elm creek
Watershed Management Commission

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

July 5, 2023

Representatives ***and*** Members
Elm Creek Watershed Management
Commission Hennepin County, MN

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

A regular meeting of the Elm Creek Watershed Management Commission will be held on **Wednesday, July 12, 2023, at 11:30 a.m.** in the Plymouth Community Center, 14800 34th Avenue North, Plymouth MN.

The Technical Advisory Committee (TAC) will meet prior to the meeting, at 10:00 a.m.

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	Erik Megow	James Kujawa	Rebecca Carlson	Ed Matthiesen
	TAC Members	Karen Galles	Kris Guentzel	Kevin Ellis	Diane Spector
	City Clerks	Brian Vlach	BWSR	Met Council	MPCA
	Official Newspaper		DNR		

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AGENDA
Technical Advisory Committee
July 12, 2023 | 10:00 a.m.

1. Call to Order.
   a. Approve agenda.*
   b. Approve minutes of last meeting.*
2. 2023 CIP – presentation - Rogers Downtown Pond Project.
3. Project Review Fees.*
4. TMDL – Ten Year Review.*
5. CWF Grant Solicitation.*
   a. News Release.*
6. Other Business.
   a. Project Review 2023-01 Chankahda Trail Phase 2 Reconstruction.*
7. Next TAC meeting – _____.
8. Adjournment.

Z:\Elm Creek\TAC\2023\July 12 2023 agenda.docx

*in meeting packet
**available at meeting

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Technical Advisory Committee Meeting
Minutes
June 14, 2023

I. A meeting of the **Technical Advisory Committee (TAC)** of the Elm Creek Watershed Management Commission was called to order at 10:31 a.m., Wednesday, June 14, 2023, in the Plymouth Community Center, 14800 34th Avenue North, Plymouth, MN, by Chair Derek Asche.

Present: Kent Torve, Stantec, Corcoran; Nico Cantarero, Stantec, Dayton; Derek Asche, Maple Grove; Rebecca Haug, WSB, Medina; Ben Scharenbroich, Plymouth; Diane Spector and Erik Megow, Stantec; Kris Guentzel and Kevin Ellis, Hennepin County Environment and Energy (HCEE); and Judie Anderson, JASS.

Not represented: Champlin and Rogers

Also present: Ken Guenthner, Corcoran; Joshua Accola and Doug Baines, Dayton; and Owen Mischio, Plymouth.

II. Motion by Scharenbroich, second by Cantarero to approve the **Agenda** as presented**.** *Motion carried unanimously.*

III. Motion by Scharenbroich, second by Cantarero to approve the **Minutes** of the May 10, 2023, meeting. *Motion carried unanimously.*

IV. **2023 CIPS.** The preliminary CIP was considered by the Commissioners at their April meeting, after which it was circulated to the cities, who proposed revisions and requested one addition.

A. The City of Maple Grove has requested that one new project be added to the CIP for 2024: **Rush Creek Stabilization-Rush Hollow.** This is a proposed restoration of about 4,000 LF of Rush Creek between Orchid Lane and Fernbrook Lane, just upstream of the Elm Creek Park Reserve. Asche presented the project to the members and stated that the estimated cost of this project has been revised downward from $1,600,000 to $1,000,000, with the Commission's share being $250,000. Exhibit A* was included in the meeting packet and describes the project in more detail. Construction is anticipated in 2023-2024.

Motion by Scharenbroich, second by Cantarero to recommend to the Commission the addition of this project to the 2024 CIP at a project cost of $1,000,000. *Motion carried unanimously.*

B. Megow presented the **Downtown Rogers Pond Expansion and Reuse project** on behalf of the City of Rogers. Exhibit A* describes this project which has an estimated cost of $406,000, with the Commission's share being $101,500. Members expressed concern that the description did not address a number of issues, specifically rate and volume control and water quality "above and beyond" the Commission's requirements. Information was also requested regarding ownership and future maintenance of the facility, impacts to the wetland, and drought mitigation.

Motion by Scharenbroich second by Haug to request that the City of Rogers provide the missing information to the members at the July 12 TAC meeting, prior to a recommendation to the Commission.

V. 2022 Year-End Fund Balances.*

The 2022 Audit Report is being presented to the Commissioners at their meeting today. While there may be a few adjustments as the 2022 audit is finalized, the 2022 preliminary year-end balances for non-operating accounts are the following:

A. Restricted for Capital Projects. These are funds levied for specific capital projects. The Commission holds these funds until such time as the member cities have completed the work. They then request reimbursement for the costs incurred. Eight capital projects, levied in 2016 – 2021, remain outstanding. The total fund balance is $624,293, including 2022 administrative costs for the 2023 levy.

B. Cost Share Projects. The Commission operates two cost share projects, one for city projects and one for partnership projects on private property. City cost share projects are funded on a one-to-one basis through the capital levy and city cost share. Partnership projects are funded through the capital levy and do not require a match. Both categories are comprised of projects with an estimated cost of less than $100,000. There are two outstanding city cost share projects for which member cities have not yet requested reimbursement, and no outstanding partnership cost projects.

C. Closed Projects Account. The Commission's Closed Projects Account houses levy funds that exceed final project costs. In addition, on occasion a project is cancelled, and the levy funds are then transferred to this fund. These funds are intended to be used for other capital improvement projects, including the cost of undertaking feasibility studies to preliminarily scope a future project. These funds may also be used to limit future capital levies for new projects. The account balance at YE2022 equals $174,334.

D. Unassigned Funds Balances. The Commission has also in past years acted to segregate or assign some of its unrestricted reserves to be held for a specific purpose, for example to fund the 4th Generation Plan. These unassigned funds may continue to be set aside to be used for these purposes or the Commission may elect to unassign the funds and transfer them to Unrestricted Reserves.

From time to time the Commission has budgeted funds for projects or special studies and set that money aside in an Assigned for Projects and Studies Account. It has rarely been used, but in 2023 the Commission encumbered just under $10,000 to provide matching funds for the Watershed-Based Implementation Fund (WBIF) grant supporting the Rush Creek SWA and the North Fork Rush Creek remeandering study. The YE2022 balance is $181,817. $9,468 encumbered for the 2023 WBIF brings that total down to $172,349.

E. Unrestricted Reserve. The last category of funds is the Commission's Unrestricted Reserves, which is cash on hand that has not been designated for a particular use. This helps with monthly cash flow and is a "rainy day reserve" in the event something unusual occurs, or one of the member cities withdraws from the JPA and no longer is contributing its share of expected revenues. The newly adopted policy is to maintain a cash

Unrestricted reserve desirable balance calculation using 2022 year-end amounts.

Component	Operating Expenses	Operating Revenues
2022 Budget	$496,371	$472,371
Less project reviews	188,032	190,442
Net Amount	308,339	285,929
5/12ths of yearly expenses	$128,475	
50% of yearly revenues		$141,464
YE 2022 Unrestricted Balance	**$141,927**	**$141,927**

reserve equal to either 50% of annual operating revenues or five months of operating expenses. Using the 2022 year-end figures, that minimum reserve balance would be the greater of the amounts in the table above.

The nearly finalized year-end 2022 Unrestricted Balance of $141,927 is much less than the 2021 year-end balance of $279,332. A very significant factor in that drop is the increase in the liability for project review fees from $11,739 in 2021 to $78,161 in 2022. Those are expenses the Commission has already incurred but for which additional review fee has not yet been collected. That escrow balance will vary from year to year. (See the separate discussion regarding the project review fees found in item VII. below.)

VI. Opportunity Grant.* Included in the meeting packet is an email from Hennepin County announcing that applications for this year's round of Opportunity Grants are being accepted through July 20, 2023. Grant applications may be for up to $50,000, with no specific match requirement, however, greater weight is given to applications that leverage other funds. Also included in the packet is Staff's June 7, 2023, memo* recommending preparation of a grant application for the proposed **Dayton River Road Ravine Stabilization Project.** An Exhibit A* describing the project in more detail was included in the meeting packet.

