LOWER MINNESOTA RIVER
WATERSHED DISTRICT

June 2020 Administrator report
From: Linda Loomis, Administrator
To: LMRWD Board of Managers

In addition to items on the meeting agenda, work continues on the following District projects and issues:

Other Work

Salt Symposium
I received notice that registration is now open for Salt Symposium scheduled for August 4th and 5th. Managers may remember that the LMRWD agreed to sponsor this event and it has expanded beyond the traditional road application of salt to talk about water softeners and more. The event has been added to the LMRWD website as a news story. There is a cost to register; however, the registration is per device, so more than one person can participate with a single registration. Please feel free to share this event with others.

Naas Creek
On May 22nd, Della and I met with Dan Callahan and Tony Nelson from Trout Unlimited. Dan and Tony shared a wealth of information about trout streams within the LMRWD. They were especially interested in one stream in Dakota County. They called the stream Naas Creek (it is shown in the LMRWD plan as Unnamed #4 or One-Mile Creek). They believe that this Creek could be restored and that Trout Unlimited has discussed restoration of this Creek with the DNR. If restored the Creek would be similar to Ike's Creek; a restored trout stream, but not available for public fishing. LMRWD staff thinks this project may fit with BWSR goals for watershed based funding.

Watershed Based Funding
Lower MN River North is holding its second meeting Tuesday, June 16, 2020 at 1:00pm. This group has not taken any direction other than to meet. I believe the focus of this group will be to continue the Chloride project that is being done by Hennepin County watershed management organizations under the pilot program for Watershed Based funding. It is essentially the same group with the addition of Carver County. Lower MN River North has been allocated $673,699 for FY 2020/2021.

Lower MN River South is holding its third meeting Tuesday, June 23, 2020 at 1:30pm. This group is working on developing priorities by which to judge projects that are submitted. LMRWD staff has discussed what priorities should be supported by the LMRWD and decided sediment reduction is a primary goal for the District. Secondary goals would be managing steep slopes and protection, preservation and restoration of unique natural resources, such as trout waters and fens. Lower MN River South has been allocated $829,075 for FY 2020/2021.

One Watershed One Plan - Planning Area 56
Le Sueur County has received the Resolution adopted by the LMRWD Board of Managers regarding the LMRWD's participation in the One Watershed One Plan process for Area #56. The County is working to schedule a meeting of everyone that has agreed to be part of the planning process.

Watershed Plan Projects

Gully Inventory and condition assessment: Staff conducted safety training for the interns virtually. Josh Maxwell from Riley Purgatory Bluff Creek Watershed District graciously included LMRWD interns in the training he conducted for interns working for RPBCWD this summer. On June 2, 2020 Young Environmental Consulting Group met in the field to conduct field training.
Project website: http://lowermnriverwd.org/projects/mn-river-corridor-management-project

Eden Prairie Area #3 Stabilization - No new information to report on this project.

Riley Creek Cooperative project/Lower Riley Creek restoration: No new information since last update.
Project website: http://www.rpbcwd.org/whats-happening/projects/lower-riley-creek-ecological-restoration

Seminary Fen ravine stabilization project: The session ended without an environmental having passed. The Governor and the Legislature are negotiating for a special session that is planned to begin June 12th. We visited the site during the field training with the interns and found silt fence still in place. The City has been notified, but no response has been received.
Project website: http://lowermnriverwd.org/projects/bwsr-clean-water-fund-grant-administration

East Chaska Creek: (Carver County Watershed Based Funding): The DNR issued a permit for this project. LMRWD staff provided a summary of the project for the Chaska City Council to consider for approval of the project, since it is located on City property. This is the final step for the project. The LMRWD will ask the City to consider allowing the project construction before cold weather.
Project website: http://lowermnriverwd.org/projects/east-chaska-creek-bank-stabilization

Schroeder Acres Park (Scott County Watershed Based Funding): No new information since last update.
Project website: http://lowermnriverwd.org/projects/schroeder-acres-parkeagle-creek-sub-watershed-stormwater-study

Shakopee Downtown BMP Retrofit (Scott County Watershed Based Funding): No new information to report since last update.
Project website: http://lowermnriverwd.org/projects/targeted-bmps-downtown-shakopee

PLOC (Prior Lake Outlet Channel) Restoration (Scott County Watershed Based Funding): No new information since last update. Project website: http://lowermnriverwd.org/projects/prior-lake-outlet-channel-realignmentwetland-restoration

Dakota County Fen Gap Analysis and Conceptual Model (Dakota County Watershed Based Funding): This project is complete. The final report has been issued and can be found on the project website. We are working with Dakota County to finalize the grant reporting and request funding.
Project website: http://lowermnriverwd.org/projects/dakota-county-fen-study-management-plan

Hennepin County Chloride Project (Hennepin County Watershed Based Funding): Riley Purgatory Bluff Creek Watershed District, Nine Mile Creek Watershed District, Richfield/Bloomington Water Management and I held a virtual meeting. A draft of the Cost Share Agreement for Salt Applicators was discussed and a draft document was presented.

Vegetation Management Plan: No new information since last update.

Sustainable Lake Management Plan: Trout Lakes: No new information since last update.

Geomorphic Assessment of Trout Streams: No new information since last update.

Spring Creek Cost Share: No new information to report since last update.

West Chaska Creek Re-meander: No new information to report since last update.

Seminary Fen Ravine Restoration Area C2: No new information to report since last update.

Project Reviews

Keyland Development: City of Shakopee - this is a new residential development in Shakopee. LMRWD will attend the field inspection for the wetland delineation on June 16, 2020.

Hentges Industrial park: City Shakopee - this is a new industrial development planned in Shakopee. LMRWD will attend the field inspection for the wetland delineation on June 16, 2020.

9960 Deerbrook, Chanhassen: No new information to report since last update.

Beech Street Bridge replacement: Chaska - No new information to report since last update.

Summerland Place Residential Development EAW: Shakopee - No new information since last update.

Timber Creek Residential Development EAW: Carver - No new information to report since last update.

MNDOT TH13 Improvement Study: No new information to report since last update.
Project website: http://www.dot.state.mn.us/metro/projects/hwy13savageburnsville/index.html

Historic Fort Snelling Revitalization: No new information to report since the last update. Project website: https://www.dnr.state.mn.us/input/environmentalreview/upperpost/index.html

HCRRA MN River Bluffs Regional Trail: No new information to report since last update.

MNDOT ADA Trail improvements in Mendota: No new information since last update.

MNDOT trail drainage improvements in Lilydale: No new information since last update.

MNDOT Trail - 494: No new information to report since last update.

MNDOT - TH5: No new information to report since last update.
Project website: http://www.dot.state.mn.us/metro/projects/hwy5mpls-stpaul/index.html.

City of Chanhassen - Moon Valley Gravel Pit: No new information to report since last update.

City of Carver - Hawthorne Ridge: No new information to report since last update.

Metropolitan Airport Commission - Environmental Assessment Worksheet for MSP Concourse G Infill - No new information since last update.

City of Burnsville - Quarry Property, LLC - No new information on this project since last update.

City of Carver - Levee rehabilitation: No new information to report since last update.

City of Carver - Jonathan Parkway upgrades - No new information to report since last update.
Project website: https://www.co.carver.mn.us/departments/public-works/projects-studies/jonathan-carver-parkway-highway-11-improvements

City of Burnsville - CenterPoint Energy Training Facility - No new information on this project since last update.

City of Burnsville -5337 Properties, LLC: No new information on this project since last update.

City of Burnsville - Freedom Enterprises, LLC: No new information on this project since last update.

City of Burnsville - Industrial Equities - 250 River Ridge Circle North: - No new information on this project since last update.

City of Burnsville - United Properties - 12400 Dupont Avenue North: No new information on this project since last update.

City of Burnsville - Kraemer Mining: No new information to report since last update.

Dakota County - MN River Greenway: No new information to report since last update. Project website: **https://www.co.dakota.mn.us/parks/About/TrailPlanning/Pages/minnesota-river.aspx**

City of Shakopee - Jackson Township AUAR: No new information to report since last update.

City of Burnsville - CenterPoint Energy Lyndale Valve Replacement Project: No new information to report since last update.

City of Eden Prairie - C. H. Robinson: No new information to report since last update.

City of Burnsville - Burnsville Sanitary Landfill: The MPCA was seeking comments from the public regarding the preferred option. The LMRWD submitted comments. The District did not offer an opinion on the preferred option, but rather on rules that would be triggered by the project. A copy of LMRWD comments is attached. Project website: https://www.pca.state.mn.us/waste/freeway-landfill-and-dump

City of Eden Prairie - Peterson Wetland Bank: No new information to report since last update.

City of Chanhassen - TH 101 Improvements: The most recent inspection report is attached for the Board's information. LMRWD staff is scheduled to meet with the project manager Wednesday June 17th. Project website: **https://www.highway101improvements.com/**

Cities of Richfield/Bloomington - TH 77 & 77th Street underpass: No new information to report since last update.

MPCA - MN River TSS TMDL: This TMDL study was approved by the EPA February, 12, 2020.

MPCA - Watonwan River Watershed Maximum Daily Load Study Draft Report and Watershed Restoration and Protection Strategy: This TMDL report was approved by the EPA April 7, 2020.

MPCA - Middle Minnesota River Watershed Total Maximum Daily Load Study Draft Report and Watershed Restoration and Protection Strategy: This TMDL was approved by the EPA February 20, 2020.

MPCA - Lower Minnesota River Watershed Total Maximum Daily Load Study Draft Report and Watershed Restoration and Protection Strategy: The EPA approved this TMDL study March 13, 2020.

The above four items will no longer appear on this report.

City of Bloomington - MN Valley State Trail: No new information to report since last update. Project website: **https://www.dnr.state.mn.us/state_trails/minnesota_valley/plans.html**

Hennepin County - CSAH 61/Flying Cloud Drive: This project is considered complete. The LMRWD is aware of on-going maintenance issues. The District will identify what these issues are and will organize a meeting of all the LGUs to discuss how future maintenance will be conducted and who is responsible.

MNDOT - I494/TH 5/TH 55 Mill & Overlay project: No new information to report since last update. Project website: **https://www.dot.state.mn.us/metro/projects/i494invergroveheights/**

MNDOT - I35W Bridge Replacement: No new information to report since last update. Project website: **https://www.dot.state.mn.us/metro/projects/i35wbloomington/index.html**

MNDOT - I494 from TH169 to Minnesota River: No new information to report since last update.

Scott County - TH 41/169/78 Interchange: No new information to report since last update. Project website https://www.scottcountymn.gov/1778/Highways-1694178-Interchange?PREVIEW=YES&PREVIEW=YES&PREVIEW=YES&PREVIEW=YES

City of Shakopee - Amazon Fulfillment Center drainage: This project appears to be complete. See attached report.

MAC/LMRWD/MCWD boundary realignment: No new information to report since last update.

Fort Snelling - Dominion Housing: No new information since last update. The DNR's website for this project is http://www.dnr.state.mn.us/input/environmentalreview/upperpost/index.html.

