LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting
Wednesday April 17, 2019

Agenda Item
Item 6. H. - Project Reviews

Prepared By
Linda Loomis, Administrator

Summary

i. **City of Burnsville - Industrial Equities - 250 River Ridge Circle North**
This project is on a previously developed parcel. Previous structures have been removed and the property has been vacant long enough that the city considered it development rather than re-development. The LMRWD steep slope overlay zone wraps around two edges of the parcel. Comment provided to the city are attached.

ii. **City of Burnsville - United Properties 12400 Dupont Avenue**
This project proposes to subdivide the parcel and construction an office/warehouse building on the new parcel. Staff reviewed this project and had no comments.

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

iv. **Dakota County - MN River Greenway**
No new information to report since last update.

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

vi. **City of Eden Prairie - C. H. Robinson**
There is work planned to replace/upgrade the parking lot. I spoke to the engineer for the project who inquired about a permit. This is not in a High Value Resource Area so no permit is required. I referred him to the city.

vii. **City of Burnsville - Burnsville Sanitary Landfill**
No new information to report since last update.

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

ix. **City of Chanhassen - TH 101 Improvements**
Staff has continued to meet with the city and project engineers. There is no new information to report since last update.

x. **City of Savage - 12113 Lynn Avenue**
No new information to report since last update.

xi. Cities of Richfield/Bloomington - TH 77 & 77th Street underpass

No new information to report since last update.

xii. MPCA - MN River TSS TMDL

The MPCA is planning to release the report for public comment later in 2019. More information on the history of this project and the differences between previous report and the current draft can be found in the attachment .

xiii. City of Bloomington - MN Valley State Trail

This project is moving along. The City of Bloomington issued its Notice of Decision for wetland replace at a 2:1 ratio for the impacts to .67 acres of wetlands caused by this project.

xiv. Hennepin County - CSAH 61/Flying Cloud Drive

LMRWD staff scheduled an inspection of the project area for Wednesday, April 10. When staff arrived on site it had begun to snowing and it was determined that it was not safe to continue with the inspection. Staff expects to begin inspections every two weeks now that the snow pack has melted and ground has thawed.

The City of Eden Prairie is planning to convene a Technical Evaluation Panel for this project shortly. LMRWD contacts for the project informed the District that they have received a letter from USFWS (US Fish & Wildlife Service) regarding remediation of project impacts. The LMRWD has contacted USFWS to get a copy of this letter.

xv. MNDOT - I494/TH 5/TH 55 Mill & Overlay project

Culvert replacement has begun on this project. The public waters work permit was issued March 20, 2019. The project on I-494 from TH 169 to MN River may affect this project. One proposal by MNDoT is looking at this area to address the flood plain storage mitigation.

xvi. MNDOT - I35W Bridge Replacement

The LMRWD was informed that plans are complete for stormwater management for this project. LMRWD staff is working to get the plans for review.

xvii. MNDOT - I494 from TH169 to Minnesota River

LMRWD staff has continued to meet with MNDoT and Engineers for this project. The LMRWD has some history with the project and in 2007 adopted a resolution with some specific requirements for MNDoT. Staff is recommending that the Board rescind this resolution. However, rather than adopting a new resolution rescinding the previous resolution and then adopting another resolution with new requirements, staff recommends waiting until the District has a better understanding of what exactly MNDoT is proposing. Young Environmental has prepared a more detailed explanation, which is attached, for the Board. Staff plans to have a resolution for the Board at the May meeting.

xviii. City of Shakopee - Amazon Fulfillment Center drainage

The City has plans to divert water from the Amazon Fulfillment Center away from the cultural resources, which are currently threatened. The plan looks to convey the water through a ditch along TH 101 to the east toward a ravine to the Minnesota River. Staff is concerned with the ability of the ravine to accept additional water and recommends assessing the ravine's current condition. A task order detailing the scope of work for the assessment is attached.

xix. MAC/LMRWD/MCWD boundary realignment

No new information to report since last update.

xx. Fort Snelling - Dominion Housing

The LMRWD received a new hydrology report for this project and the SWPPP (Storm Water Pollution Prevention Plan). The Engineers for the project have been working with the State Historical Preservation Office to make sure that no areas with historical significance are disturbed. Staff is reviewing the documents. The District was informed that a long term maintenance agreement will be submitted within the next few months. Construction is planned to begin in September

xxi. USACOE/USFWS - Bass Ponds, Marsh & Wetland

The Corps of Engineers discovered that they needed to prepare an EAW. Scott County agreed to act as the Regulating Governmental Unit to prepare and release the EAW. In the mean time, the Corps has applied to the DNR for a permit to work in public waters.

