained with native vegetation. This meets the Commission buffer vegetations standard for native seed.
5) ACTION REQUIRED: During the first two full growing seasons, the owner must replant any buffer strip vegetation that does not survive.
6) ACTION REQUIRED: Wetland buffer monumentation locations must be provided on the site plans.

Wetland Alterations (Rule G)

1) Wetland alterations **meet** the Commission's requirements.
2) The City of Medina is the LGU in charge of administering the MN Wetland Conservation Act. Three wetland impacts are proposed that will fill 6,867 square feet.
    a. The City of Medina's wetland and zoning codes follow the ECWMC wetland alteration rules.
    b. Wetland replacement plans have been approved by the City of Medina (LGU).
3) RECOMMENDATION: We recommend the normal water level (NWL) of wetland 2A be determined with an outlet pipe established at said elevation routed to CBMH A-8A.

Floodplain Alterations (Rule F).

1) The floodplain alteration plan **meets** the Commission's requirements.
2) The Elm Creek Watershed and Meadow View stormwater management plans have the base flood elevation (BFE) at 982.26 for the section of Elm Creek that runs along the south and easterly area of this site.
3) Floodplain impacts will occur along the fringe area of the Elm Creek floodplain.
    a. Estimated floodplain fill below 982.3 will be 213 cubic yards.
    b. Compensatory floodplain mitigation will be 396 cubic yards.

Erosion and Sediment Control (Rule E)

1) Erosion and sediment controls **do not meet** the Commission's requirements.
2) ACTION REQUIRED: Temporary sediment basin erosion control sequencing is needed.
3) ACTION REQUIRED: A two-year maintenance plan per the wetland buffer requirements is required.

Recommendation to the Elm Creek Commissioners

Approval contingent upon:

1) Grading is administratively approved by technical staff on the condition that:
    a. the applicant accepts all risks for any changes required to obtain final approval by the ECWMC, and
    b. the City of Medina grants approvals for said grading.
2) The mean (average) depth on the west wet-detention pond must be 4.0' or deeper.
3) Buffer strip monumentation and vegetation maintenance plans must conform to the Commission's requirements.
4) An operation and maintenance agreement of the stormwater ponds must be approved by the City and ECWMC. Said agreement must be recorded on the property title with a copy of the recorded document provided to the ECWMC.
5) Erosion and sediment controls must conform to the ECWMC requirement.

On Behalf of Barr Engineering
Advisor to the Commission

September 30, 2020
Date

James C. Kujawa
Surface Water Solutions LLC

Attachments

Figure 1 Location Map
Figure 2 2018 Aerial Photograph
Figure 3 Grading and Drainage Plan

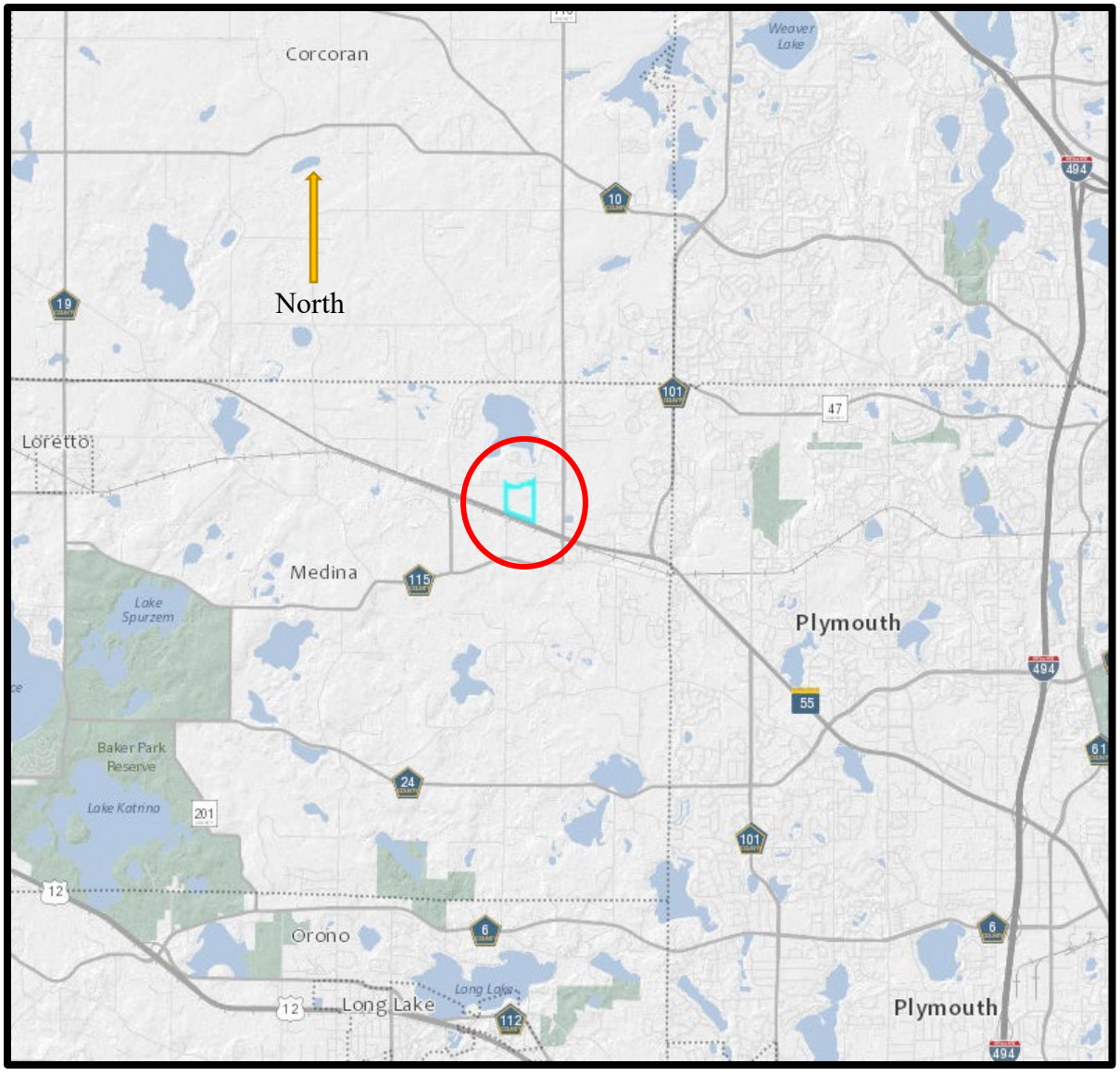


Figure 1 Location Map

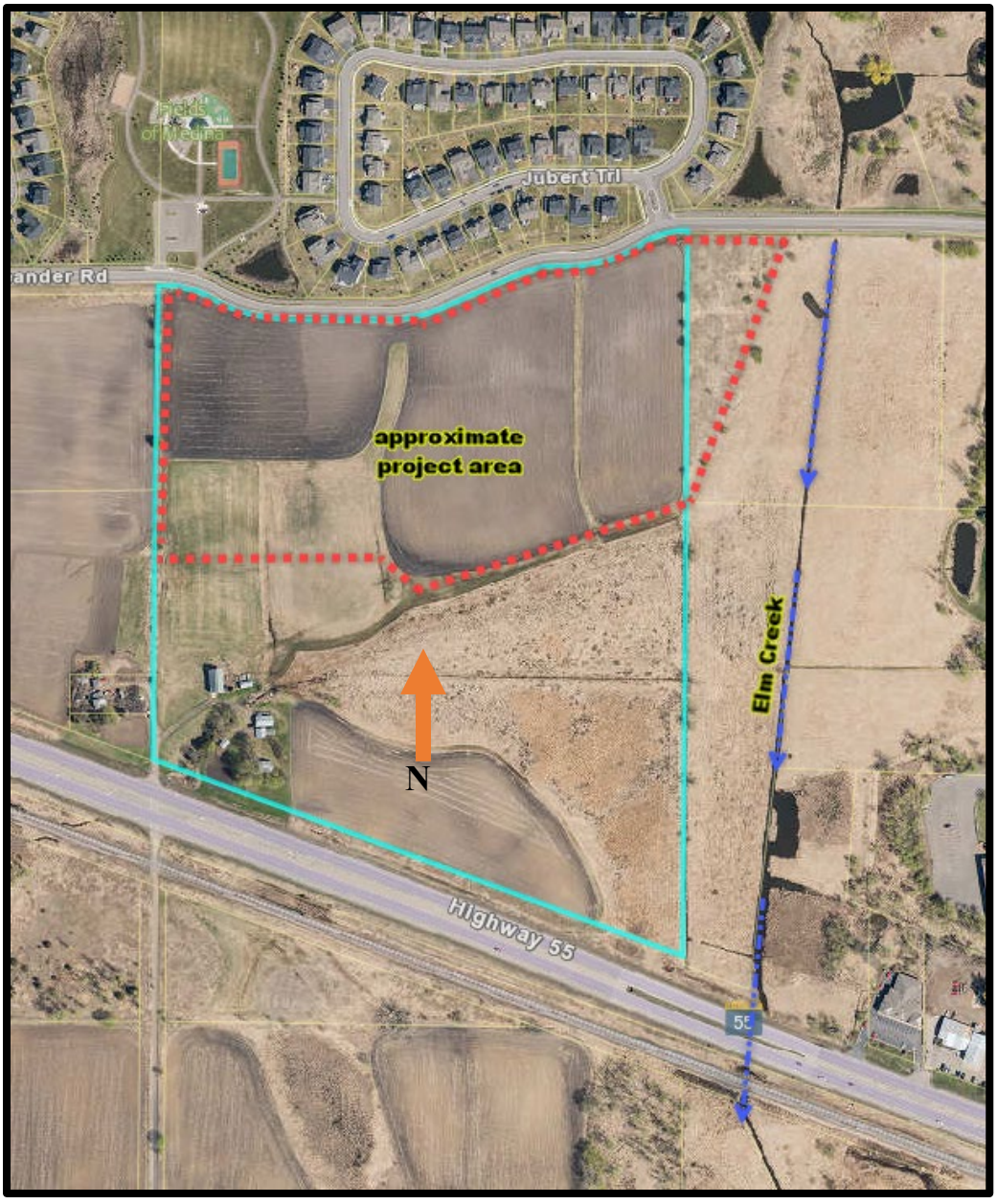


Figure 2 2018 Aerial Photograph

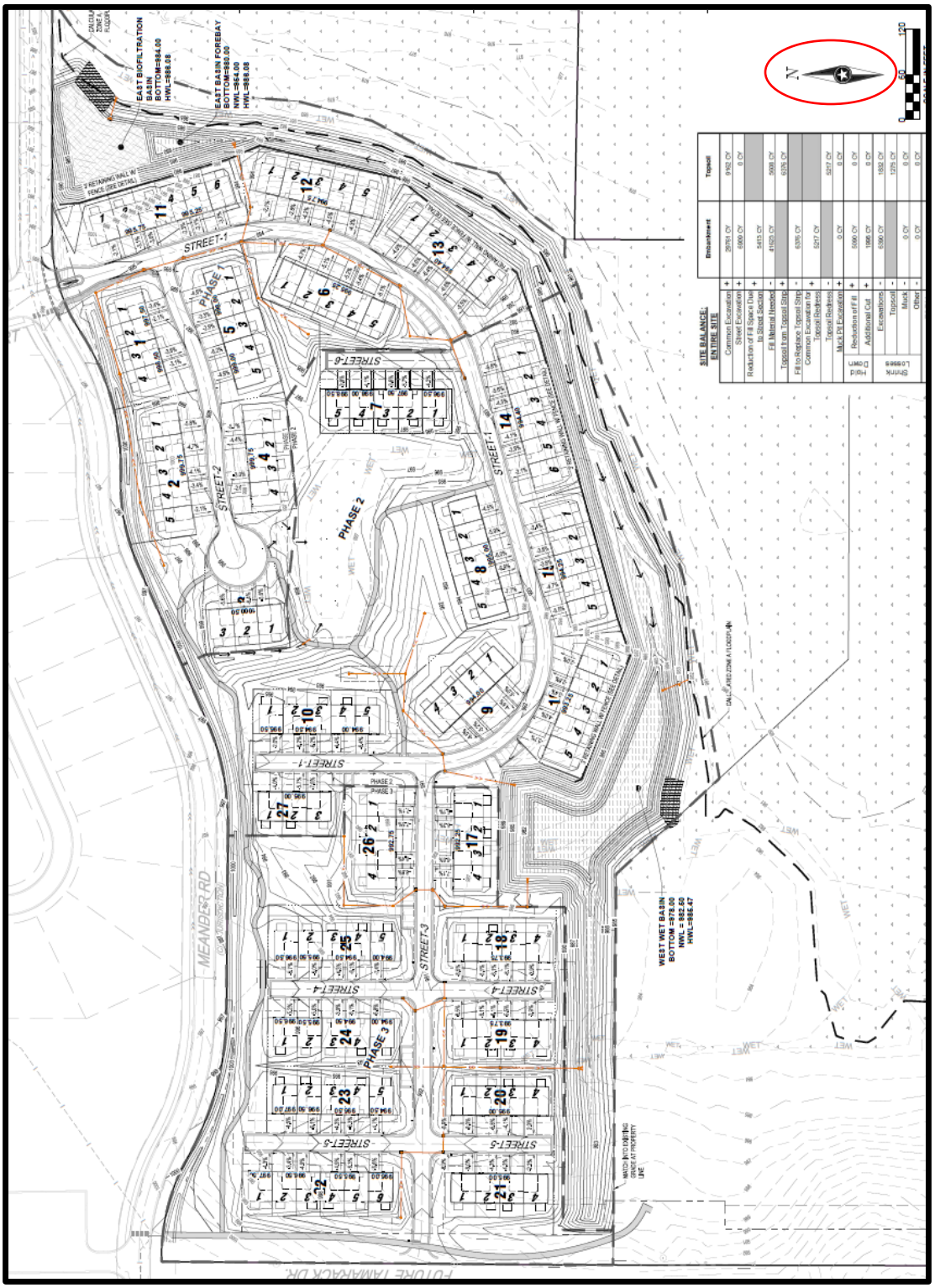


Figure 3, Grading and Drainage Plan

Project Name and/or Number:

PART ONE: Applicant Information

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: Paul and Ruth Walti
Mailing Address: 10420 Cain Rd
Phone: 763-428-2129
E-mail Address: p_walti@outlook.com

Authorized Contact (do not complete if same as above):
Mailing Address:
Phone:
E-mail Address:

Agent Name:
Mailing Address:
Phone:
E-mail Address:

PART TWO: Site Location Information

County: Hennipen **City/Township:** Corcoran
Parcel ID and/or Address: 02-119-23 31 0001
Legal Description (Section, Township, Range): Addition:Unplatted 02 119 23
Lat/Long (decimal degrees):
Attach a map showing the location of the site in relation to local streets, roads, highways.
Approximate size of site (acres) or if a linear project, length (feet):