USACOE/USFWS - Bass Ponds, Marsh & Wetland: .
Project website: https://www.scottcountymn.gov/1865/Bass-Ponds-EAW

Upcoming meetings/events

- UMWA - Thursday, May 21, 2020, 12:30pm to 1:30pm, check with District Administrator to join
- Metro MAWD - Tuesday, July 21, 2020, 7:00pm Capitol Region Watershed District (no word yet on whether or not it will be virtual or cancelled)
- 2020 Salt Symposium - August 4, 2020 8:30am & August 5, 2020, 7:30am streamed live on-line
- USACE River Resource Forum #117 - August 25-26, Savage City Hall
- USACE River Resource Forum #118 - December 1-2, MN Valley US Fish & Wildlife Service Visitor's Center, Bloomington, MN

Memorandum

To: **City of Chaska**

From: **Lower Minnesota River Watershed District**
Linda Loomis
District Administrator

RE: **East Chaska Creek Bank Stabilization Project**

The Lower Minnesota River Watershed District (LMRWD) plans to stabilize stream banks on a segment of East Chaska Creek. The LMRWD has identified East Chaska Creek as a source of sediment entering the Minnesota River. The LMRWD has received all permits necessary to construct the project and is seeking approval from the City of Chaska.

East Chaska Creek is unique relative to other streams in the region because the channel from Engler Street to the Minnesota River is likely completely manmade, with flow through the channel controlled by an upstream diversion structure. LMRWD research indicates the channel was constructed at some time between 1851 and 1937, possibly to support clay mining and brick-making operations.

The Minnesota Pollution Control Agency (MPCA) listed East Chaska Creek as an "impaired water" for fecal coliform (2007) and fish bio-assessments and turbidity (2009). According to the MPCA, "impaired waters" are those waters that do not meet State water quality standards for one or more pollutants; thus they are "impaired" for their designated uses.

In January 2012, the LMRWD completed a Strategic Resource Evaluation ([SRE] HDR, Inc., 2015) in which several streams, including East Chaska Creek, were assessed for current and ongoing erosion and maintenance issues. In 2015, the LMRWD completed a more detailed erosion assessment of East Chaska Creek and published a report in early 2016 titled *East Chaska Creek Restoration Project* (Burns and McDonnell, 2016). The report identified multiple areas of erosion along East Chaska Creek, which generally coincided with those identified in the SRE, and the study provided recommendations and cost estimates for channel stabilization projects. The report identified several locations where maintenance was needed to mitigate small localized issues. Maintenance items included removing fallen trees and debris and installing riprap at storm sewer outfalls. Channel stabilization projects included larger areas of eroding banks and channel instability.

The LMRWD began preparation to implement channel stabilization projects with a Clean Water Fund Grant of $25,472 obtained through the Metro-area Watershed Based Funding Pilot Program. In 2019, the LMRWD retained Young Environmental Consulting Group, LLC, and Barr Engineering Co. to reassess the previously identified maintenance and erosion sites, identify any new erosion sites that may have developed, and update cost estimates for completing stabilization work.

The project has now been sorted into three erosion areas for stabilization: repair the scour hole downstream of the Crosstown Boulevard Bridge, install bank armoring, toe protection and grade

control structures behind Lenzen Chevrolet, and install toe protection on the right bank east of Oak Street.

A more detailed description of the project can be found in the 2019 report from Barr Engineering Co., which is attached to this memorandum.

Construction is planned for late fall to early winter of 2020, at the request of the City. The project was bid in early December of 2019. The bid was awarded to Blackstone Contractors, LLC, for a low bid of $68,959.50.

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Memorandum

To: Della Schall Young, Principal, Young Environmental Consulting Group, LLC
Linda Loomis, Administrator, Lower Minnesota River Watershed District
From: Jeff Weiss, PE, Senior Water Resources Engineer
Adam Howard, PE, Water Resources Engineer
Subject: East Chaska Creek Assessment
Date: January 18, 2019
Project: 23101028.02

1.0 Background and Purpose

The Lower Minnesota River Watershed District (LMRWD) has identified East Chaska Creek as a source of sediment entering the Minnesota River. In 2012, LMRWD completed a Strategic Resources Evaluation (SRE) (HDR, Inc., 2015), in which several streams, including East Chaska Creek, were assessed for current and on-going erosion and maintenance issues. In 2015, LMRWD completed a more detailed erosion assessment of East Chaska Creek and published a report in early 2016 titled East Chaska Creek Restoration Project (Burns and McDonnell, 2016). The study identified multiple areas of erosion along East Chaska Creek, which generally coincided with those identified in the SRE; and the study provided recommendations and cost estimates for channel stabilization projects. The study also identified several locations where maintenance is needed to mitigate small, localized issues. Maintenance items included removing fallen trees, removing debris, and installing riprap at storm sewer outfalls. Channel stabilization projects included larger areas of eroding banks and channel instability. Maintenance projects are the primary responsibility of the city of Chaska to complete, and LMRWD helps to facilitate the implementation of the channel stabilization projects.

Since the 2016 East Chaska Creek report, the City has completed some identified maintenance projects, and LMRWD has begun preparing to implement channel stabilization projects. The goals of this study are the following:

1) Reassess previously identified maintenance and erosion sites to
    a. Assess the condition of locations where the City has completed maintenance and stabilization work;
    b. Determine if any erosion sites have worsened;
    c. Evaluate the previous recommendations and reassess their feasibility.
2) Identify new erosion sites that may have developed.
3) Update cost estimates for completing remaining stabilization work.

2.0 Channel Assessment

2.1 Overall assessment

On November 8, 2018, staff from Barr Engineering Co. (Barr) and Young Environmental Consulting Group (Young Environmental) walked East Chaska Creek from approximately Engler Boulevard to the levee gate structure. Overall, the channel appeared to be in relatively good condition. The creek appeared to have adequate connection to a floodplain in most places, so it does not appear to be incised. There are localized erosion locations contributing sediment to the stream; however, it does not appear to have significant systemic issues related to channel incision.

As noted in the 2016 report, the channel is likely a man-made channel constructed to serve local industry. As such, it was likely designed for the industrial purposes and was not designed with geomorphic principals in mind. Some of the localized erosion issues could be attributed to the channel being constructed as a relatively straight channel with few meanders. When straightened, streams always try to create a more meandering path, so some of the localized erosion is likely caused by the channel trying to create a more sinuous, meandering path. The diversion channel located upstream of this reach controls flows through this reach and likely helps prevent some erosion from becoming worse by reducing the peak flows.

2.2 Maintenance Sites

Staff from Barr and Young Environmental noted if previously recommended maintenance activities had been completed. Table 1 and Figure 1 summarize the status of maintenance activities.

Table 1 Summary of Maintenance Sites

Maintenance No.	Description	Completed Status	Recommendation
M1	Riprap toe at RCP Outfall	No	Complete as planned
M2	Repair bank, riprap at dual 12" diameter CMP outfalls	No	Complete as planned
M3	Remove debris	No	Complete as planned
M4	Remove debris	No	Complete as planned
M5	Remove debris	No	Complete as planned
M6	Repair bank, install riprap at PVC outfall	No	Complete as planned
M7	Remove debris	No	Not necessary
M8	Remove debris	No	Not necessary
M9	Remove debris	No	Not necessary
M10	Remove debris	No	Not necessary

M11	Remove flap gate off RCP outlet, repair riprap	No	Complete as planned
M12	Remove debris	No	Complete as planned
M13	Remove debris and remove material pile on left bank, seed	Yes	N/A
M14	Install riprap at end of storm sewer outfalls and cross vane for grade control	No	Added in 2018

It appeared that one maintenance item (M13) has been completed. Most other previously recommended maintenance tasks (M1, M2, M3, M4, M5, M6, M11, and M12) should still be completed. Of those it should be noted that M12 includes failing riprap with erosion at the site. Also, the debris at M12 is significant enough that it is staging water upstream. Site M14 was added to the list with this assessment as staff observed erosion at the storm sewer outfalls on the downstream side of Chaska Boulevard.

After evaluating photos and field notes, Barr concluded that the maintenance items at M7, M8, M9, and M10 are the lowest priorities, or could be excluded from maintenance activities. Debris is still located at each site and should be removed if it can be done without creating a significant additional disturbance; however, they are minor issues that are not causing significant adverse impacts.

Photos of many of the maintenance sites are included in Attachment A.

2.3 Stabilization Sites

The 2016 report recommended stabilizing several erosion areas, and they were grouped into three recommended stabilization projects. Barr and Young Environmental evaluated the erosion at each of these locations, and the following sections provide a review of the recommended projects. The Barr and Young Environmental evaluation observed one new erosion location, so there is a new recommended stabilization project. Photos of the stabilization sites are included in Attachment A

2.3.1 Site S1: Repair Scour Hole Downstream of Crosstown Boulevard Bridge

The channel under the Crosstown Boulevard Bridge is lined with concrete so it is wide and flat (Site S1 in Figure 2). The downstream end of the concrete lining is also above the existing channel bed, resulting in a drop of approximately one to two feet. It is possible that the channel downstream developed a headcut that created the drop at this location; however, the banks downstream of the bridge do not have a similar evidence of a headcut moving through the section of stream. In general, the banks are gradually sloping and appear to be at a reasonable height compared to the stream. If a headcut came through this section, the impacts of the headcut appear to have self-mitigated downstream of the bridge. Alternatively, it is also possible that the bridge was originally installed with an elevation drop at the downstream end.

Regardless of the cause, the current situation has a handful of issues that should be mitigated. The main issue present is primarily caused by the fact that the wide, flat concrete lining disperses flow along the entire width of the channel bottom at a nearly even depth, and it spills over the end of the lining like a weir. This results in bank erosion and an over-widened channel for approximately 20-30 feet downstream of the bridge. Furthermore, the combination of the elevation drop and the flat, sheet flow through the bridge also create a barrier for aquatic organism passage.

The 2016 report recommended salvaging the existing riprap, regrading, reinstalling riprap, and adding some additional riprap. Barr concurs that this approach is likely the most cost effective option with the following considerations:

1) The design of the riprap at the end of the bridge should try to eliminate the weir flow at the end of the bridge and direct flow into a channel width that mimics the channel width downstream of the bridge. Eliminating the weir flow will reduce erosive pressure on the banks immediately downstream of the bridge. There are multiple ways of achieving this that will depend on other design parameters related to the bridge hydraulics.
2) Given the elevation drop from the end of the bridge to the existing channel, the design should plan to incorporate a scour hole at the end of riprap. Scour holes naturally occur downstream of elevation drops in streams, so a scour hole is likely to develop anyway. Incorporating it into the design will reduce the risk of adverse impacts.
3) If possible, riprap at the end of the bridge should extend above the bottom of the bridge to create additional flow depth to provide for aquatic organism passage. Bridge flow capacity and hydraulics will determine if this is possible.

The construction cost estimate for this reach is estimated to be approximately $18,980, including a 30% contingency. The estimated construction cost for specified items is similar to the cost estimated in 2016; however, this estimate includes a larger assumed percent for mobilization and contingency. A full cost estimate summary, including estimated engineering fees, is included at the end of this section.

2.3.2 Sites S2-S6: Install Bank Armoring, Toe Protection, and Grade Control Structures behind Lenzen Chevrolet

There are multiple eroding banks within this reach (Sites S2 – S6, Figure 2) that threaten the City's paved trail located between the channel and the Lenzen Chevrolet parking lot. The creek appears to be developing point bars and a meandering pattern through this reach that is otherwise relatively straight. Given the man-made origins of the channel, the original channel may have been created too large for the flows it currently experiences in this location, so a smaller, meandering pattern appears to be developing within the larger channel.

The 2016 report recommended a variety of measures to stabilize the reach, including installing a grade control structure, removing temporary asphalt repairs, installation of hard armoring for approximately 320 feet of banks, and installation of toe protection for approximately 340 feet of banks.

After reviewing the site, Barr concurs that all of the erosion sites should be stabilized, and we concur with the recommendation to remove temporary asphalt repairs. The armoring and toe protection previously recommended would be effective. The previously recommended grade control structure (S2, Figure 2) can be eliminated because headcutting does not appear to be an issue within this reach.