Attachments

Email to City of Burnsville/proponent for 250 River Ridge Circle North
MPCA Minnesota River and Greater Blue Earth River Total Maximum Daily Load Study for Total Suspended Solids
Memo from Young Environmental regarding I-494
TH 101 - Shakopee Task Order

Recommended Action

Motion to authorize TH 101- Shakopee Task Order

Industrial Equities

Linda Loomis <naiadconsulting@gmail.com> Thu, Apr 4, 2019 at 8:18 AM
To: jnanaples@gmail.com
Cc: Sarah Arnold <Sarah.Arnold@burnsvillemn.gov>, Deb Garross <Deb.Garross@burnsvillemn.gov>, Della Young <della@youngecg.com>

Mr. Allen,

Hi Linda,

The Lower Minnesota River Watershed District has reviewed the information provided by the regarding the proposed development at 250 River Ridge Circle North in Burnsville and do not have any comments. There are portions of the project area that have steep slopes. As reflected in the District's standards, the applicant must comply with the following criteria, as noted in the District's standards:

1. Land-disturbing activities as regulated in this section may occur within the Steep Slopes Overlay District provided that a qualified professional/professional engineer registered in the state of Minnesota certifies the area's suitability for the proposed activities, structures, or uses resulting from the activities and that the following requirements are addressed:
    - Minimum erosion and sediment control BMPs include site stabilization and slope restoration measures to ensure the proposed activity will not result in (1) adverse impacts to adjacent and/or downstream properties or water bodies; (2) unstable slope conditions; and (3) degradation of water quality from erosion, sedimentation, flooding, and other damage.

- Preservation of existing hydrology and drainage patterns. Land-disturbing activities may not result in any new water discharge points on steep slopes or along the bluff.

2. Stormwater ponds, swales, infiltration basins, or other soil saturation–type features shall not be constructed within a Steep Slopes Overlay District.

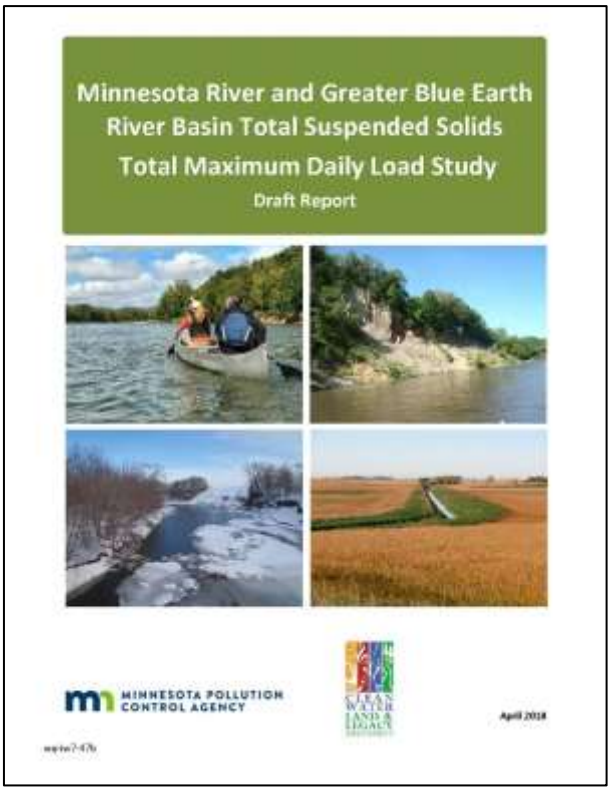
The project disturbs 5.7 acres and creates approximately 4 acres of new impervious surface. Since the project is in a drinking water supply management area, but is it not in the District's high value resource area overlay district, it must comply with the state of Minnesota's NPDES Construction Stormwater Permit's requirements and restrictions. Compliance with that permit is equivalent to compliance with the District's requirements. Electronic copies of the NPDES Construction Stormwater Permit and the project's stormwater pollution prevention plan should be submitted to the District, for our records.