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

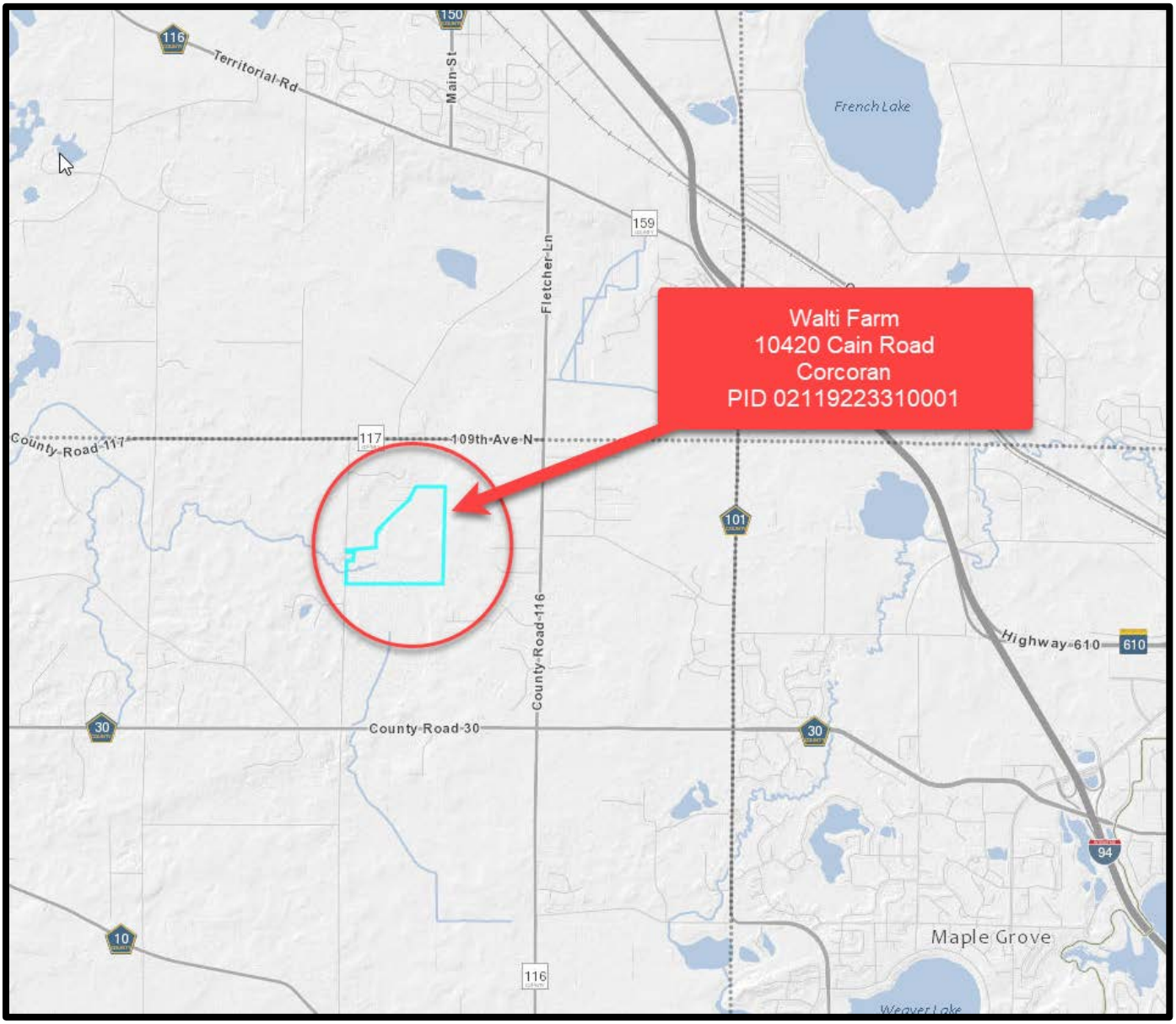
http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform_4345_2012oct.pdf

PART THREE: General Project/Site Information

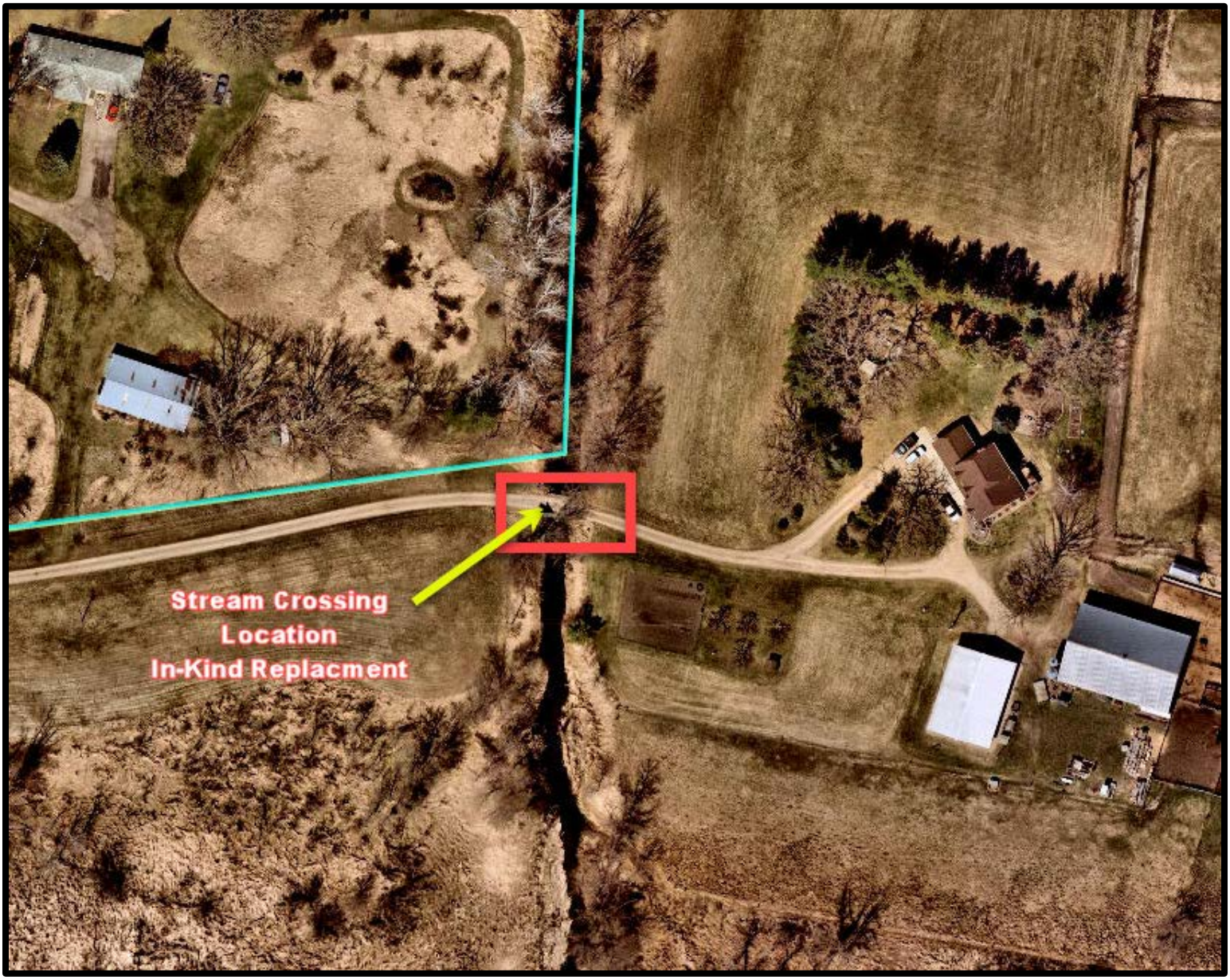
If this application is related to a delineation approval, exemption determination, jurisdictional determination, or other correspondence submitted ***prior to*** this application then describe that here and provide the Corps of Engineers project number.

Describe the project that is being proposed, the project purpose and need, and schedule for implementation and completion. The project description must fully describe the nature and scope of the proposed activity including a description of all project elements that effect aquatic resources (wetland, lake, tributary, etc.) and must also include plans and cross section or profile drawings showing the location, character, and dimensions of all proposed activities and aquatic resource impacts.

Replace existing bridge to current elevation measurement, as to be agreed with the DNR . The existing bridge culverts have settled unevenly and need to be replaced to allow access to the residential property. Current culverts used 16' wide by 4' diameter. Propose 20' wide by 4' diameter. Project start and completion ASAP pending water level to be low.



Project Location



Project Location

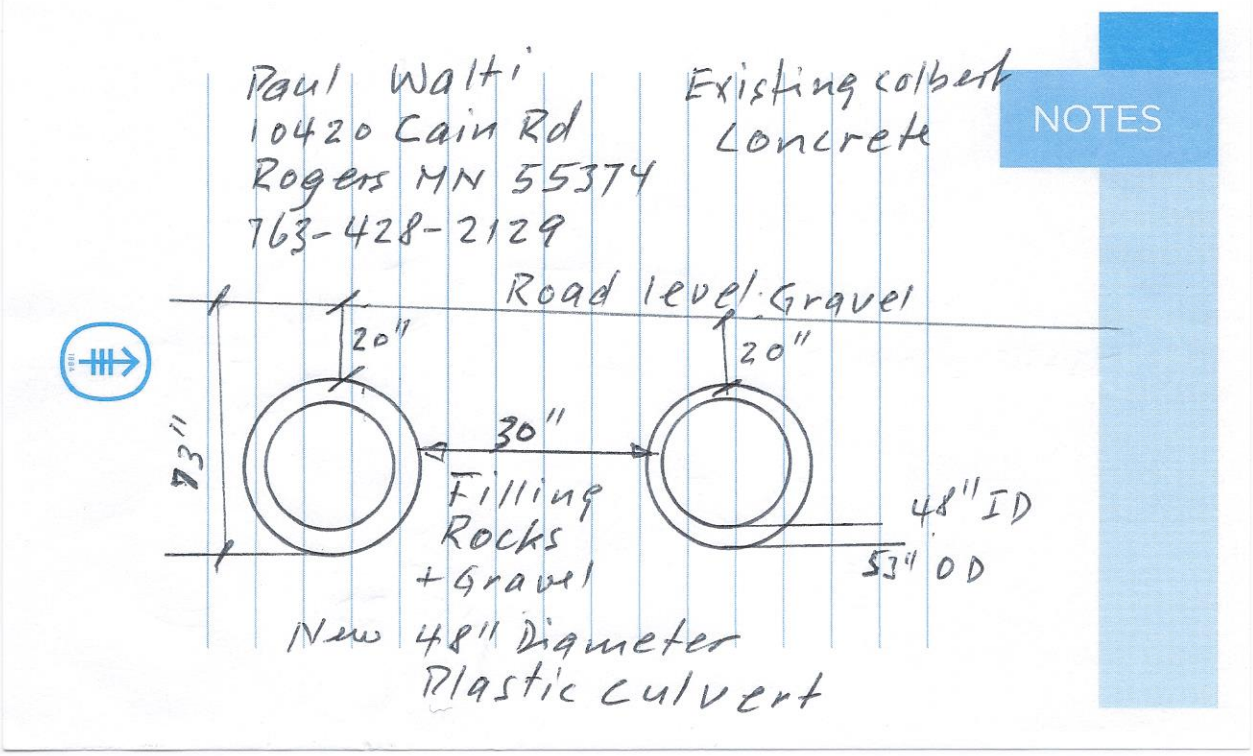
2020 Aerial Photograph

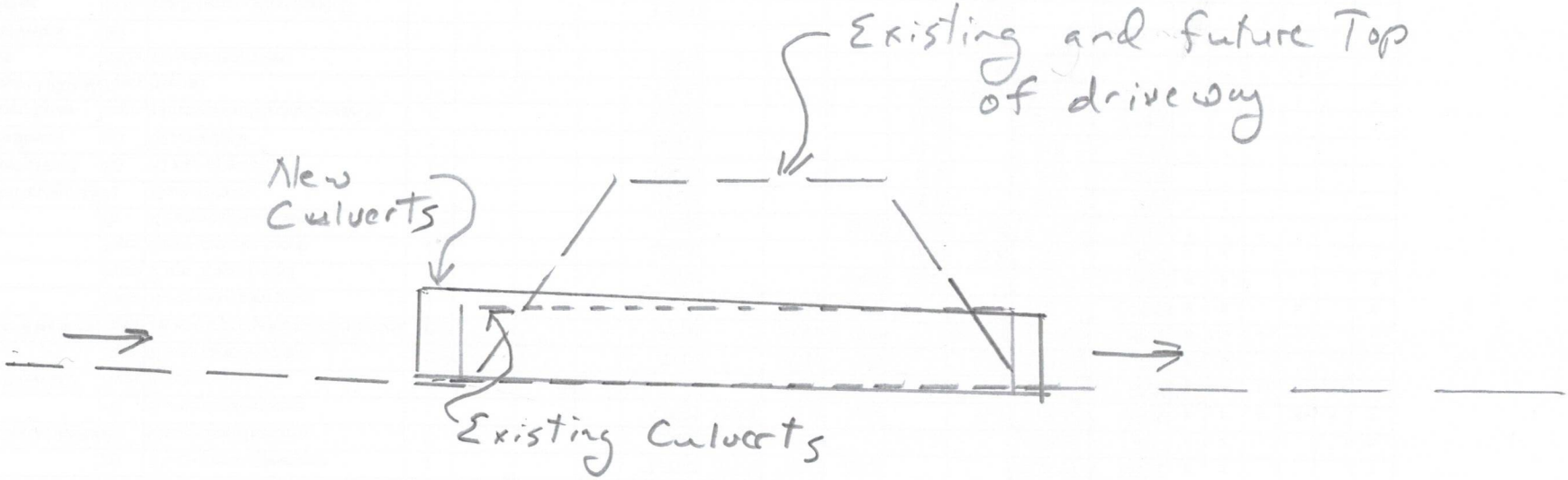
Elm Creek Watershed Conditions for Paul Walti Stream Crossing.

ECWMC Project 2020-024
September 8, 2020

You are granted a permit from the Elm Creek Watershed Management Commission (ECWMC). to replace your stream crossing culvert in-kind.
The permit from the ECWMC is conditions upon the following items;

- Culverts are replaced per site plane and profile information submitted with the ECWMC request for review and approvals (attached)
- Culverts are replaced in-kind at the same elevation, size and grade as the original culverts. Minor adjustments to length and culvert materials per plans are accepted. If plastic pipe is used, a smooth wall interior is required.
- The elevation of the driveway remains the same.
- Provide the following documentation to the me when the work is complete.
    - Pictures of the roadway and culvert prior to construction. (already received with application)
    - Pictures of the project showing the removal of the pipe and driveway material
    - Pictures of the project showing the placement of the pipes and driveway
    - Pictures of the final pipe and driveway construction.
    - Contractor notes or documentation showing before and after elevations of the pipe and road surface. Elevations can be relative (i.e.. Existing culvert south invert is 2.5' below offset hub located 40' south of culvert. New culvert set at 2.6' below offset hub located 40'south of the culvert)





Cross - Section
No Scale

Notes i - Existing Culverts - 2 - 48" Diameter RCP - 16' Length

- Proposed Culverts - 2 - 48" Diameter Plastic - 20' Leng

- New Culvert inlet elevation (southend) to be set at existing elevation or elevation agreed to by MNDNR.

elm creek
Watershed Management Commission

ADMINISTRATIVE OFFICE
3235 Fernbrook Lane
Plymouth, MN 55447
PH: 763.553.1144
email: judie@jass.biz
www.elmcreekwatershed.org

TECHNICAL OFFICE
Barr Engineering
4300 Market Point Drive, Suite 200
Minneapolis, MN 55435
PH: 612.834.1060
Email: jHerbert@barr.com

Paulsen Farms
Corcoran, Project #2020-025

Project Overview: This is an 88-acre parcel located south of CR 30 and east of Bechtold Road. Twenty (20) single family rural residential lots with 5.2 acres of new impervious areas are proposed on this site.

This project will trigger the Commission's Appendix C Rules and Standards as indicated below.

X	Rule D	Stormwater Management
X	Rule E	Erosion and Sediment Control
	Rule F	Floodplain Alterations
X	Rule G	Wetland Alteration
	Rule H	Bridge and Culvert Crossings
X	Rule I	Buffer Strips

Applicant: DS Management Group LLC, Attention Craig Scherber, 20160 75th Avenue N, Corcoran, MN 55340. Phone: 612-810-8400. Email: cescherber@yahoo.com

Agent: Sathre-Bergquist, Attention Eric Johnson. 150 Broadway Avenue S., Wayzata, MN 55391. Phone: 952-476-6000. Email: ejohnson@sathre.com

Exhibits:

1) A complete ECWMC application received July 27, 2020.
    a. ECWMC Request for Review and Approval.
    b. Corcoran city authorization for review via email dated July 23, 2020
    c. Project review fee, $7,225 for 88.5 acres, residential site development project received May 1, 2020
    d. Site plan design submittal via email on July 22, 2020.
2) Paulsen Farms Site Plans by Sathre-Bergquist, Inc. dated March 6,2020 with last revision date of July 17, 2020 except the grading plan with revision date of September 15, 2020.
    a. Sheet 1 of 22, Title Sheet
    b. Sheets 2 and 3 of 22, Outlot Plan and Open Space Area Exhibit.
    c. Sheets 4 to 7 of 22, Street Plan
    d. Sheets 8 to 11 of 22, Storm Sewer Plan.
    e. Sheets 12 to 15 of 22, Grading Plan, last revision dated September 15, 2020.
    f. Sheet 16 of 22, Erosion Control Plan.
    g. Sheets 17 to 22 of 22, Details
3) Paulsen Farms Development Stormwater Plan by Advanced Engineering and Environmental Services dated September 15, 2020. Including narrative, existing, and proposed conditions maps, Web soil survey report, pre- and post-development HydroCAD model received as Appendix C on September 21, 2020, P8 output model, and outlet control structure details.