Alternatively, other stabilization measures could be used to achieve the same goals. Toe protection with riprap is still the most effective option in some places; however, rock vanes and root wads would be used in many locations to provide bank protection at a lower cost. The following table provides a comparison of the 2016 recommendations and alternatives considered in this analysis.

Table 2 Comparison of stabilization recommendations

Site	Original Recommendation	Alternate Recommendation
S2	Install grade control structure	Not necessary
S3	Armor bank (320 LF)	Install riprap toe protection and riprap armoring along approximately 100 feet of bank. Install approximately 6 rock vanes in other locations to direct flow away from the banks
S4	Install toe protection (130 LF)	Install riprap toe protection along approximately 50 feet, and install 4 rock vanes.
S5	Install toe protection (150 LF)	Grade banks and use removed trees from the project to install root wads for bank protection
S6	Install toe protection (60 LF)	Install 2 rock vanes to direct flow away from bank.
Construction Cost Estimate[1]	**$122,200**	**$96,850**

1 – Includes 30% construction contingency.

Based on Barr's cost assumptions and the assessment completed by Barr and Young Environmental, the alternative recommendations for stabilizing this reach have the potential to have a lower cost than those included in the original recommendation in 2016. A full cost estimate summary, including estimated engineering fees, is included at the end of this section.

2.3.3 Site S7: Install toe protection on right bank east of Oak Street

The original recommendation included installing toe protection for approximately 120 feet of the right bank (Figure 3). The 2018 assessment found that the City had recently completed some stabilization work

on this site, including grading and revegetating the bank. As a result, Barr recommends not completing additional stabilization work in this area.

2.4 Cost Estimate

Table 3 summarizes the cost estimate for the stabilization projects summarized in this memorandum. We assumed larger percentages for some items, such as mobilization, construction contingency, and engineering compared to those used in the 2016 report. The percentages used are those that Barr typically uses for a feasibility-level cost estimate on projects of this order of magnitude. Detailed cost estimates are included in Attachment B.

Table 3 Cost Estimate Summary

Site No.	Description	Estimated Cost
S1	Repair erosion downstream of Crosstown Boulevard	$14,600
S2-S6	Stabilize bank erosion near Lenzen Chevrolet	$74,500
S7	No recommended action	$0
	Subtotal	$89,100
	Contingency (30%)	$26,730
	Construction Subtotal	**$115,830[a]**
	Survey	$10,000
	Engineering (30% of Construction Subtotal)	$34,750
	Project total	**$150,580[b]**

a – includes the subtotal plus contingency
b – includes the Construction Subtotal, Survey, and Engineering

The current cost estimate represents a decrease of approximately $17,900 under the 2016 cost estimate of $168,506. Some items were assumed to cost less with the current estimate while other items were added or assumed to cost more. Some key differences include:

1) Barr assumed mobilization costs 10% of remaining construction costs, whereas the 2016 report assumed 5% for mobilization. Mobilization percentages in bids can vary widely, and Barr typically assumes 10% in cost estimates.
2) Barr included a 30% contingency instead of 20%. Barr typically assumes a 30% contingency at a feasibility level cost estimate. Furthermore, since this is a relatively small project, the contingency amount could be consumed quickly by one or two additions, so the larger contingency provides some additional funds for unforeseen items or sites.

3) Barr assumed $10,000 for surveying instead of $5,000 because some sites could prove to be challenging to survey, depending on the time of year.
4) Barr assumed 30% of the construction subtotal for engineering and design, rather than 15%. This percentage is often near 15% for larger projects; however, Barr feels 30% is a realistic percentage for this size of project.

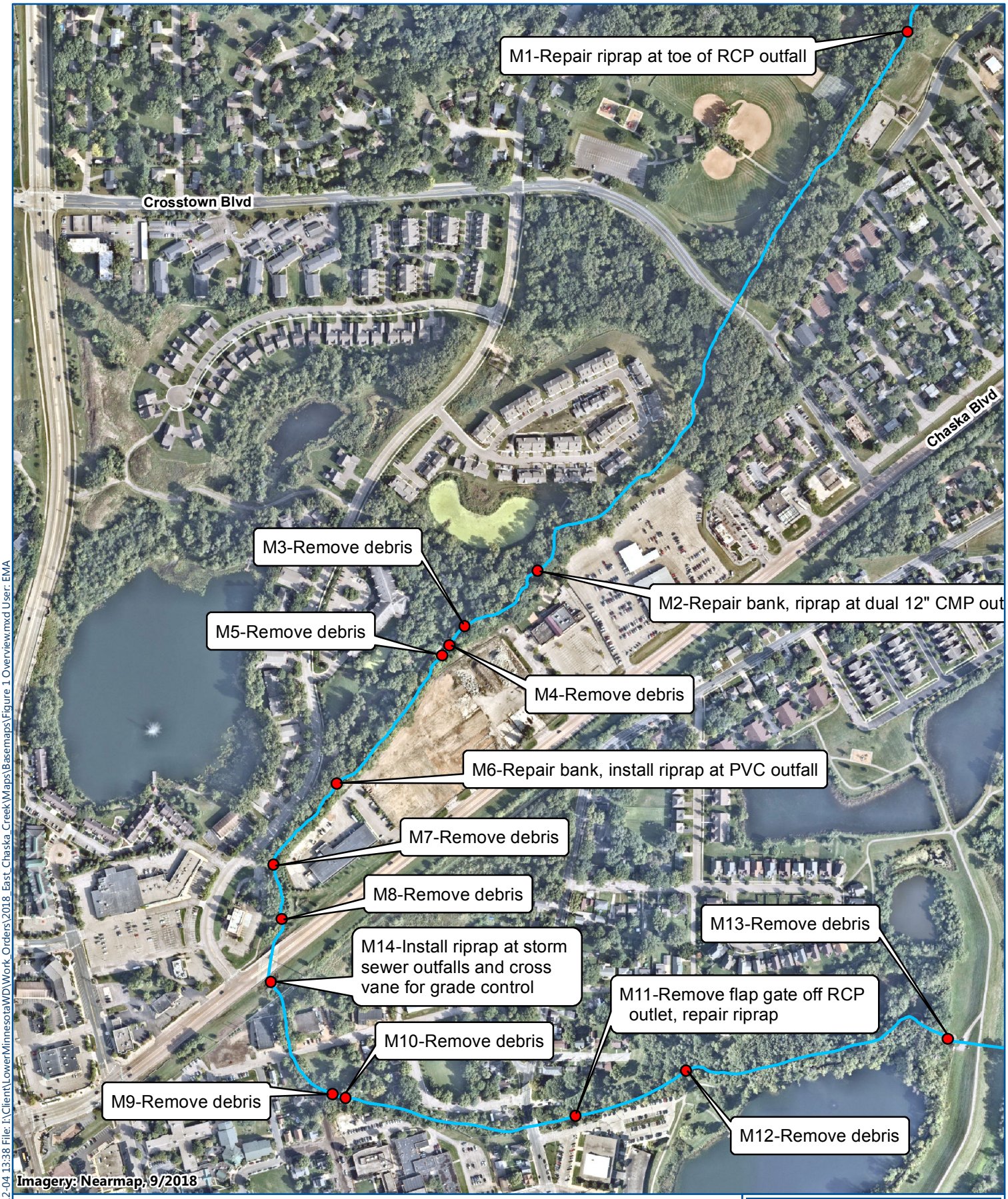
Despite these differences that typically added costs, the overall cost estimate is similar to the original estimate in 2016.

3.0 Recommendations

Barr recommends that LMRWD move forward with planned maintenance and stabilization projects with the following recommendations:

1) Add Site M16 to the recommendation maintenance items
2) Coordinate with the city of Chaska to save money by completing maintenance and stabilization projects at the same time.

Figures



Legend

- East Chaska Creek
- Recommended Maintenance Activity Location

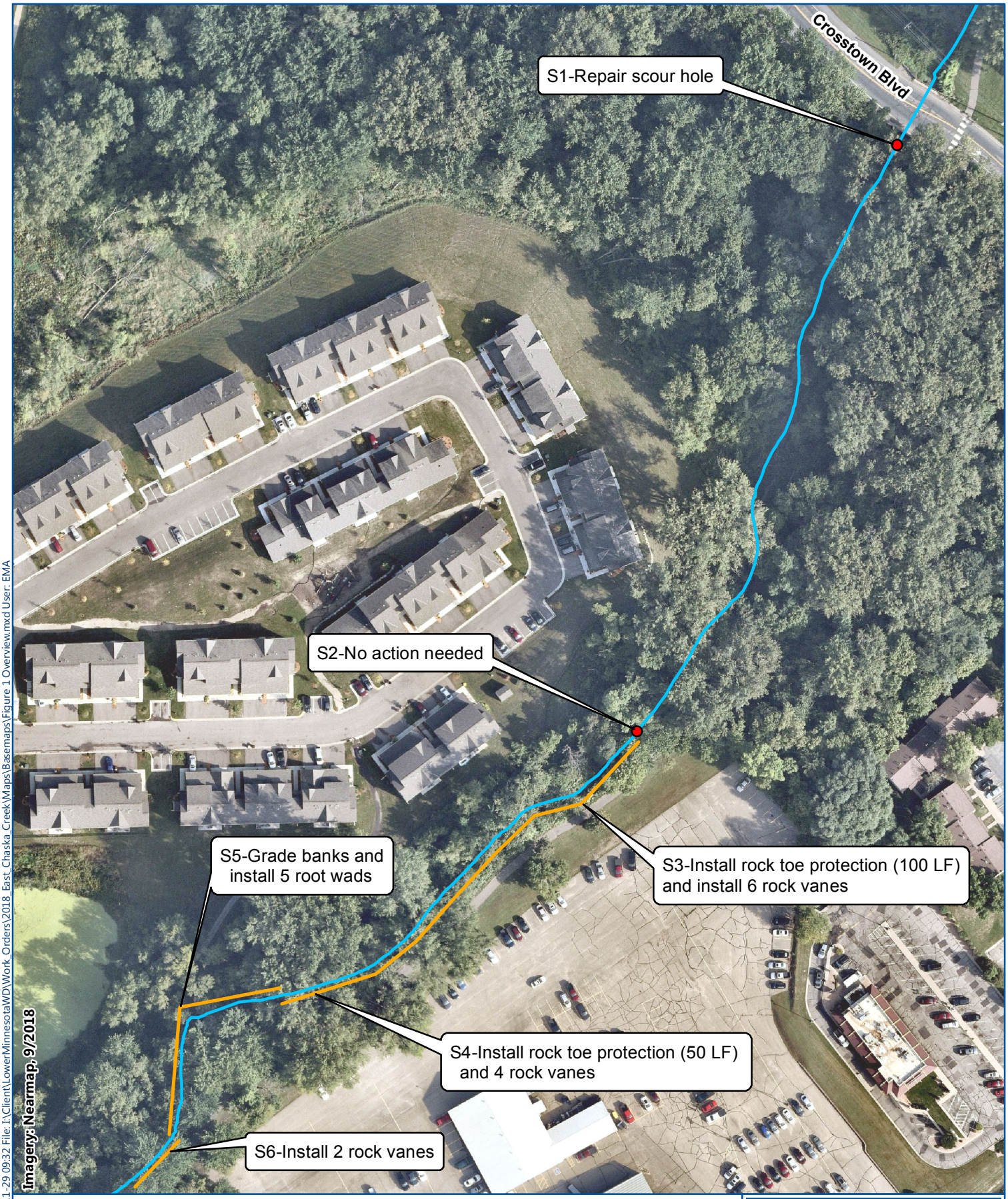
0 250 500

Feet

1 inch = 494 feet

RECOMMENDED MAINTENANCE ACTIVITIES
East Chaska Creek Project
Chaska, MN

FIGURE 1



Legend

- East Chaska Creek
- Recommended Channel Stabilization Project (Stream Bank)
- Recommended Channel Stabilization Project (Single Location)