Please let me know if you have any questions. Thanks!

Linda Loomis
Administrator, Lower Minnesota River Watershed District
Naiad Consulting, LLC
612-306-5802 *Cell*
763-545-4659 *Home/Office*
6677 Olson Memorial Highway
Golden Valley, MN 55427

Minnesota River and Greater Blue Earth River Total Maximum Daily Load Study for Total Suspended Solids

Highlighting differences between the current and previous drafts



In 2012 the Minnesota Pollution Control Agency prepared draft Total Maximum Daily Load (TMDL) studies for turbidity (see #1 below) in the Minnesota River and Greater Blue Earth River. During their public notice periods both generated significant comments and requests for contested case hearings.

After prolonged negotiations and responses to the comments and requests for hearings, in 2014 the state adopted new water quality standards for Total Suspended Solids (TSS) that replaced the turbidity standard. This required a recalculation of allocations for the turbidity impairments in the draft TMDLs.

The MPCA decided the best course was to withdraw the 2012 drafts from U.S. EPA consideration under Section 303 (d) of the Clean Water Act, and re-develop the two TMDLs as one combined study using the TSS standard. Following are highlights of significant differences between the 2012 Minnesota River and Greater Blue Earth turbidity TMDLs and the 2018 draft TSS TMDL.

1. Change to Total Suspended Solids water quality standard

The water quality standard in effect during the development of the 2012 drafts of the Minnesota River and Greater Blue Earth Turbidity TMDLs for Class 2Bd and 2B waters was a turbidity standard of 25 nephelometric units (NTUs), which measures the amount of light penetration of water. According to Minn. R. Ch. 7050.0222, turbidity impairment listings occurred when greater than 10 percent of data points collected within the previous 10-year period exceeded the 25 NTU standard. Because turbidity is not a mass-based measurement, a surrogate was required to calculate TMDLs. TSS, which measures sediment and organic material, was used to set TMDLs for the impaired reaches addressed in the 2012 draft TMDLs. In order to determine the TSS numerical equivalent to 25 NTUs, simple linear regressions were used to establish surrogate TSS values. These surrogate values ranged from 50 mg/L TSS for some of the upper major watersheds to 100 mg/L TSS for the lower mainstem reaches of the Minnesota River.

In June 2014 the MPCA adopted a TSS water quality standard to replace the turbidity standard; it was approved by EPA in January 2015. The TSS standards are region-specific and based on a combination of both

biotic sensitivity to TSS concentrations and reference or least impacted streams as supported by data. The Minnesota River basin (including the Greater Blue Earth) is located in the Southern River Nutrient Region . It has a 65 mg/L TSS standard that may not be exceeded more than 10 percent of the time April through September over a number of years. The TSS concentration of 65 mg/L is being used to establish TMDL allocations for the impaired reaches addressed in the 2018 draft TSS TMDL. Historic turbidity listings prior to the 2016 303(d) impaired waters list will continue to be displayed as turbidity impairments. Subsequent impairments are listed as TSS. See Section 2 of the 2018 draft Minnesota River and Greater Blue Earth TSS TMDL for further information on the applicable water quality standard.

2. Consolidating sections and including sections approaching the Mississippi River

The 2012 draft of the Minnesota River Turbidity TMDL addressed nine mainstem impaired sections. These were not all contiguous due to data limitations and section length. The nature of suspended sediment and its ability to be easily transported downstream makes this patchwork of section impairments unlikely. Rather, the sections not listed as impaired were likely an artifact of incomplete data. The MPCA recently has consolidated some of the shorter sections of the Minnesota River resulting in fewer but longer mainstem sections.