Last fall the city of Dayton and Commission staff investigated a concern posed by residents of adjacent homes on Dayton River Road regarding ongoing erosion in a channel from a culvert under CSAH 12/Dayton River Road to the Mississippi River. Their concern was that this culvert was proposed to be modified as part of the ongoing CSAH 12 county road project, and that the modifications would exacerbate that erosion, with no improvement proposed by the County as part of that larger project. The estimated project cost is $75,000, and the Commission had previously approved an application from Dayton for $50,000 from Partnership Cost Funds.

City and Commission staff agreed that this was potentially the case and recommended that the city of Dayton apply for a Hennepin County Good Steward grant to fund stabilization, to be supplemented from the Commission's Partnership Cost Share Program for projects on private property. The City applied for the grant in November 2022, but it was not selected for funding.

Staff recommends preparing an Opportunity Grant application in the amount of $37,500, to be matched by $37,500 from the Partnership Cost Share Program. Much of the application text that was prepared for the Good Steward grant can be reused in this application. If preparation of the application is approved, Staff will provide a draft for review at the July 13, 2023, Commission meeting prior to submittal by the July 20 deadline.

Motion by Scharenbroich, second by Haug to recommend to the Commission that Staff prepare the application as described above. *Motion carried unanimously.*

VII. Project Review Fees.*

Technical and administrative staff have spent considerable time over the past few months reviewing the adequacy of the existing project review fee structure at recovering the costs of performing those reviews. The review fees will not recover all the costs of operating a project review program; there will always be costs such as working with developers on projects that never come to fruition or doing non-fee project review-like work such as reviewing environmental review documents (i.e., EAWs). However, both engineering and administrative staff do track their time and expenses for numbered projects, so we can review those costs against the fees that were charged for them. Asche suggested that admin staff would not need to charge against individual projects, just overall project reviews.

For a number of years, the Commission charged a review fee per project that was a flat fee based on the size of the project. It was assumed that larger projects with more residential units would be more complicated and require more effort to review than smaller projects. This was true to an extent. There were always large projects that were very straightforward and required a basic level of effort to review, and the actual cost of performing that review was less than the review fee. There were also smaller projects that were more complicated or where the applicant went through several iterations of plans that had to be reviewed each time.

Those actual costs exceeded the review fees.

Setting the review fee structure was an attempt to balance those projects so the bottom-line net effect was close to zero. In practice, that was very hard to do. In 2021, the Commission adopted a project review fee policy that required the applicant to pay the actual cost of performing the review, so that those that were done more efficiently were no longer subsidizing the more complicated projects.

The current review fee structure (see attached) consists of four components: a flat amount based on which rules are being triggered; a 10% contingency on that total; a 10% non-refundable administrative fee; and a 15% nonrefundable technical fee. The flat fee plus contingency are, in essence, an escrow. If the actual cost of reviewing the project is less than that amount, the applicant is refunded the balance. If the cost exceeds that amount, the applicant is invoiced the balance, which must be paid prior to final approval and release of the project review. The non-refundable fees are intended to recover the cost prior to an application being submitted and accepted, and any costs that might come up after, such as a file closeout, or review of documents for issues that may come up later.

The new fee structure was ramped up in 2021, so 2021 and 2022 are the first full years of experience. The following are staff's observations:

A. Administering the fee structure is very staff intensive. The costs and fees for each individual project review are tracked monthly, as are outstanding invoices for increases in the review escrow. Administrative costs associated with an active project are tracked and are billed to that project, but all other tasks are not. In addition, there are administrative costs for inquiries and correspondence with applicants before and after the project review that are not recorded against a specific project but are tracked as a category. These generalized costs are what the Non-Refundable Administrative Fee is supposed to recoup. Table 1 shows the nonrefundable administrative fees collected in 2021 and 2022 compared to the cost of administering the project review program. The fees collected did not fully fund the program. *This suggests that the current admin fees should be adjusted.*

Table 1. Non-billable administrative review fees in 2021 and 2022.

	2021	2022
Non-refundable Admin Fee collected	$13,800	$13,150
Total non-billed admin costs	$15,076	$16,918
Unrecovered admin costs	**-$1,276**	**-$3,768**

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B. In 2021 and 2022 *more than half* of the project reviews (32 of 56 in 2021 and 25 of 49 in 2022) required additional fees to be collected. These additional fees were an estimated $83,600 compared to an estimated $63,400 that was refunded. The average additional fee required was $2,280 in 2021 and $1,900 in 2022, while the amount to be refunded was about $1,400 and $1,300 respectively. *This suggests that the current fees should be adjusted.*

C. It can take several months between project review submittal and review by the Commission and when the applicant is reimbursed for any excess funds, or more importantly, when the Commission is able to invoice for the final costs and collect that additional fee. This lag between submittal of a project review and fee and collection of the final fee owed is impacting the Commission's balance sheet. On the 2022 financial audit, the Commission carried a liability of $78,161 in outstanding project review fees compared to $11,739 at the end of 2021. In other words, the Commission had expended $78,161 in project review costs it had paid for but had not yet collected the additional fee. This directly reduces the Unrestricted Fund Balance. *This argues for increasing the base rates in the fee schedule to collect additional fees up front.*

D. The Commission made a policy choice with the adoption of the new schedule to charge the

actual cost rather than a flat amount intended to, on average, recover the actual cost. Neither the previous fee schedule nor the current fee schedule work perfectly to accomplish the Commission's and TAC's goals that the fees adequately reimburse the Commission for the costs of performing project reviews.

1. The schedule can be tweaked to be sure the admin costs are fully-covered, or the Commission can accept the admin time spent as the cost of running a project review program.

2. Staff can review the 2021 and 2022 projects to see if there are commonalities in the projects for which the review cost exceeded the initial fee to see if there might be modifications to the fee schedule, for example, a tiered base fee based on project size. The proposed 2024 budget does assume some increase in fees.

Staff are seeking guidance and input from both the TAC and the Commission.

Asche noted that the fee structure is not intended to be staff intensive and that fees collected should cover nearly 100% of applications. Asche suggested doubling fees and reducing the administrative non-refundable percentage from 10% to 8%. He also noted that the current fees are based on 2020 numbers and that the fees should be modified annually to ensure there are no shortfalls during the project review process.

Due to time constraints, the members briefly discussed the fee structure and asked Staff to draft a revised schedule for the July TAC meeting. It was agreed that the fee structure should be reviewed annually. This item will also be discussed at the Commission meeting.

VIII. The **next meeting** of the Technical Advisory Committee is scheduled for 10:00 a.m., Wednesday, July 12, 2023, preceding the Commission's regular meeting.

There being no further business, the meeting was adjourned at 11:37 a.m.

Respectfully submitted,

Judie A. Anderson
Recording Secretary
JAA:tim

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Stantec

Memo

To: Elm Creek WMO Commissioners
Elm Creek TAC

From: Erik Megow, PE
Diane Spector
Judie Anderson

Date: July 5, 2023

Subject: Project Review Fee Adjustment Options

Recommended Commission Action	Discuss and provide recommendation and direction.

At the June 2023 TAC and Commission meetings, staff discussed the results of their internal review of the adequacy of the project review fees to not only recover the costs of performing the project reviews, but also the administrative and other tasks associated with the program. At that time staff concluded that:

1) The nonrefundable admin fee was not recovering the cost of admin time, which was more extensive than anticipated at the time of the programmatic switch from a flat fee to an actual-cost fee.
2) The nonrefundable tech fee is adequately recovering costs. While both the non-billable admin and tech costs are tracked separately, currently the Treasurer's Report lumps the technical costs in with other engineering costs on the line item "Technical Other," and should be shown separately.
3) More than half the project reviews incurred costs that exceeded the base fee, requiring staff to invoice applicants for additional escrow funds and causing what was sometimes a several month gap between when the review expense was incurred and when the fee was recovered. Staff recommended increasing the base review fees.