N

0 60 120

Feet

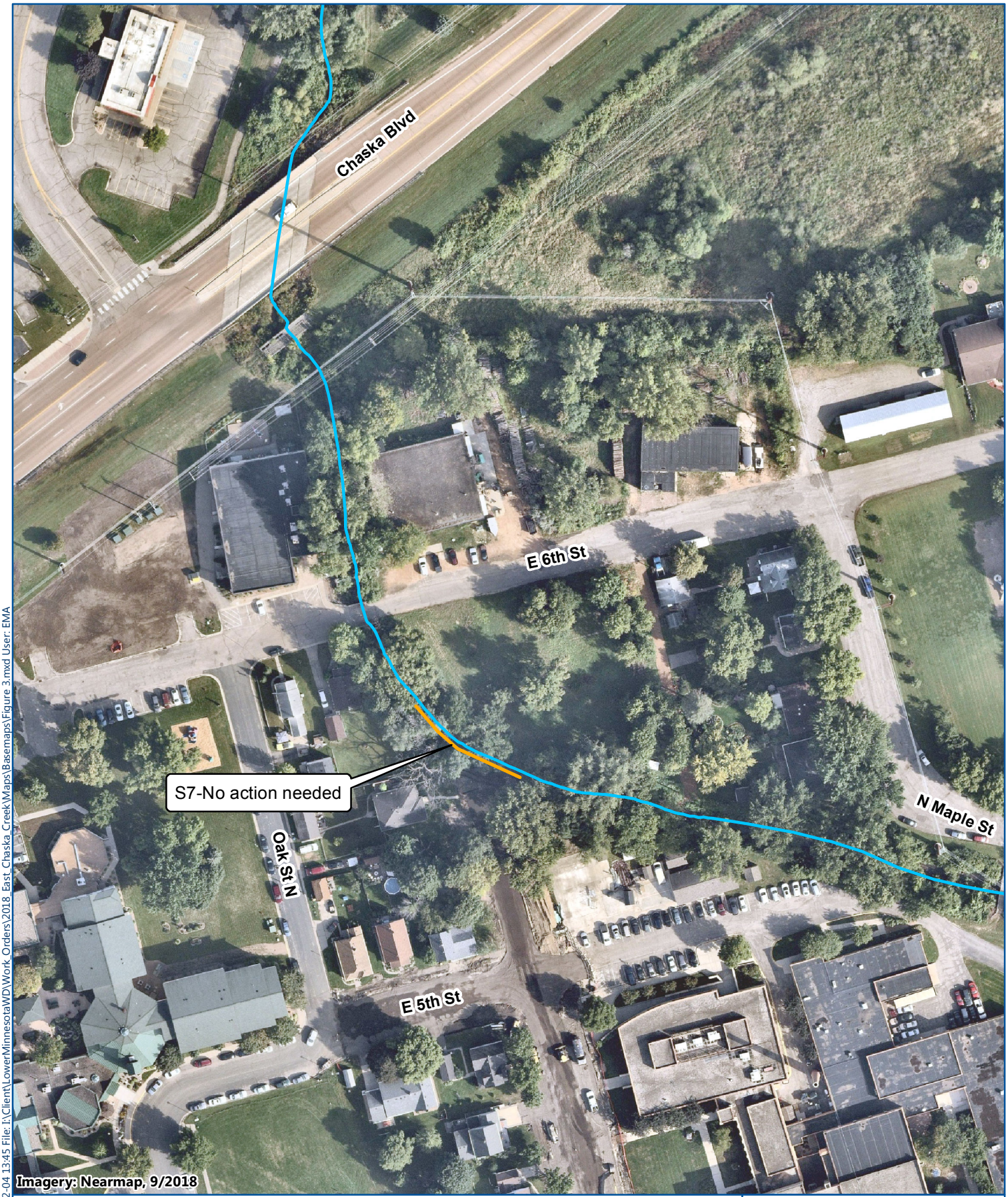
1 inch = 120 feet

BARR

RECOMMENDED CHANNEL STABILIZATION PROJECTS
East Chaska Creek Project
Chaska, MN

FIGURE 2

Barr Footer: ArcGIS 10.6, 2018-11-29 09:32 File: I:\Client\LowerMinnesotaWD\Work_Orders\2018_East_Chaska_Creek\Maps\Basemaps\Figure 1 Overview.mxd User: EMA



Legend

- East Chaska Creek
- Recommended Channel Stabilization Project (Stream Bank)
- Recommended Channel Stabilization Project (Single Location)

N

0 60 120

Feet

1 inch = 120 feet

BARR

RECOMMENDED CHANNEL STABILIZATION PROJECTS

East Chaska Creek Project
Chaska, MN

FIGURE 3

Attachment A

Site Photos

Chaska Creek Site Photos, November 8, 2018

Photo 1: Site M2 –erosion around culvert outfalls.

Photo 2: Site M3 – debris in channel creating blockage and minor erosion

Photo 3: Site M6 – bank erosion adjacent to a PVC outfall

Photo 4: Site M7 – debris in channel causing blockage

Photo 5: Site M8 – debris in channel

Photo 6: Site M9 – debris in channel upstream of site repaired by city of Chaska

Photo 7: Site M10 – debris in channel downstream of site repaired by city of Chaska

Photo 8: Site M11 – flap on RCP outlet and minor bank erosion

Photo 9: Site M12 – debris jam causing blockage and backwater

Photo 10: Site M13 – culvert outlet through the levee.

Photo 11: Site M14 – eroding banks and headcuts near Chaska Boulevard

Photo 12: Site S1 – scour hole and erosion downstream of Crosstown Boulevard

Photo 13: Channel near site S2

Photo 14: Site S3 – eroding bank between channel and paved trail near Lenzen Chevrolet

Photo 15: Site S4 – eroding bank and debris in the channel

Photo 16: Site S5 – eroding bank and undercut trees

Photo 17: Site S6 – minor bank erosion downstream on Lenzen Chevrolet

Photo 18: Site S7 – recent repairs made by city of Chaska

Attachment B

Detailed Cost Estimates

EAST CHASKA CREEK STABILIZATION SITES
COST ESTIMATE
January 18, 2018

Site S1: Repair Scour Hole Downstream of Crosstown Boulevard

Item	Description	Units	Quantity	Unit Price	Extension
1.01	Mobilization (10%)	Lump Sum	1	$ 1,400.00	$ 1,400.00
1.02	Erosion Control	Lump Sum	1	$ 300.00	$ 300.00
1.03	Clearing and grubbing	Lump Sum	1	$ 1,000.00	$ 1,000.00
1.04	Salvage existing riprap	CY	30	$ 25.00	$ 750.00
1.05	Grading	CY	100	$ 50.00	$ 5,000.00
1.06	Granular filter material	Ton	15	$ 60.00	$ 900.00
1.07	Replace salvaged riprap	CY	30	$ 25.00	$ 750.00
1.08	install new riprap	Ton	50	$ 80.00	$ 4,000.00
1.09	Site restoration	Lump Sum	1	$ 500.00	$ 500.00
				Subtotal	**$ 14,600.00**
				Contingency	30%
				Total	**$ 18,980.00**

Site S2-S6: Repair Eroding Banks by Lenzen Chevrolet

Item	Description	Units	Quantity	Unit Price	Extension
1.01	Mobilization (10%)	Lump Sum	1	$ 6,800.00	$ 6,800.00
1.02	Erosion Control	Lump Sum	1	$ 1,400.00	$ 1,400.00
1.03	Clearing and grubbing	Lump Sum	1	$ 5,000.00	$ 5,000.00
1.04	Remove asphalt stabilizat	CY	15	$ 30.00	$ 450.00
1.05	Grading	CY	750	$ 15.00	$ 11,250.00
1.06	granular filter	Ton	100	$ 60.00	$ 6,000.00
1.07	Riprap - toe protection	Ton	250	$ 80.00	$ 20,000.00
1.08	Rock vanes	LF	140	$ 120.00	$ 16,800.00
1.09	Root wads	Each	6	$ 800.00	$ 4,800.00
1.10	Site restoration	Lump Sum	1	$ 2,000.00	$ 2,000.00
				Subtotal	**$ 74,500.00**
				Contingency	30%
				Total	**$ 96,850.00**

East Chaska Stream Stabilization Project

WHY

East Chaska Creek is a source of sediment entering the Minnesota River as a result of ongoing streambank erosion.

The above photo highlights some of the current bank erosion occurring in East Chaska Creek.

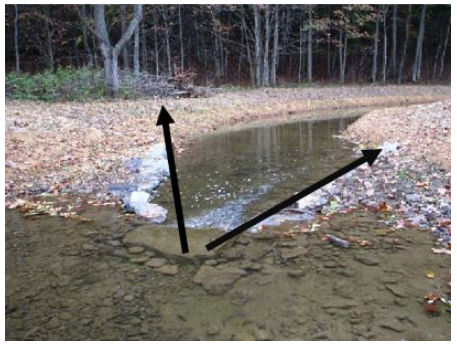
WHAT

The project will help to stabilize the banks of East Chaska Creek, mitigating the amount of sediment entering the creek as well as the Minnesota River. The project will implement stabilization practices that include root wads, rock cross vanes, and rock riprap.

HOW

Root Wads

Provide toe support for bank revegetation, collect sediment and debris, enhance bank structure



Rock Cross Vanes

Direct the stream's energy toward the center of the channel relieving pressure on the banks, establish grade control, reduce bank erosion,

Riprap Toe Protection

Rock riprap placed along the streambank to dissipate energy, protecting the slopes from erosion

WHERE

The project is located on a portion of East Chaska Creek, starting at Crosstown Boulevard and extending approximately 1,500 feet downstream

WHEN

Construction is slated to take place between November and December 2020 and should span approximately four weeks once construction begins.

For information contact: Linda Loomis, Administrator at (763) 545-4659 or naiadconsulting@gmail.com

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Winter Maintenance Best Practices Grant

[Chloride Reduction Grant]OK with that name? Guidelines

Financial assistance, resources and tools to help you take action for healthy water resources in your neighborhood, city, watershed, and beyond. Join a community of stewards who are changing norms and building the future of clean water.

Program summary

The [Chloride Reduction Grant] program offers financial support and resources for businesses and local government units for tools and practices which reduce, directly or indirectly, chloride usage by that organization. Some examples include pavement temperature sensors which would allow for more effective chloride application or outfitting currently owned trucks with new segmented plow blades in order to reduce chemical removal of snow and ice.

The mission of the Lower Minnesota Collaborative is to protect, manage, and restore the water resources in its boundaries. The Lower Minnesota Collaborative includes the Lower Minnesota River Watershed District, Nine Mile Creek Watershed District, Richfield Bloomington Watershed Management Organization and the Riley Purgatory Bluff Creek Watershed District. We can't do this work alone though. We need an informed and empowered community to help create meaningful change with real results for clean water. The [Chloride Reduction Grant] exists to help grow and support that community.

Who can apply?