Using additional data and professional judgment, the long sections resulting from consolidation of an impaired section and a non-listed section are listed as impaired for turbidity or TSS on the draft 2018 303(d) impaired waters list. As a result, all of the Minnesota River mainstem sections downstream of the Lac qui Parle dam will be listed as impaired for turbidity or TSS and are addressed in the 2018 draft TSS TMDL. This includes the mainstem sections between High Island Creek and the confluence with the Mississippi River that were not included in the 2012 draft Minnesota River Turbidity TMDL. See Table 1 and Appendix A in the 2018 draft TSS TMDL for more information on the impairment listings and section consolidations.

3. Hydrological Simulation Program – FORTRAN (HSPF) model update

Models for six of the Minnesota River's 12 watersheds (HUC8) were originally developed by MPCA and subsequently expanded and calibrated by Tetra Tech in 2002 to include the entire basin from Lac qui Parle to Jordan. In 2008 Tetra Tech refined the models for sediment simulation, and were used in the MPCA's 2012 Minnesota River and Greater Blue Earth Turbidity TMDLs. The basin model since has been refined by RESPEC (2014) and most recently by Tetra Tech (2016) to incorporate new data and increase resolution. The primary differences between the 2008 HSPF model application used in the previous draft TMDLs and the 2016 model used in the current project are:

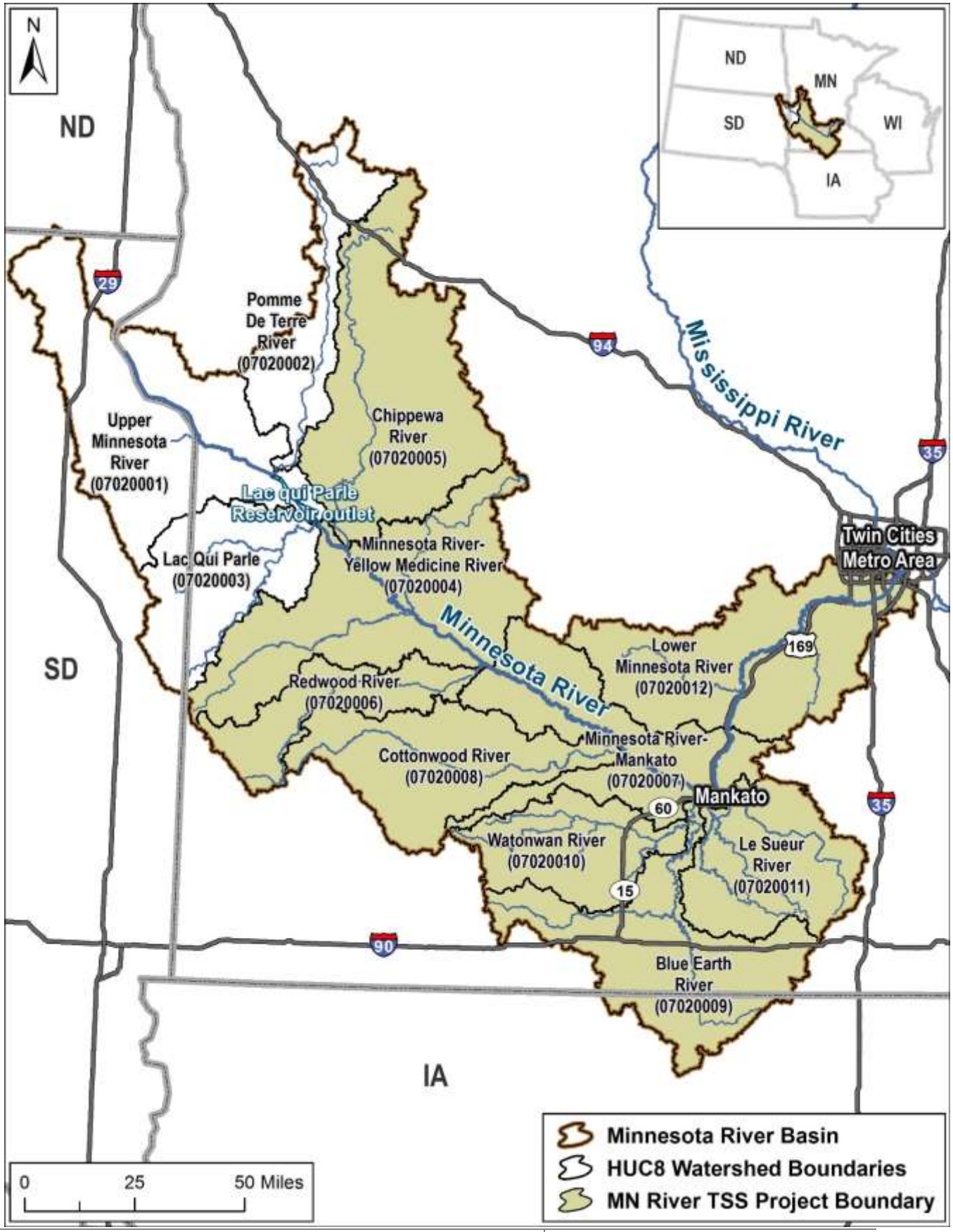
- The 2008 model scale was at approximately the HUC10 scale; the 2016 model is at the HUC12 scale.
- The 2016 model was extended through 2012.
- The entire updated model was recalibrated based on newer observations and additional data on field-derived sediment sources in the remainder of the basin. The simulations were recalibrated to agree with external information on water balance components and sediment sources:
    - Sediment was apportioned among upland, ravine, bluff, and channel erosion based on sediment budget studies of the Le Sueur and Greater Blue Earth River basins.
    - Model parameter adjustments were made to ensure that per-acre upland sediment loading rates are consistent with expected rates based on local and regional monitoring data and modeling studies.