4) Haugo GeoTechnical Services soil boring logs 1 to 6 with location exhibit.
5) MN WCA Notice of Wetland Application, boundary/type for Cory Scherber CR 30 Site dated July 23, 2019
6) MN WCA Notice of Wetland Delineation, boundary/type for Cory Scherber CR 30 Site dated September 19, 2019.

Findings

General

1) A complete application was received July 23, 2020. The decision period deadline per MN Statute 15.99 has been extended to October 21, 2020.
2) The existing land use is approximately 70 acres crop land and 19 acres of woods/wetlands and open space.
3) The proposed land use will consist of:
    a. The north and westerly 45 acres will be platted into twenty 20 single family rural residential lots. Roads/infrastructure and home sites will disturb 9 acres and create 5.2 acres of new impervious areas.
    b. The southerly 35 acres will be platted as outlots and remain developer owned for potential future platting. Future conditions are not part of this review
    c. The remaining 10 acres will be Homeowner Association (HOA) controlled.
4) This site drains to the east and north. It eventually reaches the North Fork of Rush Creek near CR 117 and Trail Haven Road approximately 1.5 miles from this site. Approximately 170 acres off-site from the south and west drain through this property.
5) Proposed drainage remains essentially the same.
6) There are no Elm Creek Watershed jurisdictional floodplains, or steam crossing within this site area.
7) There are 14 wetlands throughout this parcel. No wetland impacts are proposed.

Rule D - Stormwater Management

1) Stormwater will be managed by routing most of the impervious surfaces into four stormwater basins – one will be a wet detention pond, two will consist of wet detention ponds with filter benches and one will be a filter basin.
2) The City of Corcoran requires the landowners to operate and maintain the stormwater facilities in new developments. An operation and maintenance agreement must be created and approved by the City and Commission. Said agreement must be recorded on the property title with a copy of the recorded document provided to the ECWMC.
3) Soil borings confirm high-clay content soils unsuitable for infiltration. Biofiltration of the abstraction volume is acceptable in lieu of infiltration.
4) Based on pre- and post-development hydrology modeling, wetland 3 will have higher water elevations for the 2-, 10- and 100-year storm events after deveopemnt. These will be 0.21 feet, 0.38 feet and 0.47 feet higher respectively. No detertmental effects to exisiting or proposed structures are anticipated, but this wetland extends into the property south of this site. The change in post-development elevations to the adjacent property could be problematic to its normal drainage characteristics. The ECWMC does not have a regulatory standard for the change in elevation anticipated on this wetland. This item is for informational purposes only.

Low Floor Elevations

1) Plans **meet** the Commission's requirements for minimum low floor elevations.
2) Low floor elevations (LFE) are to be a minimum of two feet above the High-Water Level (HWL), defined as the critical event 100-year elevation, and one foot above the emergency overflow elevations of nearby waterbodies and stormwater ponds. These criteria are met for all the lots in this development. Table 1 summarizes critical lots on this site plan.

Table 1 Low Floor Elevation Summary

Lot/Block	Proposed LFE (feet)	HWL of adjacent pond or wetland (feet)	LFE minus HWL (feet) 2-ft min.	Emergency overflow elevation (feet)	Minimum LFE (feet)	Adjacent pond/wetland
10.5	984.8	982.4	+2.0	982.0.	984.4	Wetland 9
L4, B1	984.8	982.4	+2.0	982.0	984.4	Wetland 9
L6, B2	1008.9	1006.6	+2.3	1008.5*	1008.6	Wetland 3
L7, B2	1009.6	1006.9	+2.7	1007.0*	1008.9	Wetland 2
L1, B3	1000.7	998.7	+2.0	998.5	1000.7	Wetland 7
L2, B3	996.4	994.2	+2.2	993.8	996.2	Wetland 8
L3, B3	996.4	994.2	+2.2	993.8	996.2	Wetland 8
L5, B3	996.4	994.2	+2.2	993.8	996.2	Wetland 8
L6, B3	996.4	994.2	+2.2	993.8	996.2	Wetland 8

*** Estimate.**

Water Quality Controls

1) Plans **meet** the Commission's requirements for water quality controls.
2) Pre- vs post-development Total Suspended Solids (TSS) and Total Phosphorous (TP) loads were modeled using P8. Results are shown in Table 2.

Table 2 Stormwater Summary

Condition (39 acres)	TP load (lbs/year)	TSS load (lbs/year)	Filtration (cubic feet) (1)	Annual volume (acre-feet))
Pre-development (baseline)	3.8	1,232	N/A	3.6
Post-development without BMPs	16.6	5,216	20,909	16.9
Post-development with BMPs	2.0	302	24,816	16.9
Net Change	**-1.8**	**-930**	**+3,907**	**+13.3**

(1) 5.2 acres new impervious

Rate Controls

1) Plans **do not meet** the Commission's requirements for rate control.
2) The 2-year flow rates at the existing ditch on the east property line will exceed the Commission's requirements by 0.9 cubic feet per second. All other flow rates meet the Commission's requirements.
3) Table 3 summarizes the total peak flows leaving the site before and after development.

Table 3 Rate Control Summary

Discharge Offsite Drainage Areas	Area (Acres) (Total = 314)	Condition	2-year (cfs)	10-year (cfs)	100-year (cfs)
Northeast	19.4	Existing	12.2	15.0	17.1
	18.9	Proposed	11.7	14.8	16.9
	-0.5	**Change**	**-0.5**	**-0.2**	**-0.2**
Northwest	23.5	Existing	14.2	30.4	72.5
	17.1	Proposed	11.5	24.5	56.6
	-6.4	**Change**	**-2.7**	**-5.9**	**-15.9**
East @ existing culvert #3	199.1	Existing	59.8	135.3	320.0
	208.2	Proposed	60.7	131.3	238.1
	+9.1	**Change**	**+0.9**	**-4.0**	**-81.9**
East @ Fox Valley Drive	271.4	Existing	76.07	192.1	476.5
	278.2	Proposed	73.2	179.7	376.7
	+6.8	**Change**	**-2.9**	**-12.4**	**-99.8**

Abstraction Controls

1) Plans **meet** the Commission's requirements for abstraction.
2) New impervious areas will be 5.2 acres requiring 20,909 cubic feet (0.48-acre feet) of abstraction.
3) Soils are unsuitable for infiltration. Filtration for abstraction is allowed per Rule D.
4) The filtration basin and two wet detention ponds with filter benches will have the capacity for 24,816 cubic feet (0.57-acre feet) of drawdown volume.
    a. The drawdown time for these filter areas will range from 11 to 26 hours.
5) Pre-treatment for filter basins 2 and 3 will occur in the wet detention ponds by routing the stormwater into the wet detention pond areas prior to the water entering the filter media.
6) Pre-treatment of stormwater in filter basin 1 will occur in a forebay area at the pipe inlet to the basin.
7) Filter basin materials for the soil media meet the MN MPCA and ECWMC guidelines for sand filters

Rule E - Erosion and Sediment Control

1) Plans **meet** the Commission's requirements for erosion and sediment control.
2) Final Stormwater Pollution Prevention Plans must be obtained before construction can begin.

Rules G – Wetland Alteration

1) Plans **meet** the Commission's requirements for Wetland Alteration.
2) No wetlands are proposed to be impacted on this site.
    a. The City of Corcoran is the LGU in charge of administering the wetland requirements on this project.

Rules I – Buffer Strips

1) Plans **do not meet** the Commission's requirements for buffer strips.
2) Wetland buffer and watercourse widths must be an average of 25 feet wide with a minimum 10-foot width allowed.
    a. All wetland buffers meet the Commission's width requirements. Most wetland buffers are at least 50 feet wide.
3) Buffer monumentation must be provided at each parcel line and have a maximum spacing of 200 feet. Additional monuments must be placed as necessary to accurately define the edge of the buffer strips.
    a. Monumentation is provided for the platted lots.
    b. Buffer monuments are not provided in Outlot B. Provide buffer monuments.
    c. Buffer monuments are required along the watercourse buffer (see item 2b above).

Recommendation to the Elm Creek Commissioners

Approval contingent upon:

1) Grading is administratively approved by technical staff on the condition that: a) the applicant accepts any and all risks for any changes required to obtain final approval by the ECWMC, and b) that the City of Corcoran grants approvals for said grading.
2) Rate control at culvert #3 must be equal to or less than pre-development rates for all storm events.
3) Buffer strip monumentation conforms to the Commission's requirements.
4) An operation and maintenance agreement must be created and approved by the City and ECWMC. Said agreement must be recorded on the property title with a copy of the recorded document provided to the ECWMC.

On Behalf of Barr Engineering
Advisor to the Commission

Surface Water Solutions LLC — September 23, 2020
Date

Attachments

Figure 1 Location Map
Figure 2 2018 Aerial Photograph
Figure 3 Overall Plan
Figure 4 Grading and Drainage Plan