Table 1 shows the estimated actual costs of performing project reviews and undertaking admin and technical tasks related to project reviews but not associated with a formal project review.

Table 1. Budgeted revenues compared to actual expenses.

Category	2021		2022		2023
	Revenues	Actual	Revenues	Actual	Budget
Review fees (incl contingency)	$155,758	$181,987	$169,720	$188,032	$184,000
Admin fee	13,750	27,806	13,100	22,703	16,000
Tech fee	20,265	12,448	19,650	14,634	17,000
# reviews		56		49	

The TAC recommended adjusting both the base fees and the nonrefundable admin and tech fees to reduce some of the administrative and financial burden and better align with actual costs. It was the TAC's thought that refunds, rather than tracking down payments from developments that may have ultimately been cancelled or changed ownership, would reduce administrative costs. Based on Table 1, given the historical number of project reviews reasonable revenue goals for each would be:

- review fees: $180,000-200,000
- admin fees: 18,000 - 20,000
- tech fees: $16,000 -18,000

Table 2 shows the estimated fees collected from a hypothetical 50 project reviews: 50 requiring erosion control review, 45 stormwater management and 15 buffer reviews. The TAC initially supported doubling the review fees. Scenario 1 shows the impact of just doubling the fee, while scenario 2 shows doubling the review base fee but also reducing the contingency and nonrefundable fees, which are a percentage of the total review fee.

Scenario 3 takes a slightly different approach. It doubles the review fee while eliminating the 10% contingency; charges a flat $250 administrative fee per application plus 5% of the total review fee; and reduces the tech nonrefundable fee to 8% of the total fee. The advantage of a flat amount plus a percent of the total is that for project reviews such as a grading plan for erosion control only, even doubling the fee from $500 to $1,000 means a 10% multiplier would yield only a $100 admin fee, which would not cover costs.

Table 2. Project review fee scenarios.

Scenario	Fees	Cont-ingency	Total Eng	Admin	Tech
Current fee structure (10%/10%/15%)*	$127,500	$12,750	$140,250	$12,750	$19,125
1-double fees (10%/10%/15%)*	255,000	25,500	280,500	25,500	38,250
2-double fees, reduce NRF (5%/8%/8%)	255,000	12,750	267,750	21,420	21,420
3-double fees, elim contingency, add flat application fee, reduce NRF (5%/8%)	255,000	0	255,000	25,250	20,400

*10% contingency, 10% nonrefundable (NRF) admin fee, 15% nonrefundable tech fee, etc

Recommendation

This is presented for review and discussion. Staff believes either approach would bring the Commission closer to its desirable revenue goals and by reducing the number of project reviews requiring invoicing and chasing after additional escrow, would be more administratively cost-effective. Discussion can be had regarding the appropriate nonrefundable fee percentages based on desired revenue goals.

Project review fees should be reviewed annually to determine if they are adequately recovering costs and adjusted as necessary on a regular basis as part of the annual budget/audit process.

Stantec

Memo

To: Elm Creek WMO Commissioners
Elm Creek TAC

From: Erik Megow, PE
Diane Spector
Brian Vlach

Date: July 5, 1023

Subject: TMDL 10-year Review Update

Recommended Commission Action	For information and discussion.

A few months ago the Commission and TAC discussed undertaking a progress review of the Elm Creek Watershed TMDL. The purpose of this memo is a progress report on the development of a scope of work to undertake that review.

The TMDL was completed in phases over several years, starting with additional monitoring and data gathering in 2009-2010, analysis and development of the TMDL in 2012-2014, and then final completion of the TMDL document and accompanying Watershed Restoration and Protection Strategies document in 2015. This TMDL covers seven nutrient-impaired lakes, and multiple impairments (dissolved oxygen, nutrient, sediment, bacteria) on Elm, Diamond, and North and South Forks Rush Creek.

The final reports were approved by the MPCA and EPA in 2016. While the final TMDL has been in place for seven years, much of the underlying data about watershed conditions goes back to 2010 and one area to 2006. Since those “baseline years” there have been numerous Best Management Practices and improvement projects implemented, and it is timely to compile that information to determine how much progress has been made toward meeting the required pollutant load reductions and whether any measurable improvement in water quality has occurred.

In previous discussions staff has met to review how best to approach this analysis and as previously discussed has developed a multi-phase approach: 1) compile BMP and water quality data; 2) fill water quality monitoring gaps; and 3) finalize TMDL review. This will take 2-4 years to complete, depending on the amount of supplemental monitoring that is desired. Our intent is to set this up as a “living analysis” that can then be added to every year as more data is available.

Staff met recently and have developed a division of labor that seems workable. Stantec will take the lead on gathering and analyzing BMP and project data and will develop an interactive GIS application to track progress. Three Rivers will take the lead on analyzing lake water quality data, and Stantec will lead analyzing stream water quality data. We still have some work to do to estimate the level of effort for the BMP collection – we assume some cities have some BMP removals computed for their NPDES reporting and GIS location data but not all do. In addition, older project reviews will have to be reviewed to estimate removals and added manually to our GIS coverages. That will allow us to partition the load reductions by drainage area.

We will meet separately with the cities and county to better understand existing data so we can prepare a final Scope of Work for consideration at the August meeting. We expect that will require a supplemental contract with Three Rivers and an additional Work Order for Stantec’s work.

Stantec

Memo

To: Elm Creek WMO Commissioners
Elm Creek TAC

From: Diane Spector

Date: July 5, 2023

Subject: 2023 Clean Water Fund (CWF) Grant Solicitation

Recommended Commission Action	For discussion and staff direction.

The Board of Water and Soil Resources (BWSR) opened the annual solicitation for Clean Water Fund Grants on June 29, 2023. Grant applications are due by August 24. The program is similar to the grant solicitation in past years with a few exceptions.

This $8.5 million is funding from the ongoing Legacy Amendment and is one of the primary funding sources for surface water improvements in Minnesota. Up to 20% of that amount may be reserved by BWSR for focus on projects that protect or improve drinking water sources.

Projects must be identified in a watershed management plan that has been state approved and locally adopted or an approved total maximum daily load study (TMDL), Watershed Restoration and Protection Strategy (WRAPS), Groundwater Restoration and Protection Strategy (GRAPS), surface water intake plan, or well head protection plan. Unlike previous years, the required match has been reduced from **25%** to **10%.**

These are very competitive funds, so well thought out, targeted projects with local consensus and significant cost-effective removals will complete best. The Commission does have a few projects on its CIP for the next few years that cities might consider for application (see attached Table 1), but again, the funds are extremely competitive, and the pool of available funds is growing smaller each year.

More information can be found here:
Apply for BWSR Grants | MN Board of Water, Soil Resources (state.mn.us)

Table 1. Elm Creek WMC CIP as Amended June 2023.