See Section 4.4.1 of the 2018 draft TSS TMDL for further information on the HSPF model.

4. Setting Waste Load Allocations for Municipal Separate Storm Sewer Systems

The method used for setting Municipal Separate Storm Sewer System (MS4) Waste Load Allocations (WLA) has been changed in the 2018 draft TSS TMDL. In the 2012 draft, MS4 WLAs were calculated by multiplying a sediment export coefficient times the regulated MS4 area. The regulated MS4 area was based on the total

developed area within the regulated MS4 boundaries of the 2001 National Land Cover Database (NLCD) layer. In the 2018 draft of the TMDL, MS4 WLAs are calculated as an area-based fraction of the estimated existing TSS load. The area of each permitted MS4 is based on the developed land within MS4 jurisdictional boundaries as indicated in the 2011 NLCD layer. Source assessment indicated *(continued on back page)*



developed areas within permitted MS4s contribute no more than 1% of existing TSS loads (with the exception of the Lower Minnesota watershed). Therefore, it was determined that no reductions to current TSS loading from MS4s are necessary. However, no increases to TSS loading are allowed. MS4s must follow the best management practices and reporting requirements as defined in their permits and Stormwater Pollution Prevention Program (SWPPP). For more information on source assessment and setting MS4 WLAs see Table 7 and Section 5.4.3 of the 2018 draft TMDL.

5. Analysis of conditions for high sediment loading

The HSPF model was used to investigate conditions of high sediment loading in the Minnesota River basin. This work was performed as part of a parallel effort to examine and potentially revise the Sediment Reduction Strategy (MPCA 2015). Seasonality, months of high sediment loads and loading from intense storms were analyzed. This analysis provides insight on critical conditions for sediment delivery in the Minnesota River basin. See Section 4.4.4 of the 2018 draft TSS TMDL for more information.

6. Reasonable assurance

The reasonable assurance section of the new TMDL has been expanded beyond the 2012 draft incorporating the framework for implementation developed for the Chesapeake Bay TMDL project (USEPA 2009). The revised reasonable assurance identifies multiple-scale efforts, from local best management practice implementation to watershed and basin scale plans and strategies. Numerous programs, laws and funding options also are identified as ways to provide reasonable assurance. Finally, the revised reasonable assurance section outlines how progress will be tracked through monitoring and reporting as well as contingency requirements if sediment reduction milestones are not met on schedule. For more information see Section 8 of the 2018 draft TSS TMDL.