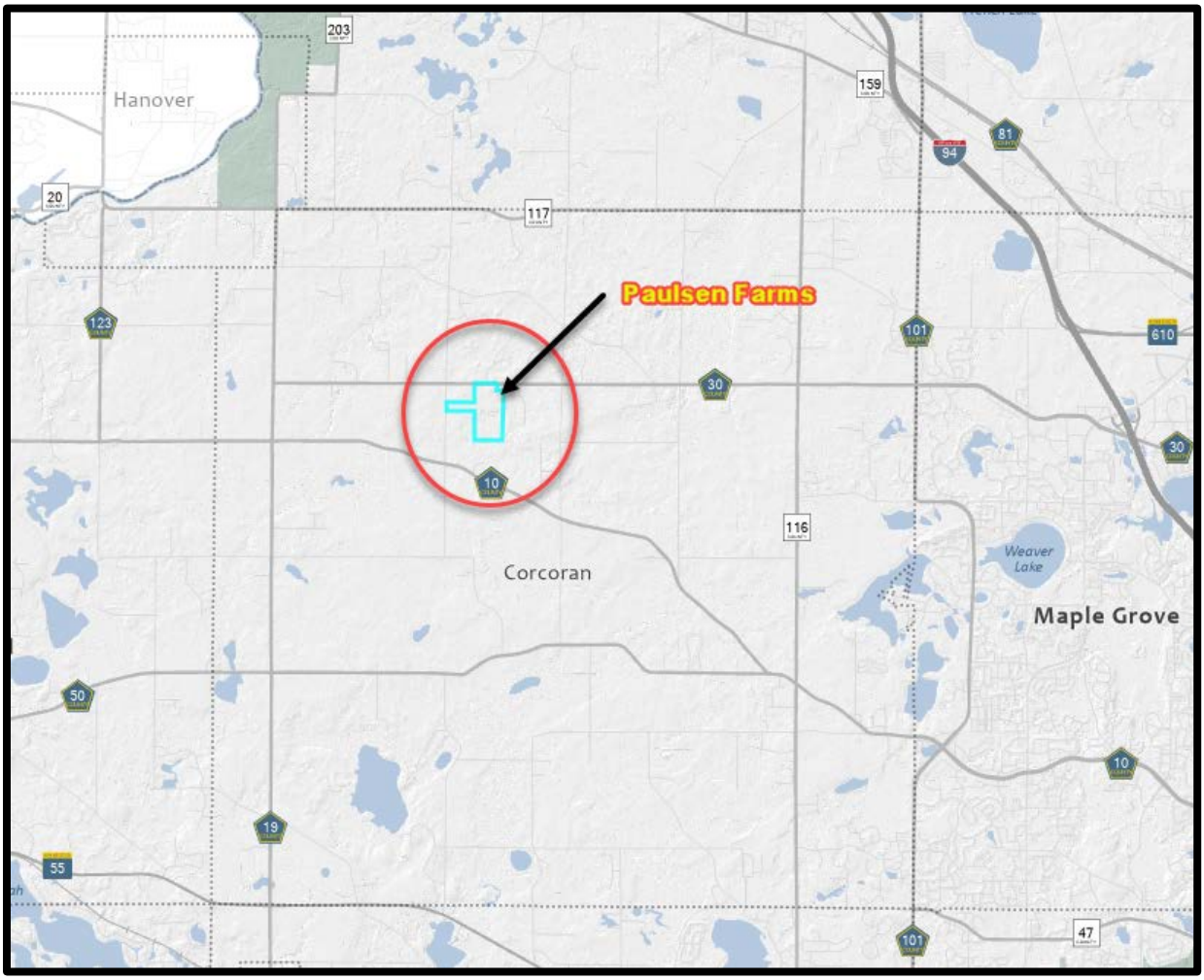


Figure 1 Location Map

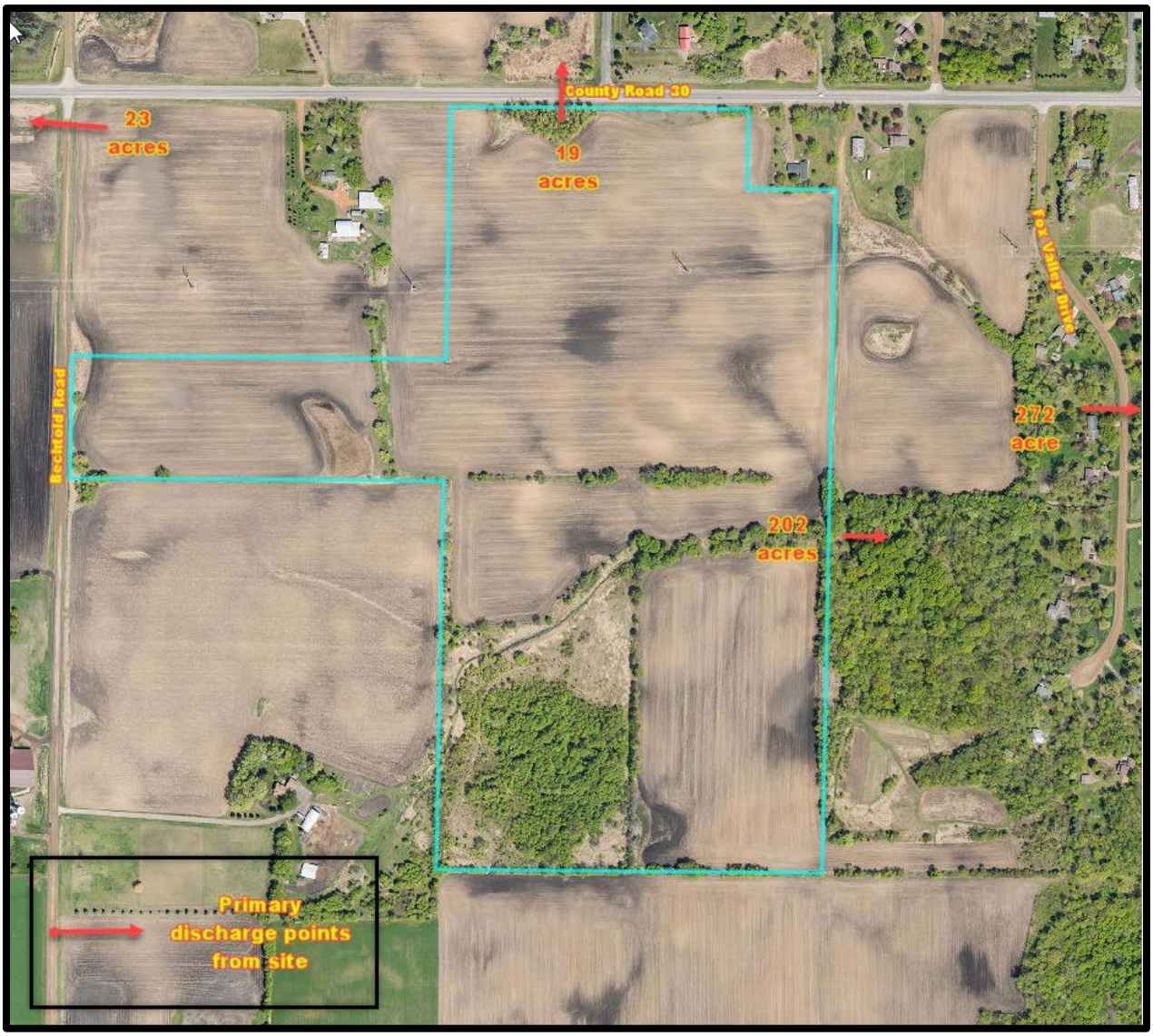


Figure 2 2018 Aerial Photograph

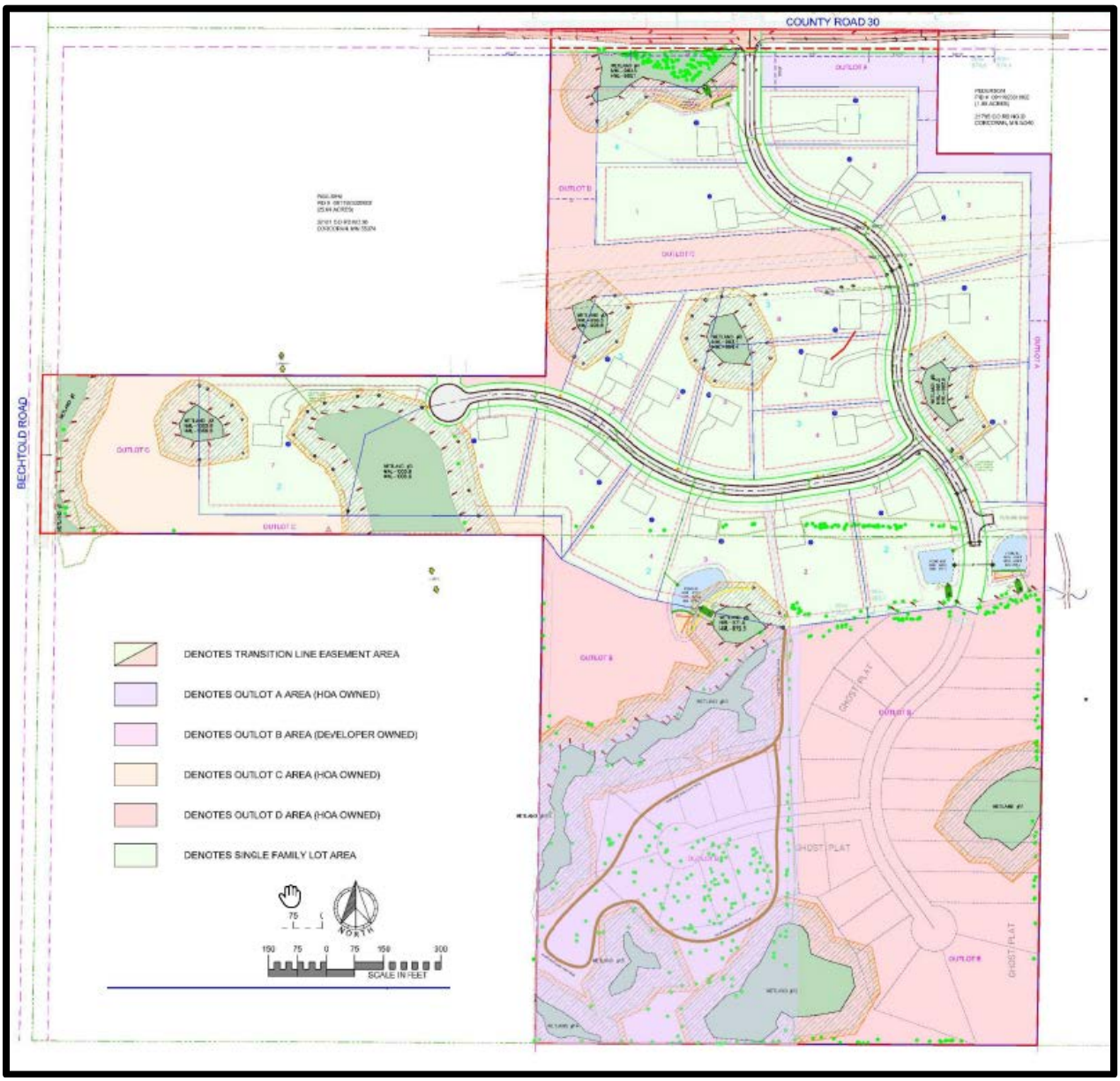


Figure 3 Overall Plan

Figure 4 Grading and Drainage Plan

elm creek
Watershed Management Commission

ADMINISTRATIVE OFFICE
3235 Fernbrook Lane
Plymouth, MN 55447
PH: 763.553.1144
email: judie@jass.biz
www.elmcreekwatershed.org

TECHNICAL OFFICE
Barr Engineering
4300 Market Point Drive, Suite 200
Minneapolis, MN 55435
PH: 612.834.1060
Email: jHerbert@barr.com

2020 Rogers High School Addition and Renovations
Rogers, Project #2020-026

(Revisions as of September 4)

Project Overview: This project is located on the Rogers High School property east of Highway 101 on the north side of CR144. It will disturb 3.35 acres and increase impervious coverage by 0.82 acres. A 35,000 square feet building addition is proposed for the north side of the existing school. The applicant proposes to use the existing regional infiltration pond constructed in 2002 to accommodate these improvements.

This project will trigger the Commission's Appendix C Rules and Standards as indicated below.

X	Rule D	Stormwater Management
X	Rule E	Erosion and Sediment Control
	Rule F	Floodplain Alterations
	Rule G	Wetland Alteration
	Rule H	Bridge and Culvert Crossings
	Rule I	Buffer Strips

Applicant: ISD #728, Attn. Thomas Baranick, 11500 93rd Ave. N., Elm River, MN 55330. Phone: 763-241-3405. Email: Thomas.baranick@isd728.org.

Agent/Engineer: BKBM Engineers, Attn. Kevin Bohl, 6120 Earle Brown Drive, Suite 700, Minneapolis, MN 55305. Phone: 763-843-0427. Email: kbohl@bkbm.com

Exhibits:

1) A complete ECWMC application received July 29, 2020.
    a. ECWMC Request for Review and Approval receive July 29, 2020.
    b. Rogers city authorization for review dated July 29, 2020.
    c. Project review fee, $887.50 for 3.35 acres for redevelopment on an institutional/government project. received July 29, 2020.
    d. Site plan design submittal via flash drive on July 29, 2020.
2) Hydrology Calculations for 2020 Rogers High School Addition and Renovation, by BKBM dated Revised September 3, 2020.
3) Civil Site Plan for 2020 Rogers High School Addition and Renovations dated September 4, 2020.
    a. Sheet C1.000, Selective Site Demolition and Erosion Control Plan
    b. Sheet C2.000, Grading, Drainage and Erosion Control Plan
    c. Sheet C3.000, Utility Plan

d. Sheet C3.001, Utility Plan, Alternative 2
e. Sheet C4.00, Paving and Geometric Plan
f. Sheets C5.000 and C5.001, Details
g. Sheet C6.000 Storm Water Pollution Prevention Plan
h. Sheet L1.001, Landscape Plan
i. Sheet L1.002 and L1.003, Landscape Details and Notes

4) Project file for 2019-003 Roger High School Tennis Courts, including correspondence from BKBM to ECWMC dated March 1, 2019, regarding stormwater management plan assumptions, design, and conclusions for project 2019-003 and regional pond model updates for Atlas 14 storm events vs TP40.

Findings.

General

1) A complete application was received on July 29, 2020. The initial 60-day decision period expires on September 27, 2020.
2) The existing land use is 2.79 acres of building/landscaping/parking and driveway areas, with 0.85 acres impervious areas.
3) The proposed land use will consist of a new 35,000 square foot addition to the school building along with modifications to the landscaping/parking and driveway areas necessary to accommodate the addition. This increases the impervious areas by 0.82 acres to 1.67 acres.
4) There are no Elm Creek Watershed jurisdictional floodplains, or steam crossing within this site area.
5) No wetland impacts are proposed.

Rule D - Stormwater Management

1) The High School campus drains to the north into a regional pond in the NE corner of the school property. This regional pond is an infiltration basin that is dry most of the time. If water flows out it eventually reaches the Crow River approximately ¾ of a mile north and east of the site.
2) Existing stormwater management: The Rogers High School and its stormwater plans were reviewed and approved by the ECWMC when it was built in 2000-2001. At that time, the large regional infiltration pond was constructed to take care of the stormwater management from this site.
    a. Total watershed area to the regional pond = 552-acre watershed
    b. Site area draining directly into regional pond = 58 acres
    c. Site area draining indirectly into the regional pond = 21 acres
    d. Soil infiltration rate in the pond based on infiltration testing = 8.3 inches per hour
    e. Regional pond storage capacity below the pipe outflow elevation = 6.2-acre feet
3) Proposed stormwater management: Rogers High School proposes to use the existing regional pond for rate and volume controls.
    a. Existing impervious areas from the high school draining to the regional pond = 19.3 acres (25% impervious)
    b. After the project is complete, impervious areas will be 20.1 acres (26% impervious)

Rate Controls

1) Plans **meet** the Commission's requirements for rate control at the regional pond.
2) Table 1 summarizes the total peak flows leaving the site before the High School regional pond was constructed and after development, including the 2020 project addition.

Table 1 Rate Control Summary

Discharge Offsite Drainage Areas	Area (Acres) (Total = 552)	Condition	2-year (cfs)	10-year (cfs)	100-year (cfs)
Northeast	552	Existing	17.5	54.3	150.3
Regional Pond	552	Proposed	7.0	37.3	112.9
	0	**Change**	**-10.5**	**-17.0**	**-37.4**

Abstraction controls

1) Plans **meet** the Commission's requirements for abstraction.
2) New impervious areas will be 0.82 acres, requiring 0.075-acre feet (3,275 cubic feet) of abstraction.
3) Abstraction will take place from excess infiltration available in the regional stormwater pond in the NE corner of the high school property.
    a. Abstraction volume available 6.2-acre feet (269,200 cubic feet)
    b. Abstraction treatment volume required for school (including new impervious areas) = 1.84-acre feet (80,260 cubic feet)
    c. Excess infiltration available for abstraction = 4.36-acre feet (189,922 cubic feet)

Water Quality Controls

1) Plans **meet** the Commission's requirements for water quality controls.
2) The sub watershed areas for this project have two distinct drainage patterns that have consequences on the water quality requirements for this project.

    a. Area I will drain north directly into the regional pond. This drainage area **will meet** the Commission's water quality requirements. Infiltration in the regional pond meet of the Commission's requirements for phosphorus and suspended solid controls per Rule D-3-e-i) which states, *Full infiltration of one point one (1.1) inches of runoff from all impervious surface will satisfy* no-net-increase criteria for post development water quality.

    b. Area II drains west directly into an existing wetland. This area **will meet** the Commission's water quality requirements. Revised plans submitted September 4, 2020 reduces the drainage areas from this project directed toward the wetland by diverting more roof and driveway water away from the wetland and directly toward the regional pond. This will decrease the total phosphorus and total suspended solid rates discharged into the wetland accordingly.

3) Area II pre- vs post-development Total Suspended Solids (TSS) and Total Phosphorous (TP) loads were modeled using MPCA MIDS. Results are shown in Table 2.

Table 2 Stormwater Summary area II drainage directly to on-site wetland.

Condition	Area (acres)	TP load (lbs/year)	TSS load (lbs/year)	Infiltration (acre feet)	Annual volume (acre-feet) (1)
Pre-development (baseline)	0.97	0.81	147	N/A	0.99
Post-development without BMPs	0.73	0.68	124	N/A	0.84
Post-development with BMPs	N/A	N/A	N/A	N/A	N/A
Net Change	**-0.24**	**-0.13**	**-23**	**N/A**	**-0.15**

(1) Based on MIDS analysis

Rule E - Erosion and Sediment Controls

1) Erosion and sediment control will **meet** the Commission's requirements per Rule E.

Recommendation: Approval.

On Behalf of Barr Engineering
Advisor to the Commission

Surface Water Solutions LLC

September 9, 2020
Date

Attachments

Figure 1 Location Map
Figure 2 2018 Aerial Photograph
Figure 3 Grading and Drainage Plan