- Businesses
- Local government – Remove or keep? I believe we spoke businesses

Entities applying for [Chloride Reduction Grant] must be currently Smart Salting certified through Fortin and the MPCA. Certification must be earned or proven before funds are released. Entities must operate within Richfield, Bloomington, Edina, Eden Prairie, Chanhassen, Chaska, Shorewood, Deephaven, and/or. Minnetonka. Did we want to limit to cities only in Hennepin

County or expand into Carver County? If it's okay, RPBCWD has funds for Carver County and would love to utilize the same guidelines and form are you ok with me clumping carver in?

How much are the grants?

These are cost-share grants. That means that the watershed district covers part of the project cost, and the award recipient covers part. The grant amount is as follows:

- Gov/business: $15,000 max, up to 75% of the project cost Are we good with this?

The applicant is eligible for up to the max award per year. This means one application may include more than one practice (ex: new pavement sensors and updated blades), or the applicant may apply for two separate projects in one year, but the total amount they are awarded may not exceed the maximum listed above.

What practices get funded?

The [Chloride Reduction Grant] funds physical water resource improvement and protection practices (*best management practices - bmp)* that have quantifiable benefits to water quality via chloride reduction. Examples of projects include:

- *Equipment retrofits and upgrades:* Segmented and/or carbide edge plow blades (such as Joma, Polarflex, Live Edge Metal Pless) , MDSS software, pavement temperature sensors,
- *Anti-icing equipment:* Brine makers, brine tanks

How are grants awarded?

Applications are reviewed by the members of the Lower Minnesota Collaborative. Projects are evaluated for how well they address the program outcomes below. Highly technical or complicated projects may be referred to the Collaborative chloride technical panel for review and recommendation. What do you think of having Fortin and PW staff involved in chloride to bounce off ideas?

Local government and business applications of $10,000 or more that are recommended for funding are brought to the District Board of Managers for consideration and approval. Are you ok with that – this is what RPBCWD is limited to

Program outcomes:

The [Chloride Reduction Grant] program funds practices that:

- have quantifiable benefits to water quality
- support the mission of the Lower Minnesota Collaborative

Projects are also evaluated on whether they:

- are examples that the district can share with others
- increase awareness of water resource issues
- increase visibility and general knowledge of winter best practices

Projects must demonstrate an improvement over existing conditions for water quality.

Responsibility to our community

As a local government organization, funded by taxpayer dollars, it is the responsibility of the Watershed District to ensure program funds are used effectively. Therefore, applications will also be closely evaluated for whether they use cost-effective methods and materials.

What are the deadlines?

Applications are accepted Year-round. The grant review committee meets once a month. Applications that are brought to the Board of Managers will be reviewed at their next monthly meeting. Thus, depending on when you submit your application, it could be up to a month and a half before you hear whether your project was approved or denied.

What is the process?

To apply, fill out or provide:

- ☐ Grant application form
- ☐ Location map of where the practice will be used
- ☐ Contractor bids (for work involving a third-party)

- Project cost estimate

Incomplete applications will not be considered. You must have a site visit prior to applying.

If your project is approved

1. We will send you a contract. Once this is signed, you can get started!
2. Keep track of your expenses including all receipts
3. Issues come up. If you think you need to make a change to your plan, contact us for approval
4. Take photos! Before, during, and after. You'll need these for submitting your project report
5. You've got one year from approval to finish

After you've completed your project

1. Send in copies of all your receipts, including from any contractors you worked with (electronic copies or scans are acceptable).
2. Submit report of the work that was accomplished and include photos in the report
3. Financials are processed once a month at the watershed. Once your reimbursement request is submitted, it may take one to two months for you to receive your check.

Long-term

1. Take care of your project
2. We will ask you for a brief annual update for the first 3-5 years. How much reporting do we want them to do? Year 1, Year 3 and Year 5?
3. Stay in contact! The watershed district often offers continuing education on topics like maintenance, and other opportunities to learn and get involved

**Applicants are required to maintain their projects for the 10 years as specified in the "Maintenance" section of your grant agreement. 10 years is defined by BWSR*

More details

These pieces are less exciting than everything above, but they are important to understand. Please read through carefully. Make note of anything you have questions about and contact us.

Reimbursable costs

Key points: Don't spend money until your project is approved. Things that are pretty, but not functional, are not covered. You can count the work you do. Maintenance isn't covered.

Expenses incurred prior to project approval are not reimbursable (do not get started until you have signed a contract). If the final cost is less than the approved estimate, the reimbursement will be the applicable percentage of the actual cost.

Reimbursements cannot be more than the original approved amount, even if you actually spent more. Purely aesthetic elements (like a bird bath, or fountain) are not reimbursable.

In-kind labor and materials: Labor and other in-kind contributions can be used for the required 25% match at a rate of $10 per hour for unskilled labor and $20 for skilled.

Maintenance: Maintenance costs including labor and materials are not reimbursable, however we encourage you to create a maintenance plan.

Funding agreement

Key point: You need to sign a grant agreement and stick to it.

Program participants enter into a binding agreement with RPBCWD (fiscal agent of the Lower Minnesota Collaborative) providing the terms under which cost-share funding is provided. After approval of the project, the agreement is signed by both the participant and on behalf of RPBCWD, and a copy given to the participant. Amendment of any of the terms of the agreement will be by mutual agreement signed by all parties to the original contract.

The agreement includes, but is not limited to, promoting and acknowledging the Lower Minnesota Collaborative sponsorship, reporting, payment schedule, terms of agreement and use of funds, cost overruns, and cancellation. The agreement also allows RPBCWD access to the project area for evaluation and promotion.

Maintenance requirements

Key point: You need to take care of your project. If you don't, we can ask for the grant money back.

Maintenance of the project is the responsibility of the grant recipient. Local government and businesses are required to maintain their projects for 10 years. RPBCWD reserves the right to request repayment of a grant if the project is not adequately maintained.

Public hearing

Key point: If you are asking for a lot of money, the public gets to review the project.

Projects requesting $20,000 or greater will go to a public hearing prior to final approval. At the hearing, members of the public, including the applicant, may express opinion on whether the project should receive funding. The information and opinions expressed at the meeting will be considered by the Board of Managers in their final funding decision.

I don't think this will apply to us unless we put a higher limit on the grant.

Schedule

Project installation must be completed within one year of the agreement being signed. If unforeseen circumstances delay a project, the participant can request an extension in writing.

Payment

Reimbursement is made after completion of the project. The participant must document completion. Applicants must provide copies of paid invoices and receipts for all costs and reasonable documentation of labor hours contributed. Claimed expenses will be verified by RPBCWD as reasonable.

Conformance to plans

Key point: You need to install what you agreed to install in order to be reimbursed.
RPBCWD will not reimburse costs expended for installation of the practice that does not substantially conform to the approved plans, and/or specifications. RPBCWD will not reimburse costs expended for partial completion of the project. However, RPBCWD staff will work in earnest with participants to address unexpected conditions, changes in conditions or other eventualities that affect the installation or implementation of a project and will present a modification of the cost-share agreement to the Administrator or Board of Managers when necessary.

Submitted information

Key point: Your application is public data.
All information, including but not limited to applications, installation designs, contractor bids, cost estimates, final decisions and specifications, copies of permits and proof of expenditures is subject to disclosure to the public when submitted to RPBCWD, except where specifically protected as non- public by state law.

Reporting

The applicant will submit a project summary report to RPBCWD within 30 days of completing the project. Update reports will be submitted annually for 5 years. Additional reporting will be required after year 9 for projects receiving more than $10,000. Will modify based on what we discuss above

Young Environmental Consulting Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Katy Thompson, PE, CFM
Della Schall Young, CPESC, PMP

Date: June 10, 2020

Re: Freeway Landfill and Dump Remediation Preliminary Project Review (Permit No. 2020_105)

The Minnesota Pollution Control Agency (MPCA) is in the process of soliciting stakeholder design input on the proposed remediation options for the Freeway Landfill and Dump site in the City of Burnsville. In 2019, Barr Engineering Co. (Barr) completed a focused feasibility study to evaluate potential remediation options, and at the time, the Lower Minnesota River Watershed District (District) requested that Young Environmental conduct a review to determine which District standards the proposed options would trigger. The MPCA and Barr have since developed two design options that the MPCA intends to release for bidding in early 2021. The following is a more detailed review of the two options and the District requirements for the MCPA public comment period ending June 12, 2020.

Summary

Project Name:	Freeway Landfill and Dump Remediation
Purpose:	Remediation of two closed, but unlined, solid waste facilities
Project Size:	Approximately 175 acres of disturbance,
Location:	11937 Interstate 35W and 1020 W. Black Dog Rd, Burnsville, MN

Applicable LMRWD Rules:	Rule A – Administrative and Procedural Requirements Rule B – Erosion and Sediment Control Rule C – Floodplain and Drainage Alteration Rule D – Stormwater Management
Recommended Board Action:	Information only, no Board action at this time

Discussion

The MPCA is proposing to remediate the waste currently stored at the Freeway Landfill and Dump because the waste disposal occurred without the needed protections required by modern landfills to manage landfill leachate and landfill gas. The MPCA has proposed two options:

1. **Dig and Line:** Build a new modern landfill on the property (three variations of this option have been provided).
2. **Dig and Haul:** Move the waste from the landfill and dump off the property to another modern landfill.

As part of the MPCA's stakeholder outreach, the District was provided with the following documents for review:

- Freeway Remediation Presentation by Barr, dated May 6, 2020
- Freeway Remediation Preliminary Drainage Figures by Barr, dated May 6, 2020
- Focused Feasibility Study Report for the Freeway Landfill and Freeway Dump by Barr, dated October 2019

Rule A – Administrative and Procedural Requirements

The proposed project is located within the City of Burnsville and would normally be subject to municipal review; however, the City of Burnsville does not have an approved Municipal Permit with the District, and as such, the MPCA must receive a District Individual Project Permit prior to construction.

Rule B – Erosion and Sediment Control

The District regulates land-disturbing activities that affect one acre or more outside the High Value Resource Area (HVRA) Overlay District under Rule B. The proposed project disturbs 174 acres and will trigger the requirements under Rule B.

In addition, Option 1 should also address long-term erosion control concerns due to the long and steep flow paths from the top of the proposed landfill down to the stormwater management ponds to prevent damage to the underlying landfill cap and reduce erosion

at the toe of the slope and future sedimentation in the stormwater ponds and downstream waterbodies.

Based on the preliminary information provided, the proposed grading at the Freeway Dump site appears acceptable. However, it should be noted that the proposed grading will discharge into the Black Dog Lake Fen complex (**Figure 1**), and care should be taken during final design to ensure no adverse impacts would result to the fen from any concentrated stormwater runoff or outfalls.

Rule C – Floodplain and Drainage Alteration

The portions of the proposed project are located in the 100-year FEMA floodplain, and a District permit is required for land alteration or placement of fill below the floodplain. The City of Burnsville will be requiring a No Rise Certificate indicating that the proposed remediation will not cause an increase in water surface elevations of more than 0.00 ft. The District requests a copy of the No Rise documentation as well as calculations that demonstrate no net loss of flood conveyance capacity.

Rule D – Stormwater Management

The District requires stormwater management for projects that propose to create more than one acre of new impervious surface and more than 10,000 square feet in the HVRA. While neither remediation option currently includes the creation of traditional impervious surfaces (such as concrete or asphalt) as part of the design, we recommend considering the impermeable landfill cap an impervious surface because it may contribute to increased runoff rates from the final landfill when compared to existing conditions.