References

MPCA (Minnesota Pollution Control Agency). 2012a. *Minnesota River Turbidity Total Maximum Daily Load*. wq-iw7-32b. St. Paul, Minnesota. February 2012. https://www.pca.state.mn.us/sites/default/files/wq-iw7-32b.pdf.

MPCA (Minnesota Pollution Control Agency). 2012b. *Turbidity Total Maximum Daily Load Study: Greater Blue Earth River Basin*. Prepared by Minnesota State University Mankato Water Resources Center for MPCA Mankato, MN. wq-iw7-29b. https://www.pca.state.mn.us/sites/default/files/wq-iw7-29b.pdf.

MPCA (Minnesota Pollution Control Agency). 2015. *Sediment Reduction Strategy for the Minnesota River Basin and South Metro Mississippi River*. wq-iw4-02. St. Paul, Minnesota. January 2015. https://www.pca.state.mn.us/sites/default/files/wq-iw4-02.pdf.

MPCA (Minnesota Pollution Control Agency). 2018. *Minnesota River and Greater Blue Earth River Basin Total Suspended Solids Total Maximum Daily Load Study*. wq-iw7-47b.

USEPA (United States Environmental Protection Agency). 2009. *The Next Generation of Tools and Actions to Restore Water Quality in the Chesapeake Bay, A Draft Report Fulfilling Section 202(a) of Executive Order 13508.* Washington, DC. September 9, 2009. https://federalleadership.chesapeakebay.net/file.axd?file=2009%2F11%2F202a+Water+Quality+Report.pdf

Young Environmental Consulting Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Della Schall Young, CPESC, PMP

Date: April 10, 2019

Re: I-494 Reconstruction Project from TH169 to the Minnesota River

---

The Minnesota Department of Transportation (MnDOT) is developing the environmental documentation and preliminary design for reconstruction of Interstate 494 (I-494) from trunk highway (TH) 169 in the City of Bloomington to the Minnesota River near the Minneapolis/St. Paul International Airport. The proposed project plan will accomplish the following:

- Provide a transit advantage to increase the number of people who can be efficiently moved through the area
- Improve the reliability of the average rush-hour trip, increase safety and reduce localized flooding through drainage, and reduce the amount of stormwater water runoff into the Minnesota River
- Restore pavement to preserve infrastructure and provide a smoother ride

Since October 2018, when MnDOT's project team hosted the kickoff meeting, MnDOT (through its drainage design consultant HZ United) has maintained contact with District staff. It has engaged District staff to gain a better understanding of standards it will have to comply with and to determine whether it will be held to past board resolution.

Standards

Based on information received and discussions with MnDOT's drainage design consultant, the following three options have been preliminarily evaluated by HZ United:

- Option 1: Ultimate Build 12' Stormwater Tunnel with Regional Pond. This option was developed by SEH, Inc as part of the 2014 I-494/I-35W Vision Layout and has been used as a reference during the early stages of preliminary design of the Airport to Highway 169 project. The condensed cost as it appeared in the 2014 Vision Layout report is $194,300,000. The estimated construction cost of Option 1 is $230,439,800.

- Option 2: Parallel Trunk Lines and Xcel Corridor Diversion. Under this option, parallel trunk lines would be constructed from I-35W to the Minnesota River. The flow generated between I-35W and Portland Avenue would be diverted from I-494 using parallel 72" trunk lines to a new drainage system running from north to south in the corridor owned by Xcel Energy located just to the east of Park Avenue. As currently conceived, this new trunk line would be augmented with a series of ponds as well as architectural and landscape features that would serve to turn this functional diversion into a neighborhood amenity. The proposed north-south trunk would connect to the existing storm sewer on 90th Street S. (owned by the City of Bloomington), which drains into Pond C at the southeast quadrant of TH 77 and E. Old Shakopee Road, and ultimately drains into the Minnesota River. The proposed west-east auxiliary trunk line, a parallel 84" line, would relieve the existing 84" trunk line, which is currently undersized for the needs of the I-494 corridor. Although the existing trunk curves northward to Almaz Pond, the proposed auxiliary trunk would continue to follow I-494, eventually discharging to an expanded pond located in the MnDOT-owned property near the Minnesota River. The estimated construction cost of Option 2 is $64,982,484.
- Option 3: Large Parallel Trunk Line with Existing System Modifications. This option features an auxiliary parallel 108" trunk line running the entire distance between I-35W and the Minnesota River. Although the auxiliary trunk will provide relief to the existing 84" trunk, additional modifications and enhancements will be employed to optimize the performance of the overall system. Modifications will include expansion of some portion of the existing trunk line on the east end of the project, and ponds will be designed to manipulate the timing of peak runoff rates during the design storm event, decreasing the required capacity of the combined trunk storm lines. The estimated construction cost of Option 3 is $79,465,773.