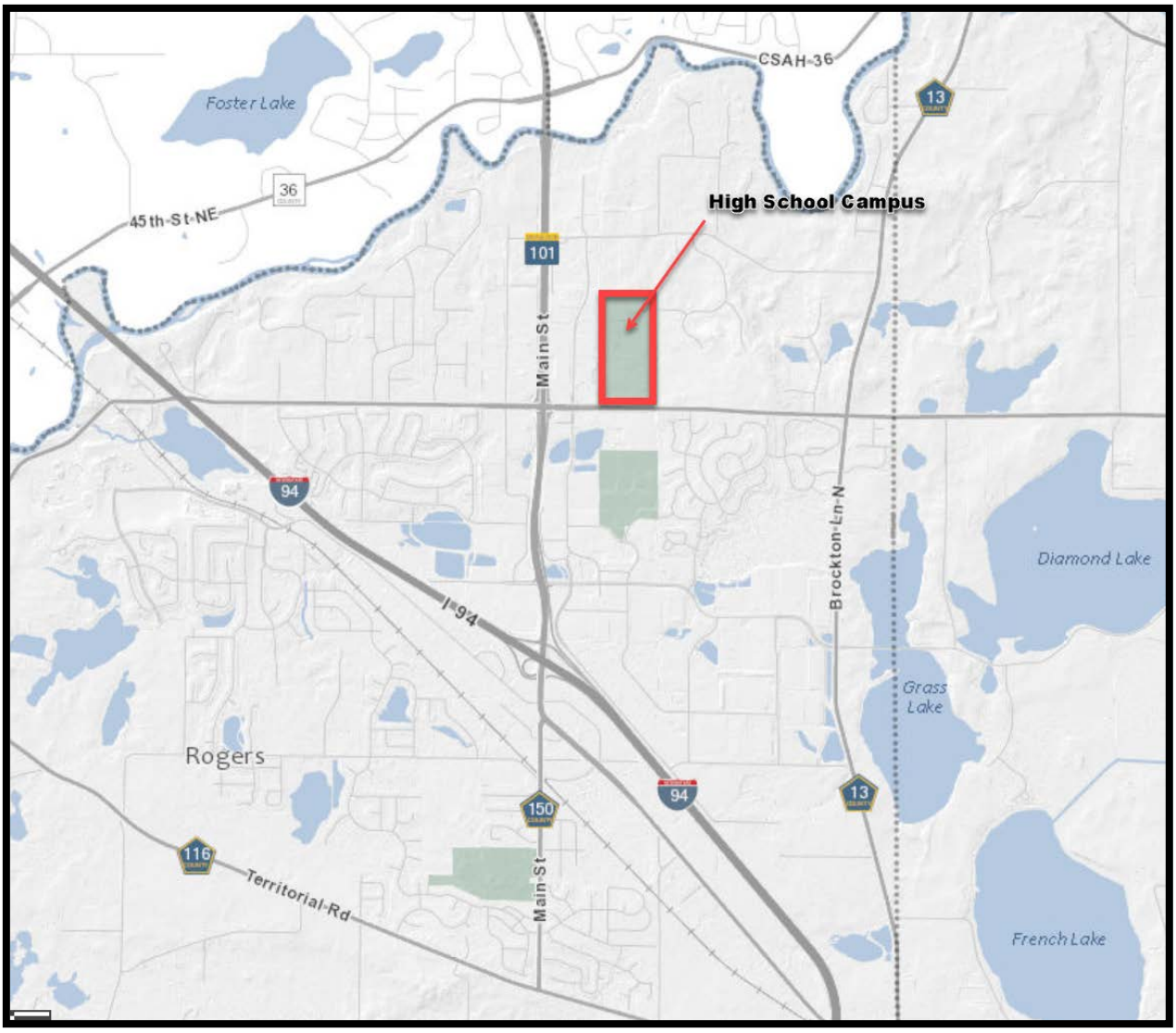


Figure 1 Location Map

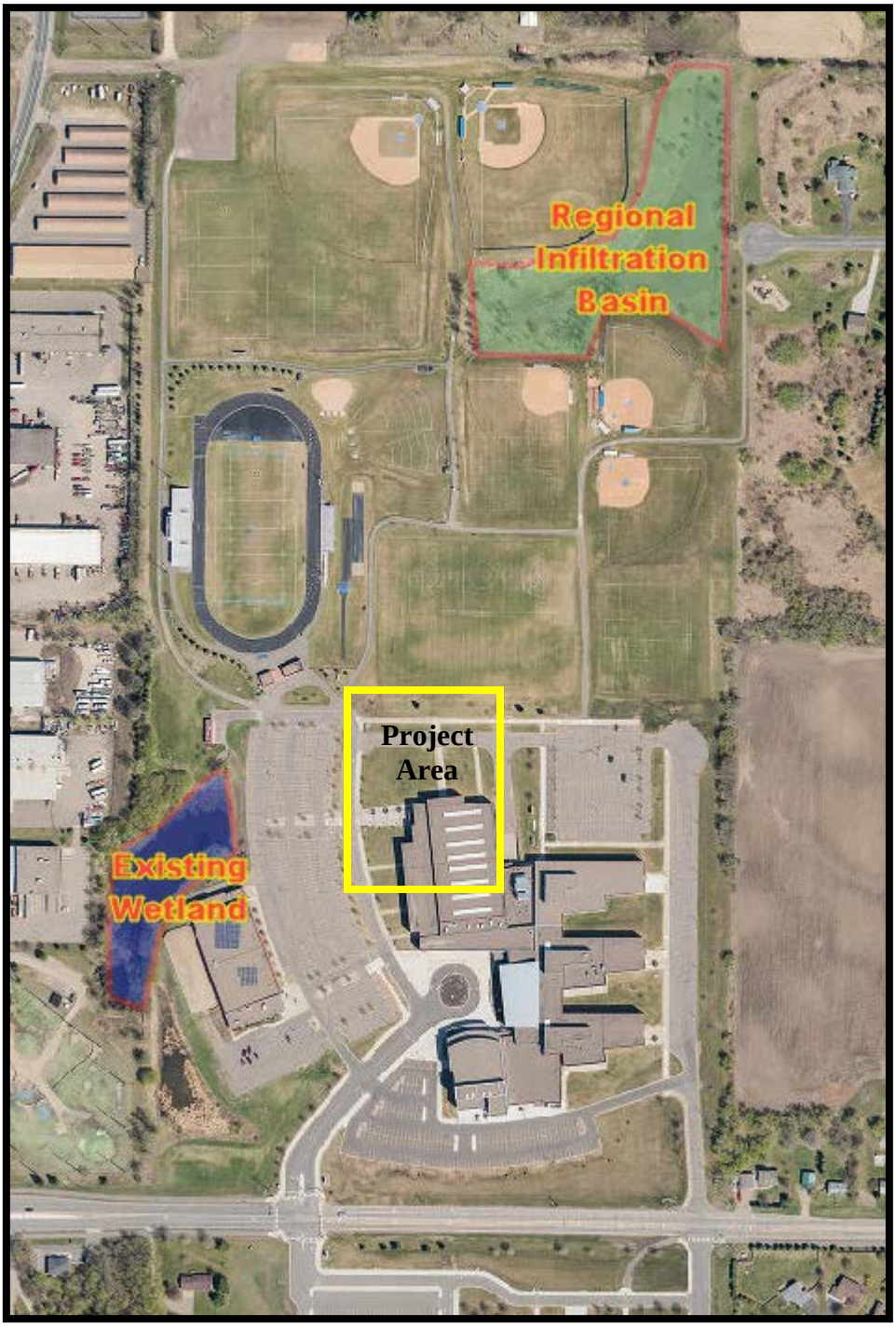


Figure 2 2018 Aerial Photo

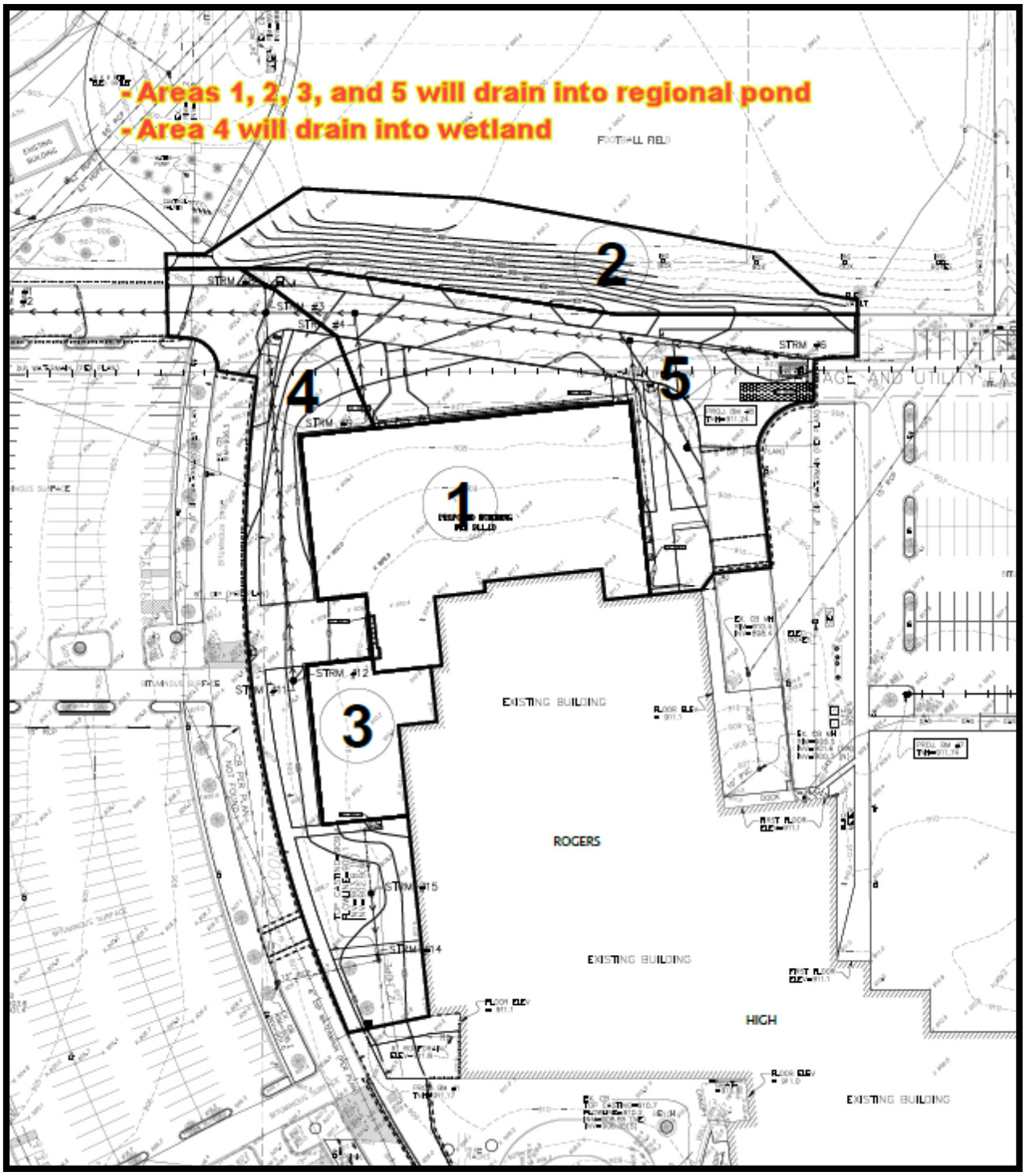


Figure 3 Grading and Drainage Plan

elm creek
Watershed Management Commission

ADMINISTRATIVE OFFICE
3235 Fernbrook Lane
Plymouth, MN 55447
PH: 763.553.1144
email: judie@jass.biz
www.elmcreekwatershed.org

TECHNICAL OFFICE
Barr Engineering
4300 Market Point Drive, Suite 200
Minneapolis, MN 55435
PH: 612.834.1060
Email: jHerbert@barr.com

Perl Gardens
Plymouth, Project #2020-028

Project Overview: This is two parcels, totaling 9.56 acres, located in the northwest corner of County Road 101 and Medina Road in Plymouth. Based on the Elm Creek Watershed jurisdictional boundaries, the site straddles the boundary between the Elm Creek Watershed and the Bassett Creek Watershed. The northerly 7.06-acre parcel is within the Elm Creek watershed and the southerly 2.46-acre parcel is within the Bassett Creek Watershed. The project would develop 43 single family twin homes creating 4.56 acres of new impervious area.

This project will trigger the Commission's Appendix C Rules and Standards as indicated below.

X	Rule D	Stormwater Management
X	Rule E	Erosion and Sediment Control
	Rule F	Floodplain Alterations
	Rule G	Wetland Alteration
	Rule H	Bridge and Culvert Crossings
	Rule I	Buffer Strips

Applicant: Rachel Development, Attention David Stradtman, 4180 Napier Court NE, St. Michael, MN 55376. Phone: 763.424.1525. Email: dstradtman@racheldevelopment.com

Agent: Carlson McCain, Inc, Attention Joseph Radach, 15650 36th Avenue N., Suite 110, Plymouth, MN 55446. Phone: 763.489.7912. Email: jradach@carlsonmccain.com

Exhibits:

1) A complete ECWMC application received August 17, 2020.
    a. ECWMC Request for Review and Approval dated July 14, 2020
    b. City of Plymouth authorization for review dated August 7, 2020
    c. Project review fee, $1,050 for 9.52 acres residential site development project, dated July 11, 2020
    d. Site plan design submittal via flash drive on August 17, 2020
2) Pearl Gardens Sanitary Sewer, Water Main, Storm Sewer and Street Construction Plans by Carlson McCain Inc. dated July 14, 2020 with last revision date of September 4, 2020.
    a. Sheet 1 of 19, Cover Sheet
    b. Sheet 2 of 19, Sanitary Sewer Index
    c. Sheet 3 of 19, Storm Sewer and Water Main Index
    d. Sheets 4 and 5 of 19 Sanitary Sewer Plans
    e. Sheets 6 and 7 of 19, Storm Serer Plans
    f. Sheet 8 of 19, Drain Tile Exhibit
    g. Sheets 9 and 10 of 19 Street Construction
    h. Sheet 11 of 19, Grading Plan

i. Sheets 12 and 13 of 19, SWPPP
j. Sheet 14 to 19 of 19, Details
k. Sheets T1 to T9, Turn Lane Plans
l. Sheets L1 and L2, Preliminary Landscape Plans
m. Sheets TP1 and TP2, Tree Preservation Plan

3) Perl Gardens Stormwater Management Plan by Carlson McCain Inc. dated April 1, 2020 with last revision date of September 4, 2020. Including Existing and Proposed conditions, MIDS model and storm sewer drainage maps, HydroCAD existing and proposed models, storm sewer calculations, MIDS model and BioClean SciClone report, Existing Pond Record Plans (Orchards of Plymouth), and Braun Intertec soils information.

Findings

General

1) A complete application was received August 17, 2020. The initial decision period deadline per MN Statute 15.99 is October 16, 2020.
2) The existing land use appears to be a landscaping operation with extensive disturbance throughout the properties.
3) The proposed land use will consist of 43 townhomes and associated infrastructure.
4) The development will create 4.56 acres of new impervious area.
5) The legal and physical watershed boundaries are somewhat conflicting for this area.
    a. On the Hennepin County property maps and Elm Creek Watershed maps, the north 7.06-acre parcel is shown in the Elm Creek Watershed and the south 2.46 acres in the Bassett Creek Watershed. These boundaries appear to be the legal boundary of the watersheds.
    b. On the City of Plymouth and Bassett Creek Watershed maps, both parcels are shown in the Elm Creek Watershed boundary. These boundaries appear to be the physical (hydrologic) boundaries of the watersheds.
6) Because this site is predominately in the ECWMC jurisdiction, and because approximately 95% of the site is proposed to drain into the Elm Creek watershed basin, the Bassett Creek WMC agreed to waive their review on the project and requested the review be completed by the ECWMC for compliance to that watershed's rules.
7) This property drains to the west and northwest approximately one mile before entering Elm Creek near the Hwy. 55 railroad viaduct.
8) Water from the proposed development will run northwest into an existing pond/wetland area in the Orchards of Plymouth development before flowing towards Elm Creek.
9) There are no Elm Creek Watershed jurisdictional floodplains, or steam crossing within this site area.
10) There are no wetlands on this parcel or adjacent properties that affect the Commission's wetland alterations or buffer strip rules.

Rule D - Stormwater Management

1) Stormwater will be managed by a biofiltration basin along CR 101. This basin will outlet to the northwest into an existing pond/wetland area in the Orchards of Plymouth development. This basin will receive approximately 95% of the water from this project.
2) The City of Plymouth will take on the responsibility for the operation and maintenance of stormwater facilities in this development.
3) Soil borings confirm high-clay content soils unsuitable for infiltration. Biofiltration of the abstraction volume is acceptable in lieu of infiltration.
4) The existing pond in the Orchard Gardens subdivision west of this site was modeled to determine the effects of routing the water from Perl Gardens to it. Modeling results determined the 100-year elevation in the Orchard Garden pond to be the same before and after the Perl Gardens development. HWL = 1000.6

Water Quality Controls

1) Plans **meet** the Commission's requirements for water quality controls.
2) The biofilter basin will be the primary best management practice for controlling suspended solids and phosphorus on this site.
3) Post-development total suspended solids (TSS) and total phosphorous (TP) loads will be less than pre-development loads.
    a. Post-development loads were modeled with the MPCA MIDS calculator.
4) Table 1 summarizes TP and TSS from this site before and after development.

Abstraction controls

1) Plans **meet** the Commission's requirements for abstraction.
2) New impervious areas will be 4.56 acres requiring 18,208 cubic feet (0.418-acre feet) of abstraction.
3) Soils are unsuitable for infiltration. Biofiltration for abstraction is allowed per Rule D.
4) The biofiltration basin will have the capacity to hold 36,416 cubic feet (0.84-acre feet) of abstraction volume prior to discharge through the primary outlet pipe. This exceeds the Commission requirements.
    a. Biofilter basin soil media is identified as 85 % sand and 15% MnDOT Grade 2 compost (MPCA Mix B).
    b. The drawdown time in this filter basin will be 24 hours.
5) Pre-treatment of sediment and skimming of floatables will be provided by two proprietary hydrodynamic separator structure called a SciClone. These will be in the storm sewer manholes upstream of the two inlets to the sand filter basin.
6) Table 1 summarizes filtration volumes provided for abstraction controls in the sand filter basin for this site.

Table 1 Stormwater Summary

Condition (9.5 acres)	TP load (lbs/year)	TSS load (lbs/year)	Filtration (cubic feet) (1)	Annual volume (acre-feet)
Pre-development (baseline)	4.9	885	N/A	5.97
Post-development without BMPs	10.3	1,865	18,208	12.53
Post-development with BMPs	4.0	213	36,416	9.92
Net Change	**-0.9**	**-672**	**+18,208**	**+3.95**

(1) 4.56 acres new impervious

Rate Controls

1) Plans **meet** the Commission's requirements for rate control.
2) Two main discharge scenarios were evaluated to ensure proposed peak rates were less than or equal to existing rates.
    a. Pre- and post-development drainage to the west into the Elm Creek Watershed
    b. Pre- and post-development drainage to the south into the Bassett Creek Watershed
3) Table 2 summarizes the total peak flows leaving the site before and after development.