The District Rules define an impervious surface as “a constructed hard surface that either prevents or retards the entry of water into the soil and causes water to runoff the surface in greater quantities and at an increased rate of flow than before development.” The inherent purpose of a landfill final cover is to be impervious to surface and groundwater intrusions and to separate waste and byproducts from rain and groundwater infiltration, and the proposed remediation plans for Option 1 includes 60 to 80 acres of impervious liner and cover.

Further discussion of Rule D is broken below into three categories: rate control, volume reduction, and water quality.

Rate Control

The District clearly states one of the underlying policies in Rule D is to “require property owners control the rate and volume of stormwater runoff originating from their property so that surface water and groundwater quantity and quality is

protected or improved, soil erosion is minimized, and flooding potential is reduced." The current Freeway Landfill and Dump sites, for better or worse, are unlined and do allow for some rainfall infiltration, which affects the overall stormwater runoff from the site.

Under Option 1 (Dig and Line), the project proposes to line and cover the landfill waste with an impervious liner under the waste and an impervious cap on top of the waste (Figure 1). Installing an impervious cover, even with roughly two feet of pervious cover vegetation and topsoil on top, may increase the amount of stormwater runoff generated from the landfill site, particularly with the proposed height and slopes of the final landfill. If Option 1 is selected as the final design, the District will require hydrologic calculations to demonstrate that the proposed stormwater runoff rates from the site do not exceed the existing rates.

As presented, Option 2 (Dig and Haul) does not propose any new impervious surface, either traditional hard surfaces or an impenetrable cover layer, and would not trigger the rate control requirements of Rule D. However, as noted in Rule B, runoff from the Freeway Dump will be entering the Black Dog Lake Fen HVRA, and care must be taken during final design to ensure no adverse impacts would result due to concentrated stormwater discharges into the fen.

Volume Reduction

Section 4.4.2 of Rule D requires volume reduction for post-construction stormwater runoff volume for projects that create more than one acre of impervious surface or redevelopment of more than 10,000 square feet in the HVRA. The District does not allow infiltration practices in areas that may mobilize high levels of contaminants in soil or groundwater; however, filtration technologies are an acceptable method in lieu of infiltration.

Water Quality

Section 4.4.3 of Rule D requires projects that create more than one acre of new impervious surface to provide evidence that no net increase in total phosphorus (TP) or total suspended solids (TSS) in the receiving waters will result from the project.

Stormwater ponds are currently proposed as part of the design; the District will require the applicant to develop and adhere to a stormwater maintenance plan for the project, including the acquisition of any necessary easements.

Recommendations

We applaud the MCPA for tackling this project and recognize the need to segregate the landfill waste from surface and groundwater. The following summarizes the comments from the District to the MPCA:

- The MPCA should apply for and receive a District Individual Project Permit prior to construction.
- The proposed project will trigger *Rule B – Erosion and Sediment Control* and require an Erosion and Sediment Control Plan, SWPPP, and NPDES Construction Stormwater Permit.
- The Freeway Dump portion of the project is located within the High Value Resource Area for Black Dog Lake Fen, and care should be taken during design to avoid concentrated stormwater discharges into the fen during and after construction.
- Portions of the project are located within the 100-year FEMA floodplain and floodway and *Rule C – Floodplain and Drainage Alteration*. The District will require a no-rise certification by a professional engineer and calculations demonstrating no loss of floodplain storage would result from the project.
- The District considers the landfill cap an impervious surface, and *Rule D – Stormwater Management* will apply to the project.
- The District does not allow infiltration practices in areas that may mobilize high levels of contaminants in soil or groundwater; however, filtration technologies are an acceptable method in lieu of infiltration.
- All stormwater BMPs will require a maintenance agreement with the District.

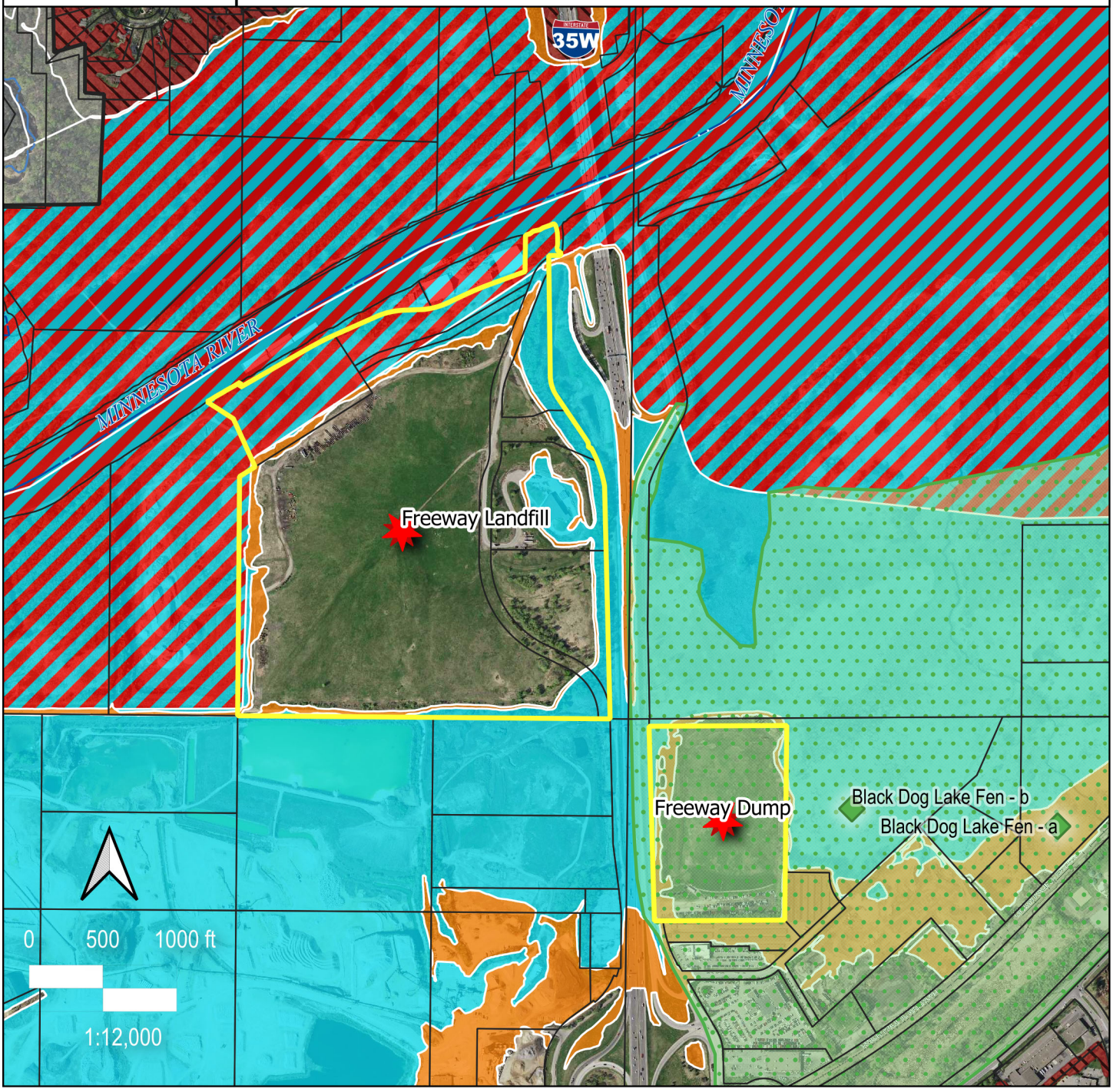
Attachments:

Figure 1—Proposed Freeway Landfill and Dump Location Map

LMRWD Permit Review Checklist

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Figure 1: Freeway Landfill and Dump Preliminary Review, City of Burnsville, MN
09-June-2020



LEGEND

- LMRWD Boundary
- Proposed Project Area
- Dakota Co. Parcels
- Dakota Co. Floodplain
- 100-yr Floodplain
- Floodway
- 500-yr Floodplain
- Steep Slopes Overlay District
- Calcareous Fen Locations
- HVRA Overlay District

Young Environmental Consulting Group, LLC

LOWER MINNESOTA RIVER WATERSHED DISTRICT
PROJECT REVIEW

Project ID	2020_0105	Authorization Agent	
Project Name	Freeway Landfill and Freeway Dump	Email Address	
Organization	Minnesota Pollution Control Agency	Phone Number	5555555555

Notes: 1/21/2020 - Review of preliminary plan documents and feedback

Project Summary

Anticipated start date	1/1/2021	Date received	
Project location	Burnsville, MN	Project map included?	☑
Project acres	174	Is the project in an unincorporated area?	☐
Total disturbed acres	174	Is it located in a High Value Resource Area	☑
New impervious acres	0	Is it located in a Steep Slope Overlay Distric	☐

Local Partners: City of Burnsville

Other Sensitive Area: Black Dog Lake Fen Complex

Project Description

The MPCA has determined additional waste management efforts are needed for the closed Freeway Landfill and Freeway Dump sites to prevent pollutants from further release of landfill gases and leachate into groundwater and the Minnesota River, particularly with the cessation of quarry pumping operations at nearby Kramer Quarry. The project proposed two options:
1. Dig & Line - excavate the waste from both sites and construct a modern landfill within the Landfill footprint
2. Dig & Haul - excavate the waste from both sites and haul to an existing landfill.
The MPCA is currently soliciting stakeholder feedback on the preliminary design through a public comment period that ends on June 12, 2020.

Additional Notes

Review Status

Is this a preliminary review?	☑
Is this a permit review?	☐
Does this project require a techincal revie	☐

Project Status

Project is pending	☑
Project is active	☐
Project has been archived	☐

Erosion and Sediment Control

This project triggers one or more thresholds for this rule.

Triggers		Criteria	
Disturbs one acre plus	☑	Erosion and Sediment Control Plan	☐
Located within the HVRA Overlay District	☑	Inspection and maintenance addressed	☐
Meets the HVRA threshold	☑	NPDES/SDS General Construction Permit documentation	☐

The documentation requirements for this rule have not been met. A review cannot be completed until all required documentation has been submitted.

Additional Notes

6/7/2020 - Based on the feasibility study and 5/6/2020 LMRWD presentation, the proposed project will disturb approximately 174 acres, including portions within the HVRA near Black Dog Lake Fen Complex. The District will require and erosion & sediment control plan, SWPPP, and a maintenance agreement for any permenant stormwater BMPs.

Floodplain Drainage Alteration

This project triggers one or more thresholds for this rule.

Triggers			
Changes in water surface elevation of floodplain	☑	Calculations by a professional engineer demonstrating no decrease to conveyance	☐
If yes, Compensatory storage equal or greater than volume of fill	☐	Conveyance capacity decrease below 100yr high water elevation	☐
If no, No-rise certification by a professional engineer	☐	Temporary placement of fill	☐
Criteria		Adverse impacts to water quality, habitat, or fisheries	☐
Net decrease of storage capacity OR increase in 100yr elevation	☐	New structures have 2ft+ between lowest enclosed area's floor and 100yr high water elevation	☐
Will floodplain storage be created	☐		

The documentation requirements for this rule have not been met. A review cannot be completed until all required documentation has been submitted.

Additional Notes

6/5/2020 - The proposed project is located within the 1% Special Flood Hazard Area for the Minnesota River. At this time it is not known if the project will reduce the flood storage capacity of the floodplain or not, but the potential impact should be con

Stormwater Managment

This project triggers one or more thresholds for this rule.