CAPITAL IMPROVEMENT PROGRAM	Location	2023	2024	2025	Future
Cost Share Program	Varies	200,000	200,000	200,000	200,000
Commission Contribution		100,000	100,000	100,000	100,000
Local Contribution		100,000	100,000	100,000	100,000
Partnership Cost-Share BMP Projects	Varies	50,000	50,000	50,000	50,000
Commission Contribution		50,000	50,000	50,000	50,000
Local Contribution		0	0	0	0
S Fork Rush Creek Restoration	Maple Grove	3,250,000			
Commission Contribution		406,250			
Local Contribution		2,437,500			
CSAH 12/Dayton R Rd Ravine Stabilization	Dayton	1,329,400			
Commission Contribution		110,000			
Local Contribution		1,219,400			
Downtown Pond Exp & Reuse	Rogers	406,000			
Commission Contribution		101,500			
Local Contribution		304,500			
Rush Creek Resto- Rush Hollow	Maple Grove		1,000,000		
Commission Contribution			250,000		
Local Contribution			750,000		
Fox Cr, South Pointe	Rogers		90,000		
Commission Contribution			22,500		
Local Contribution			67,500		
Lowell Pond Rain Garden	Champlin		400,000		
Commission Contribution			100,000		
Local Contribution			300,000		
The Meadows Playfield	Plymouth		5,300,000		
Commission Contribution			250,000		
Local Contribution			5,050,000		
Brockton Ln WQ Improv	Plymouth		150,000		
Commission Contribution			37,500		
Local Contribution			112,500		
Recon Bridge at Cartway and Elm Creek	Champlin		950,000		
Commission Contribution			237,500		
Local Contribution			712,500		
Eastman Nat Ctr Oxbow Tr Rush Ck Stabil	Maple Grove		100,000		
Commission Contribution			25,000		
Local Contribution			75,000		
Ranchview Wetland Restoration	Maple Grove				2,500,000
Commission Contribution					250,000
Local Contribution					2,250,000
Goose Lake Rd Area Infiltr Improv	Champlin				200,000
Commission Contribution					50,000
Local Contribution					150,000
Mill Pond BMPs Water Quality Project Area	Champlin				200,000
Commission Contribution					50,000
Local Contribution					150,000
Lemans Lake Water Quality Improvements	Champlin				100,000
Commission Contribution					25,000

CAPITAL IMPROVEMENT PROGRAM	Location	2023	2024	2025	Future
Local Contribution					75,000
TOTAL PROJECT COST		**5,235,400**	**7,150,000**	**250,000**	**3,250,000**
TOTAL COMMISSION SHARE		**767,750**	**800,000**	**150,000**	**525,000**
TOTAL CITY SHARE		**4,061,400**	**6,350,000**	**100,000**	**2,725,000**

Judie Anderson

From: Minnesota Board of Water and Soil Resources <mnbwsr@public.govdelivery.com>
Sent: Thursday, June 29, 2023 9:36 AM
To: Judie Anderson
Subject: News Release: BWSR Accepting Applications for Clean Water Fund Grants

BWSR News Release

FOR IMMEDIATE RELEASE

Contact: Mary Juhl (612-358-5733)

BWSR Accepting Applications for Clean Water Fund Grants

June 29, 2023

St. Paul, Minn. — The Minnesota Board of Water and Soil Resources (BWSR) is now seeking applications for its Clean Water Fund Competitive Grants Program. More than $8.7 million in grants and $8.2 million in loans are available to local governments. Eligible applicants include soil and water conservation districts, watershed districts, watershed management organizations, counties, joint powers boards and municipalities with approved water management plans.

"Supporting local efforts to improve water quality and protect drinking water is essential to BWSR's mission," said BWSR Executive Director John Jaschke. "These grants will help local governments advance meaningful conservation work throughout Minnesota."

The application period opens June 29 and closes August 24. Grants are typically awarded during the winter following the application period. Interested applicants can find the Request for Proposals on BWSR's website.

About the Minnesota Clean Water Fund Minnesota voters approved the Clean Water, Land and Legacy Amendment in 2008 to protect, enhance, and restore wetlands, prairies, forests, and fish, game, and wildlife habitat; to preserve arts and cultural heritage; to support parks and trails; and to protect, enhance, and restore lakes, rivers, streams, and groundwater. The Clean Water Fund receives 33 percent of the sales tax revenue generated by the Legacy Amendment. More information about the Clean Water Fund is available here.

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BWSR is the state soil and water conservation agency, and it administers programs that prevent sediment and nutrients from entering our lakes, rivers, and streams; enhance fish and wildlife habitat; and protect wetlands. The 20-member board consists of representatives of local and state

government agencies and citizens. BWSR's mission is to improve and protect Minnesota's water and soil resources by working in partnership with local organizations and private landowners.

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Kimley»Horn

MEMORANDUM

To:	ECWMC Technical Advisory Committee
From:	Stephanie Thulien, PE, CFM; Kimley-Horn and Associates, Inc.
Cc:	Chadd Larson, PE; Kimley-Horn and Associates, Inc. Mike Payne, PE; City of Plymouth
Date:	June 30, 2023
Subject:	Review Packet to Discuss ECWMC Rule F: Floodplain Alteration for the Chankahda Trail Phase 2 Reconstruction Project.

The City of Plymouth and Kimley-Horn would like to request the TAC's review and input regarding ECWMC Rule F: Floodplain Alteration for the Chankahda Trail Phase 2 Reconstruction project. The attached Compensatory Storage Summary Letter dated 6/15/23 provides the project background as well as a discussion on the required compensatory storage for project impacts to Elm Creek and how the project is meeting the Commission's Rule F. Additional attachments included in the packet for the TAC's review and consideration are listed below.

The primary topic of discussion will be related to the bottom of the compensatory storage basin elevation of 918.25 relative to the fluctuating groundwater elevations noted in the attachments. The discussion will focus on the current Floodplain Alteration rule and how the basin design meets the rules as written.

Attachments:

- Compensatory Storage Summary Letter dated 6/15/23
- ECWMC Response to Compensatory Storage Summary Letter dated 6/20/23
- Comment Response Letter for ECWMC Comments dated 3/23/23
- Compensatory Storage Basin Grading
- Piezometer Readings
- Onsite Picture of Basin Excavation dated 6/27/23

Kimley»Horn

June 15, 2023, *Updated June 30, 2023*

Elm Creek Watershed Management Commission
c/o Erik Megow - Stantec
733 Marquette Avenue, Suite 1000
Minneapolis MN 55402-2309

RE: *Elm Creek Watershed Management Commission - Project Review # 2023-01 Chankahda Trail Reconstruction – Phase 2; Rule F: Floodplain Alteration Compensatory Storage Requirements*

Dear Mr. Megow,

The purpose of this memo is to summarize the requirements related to ECWMC's Rule F: Floodplain Alteration for the Chankahda Trail Phase 2 Reconstruction project and demonstrate the City's compliance in meeting this rule.

The Chankahda Trail Phase 2 Reconstruction project consists of approximately one mile of improvements to reconstruct the roadway into a two-lane urban section and add new trails along the north and south side of the road. Additional improvements include the addition of a new storm sewer network, a box culvert replacement over Elm Creek and the construction of BMPs to meet regulatory requirements for volume control, rate control, and water quality. Due to the widening of the roadway and the addition of trails, approximately 4,892 cubic yards of fill will be placed within the 100-year floodplain of Elm Creek. The ECWMC's Rule F requires compensatory storage below the 100-year flood elevation be provided for this floodplain fill. The current 100-year floodplain elevation is 921.5.

The following is a summary of the watershed commission coordination timeline and key dates.

- 1/27/23 – received the first round of ECWMC review comments
- 3/6/23 – KH responded to ECWMC comments and sent over updated review documents
- 3/22/23 – Received additional comments from ECWMC related to the compensatory storage provided on the lot adjacent to Peony Lane
- 3/23/23 – Response letter to the compensatory storage comments was provided to ECWMC stating compliance with the watershed's Rule F: Floodplain Alteration
- 3/27/23 – Meeting with ECWMC to discuss compensatory storage
- 4/12/23 – ECWMC conditionally approved the Chankahda Trail Phase 2 project

The compensatory storage is shown in the bidding plans on City property located just south of the project area adjacent to Peony Lane. The basin design has a bottom elevation of 918.25 and requires 14,700 cubic yards of common excavation to provide the required 4,892 cubic yards of compensatory flood storage volume needed. The total cost of this improvement is approximately $200,000.

During the meeting with ECWMC on 3/27/23, the watershed stated concern regarding the current basin bottom of 918.25. The watershed stated that the expected groundwater would be around the 920 elevation and that the basin would be continually full of water below 920. The watershed requested the City provide proof of groundwater levels to approve the current design. The City hired Braun Intertec to install a piezometer to measure the groundwater elevation in April 2023. Measurements indicated the current groundwater elevation was much higher than anticipated at approximately 920.