Table 2 Rate Control Summary

Discharge Offsite Drainage Areas	Area (Acres)	Condition	2-year (cfs)	10-year (cfs)	100-year (cfs)
West	5.98	Existing	9.8	17.6	34.7
Elm Creek Watershed	9.44	Proposed	2.5	12.4	16.0
	+3.46	**Change**	**-7.3**	**-5.2**	**-18.7**
South	3.70	Existing	6.4	11.5	22.6
Bassett Creek Watershed	0.25	Proposed	0.5	0.9	2.0
	-3.45	**Change**	**-5.9**	**-10.6**	**-20.6**

Rule E - Erosion and Sediment Control

1) Plans **meet** the Commission's requirements.

Recommendation to the Elm Creek Commissioners

Approval.

On Behalf of Barr Engineering
Advisor to the Commission

Surface Water Solutions LLC — September 9, 2020
Date

Attachments

Figure 1	Location Map
Figure 2	Watershed Boundary Map
Figure 3	Existing Drainage Pattern Map
Figure 4	Proposed Drainage Pattern Map
Figure 5	2018 Aerial Photograph
Figure 6	Grading and Drainage Plan

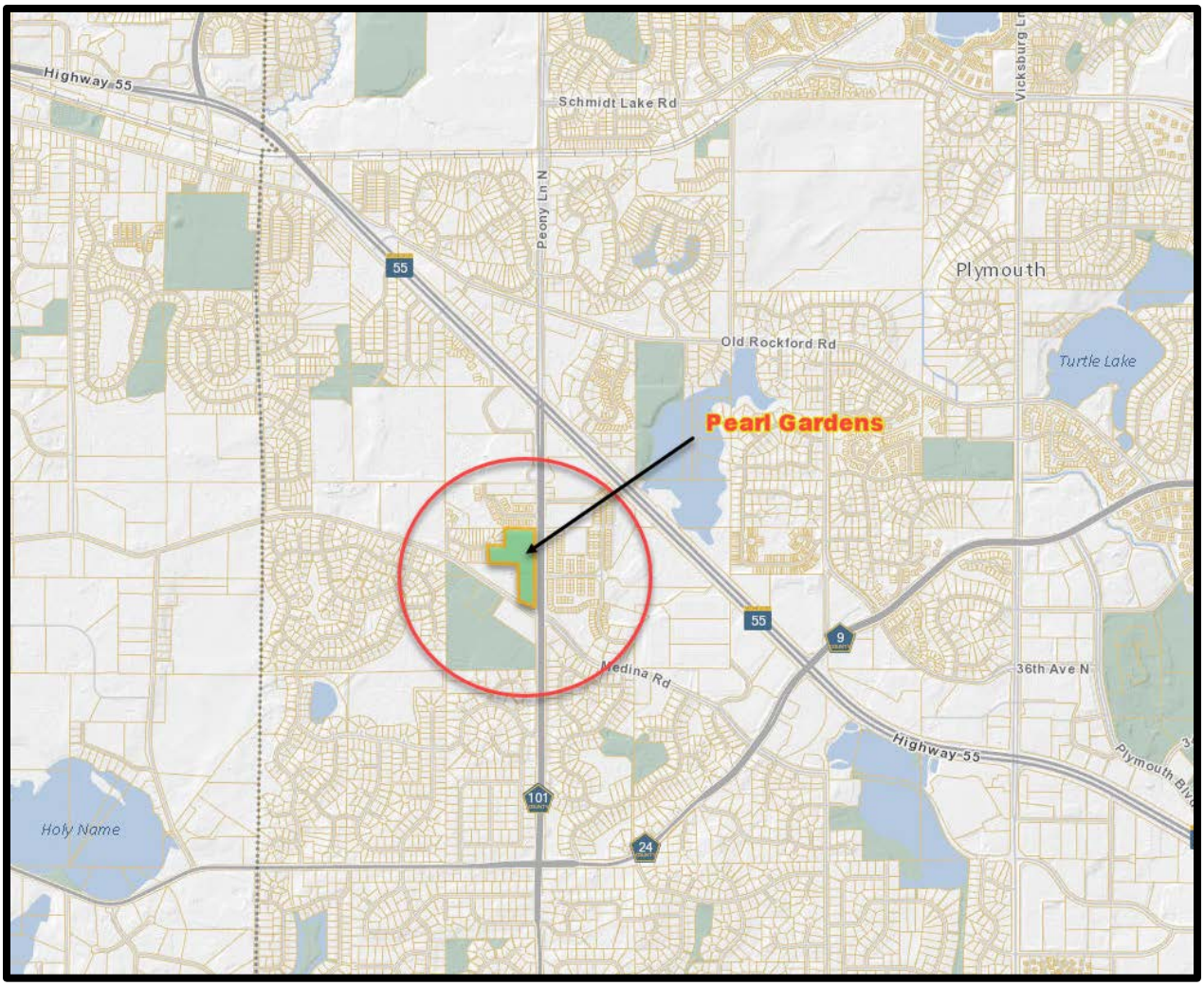


Figure 1 Location Map

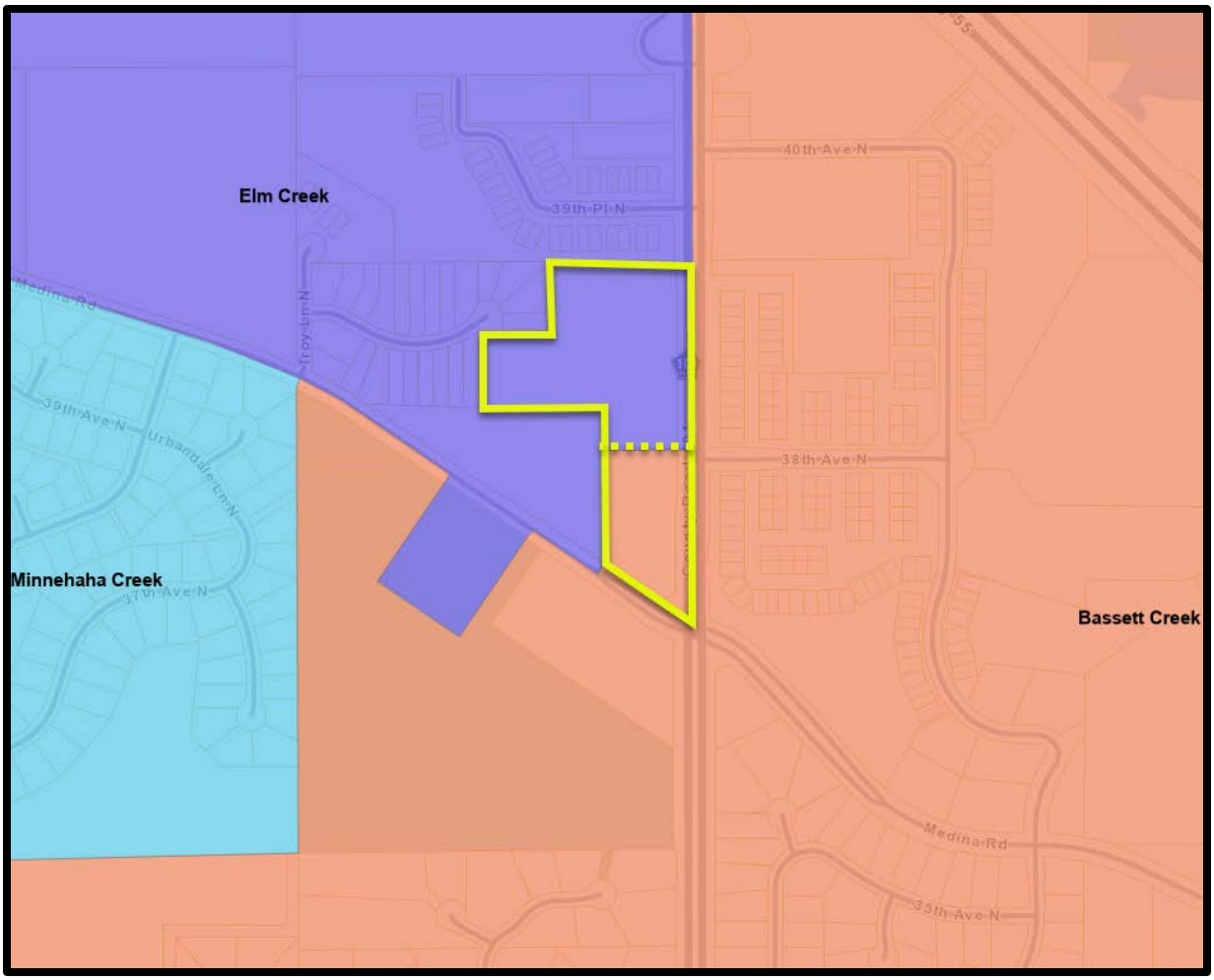


Figure 2 Watershed Legal Boundary Map

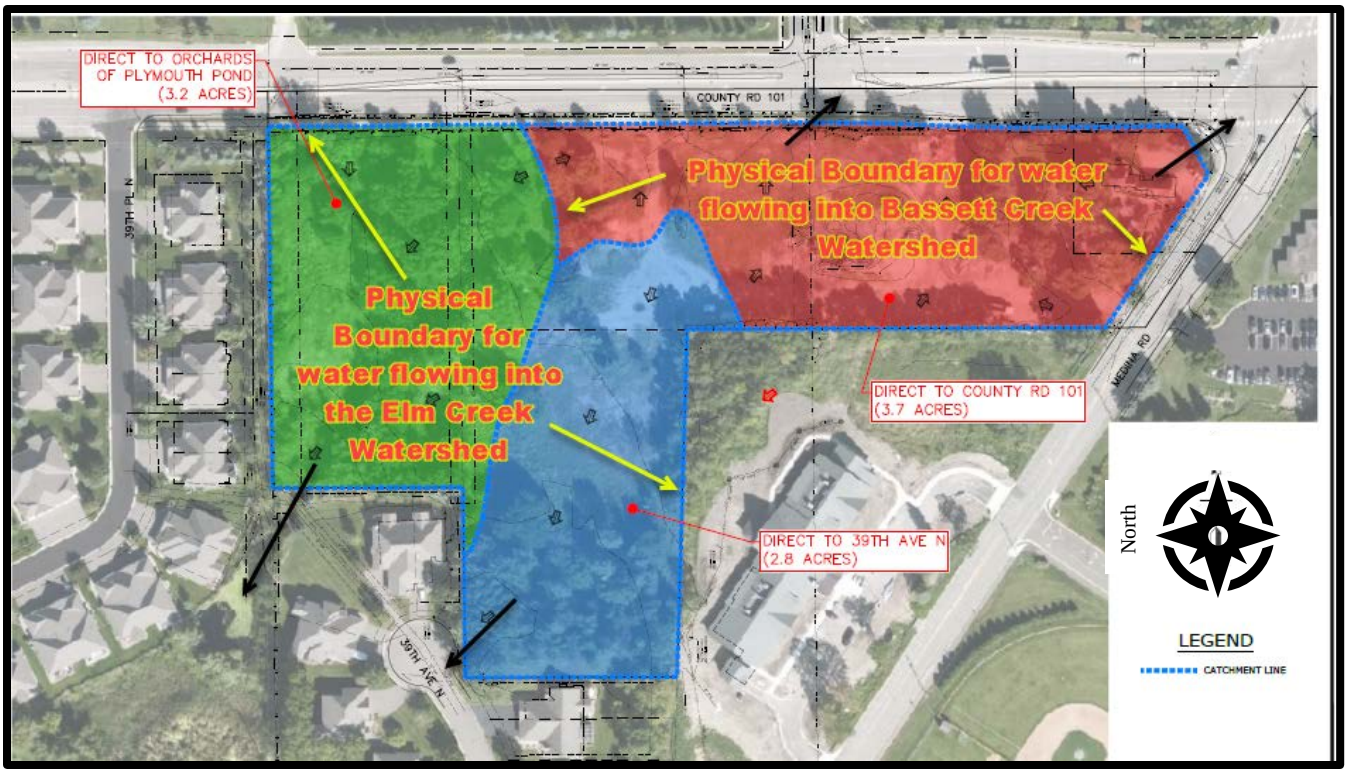


Figure 3 Existing drainage patterns

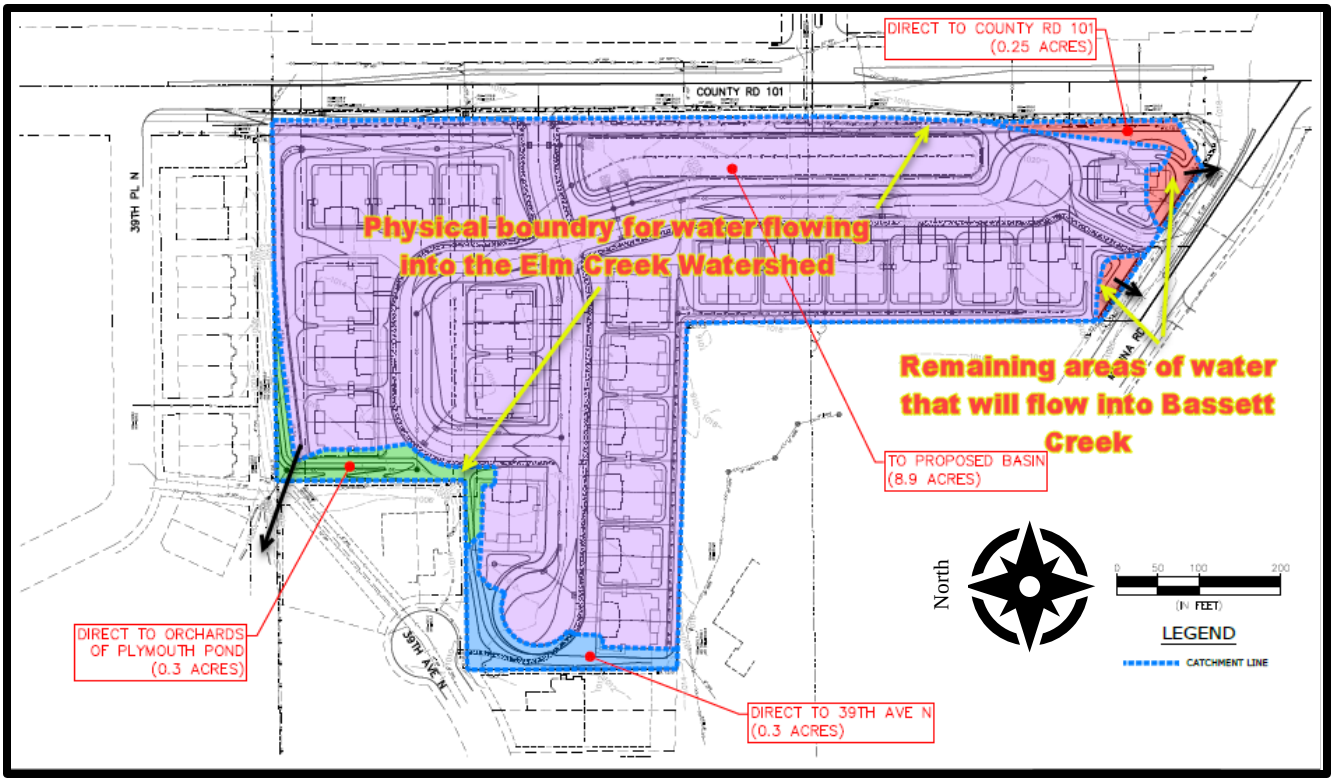


Figure 4 Proposed drainage pattern

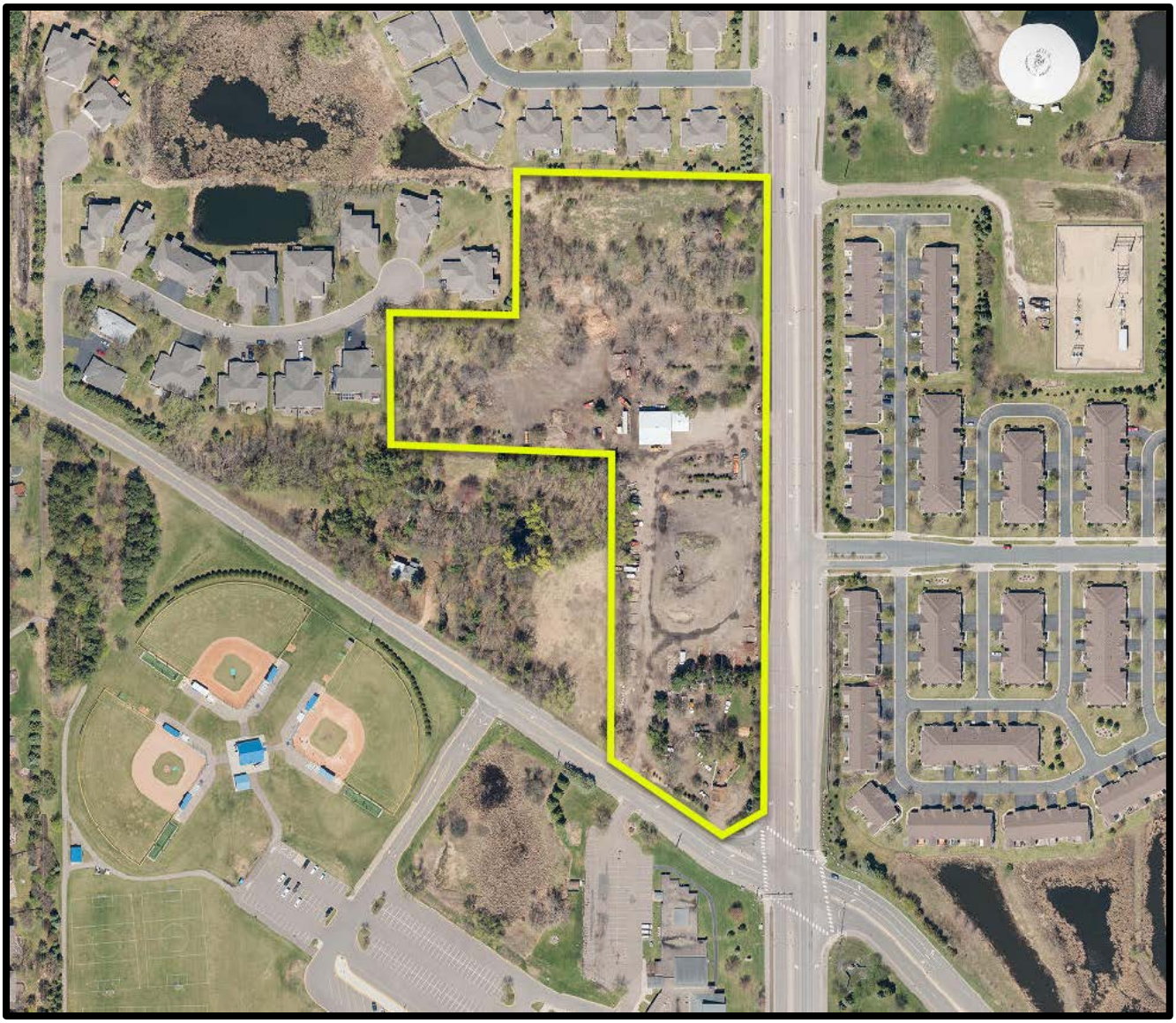


Figure 5 2018 Aerial Photograph

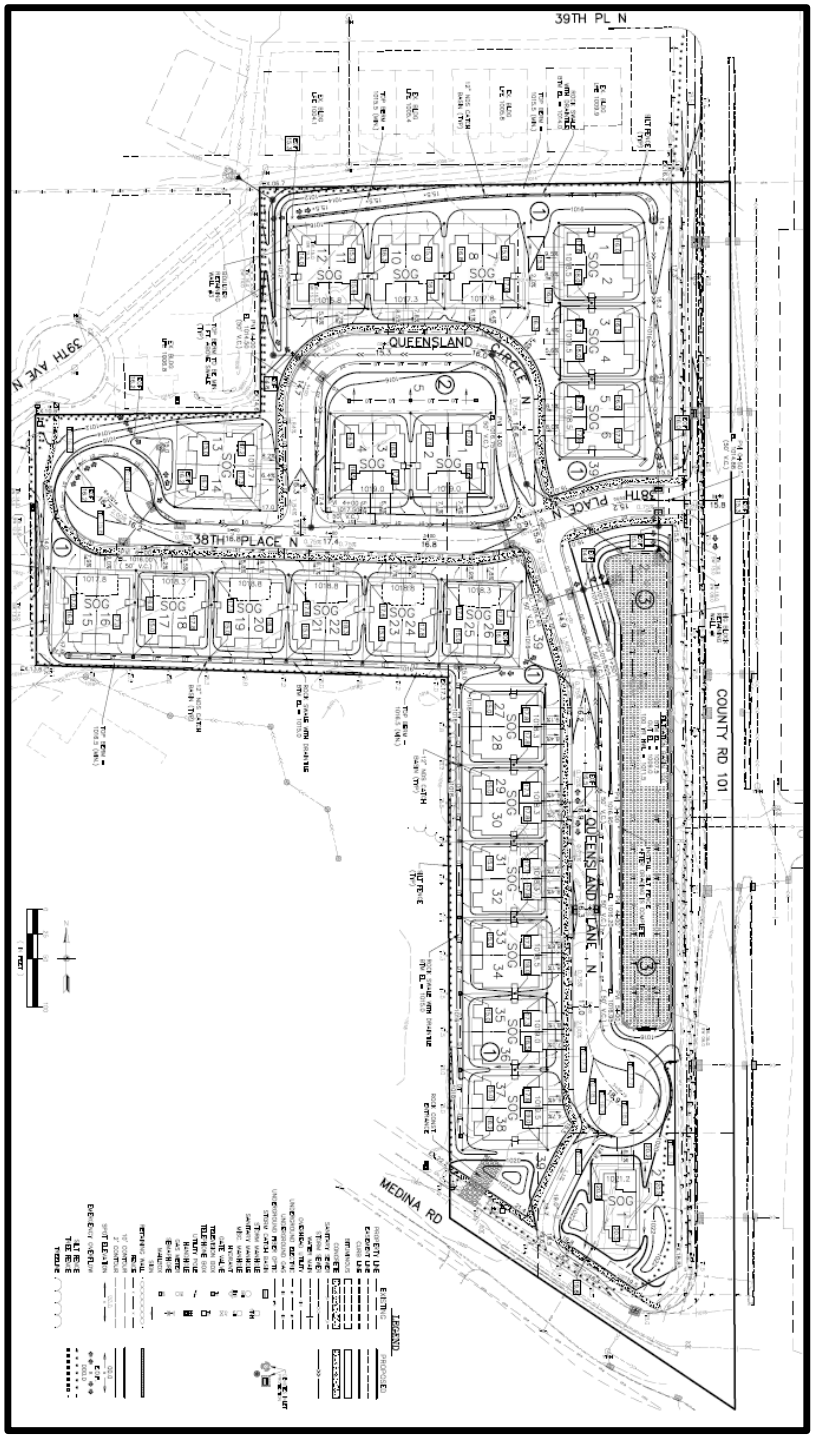


Figure 6 Grading and Drainage Plan

elm creek
Watershed Management Commission

ADMINISTRATIVE OFFICE
3235 Fernbrook Lane
Plymouth, MN 55447
PH: 763.553.1144
FAX: 763.553.9326
Email: judie@jass.biz

TECHNICAL OFFICE
Barr Engineering Co.
4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
PH: 503-957-7710
Email: jherbert@barr.com

Sundance Greens 5th Addition

Dayton, Project #2020-029

Project Overview: This project is part of a larger residential development that was reviewed and approved as the Sundance Greens Development (Project #2018-005). The full development covers 310 acres west of County Road 121 (Fernbrook Lane N.) in and around the Sundance Green Golf Course. The Sundance Greens site plans consist of 645 new single-family homes with a 100-unit senior housing facility. This phase will grade 75 acres for 212 lots. This review will limit its discussion to verification that the 5th Addition plan set is consistent with the plans approved by the Commission for project 2018-005.

This project will trigger the Commission's Appendix C Rules and Standards as indicated below.

X	Rule D	Stormwater Management (compliance to 2018-005)
X	Rule E	Erosion and Sediment Control
X	Rule F	Floodplain Alterations (compliance to 2018-005)
X	Rule G	Wetland Alteration (compliance to 2018-005)
	Rule H	Bridge and Culvert Crossings
X	Rule I	Buffer Strips (compliance to 2018-005)

Applicant: Sundance Development, LLC, Attention Tom Dehn, 6781 Highway 10, Ramsey, MN 55303. Phone:612-328-2215. Email: tom.dehn@powerlodge.com

Agent: Campion Engineering Services, Inc. Attention Marty Campion, 1800 Pioneer Creek Center, Maple Plain, MN 55359. Phone: 763-479-5172. Email mcampion@campioneng.com

Exhibits:

1) ECWMC Request for Plan Review and Approval and associated fees received August 31,2020.
2) Grading Plans for Sundance Greens Fifth Addition by Campion Engineering signed and dated August 12, 2020.
    a. Sheet 1 of 10, Cover Sheet
    b. Sheet 2 of 10, Existing Conditions
    c. Sheets 3 to 7 of 10 Grading Plans
    d. Sheets 8 to 10 of 10, Storm Water Pollution Prevention Plan, Details and SWPPP Notes.
3) Sundance Greens Stormwater Management Plan updates July 22 and August 26, 2020.
4) ECWMC 2018-005 project file, Sundance Greens.

Findings:

General

1) A complete application was received on August 31, 2020. The initial 60-day decision period ends on October 30, 2020.
2) Project 2018-005 was approved by the ECWMC per findings and recommendations dated April 10, 2019. The approval covered the overall regional stormwater management plans, wetland and buffer plans, and the Sundance Greens West and 2nd Addition grading and erosion control plans.
    a. Per Sundance Greens (2018-005) findings, future phasing of the grading plans must be submitted separately for the Commission's review for Rule E and consistency with other approvals from the ECWMC.