Type of project Development

Triggers

One acre or more of impervious surface	☑	Are trout streams protected	☐
HVRA Overlay District		Rate control exceeded for 1, 2, 10, and 100yr 24-hour event	☐
Located within the HVRA Overlay District	☑		
If yes, Meets the HVRA threshold	☑	Projects with 1+ acres of new impervious: are MPCA's Construction General Permit	☐

Criteria

Post-construction runoff rates exceed existing rates for 1, 2, 10, and 100yr 24-hour events?	☐	Net increase of TP	☐
		Net increase of TSS	☐
New Development: the post-construction runoff volume retained onsite equal 1.1 inches of runoff from impervious surfaces	☐	Is maintenance adequately addresse	☐
		Project will result in a net decrease of TP and TSS	☐
Redevelopment: the project will capture and retain onsite 1.1 inches from new/fully reconstructed impervious surface	☐	Volume control requirements sufficiently addressed	☐
Linear: the site will capture and retain (a) 0.55 inches of runoff from new/fully reconstructed impervious, or (b) 1.1 inches of runoff from the net increase in impervious area	☐		

The documentation requirements for this rule have not been met. A review cannot be completed until all required documentation has been submitted.

Alternative Infiltration Measures

Additional Notes

6/5/2020 - Option 1 (Dig & Line) proposes to dig up the existing landfill waste and construct an

impermeable liner under the waste, replace the waste, then cap with an impermeable cover over the waste per current regulatory standards. The purpose of a landfill liner and cap are to provide a permanent separation between the landfill waste and surface and groundwater, as such, the cap and liner should be considered impervious surface and would trigger the District's Rule D - Stormwater Management.
Option 2 (Dig & Haul) would remove the waste from both sites and presumably replace the waste with clean fill and pervious surface. In which case, Rule D would not be triggered.

Steep Slopes

This rule does not apply.

Triggers		***Criteria***	
Is the project in the Steep Slopes Overlay District	☐	Has the project been certified by a professional engineer	☐
Excavation of 50 cubic yards+ of earth	☐	Adverse impact to waterbodies	☐
Displacement of 5,000 sq. ft+ of earth	☐	Unstable slope conditions	☐
Vegetation removal or displacement	☐	Degradation of water quality	☐
		Preservation of existing hydrology	☐
Activities that require LGU permits	☐	New discharge points along slope	☐

Additional Notes

Memorandum

Young Environmental Consulting Group, LLC

DATE: May 21, 2020 *(Email transmittal)*

TO: Linda Loomis—Administrator, LMRWD

FROM: Shane Soukup, Water Resources Scientist
Della Schall Young, PMP, CPESC

SUBJECT: Stormwater Visit Summary
May 15, 2020, 5:25–6:05 a.m.
TH 101—Great Plains Boulevard
Owner—City of Chanhassen and Contractor—S.M. Hentges & Sons Inc.

WEATHER: 48°F, sunny—per AccuWeather

SITE CONDITIONS/PHASE

Construction began in March 2020 and is currently in Phase 1, which takes place on the segment of TH 101 between Flying Cloud Drive and Creekwood Drive. Construction activities that were completed or underway during the site inspection included excavation and grading activities in various locations along TH 101, erosion and sediment control practices in place, construction of the Creekwood Drive cul-de-sac, construction of the Lakota Lane connection, and excavation and grading north of the Highway 61 roundabout. TH 101 is now closed between Highway 61 and Lakota Lane.

The City of Chanhassen and its project partners, Carver County and the Minnesota Department of Transportation, have developed the Highway 101 Improvements website found here: https://www.highway101improvements.com. The website provides the public with general information regarding the project, construction updates, contact information, and relevant project documents. The most recent construction update is dated May 8, 2020, and it shows the status and planned construction activities, which include the following:

- Status
    - Excavation and grading activities are occurring north of the Highway 61 roundabout and along Highway 101.
    - Sanitary sewer is being installed north of the Highway 61 roundabout.
    - Lakota Lane connection road is under construction.
    - Creekwood Drive cul-de-sac is under construction.
    - Private utilities (gas, electric, etc.) are relocating their facilities.
- Planned
    - Highway 101 will be closed to traffic from Highway 61 to Lakota Lane beginning on May 11.
    - Excavation and grading activities will continue along Highway 101 between Highway 61 and Creekwood Drive.
    - Box culvert installation will occur north of the Highway 61 roundabout.

- Private utility relocations will continue.

PRESENT

Shane Soukup—Young Environmental Consulting Group

PURPOSE

To observe stormwater management/erosion control techniques implemented by S.M. Hentges & Sons Inc. on the reconstruction of Great Plains Boulevard/Trunk Highway 101 from Flying Cloud Drive to Pioneer Trail in the City of Chanhassen in Carver County.

GENERAL NOTES/OBSERVATIONS

- Site visit was scheduled at 5:30 a.m. in order to stay clear of construction activities as well as avoid interactions with on-site staff due to the COVID-19 pandemic.
- Photos were taken of construction activities accompanying BMPs. These activities, BMPs, and observations include the following:
    - Excavation and grading activities north of Highway 61 roundabout (photos 1–11).
        - Dewatering activities occurring near Bluff Creek
            - Water flowing in Bluff Creek and through hose (Photo 4) appeared clear at the time of inspection
            - Some sediment accumulating in Bluff Creek near the dewatering discharge point, site appeared relatively stable (photo 5)
        - Photos 6 and 7 show sediment from the project area over topping the in place silt sock near Bluff Creek
        - A relatively deep conveyance channel has formed between earthwork and grading area to Bluff Creek allowing the opportunity for sediment to enter Bluff Creek. Water was not present during the inspection (photos 6–10). Photo 9 shows the channel and Photo 10 shows the scour hole/ bank erosion entering Bluff Creek.
    - Grading and roadbed preparation for the Lakota Lane connection (photos 12–13)
    - Earthwork and grading occurring on the west side of TH 101 south of Creekwood Drive. Hydromulch has been applied in various locations (photos 14–15)
    - Earthwork occurring in preparation for the Creekwood Drive cul-de-sac (photos 16–22)
        - Sediment from localized runoff is accumulating in the drainage channel (photos 20–22)
        - Excavated drainage channel with rock applied throughout (photo 21)

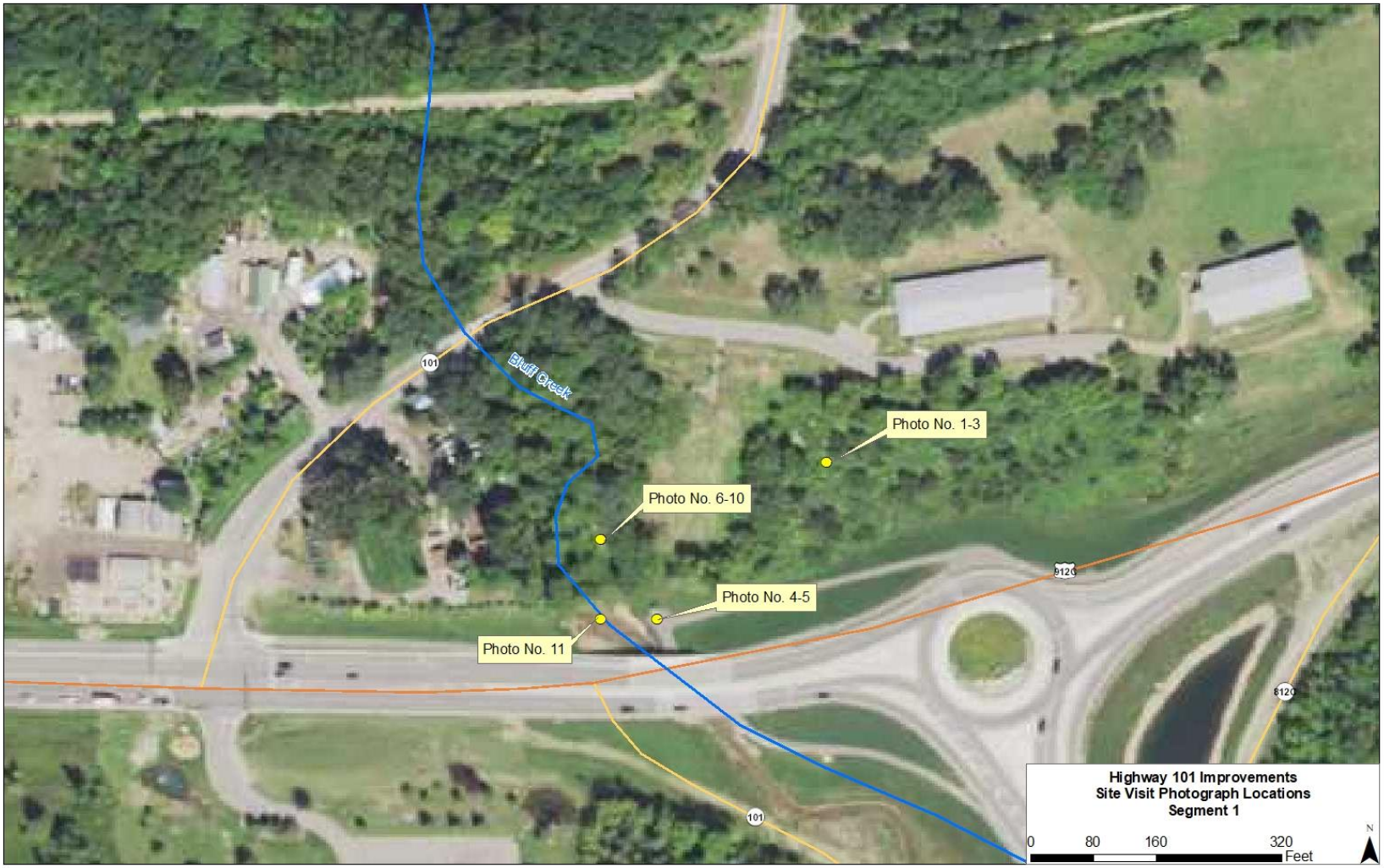
- Exposed soil near drainage channel just east of TH 101 (photos 23–25)
- Earthwork activities occurring in the east ravine located north of Creekwood Drive and adjacent to the Mustard Seed (photos 26–34)
  - Dewatering activities in the ravine (photos 26–31)
  - Temporary pond established in the ravine (photo 32)
  - Extensive grading occurring in preparation for the roadway realignment (photos 33–34)