After receiving the piezometer results, the basin was reevaluated to raise the basin bottom elevation to 920. The floodplain compensatory storage was now only counted between 920 and 921.5 per request by the watershed's engineer. In order to achieve the required 4,892 cubic yards of floodplain compensatory storage within that 1.5 feet, the basin footprint needed to expand significantly. The new basin requires 26,300 cubic yards of common excavation. The total cost for this work is approximately $370,000.

ECWMC's rules define compensatory storage as the following: Excavated volume of material below the floodplain elevation required to offset floodplain fill. The rules state that "Floodplain alteration or filling shall not cause a net decrease in flood storage capacity below the projected 1% (100-year) critical flood elevation or alter the timing of flooding unless it is shown that the proposed alteration or filling, together with the alteration or filling of all other land on the affected reach of the waterbody to the same degree of encroachment as proposed by the applicant, will not cause high water or aggravate flooding on other land and will not unduly restrict flood flows.".

The groundwater elevation noted as part of the piezometer testing in April/May is likely the seasonal high groundwater level due to a spring measurement and a higher-than-average winter snowfall and is not an accurate reflection of the permanent groundwater level within the creek and wetland. Additional piezometer results were obtained on 6/27/23 showing a groundwater elevation of 916.4. The basin was excavated on 6/19/23 and 6/20/23 down to an elevation of 917.75 and no groundwater was present, as shown in the attached site picture. The site also received around 1.2 inches of rain while the basin was excavated, and no rainwater was present within the basin after about 2 days.

Regardless, the large wetland complex south of Chankahda Trail and the portion of Elm Creek that flows through it is likely connected to groundwater and recharged to some extent during the year depending on current flow conditions. A portion of the floodplain storage accounted for is already likely tied to permanent groundwater elevations. The ECWMC floodplain model doesn't take into account groundwater elevations or permanent water within the creek and wetland due to groundwater recharge. ECWMC's rules do not explicitly account for groundwater connection to the floodplain elevation, nor is there enough understanding about how it recharges the existing floodplain storage to regulate to.

The City believes that the original compensatory storage basin design meets the intent of ECWMC's Rule F by providing flood storage from 918.25 up to the 100-year floodplain elevation of 921.5. The redesigned basin with a bottom elevation of 920 creates an extremely large basin that almost doubles the cost of the original design, which is beyond what is reasonable to meet the floodplain compensatory storage requirements stated in the watershed's rules. In addition, the total floodplain storage south between Chankahda Trail and Peony Lane in the large wetland complex is approximately 290,287 cubic yards. The 4,892 cubic yards of fill and subsequent compensatory storage provided due to the project impacts is only 1.7% of the total floodplain storage in the south wetland complex. With this small of an impact to the total flood storage, there would be no negative flooding impacts and is negligible in the updated floodplain model. The City believes that the basin design meets Rule F and is requesting that the watershed consider approving the original basin design.

Please contact me at (612) 431-2644 or stephanie.thulien@kimley-horn.com with any questions or to discuss further.

Sincerely,

Stephanie Thulien

Stephanie Thulien, PE, CFM
Water Resources Engineer

cc. Chadd Larson, PE, Kimley-Horn
Mike Payne, PE, City of Plymouth
Ben Scharenbroich, City of Plymouth

Thulien, Stephanie

From: Megow, Erik <erik.megow@stantec.com>
Sent: Tuesday, June 20, 2023 11:26 AM
To: Thulien, Stephanie
Cc: Larson, Chadd; Michael Payne; Ben Scharenbroich - City of Plymouth (bscharenbroich@plymouthmn.gov); James Kujawa; Rebecca Carlson
Subject: RE: Chankahda Trail Reconstruction Project - Elm Creek Compensatory Storage

Follow Up Flag: Follow up
Flag Status: Flagged

Stephanie,

At the Elm Creek's April 2023 Commission Meeting, the Commission approved the project with the following condition:

1. "Approval is contingent upon the receival of an updated compensatory storage plan that is separated from groundwater and hydraulically connected to the floodplain.

The original compensatory storage grading does not provide a hydraulic connection to the floodplain, as there is a berm at the 100-year HWL, so surface water elevations would have to exceed the 100-year HWL to utilize the compensatory storage.

The original compensatory storage grading also is not separated from groundwater, based on the piezometer readings you provided from Braun. In my talks with Jim Kujawa, the Commission has not historically allowed compensatory storage to be provided below the normal water level or groundwater levels of basins, as these areas are not floodable and will cause a 'net decrease in flood storage capacity below the projected 1% (100-year) critical flood elevation'. How ECWMC Staff have interpreted the compensatory storage, or 'floodable' area, is consistent with the National Flood Insurance Program (NFIP) definition of compensatory storage which states, "The developer is required to offset new fill put in the floodplain by excavating an additional floodable area to replace the lost flood storage area."

Please let me know if you would like to schedule a meeting to discuss alternatives that meet the approved condition, or if you would like to bring this back to the Commission for approval, as we do not believe the proposed solution meets the Commission standards, or their intent.

Thanks,

Erik Megow, PE (MN)
Senior Water Resources Engineer, Associate
Pronouns: he/him/his

Direct: 763 252-6857
erik.megow@stantec.com

Stantec
733 Marquette Avenue Suite 1000
Minneapolis MN 55402-2309

From: Thulien, Stephanie <Stephanie.Thulien@kimley-horn.com>
Sent: Thursday, June 15, 2023 1:49 PM
To: Megow, Erik <erik.megow@stantec.com>

Cc: Larson, Chadd <Chadd.Larson@kimley-horn.com>; mpayne (mpayne@plymouthmn.gov) <mpayne@plymouthmn.gov>; Ben Scharenbroich <bscharenbroich@plymouthmn.gov>; James Kujawa <surfacewatersolutions@outlook.com>
Subject: RE: Chankahda Trail Reconstruction Project - Elm Creek Compensatory Storage

Hi Erik,

See attached for the original compensatory storage grading plan sheet. The table below are the piezometer results provided by Braun.

Reading Date	Existing Ground Surface Elevation (feet)	Reading (feet)	Corresponding Groundwater Elevation (feet)
4/14/2023	926.7	6.6	920.1
4/19/2023		5.8	920.9
4/24/2023		6.7	920.0
5/3/2023		6.4	920.3
5/17/2023		6.7	920.0
5/18/2023		6.9	919.8
5/31/2023		6.6	920.1

Stephanie Thulien, PE, CFM
Kimley-Horn | 11995 Singletree Lane, Suite 225, Eden Prairie, MN 55344
Direct: 612 431 2644

From: Megow, Erik <erik.megow@stantec.com>
Sent: Thursday, June 15, 2023 1:19 PM
To: Thulien, Stephanie <Stephanie.Thulien@kimley-horn.com>
Cc: Larson, Chadd <Chadd.Larson@kimley-horn.com>; mpayne (mpayne@plymouthmn.gov) <mpayne@plymouthmn.gov>; Ben Scharenbroich <bscharenbroich@plymouthmn.gov>; James Kujawa <surfacewatersolutions@outlook.com>
Subject: RE: Chankahda Trail Reconstruction Project - Elm Creek Compensatory Storage

Stephanie,

Can you please send me the grading plan for the original compensatory storage basin design (that you would like to use) and the piezometer data that you collected?