    b. Sundance Greens 4th Addition (2020-019) was approved by the Commission on June 24, 2020.
3) The applicant is requesting, and the Commission has granted authority to administratively approve this portion of the development if it is consistent with the previously approved plan (Project #2018-005) and it meets the Commission's erosion control standard.

Rule D – Stormwater Management

General

1) Stormwater management **does not meet** the Commission's requirements.
2) Grading, drainage, and stormwater management have been modified for flows into ponds 6P and 10P on the 2020 site plans for the 5th Addition.
3) Rate controls, water quantity, quality and abstraction are consistent with project approvals from the 2018-005 site plans.
4) REQUIRED ACTION: Highwater elevation for pond 6P is 924.5. Lowest most floor for homes adjacent to the pond must be 926.5 or higher. Lot 6, Block 26 lowest floor elevation is 926.0. This does not comply with the Commission's requirement.

Rate Control

1) Rate controls **meet** the Commission's requirements.
2) Rate control discharges for the changes made to ponds 6P and 10P increase slightly from the 2018-005 approvals. The increases will remain well below the pre-existing conditions per Table 1 below.

Water Quality Controls

1) Water quality controls **meet** the Commission's requirement.
2) Staff analysis to the changes to pond 6P and pond 10P, both which flow into biofiltration pond 10.1P, show no increase in total phosphorus or suspended solids flowing out of pond 10.1. The applicant's analysis shows an increase of 1.0 pounds per year in total phosphorus and 58 pounds per year in total suspended solids. Both analyses are well below pre-existing loads and within an acceptable margin of error. Table 2 summarizes the changes in water quality loads from the site changes proposed for the 5th Addition.

Abstraction

1) Abstraction Controls **meet** the Commission's requirement.
2) Changes to ponds 6 and 10 do not affect the abstraction controls approved for project 2018-005 on this site. Both ponds drained into biofiltration pond 10.1P which maintains the original abstraction volume for the drainage and impervious areas flowing to it. Table 2 summarizes the abstraction volumes for biofiltration pond 10.1P

Table 1 Rate Control Summary Ponds 6, 10, and East Discharge Point.

Discharge	Acreage	Condition	2-yr (cfs)	10-yr (cfs)	100-yr (cfs)
From Pond 6	7.6	2018-005 Approved Post-Development	12.1	20.1	49.6
	15.3	2020 Proposes Post Development	7.7	8.6	9.9
	+7.7	**Change**	**-4.4**	**-12.2**	**-39.7**
From Pond 10	49.4	2018-005 Approved Post-Development	34.7	86.1	194.0
	41.7	2020 Proposed Post Development	38.6	92.5	203.3
	-7.7	**Change**	**+3.9**	**+6.4**	**-9.3**
East Discharge	**74.9**	Pre-Development	29.3	51.4	215.1
	72.9	2018-005 Approved Post-Development	16.4	21.0	34.4
	72.9	2020 Proposed Post Development	16.9	21.1	33.2
	0	**Change**	**-12.4**	**-30.3**	**-181.9**

Table 2 Stormwater Summary Biofiltration Pond 10.1P.

CONDITION	ACREAGE	TP LOAD (LBS/YR)	TSS LOAD (LBS/YR)	ABSTRATION (CU. FT.)
Existing Condition	72.3	46.8	9282	N/A
2018-005 Approved Pre-development	72.9	14.4	253	47,567
2020 Proposed Post-development without BMPs	72.9	19.1	1456	N/A
2020-Proposed Post-development with BMPs	72.9	15.3	291	47,567
Net Change Pre-existing	**+0.6**	**-31.5**	**-8,991**	**0**
Net Change 2018 approved vs 2020 proposed	**0**	**+0.9**	**+38**	**0**

Rule E – Erosion and Sediment Control

1) The erosion control plans **do not meets** the Commission standard.
2) REQUIRED ACTION: Erosion and sediment controls must comply to the Commission's standards.

Rule F – Floodplain Alterations

1) Floodplain grading **meet** the Commission's requirements. It is consistent with project 2018-005 approvals.
2) Lot 6, Block 26 does not meet the Commission's lowest most floor requirements. See item

Rule G and I – Wetland Alteration and Buffer Strips

3) Wetland alterations and buffer strips **meet** the Commission's requirements. They are consistent with project 2018-005 approved plans.

Recommendation: None Currently. Erosion controls and lowest most floor on lot 6, block 26 must meet the Commission's requirements.