RECOMMENDATIONS

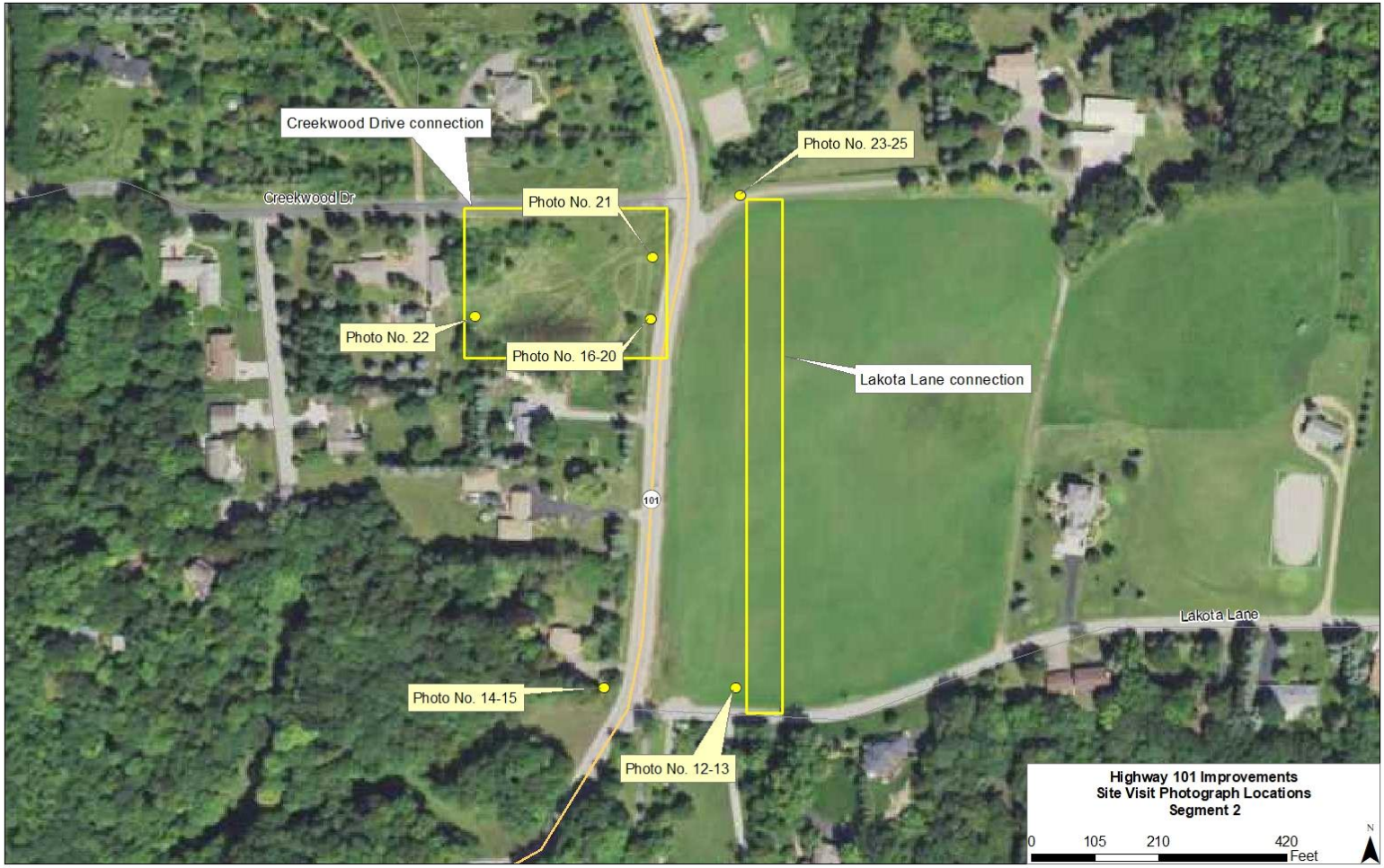
- There have been a number of recurring comments about the use of and proper installation of BMPs necessary to prevent sediment from surface water resources and creating new erosive conveyance paths to Bluff Creek, as noted in the previous report (photos 6–10 and photos 24–25).
- Investigate/confirm whether downgradient erosion and sediment control measures have been installed in the east ravine, as noted in the previous report (photo 34).
- Sweep and maintain adjacent side streets, as required by the NPDES Construction Stormwater Permit and the Project's SWPPP, as noted in the previous report.
- If the project SWPPP has been updated, request a copy of the updated version.
- Continue weekly site inspections; the next scheduled inspection is planned for May 26, 2020, after forecasted rain.

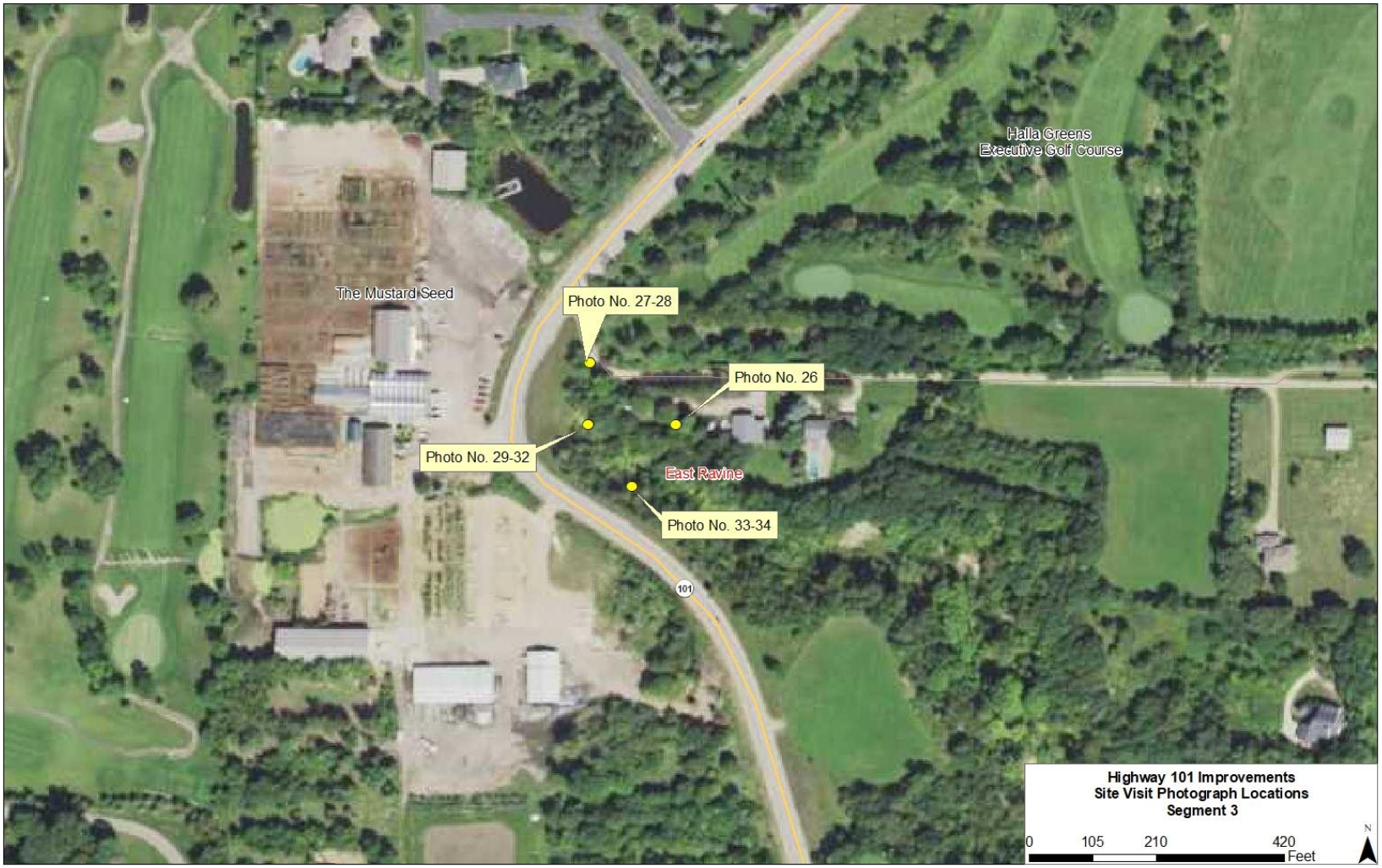
Below is a map indicating where photos were taken. Photos include observations, coordinates, a white arrow indicating north, and a yellow arrow indicating flow direction. Due to the ongoing construction activities, the aerial photographs do not reflect the current ground conditions of the site.

Memorandum



Young Environmental Consulting Group, LLC
915 Mainstreet, Hopkins, MN 55343
(651) 249-6974


Creekwood Drive connection
Creekwood Dr
Photo No. 21
Photo No. 23-25
Photo No. 22
Photo No. 16-20
Lakota Lane connection
101
Lakota Lane
Photo No. 14-15
Photo No. 12-13
Highway 101 Improvements
Site Visit Photograph Locations
Segment 2
0
105
210
420
Feet
N


Halla Greens
Executive Golf Course
The Mustard Seed
Photo No. 27-28
Photo No. 26
Photo No. 29-32
East Ravine
Photo No. 33-34
101
Highway 101 Improvements
Site Visit Photograph Locations
Segment 3
0
105
210
420
Feet
N


Dewatering activities north of the Highway 61 roundabout
44°48'46.4"N 93°32'23.5"

1


Dewatering activities north of the Highway 61 roundabout
44°48'46.4"N 93°32'23.5"W

2


Dewatering activities north of the Highway 61 roundabout
44°48'46.4"N 93°32'23.5"W

3


Bluff Creek
Discharge location of dewatering activities north of the Highway 61 roundabout
44°48'44.1"N 93°32'26.5"W

4


Sediment accumulating in Bluff Creek near the dewatering discharge point
44°48'44.1"N 93°32'26.5"W

5


Sediment over topping the silt sock adjacent to conveyance channel to Bluff Creek
44°48'45.9"N 93°32'27.4"W

6


Sediment over topping the silt sock adjacent to conveyance channel to Bluff Creek
44°48'45.9"N 93°32'27.4"W

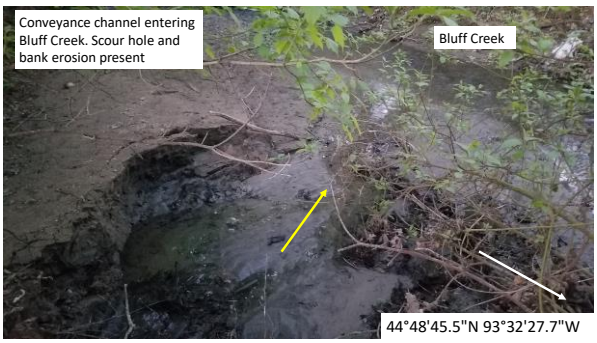
7


Start of conveyance channel between project area and Bluff Creek
44°48'45.5"N 93°32'27.7"W

8


Conveyance channel between earthwork and Bluff Creek. Water was not present during the inspection
Bluff Creek
44°48'45.5"N 93°32'27.7"W

9


Conveyance channel entering Bluff Creek. Scour hole and bank erosion present
Bluff Creek
44°48'45.5"N 93°32'27.7"W

10


Bluff Creek, downstream of eroded drainage channel. Water appeared clear at the time of inspection
44°48'44.0"N 93°32'27.8"W

11


Lakota Lane connection
44°49'01.4"N 93°32'13.0"W

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30


Dewatering activities in the east ravine
44°49'21.5"N 93°32'21.9"W

31


Temporary pond in the east ravine
44°49'21.5"N 93°32'21.9"W

32


Earthwork and grading in the east ravine
44°49'20.3"N 93°32'20.2"W

33


Earthwork and grading in the east ravine
44°49'20.3"N 93°32'20.2"W

34

Memorandum

To: **LMRWD Board of Managers**

From: **Lower Minnesota River Watershed District**
Linda Loomis
District Administrator

RE: **101 Ravine Stabilization - Shakopee - Amazon Fulfillment Center**

On May 22, 2020, I inspected the stabilization of the ravine to the Minnesota RIver that stormwater from the Amazon Fulfillment Center will traverse to get to the Minnesota River. Pictures of the project follow:

Looking east from frontage road in front of Murphy Landing Visitor Center. Erosion blanket covering excavation to install drainage from median of TH 101.

Looking north from frontage road.

Looking north from frontage road

Looking south toward frontage road

Looking north toward MN River

Where gully meets MN River - looking north

Looking south from MN River

Looking south

Drainage outfall - looking southeast

Drainage outfall - looking southeast

Secondary outfall to stabilized ravine. Pipe in under a service road to back of Riverland elevator

Other end of pipe under service road to back of Riverland elevator

Drainage to pipe under service road to back of Riverland elevator - from frontage road

End of pipe under frontage road

End of pipe from median of TH 101 - looking south from frontage road. Bike trail visible above outfall. This is a secondary drainage system draining to stabilized gully.