Thanks,
Erik Megow, PE (MN)
Senior Water Resources Engineer, Associate
Pronouns: he/him/his

Direct: 763 252-6857
erik.megow@stantec.com

Stantec
733 Marquette Avenue Suite 1000
Minneapolis MN 55402-2309

From: Thulien, Stephanie <Stephanie.Thulien@kimley-horn.com>
Sent: Thursday, June 15, 2023 12:57 PM
To: Megow, Erik <erik.megow@stantec.com>
Cc: Larson, Chadd <Chadd.Larson@kimley-horn.com>; mpayne (mpayne@plymouthmn.gov) <mpayne@plymouthmn.gov>; Ben Scharenbroich <bscharenbroich@plymouthmn.gov>; James Kujawa <surfacewatersolutions@outlook.com>
Subject: Chankahda Trail Reconstruction Project - Elm Creek Compensatory Storage

Good afternoon Erik,

Please see attached for a memo discussing the compensatory storage requirement for the Chankahda Trail Reconstruction project. The memo outlines our previous discussions on the compensatory storage provided near Peony Lane and the desire for the watershed commission to consider approving the original basin design with a bottom elevation of 918.25. Please review the memo and let me know if you have any questions or would like to set up a meeting with the group to discuss further.

Thanks,

Stephanie Thulien, PE, CFM
Kimley-Horn | 11995 Singletree Lane, Suite 225, Eden Prairie, MN 55344
Direct: 612 431 2644

Caution: This email originated from outside of Stantec. Please take extra precaution.

Attention: Ce courriel provient de l'extérieur de Stantec. Veuillez prendre des précautions supplémentaires.

Atención: Este correo electrónico proviene de fuera de Stantec. Por favor, tome precauciones adicionales.

March 23, 2023

Elm Creek Watershed Management Commission
c/o Erik Megow - Stantec
733 Marquette Avenue, Suite 1000
Minneapolis MN 55402-2309

SUBJECT: **ELM CREEK WATERSHED MANAGEMENT COMMISSION - PROJECT REVIEW # 2023-01**
CHANKAHDA TRAIL RECONSTRUCTION – PHASE 2
RESPONSE TO FINAL COMMENTS

Dear Mr. Megow:

Thank you for providing the final comments related to the compensatory storage area for the Elm Creek Watershed Management Commission (ECWMC) project #2023-01 – Chankahda Trail Reconstruction Phase 2. The following italicized comments were provided on March 22, 2023. Responses are provided below each comment and a more detailed response follows.

1. *The proposed compensatory storage is not hydraulically connected to the floodplain. The 100-year HWL (~921.5') would need to be exceeded to access this flood storage.*

   The grading tie in point for the storage basin can be lowered below 921.5' to allow water during a 100-year event to enter the basin.

2. *The floodplain is currently unable to drain and the drawdown for C/D soils would exceed two weeks.*

   Soils on site have been noted through historic soil borings to consist of Hydrologic soil groups C and D. Infiltration rates (inches/hour) for these soil groups are 0.2" and 0.06" respectively per the Minnesota Stormwater Manual Design Infiltration Rates table.

   Based on the soil infiltration rates noted above, the compensatory storage area will slowly infiltrate after a 100-year event. This basin is not required to, nor designed to, store back-to-back 100-year events or to infiltrate within a certain amount of time such as a stormwater infiltration/filtration basin would be required to.

   To ensure infiltration occurs post construction, the bottom of the basin can be scarified to promote infiltration. Infiltrated water will help recharge the groundwater in this area.

3. *If you can hydraulically connect the compensatory storage to the 920' contour, we will be able to give you credit for the volume within the storage from the 920' to the 921.5' contour, but the storage between the 918.25' and 920' contours is not hydraulically connected to the stream and has no outlet so it is effectively dead storage, or a wet pond.*

   See Response #2 above. The compensatory storage area is hydraulically connected to the Elm Creek wetland to the east of the storage area through infiltration and groundwater.

This comment indicates that the ECWMC is requesting the 100-year compensatory storage basin take on flood water during smaller rainfall events and connect to the observed normal water level of the Elm Creek wetland complex to the east. This is not explicitly stated within Rule F and we would like ECWMC to confirm this request, as it goes above and beyond what is listed within Rule F.

4. *As proposed, there may be some scour at the proposed connection to the floodplain if it were done through a channel-like feature.*

   Erosion protection measures such as erosion control blanket will be used during construction and can be shown on the plans to prevent scour. The final vegetation in bottom and sides of the storage basin as well as the channel will consist of wetland vegetation. The deep-rooted nature of this vegetation will minimize erosion and scour once established.

The proposed compensatory storage area is designed to provide storage for fill placed within the 100-year floodplain boundary of Elm Creek due to project impacts associated with the culvert crossing of Elm Creek. We believe the designed compensatory storage area as revised, meets ECWMC's Rule F: Floodplain Alteration.

To ensure that the project is approved at the Commission's April meeting, the City would be happy to set up a meeting to discuss the above responses if you have any questions.

Sincerely,

Mike Payne, PE
Assistant City Engineer
763-509-5538
mpayne@plymouthmn.gov

Cc: Ben Scharenbroich, Water Resources Supervisor – City of Plymouth
Stephanie Thulien, PE, CFM – Kimley-Horn
Chadd B. Larson, PE – Kimley-Horn
Judie Anderson, Watershed Administrator – JASS

K:\TWC_Civil\City\PLYMOUTH\CR 47_PHASE 2 FINAL DESIGN\CAD\Plan Sheets\Exhibits\CR47-PH2 -100 Year Floodplain Grading-PeonyAlt.dwg June 29, 2023 - 9:17am