On Behalf of Barr Engineering
Advisor to the Commission

October 4, 2020
Date

James C. Kujawa
Surface Water Solutions LLC

Attachments

Figure 1 Location Map
Figure 2 2018 Aerial Photograph
Figure 3 2018-005 Overall Site and Drainage Plan
Figure 4 5th Addition Grading Plans

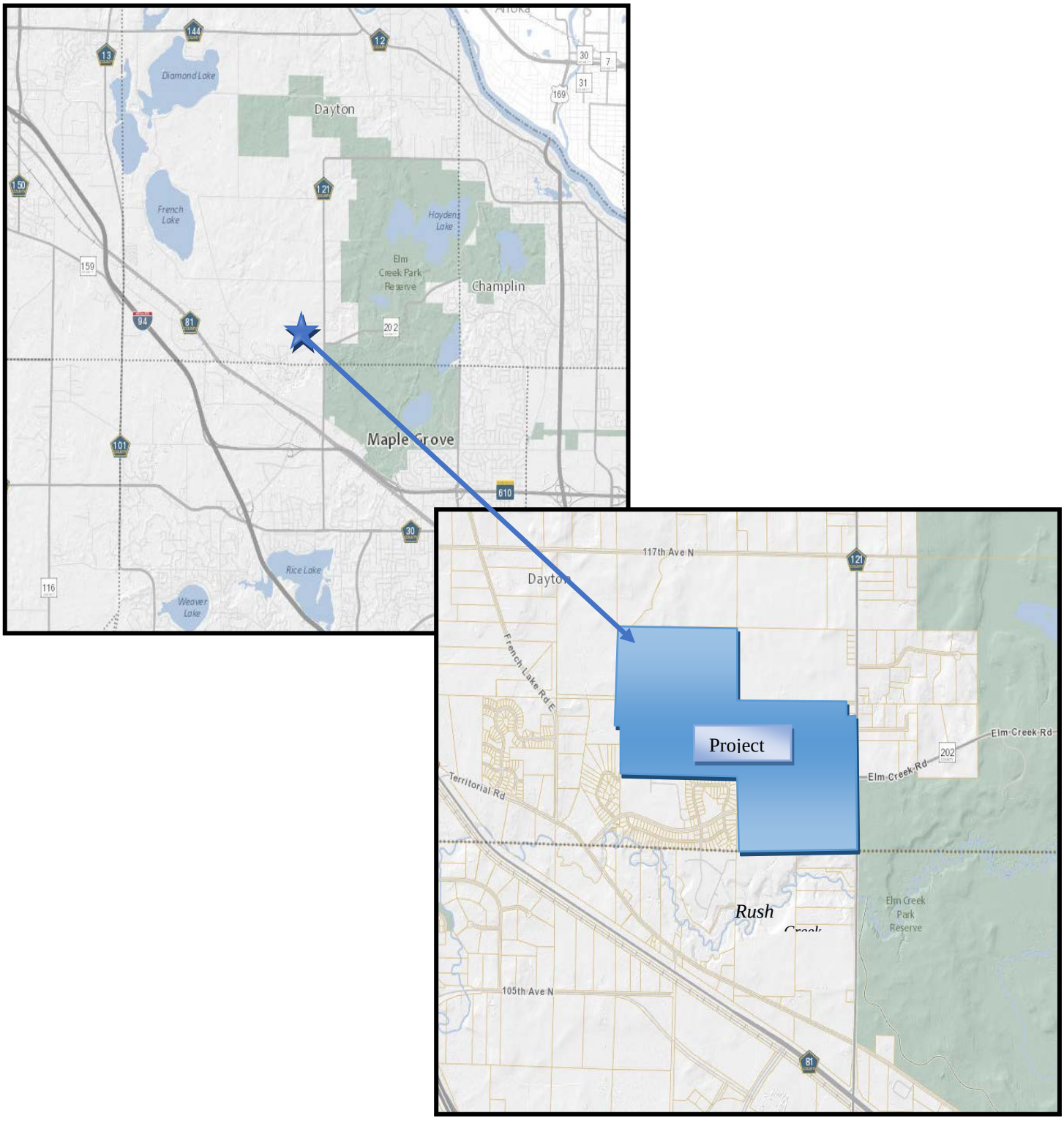


Figure 1 Location Maps

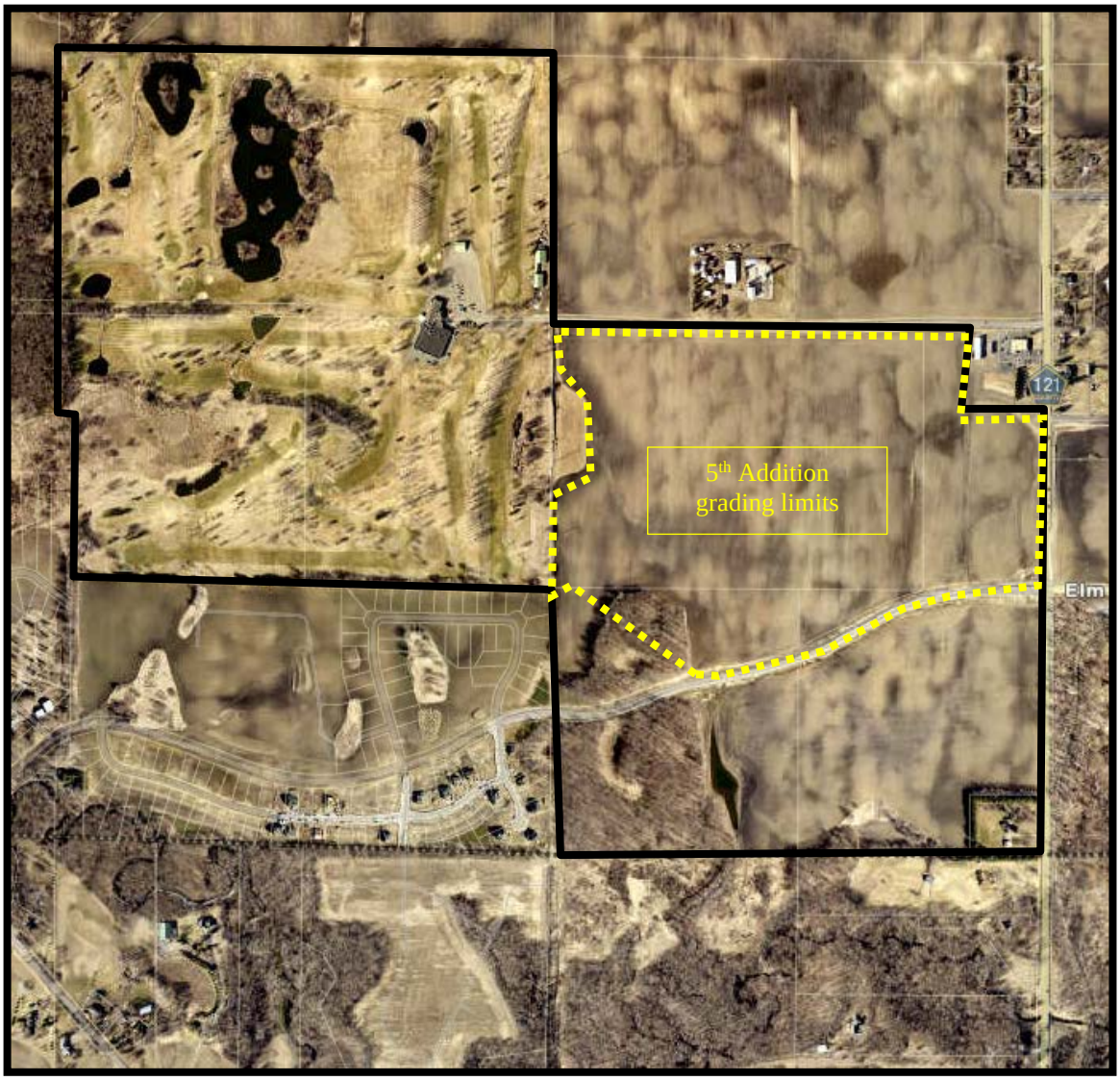


Figure 2 2018 Aerial Photograph

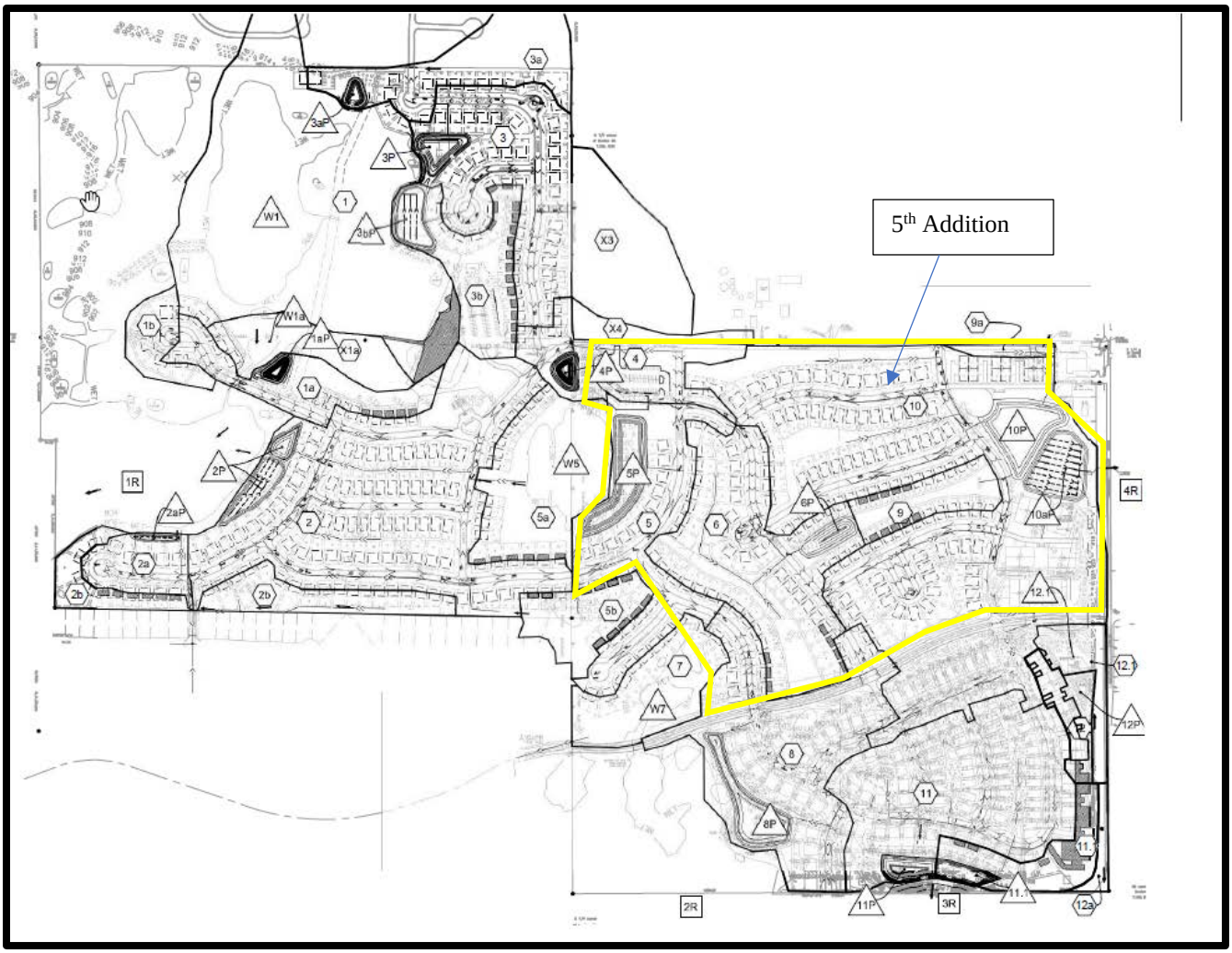


Figure 3 2018-005 Overall Site and Drainage Plan

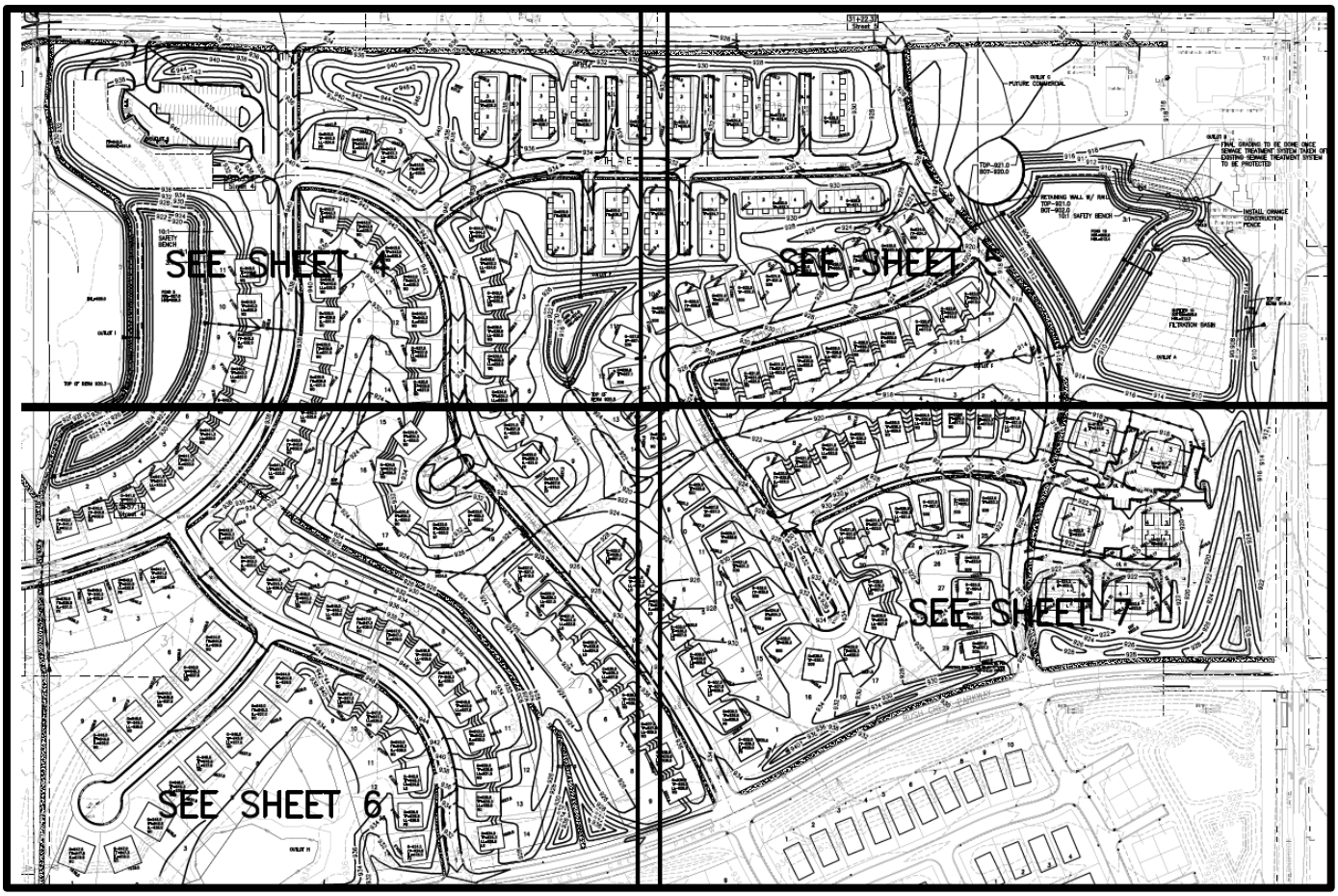


Figure 4 5th Addition Grading Plans

From:	James Kujawa on behalf of surfacewatersolutions@outlook.com
To:	Dusty Finke
Cc:	"Judie Anderson"; Joe J. Waln; Jim Herbert
Subject:	Elm Creek Watershed Management Commission comments, Chippewa Road Extension and Weston Woods EAW (2020-031)
Date:	Tuesday, October 6, 2020 2:36:00 PM

On behalf of the Elm Creek Watershed Management Commission (ECWMC) and Barr Engineering and, please accept the following comments on the Chippewa/Weston Woods EAW in Medina.

This review covers the EAW's general compliance to the ECWMC Stormwater Management Plan, Appendix C, Rules and Standards and various comments as they relate to the natural resources on this site.

1. Page 5, Table 3, Permits and Approvals Required. The ECWMC will require an application and approval on the site plans for these developments and improvements. We will require compliance to Rule D - Stormwater Management, Rule E – Erosion and Sediment Control, Rule f – Floodplain Alteration, Rule G – Wetland Alteration, Rule H - Bridge and Culvert Crossings, and Rule I - Buffer Strips. Table 3 only mentions stormwater management and erosion control approvals.
2. Pages 8 and 9 Section 10, Geology. This section makes reference to the 1989 MN Geological Survey. Hennepin County and the MN Geological Survey updated the Hennepin Geological Atlas in 2018. You can find a copy of said updates at https://conservancy.umn.edu/handle/11299/200919
3. Page 22, Wetland Buffers. The ECWMC requires buffer around all wetland and watercourses on site. Regardless of classification or MN RAM equivalent, the Commission requires a 25 foot average buffer width and a 10 foot minimum width. There are exceptions available for linear projects such as roadways. Please refer to Rule I in Appendix C of the Commission's Rules and Standards.
4. Page 30, Section 12. Fish, Wildlife, Plant Communities and Sensitive Ecological Resources (Rare Features). The Hennepin County Department of Environmental Services identifies three ecologically significant areas on these parcels. Please refer to the Hennepin County Interactive Map at https://gis.hennepin.us/naturalresources/map/default.aspx. Two of the areas appear to be preserved in the preliminary tree preservation and wetland plans. One area identified as 3.08 acres of Oak forest mesic subtype will be destroyed according to the preliminary layouts. We would request the applicants consider preservation of this Oak forest area.

Thank you for the opportunity to comment on this EAW. Please contact me if you have any questions on this information.

Sincerely
James C. Kujawa
Technical Advisor to the Elm Creek Watershed Management Commission.

James C. Kujawa
Surface Water Solutions LLC
6533 Neddersen Circle
Brooklyn Park, MN 55445-3206

952-456-4091
surfacewatersolutions@outlook.com