MnDOT has selected Option 3 as the preferred option, and it appears the project will have to comply with the Erosion and Sediment Control, Floodplain, and Stormwater Management standards. The current footprint of the project doesn't encompass high value resources areas; however, steep slopes areas will probably be affected. Conclusive evidence on whether steep slopes areas will be affected is expected in May 2019. Nevertheless, we have provided the drainage design consultant a copy of Appendix K, and they have been informed and updated on rules development and adoption process.

Past Board Resolution

In 2007, MnDOT retained Stanley Consultants, Inc., to complete a study on the I-494 Improvements: Penn Avenue to the Minnesota River: I-494 Stormwater Alternatives Study. During the development of the study, which spanned a few years, the Stanley staff met with the managers and then-administrator Terry Schwalbe several times to

discuss and address the District's concerns. On May 16, 2007, the District passed the attached resolution 2007-01; since then, there have been significant changes in how development and redevelopment projects are regulated for water and natural resource protection, preservation, and restoration. A few of those changes include the release of Atlas 14, the continued refinement of the national pollution discharge elimination systems (NPDES) permits (industrial, municipal, and construction), completion of total maximum daily load studies, and the District's shift to addressing its comprehensive organizational mission.

Atlas 14

In 2007, when resolution 2007-01 was passed, design and modeling information for development and roadway reconstruction projects were based on the Technical Paper 40 (TP-40). TP-40 was developed by the National Oceanic and Atmospheric Administration (NOAA) in 1961 and provides rainfall data for every county in every state for a range of rainfall recurrence intervals (1-year through 100-year) and durations (30 minutes to four days) based on a limited data set. In 2013, NOAA's Hydrometeorological Design Studies Center within the Office of Hydrologic Development published Atlas 14 Volume 8. Atlas 14, which is now part of the District's standards, uses denser precipitation data networks with a greater period of record, new statistical approaches, and new spatial interpolation and mapping techniques to develop new precipitation frequency estimates.

NPDES Permits

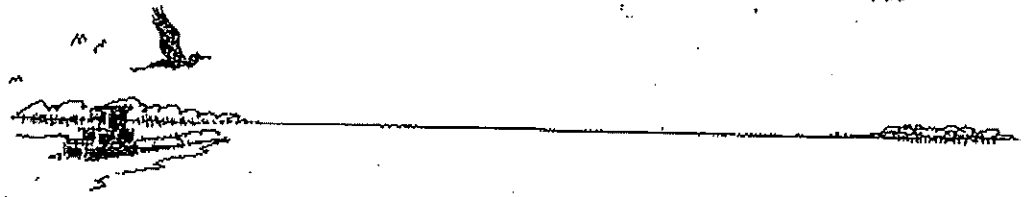
The NPDES permits administered by the Minnesota Pollution Control Agency have consistently been reviewed every five years and modified to include requirements that minimize the potential for pollutants to come in contact with or be transported in stormwater runoff. The municipal and construction permits include provisions for stormwater abstraction, infiltration, and attenuation. These are all beneficial for recharging groundwater and reducing stormwater runoff rate and treating the water quality of stormwater runoff generated by new and redevelopment projects.

District's Direction

The District's adopted watershed management plan moves the organization away from what appeared to be a singular focus on dredge material management to a broad, holistic focus on protecting high value resources (calcareous fens and trout waters) and steep slopes (Minnesota River Bluff). This focus is reflected in the more restrictive development standards for projects proposed in high value resource areas and steep slope overlay districts.