City of Plymouth

Hennepin

Kimley»Horn

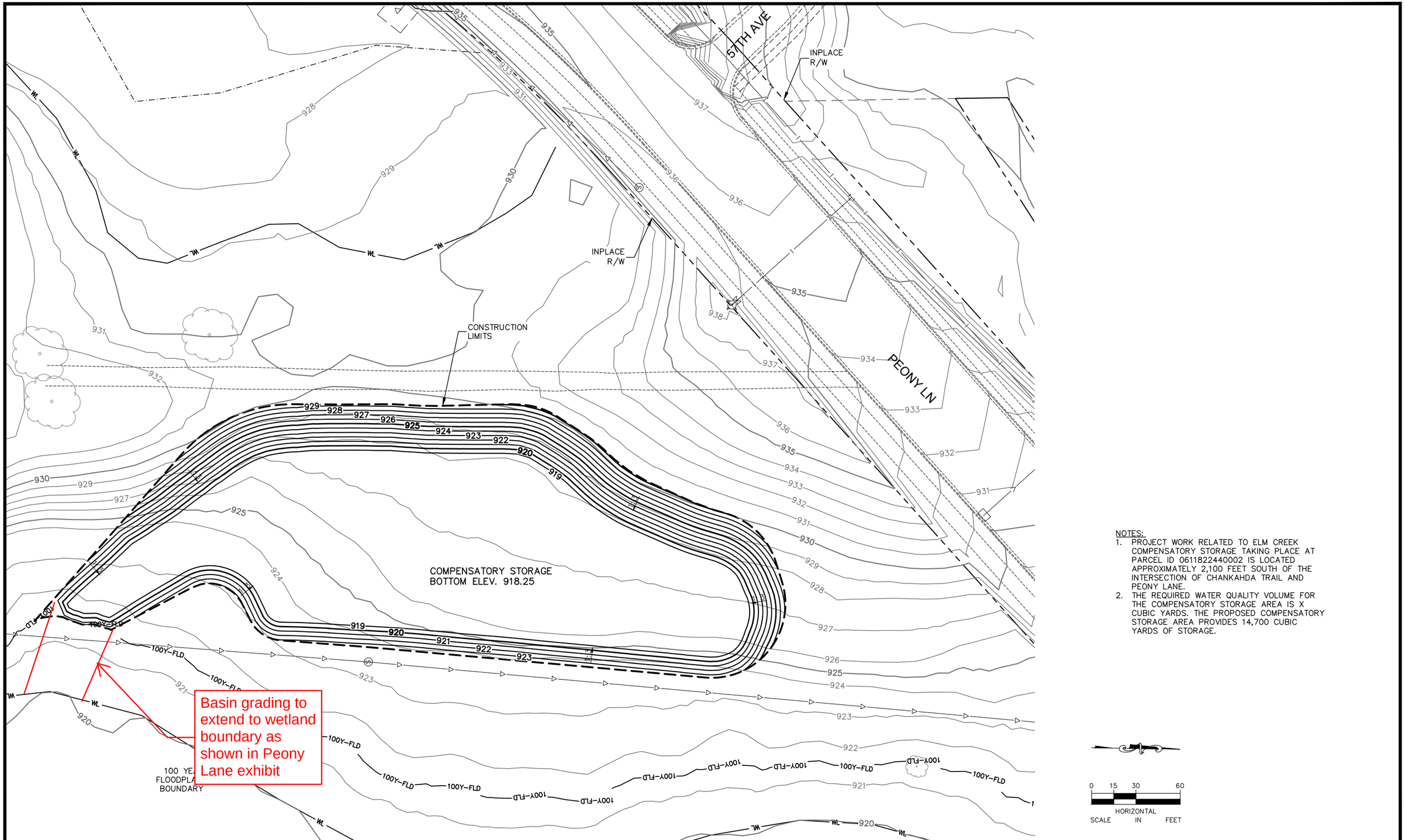
0 10 20
HORIZONTAL
SCALE IN FEET

LEGEND

REQUIRE COMPENSATORY FLOOD PLAIN STORAGE VOLUME 4892 CU. YDS.
PROPOSED COMPENSATORY FLOOD PLAIN STORAGE VOLUME 5392 CU. YDS.

CITY OF PLYMOUTH
CHANKAHDA TR
CHANKAHDA TR PHASE 2 CONSTRUCTION

PEONY LN N
FLOOD PLAIN GRADING
JUNE 2023



NOTES:
1. PROJECT WORK RELATED TO ELM CREEK COMPENSATORY STORAGE TAKING PLACE AT PARCEL ID 0611822440002 IS LOCATED APPROXIMATELY 2,100 FEET SOUTH OF THE INTERSECTION OF CHANKAHDA TRAIL AND PEONY LANE.
2. THE REQUIRED WATER QUALITY VOLUME FOR THE COMPENSATORY STORAGE AREA IS X CUBIC YARDS. THE PROPOSED COMPENSATORY STORAGE AREA PROVIDES 14,700 CUBIC YARDS OF STORAGE.

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH2_Grading.dwg
DESIGNED BY:	RJG
DRAWN BY:	RJG
CHECKED BY:	CBL
DATE:	2/14/2023
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Stephanie Thulien

STEPHANIE L. THULIEN, PE

DATE: 2/14/2023 MN LIC. NO. 57230

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 2

PEONY LANE
COMPENSATORY STORAGE GRADING

CITY PROJECT	ST230002
COUNTY PROJECT	
S.A.P.	155-210-002
S.A.P.	

SHEET NO. 115 / 230

Piezometer Readings – Completed by Braun Intertec.

Reading Date	Existing Ground Surface Elevation (feet)	Reading (feet)	Corresponding Groundwater Elevation (feet)
4/14/2023	926.7	6.6	920.1
4/19/2023		5.8	920.9
4/24/2023		6.7	920.0
5/3/2023		6.4	920.3
5/17/2023		6.7	920.0
5/18/2023		6.9	919.8
5/31/2023		6.6	920.1
6/29/2023		10.3	916.4

Excavation of the pond on 6/19 and 6/20. Photo taken 6/27/23. Follows approximately 1.2 inches of rain that occurred between 6/23-6/26. No water present down to an elevation of 917.75. Basin not holding rainwater.

917.75'

919.5'

elm creek
Watershed Management Commission

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

Chankahda Trail Reconstruction Phase 2

Plymouth Project #2023-01

Project Overview:

Location: Phase 2 of County Road 47 has been renamed Chankahda Trail. This phase extends from approximately 300 feet east of Peony Lane N/Maple Grove Parkway to roughly 100 feet east of Vicksburg Lane N.

Purpose: Improvements include the reconstruction of Chankahda Trail into a two-lane urban roadway, new trails along the north and south side of the road, utility updates, and stormwater management BMPs.

WMC Rules Triggered:

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

Applicant:	City of Plymouth	*Attention:*	Ben Scharenbroich
Address:	3400 Plymouth Boulevard Plymouth MN, 55447	*Phone:*	(763)509-5527
		Email:	bscharenbroich@plymouthmn.gov
Agent:	Kimley-Horn and Associates	*Attention:*	Stephanie Thulien
Address:	767 N Eustis St Suite 100 St. Paul MN, 55114	*Phone:*	(612)-431-2644
		Email:	stephanie.thulien@kimley-horn.com

Exhibits:	Description	Date Received
Application	☒ Complete ECWMC Application	January 20, 2023
	☒ ECWMC Request for Review and Approval	January 20, 2023
	☒ City authorization: Plymouth, MN	January 12, 2023
	☒ Review fee: $6,075	January 20, 2023
	☒ Project Documents (site plans, reports, models, etc.)	January 20, 2023

Submittals

1. Stormwater Management Plan, dated January 11, 2023, prepared by Kimley-Horn and Associates, Revised March 6, 2023.
    a. Stormwater Narrative
    b. Existing and Proposed Drainage Maps

c. Existing and Proposed HydroCAD Models
d. Proposed MIDS Models
e. Geotechnical Evaluation Report, dated June 25 2021, prepared by Braun Intertec Corporation

2. Construction Drawings, dated January 6, 2023, prepared by Kimley-Horn and Associates, Revised February 14, 2023

Findings

General

1. A complete application was received January 23, 2023. The initial 60-day decision period per MN Statute 15.99 expired March 24, 2023 and was extended an additional 60-days on March 23, 2023 to May 23, 2023.
2. The project area for Phase 2 includes the existing roadway and shoulders. Stormwater runoff currently sheet flows off the roadway. There is no existing storm sewer in this phase, except for a small portion at the intersection of Chankahda Trail and Vicksburg Lane N. The site currently drains in two general directions:
    a. To Elm Creek to the south
    b. To an existing wetland to the north
3. The proposed site for Phase 2 corridor will be reconstructed as an urban corridor with trails being added on the north and south side of the roadway. Storm sewer and infiltration basins will also be added, and the existing Elm Creek culvert will be replaced with a box culvert.
4. The total new and reconstructed impervious area will be 7.94-acres resulting in a net increase in impervious area of 2.65-acres.
5. Two proposed filtration basins and one rate control swale will be constructed to meet the water quality and abstraction requirements.
6. Braun Intertec recommended infiltration rates for stormwater BMPs to be listed as 0.06 in/hr. Because of this, infiltration BMPs are not feasible for this stormwater management design.
7. The project will cross Elm Creek and result in floodplain fill with compensatory storage.

Rule D – Stormwater Management

General

1. The total new and reconstructed impervious area will be 7.94-acres resulting in a net increase in impervious area of 2.65-acres.
2. Braun Intertec recommended infiltration rates for stormwater BMPs to be listed as 0.06 in/hr. Because of this, infiltration BMPs are not feasible for this stormwater management design.
3. Two proposed filtration basins and one rate control swale will be constructed to meet the water quality and abstraction requirements.
4. The ultimate discharge locations of the site are Elm Creek and an existing wetland area to the north.

Rate Controls

1. Rate control **meets** Commission requirements.
2. The proposed basins were sized to draw down within 48 hours.

3. The applicant provided HydroCAD model output for the 2-year, 10-year, and 100-year events total outflow from each drainage from the site. The rates are summarized in Table 1.

Table 1 Rate of Discharge Leaving Site

Direction	Condition	2-year (cfs)	10-year (cfs)	100-year (cfs)
South *To Elm Creek*	Pre-Project	17.76	31.39	65.57
	Proposed	13.14	22.74	43.98
	Change	**-4.62**	**-8.65**	**-21.59**
North *To Wetland*	Pre-Project	17.99	32.83	72.25
	Proposed	9.35	28.20	68.81
	Change	**-8.64**	**-4.63**	**-3.44**
TOTAL	Pre-Project	35.75	64.22	137.82
	Proposed	22.49	50.94	112.79
	Change	**-13.26**	**-13.28**	**-25.03**

Low Floor Elevations

1. Low floors **meet** Commission requirements.
2. The low floor elevations must be at least two feet above the 100-yr high water level (HWL) and at least one foot above the EOF for the stormwater pond.

Operation and Maintenance

The applicant will need to enter a stormwater maintenance agreement with the City of Plymouth. The city's template stormwater maintenance agreement satisfies the requirements of the Commission.

Abstraction Controls and Water Quality

1. Abstraction and Water Quality controls **meet** Commission requirements
2. Infiltration from 1.1 inches of runoff from impervious areas is not feasible.
3. The applicant proposes to use filtration to meet the Commission's requirement for abstraction.
4. Net, new impervious areas will be 2.65-acres from the site, requiring abstraction of 10,581 cubic feet.
5. The applicant provided existing and proposed MIDS modeling for the development showing conformance with the water quality requirements.

Table 2 Water Quality Summary

	Annual Runoff Vol. (ac-ft)	Abstraction Vol. (cubic feet)	TP (lbs/year)	TSS (lbs/year)
Pre-Project	18.62	N/A	15.20	2,760
Proposed (w/ BMP's)	22.77	10,581 (required) 32,670 (provided)	7.46	876
Change	**+4.15**	+22,089 (excess)	**-7.74**	**-1,884**

Rule E – Erosion and Sediment Control (plans)

1. Plans **meets** Commission requirements for erosion and sediment control.
2. The erosion and sediment control plans are consistent with current best management practices, including:
    a. Silt fence
    b. Catch basin inlet protection
    c. Permanent erosion control devices
    d. Stabilization of disturbed soil areas

Rule F – Floodplain Alteration

Alterations within the floodplain **do not meet** the Commission's requirements.

1. The 100-year high-water level of Elm Creek at the project location is 921.5 (NGVD 88).
2. The applicant is proposing net fill of 4,892 cubic yards within the 100-year floodplain of Elm Creek.
3. Approval of the provided compensatory storage is dependent on the Conditions of Approval being met for floodplain alteration.

Rule H – Bridge and Culvert Crossings

1. Bridge and culvert crossings **meet** the Commission's requirements.
2. Elm Creek box culvert maintains the 100-yr flow profile.
3. No rise certification provided.
4. The water quality is not adversely affected.

Recommendation

Conditional Approval

Conditions for Approval

1. Approval is contingent upon final application escrow fee balance. Additional payment or refund of the fees will be determined when all conditions for approval are met.
2. Approval is contingent upon an operation and maintenance plan that is approved by the City of Plymouth.
3. Approval is contingent upon the receival of an updated compensatory storage plan that is separated from groundwater and hydraulically connected to the floodplain.

On Behalf of Stantec Consulting Services, Inc.
Advisor to the Commission

Date 4/3/2022

Attachments

Figure 1	Project Location
Figure 2	Existing Drainage Map
Figure 3	Proposed Drainage Plan

Figure 1 Project Location

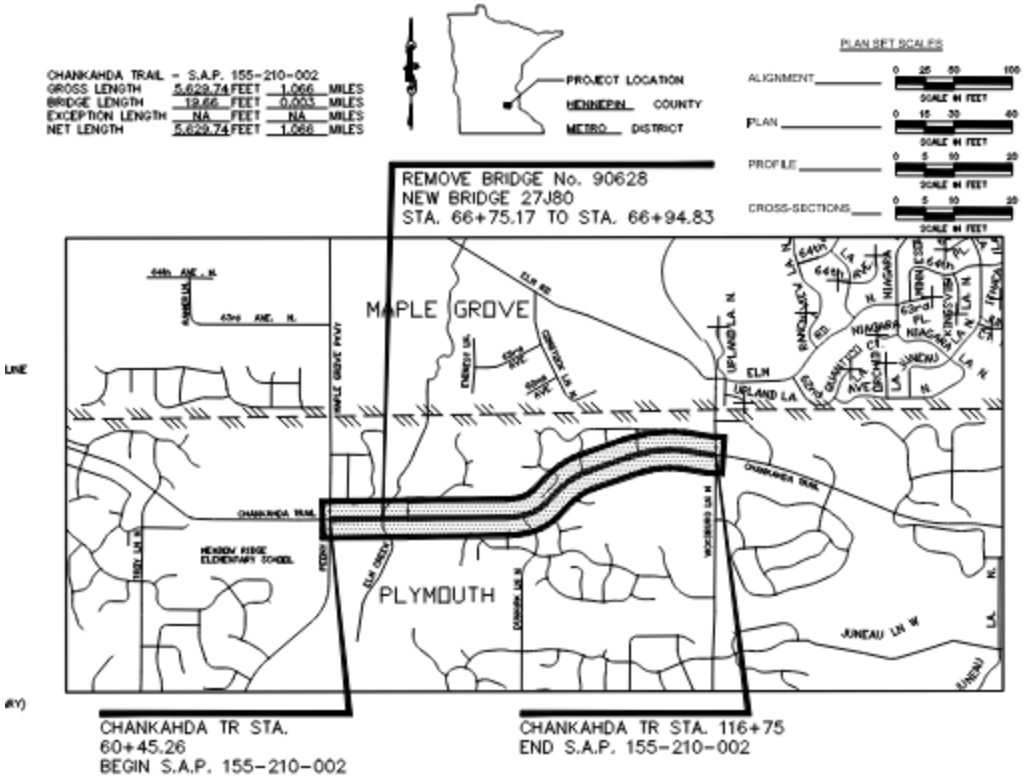


Figure 2 Existing Drainage Map

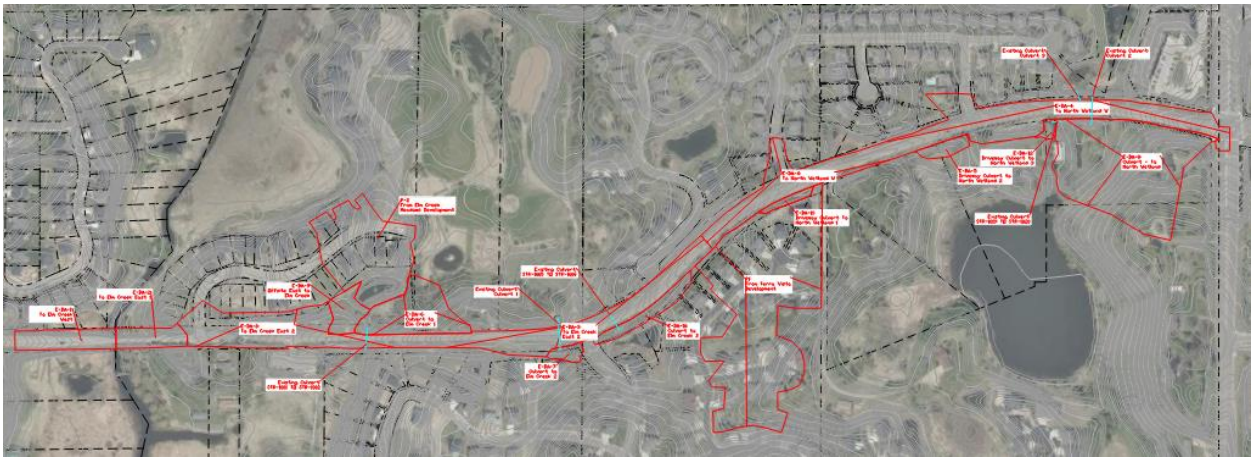


Figure 3 Proposed Drainage Plan