Given the progressive changes described above related to water and natural resource protection, preservation, and restoration, we recommend and ask the board of managers to rescind Resolution 2007-01.

Lower Minnesota River Watershed District



LOWER MINNESOTA RIVER WATERSHED DISTRICT

RESOLUTION NO. 2007-01

Interstate Highway 494 – Penn Avenue to Minnesota River

WHEREAS, the Minnesota Department of Transportation (MnDOT) is studying stormwater drainage alternatives for the portion I-494 from the Penn Avenue low point to the Minnesota River, and has provided information about the alternatives and their effect on the Minnesota River to the Board of Managers and has requested a determination that their Alternative 1C be determined to be eligible for exemption from the District's rate control requirement as documented in a technical memorandum *(Subject: MnDOT – I-494 Stormwater Alternatives Study (Penn Avenue to Minnesota River) Technical support for resolution by Lower Minnesota River Watershed District Board regarding rate control requirements)* dated February 2007 and presented to the Managers at their February 21, 2007 meeting; and

WHEREAS, the existing I-494 drainage system is undersized for present and future conditions; and

WHEREAS, the I-494 drainage investigation is being undertaken as part of long-term planning for a future roadway expansion project and MnDOT is not applying for a LMRWD permit at this time; and

WHEREAS, MnDOT has addressed questions raised by the LMRWD Board of Managers; and

WHEREAS, the information presented to the Board supports a finding that requiring rate control for Alternative 1C would not have a beneficial effect on Minnesota River flood stages, and a rate control pond would displace existing floodplain storage volume and reduce river conveyance; and

WHEREAS, the soils at the West Pond site are poor and incapable of supporting the dike structures necessary to construct a rate control pond; and

1600 Bavaria Road, Chaska, MN 55318
Terry Schwalbe: 952-227-1037; Joan Ellis: 952-227-1038; Fax: 952-227-1039
E-mail terrys@lowermn.com; joane@lowermn.com

Lower Minnesota River Watershed District

WHEREAS, the request by MnDOT is limited to this I-494 drainage project, and MnDOT will meet other LMRWD Design Considerations including water quality.

NOW THEREFORE BE IT RESOLVED, the LMRWD Board of Managers conceptually agree at this point in time with the Minnesota Department of Transportation that the Alternative 1C, as will be further developed in the study, could be permitted in the future without meeting rate control requirements of the LMRWD Design Considerations; and

BE IT FURTHER RESOLVED, the above determination that the Alternative 1C could be permitted without meeting rate control requirements of the LMRWD Design Considerations is made under the current regulatory conditions affecting the LMRWD and MnDOT, a future Board may decide not to so permit Alternative 1C under these conditions, and this resolution would not be binding on a future Board during the future permitting of the project, nor would it exempt MnDOT from the requirements of any future regulations or future LMRWD Rules; and

BE IT FURTHER RESOLVED, the I-494 drainage system from Penn Avenue to the Minnesota should be designed to meet all other LMRWD Design Considerations.

Adopted: 05/16/2007

LOWER MINNESOTA RIVER WATERSHED DISTRICT

By: _____
Len Kremer, President

1600 Bavaria Road, Chaska, MN 55318
Terry Schwalbe: 952-227-1037; Joan Ellis: 952-227-1038; Fax: 952-227-1039
E-mail terrys@lowermn.com; joane@lowermn.com

Young Environmental Consulting Group, LLC

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Della Schall Young, CPESC, PMP

Date: April 10, 2019

Re: County Highway 101 Shakopee – Ravine Assessment Task Order

---

The City of Shakopee (City) has requested funding from the Lower Minnesota River Watershed District (District) to assist them with correcting drainage issues (increase flow rates and volume) affecting a cultural resource site. The issues were realized after the 2015 development of the Amazon Distribution Center.

To adequately characterize the condition of the downstream ravine to the Minnesota River, and to present a reasonable funding recommendation for participating in the project, a ravine assessment was requested by the District. Below is the scope of work for the Young Environmental Consulting Group (LLC) team, which includes Barr Engineering Co, to complete the ravine assessment project and produce a feasibility study and funding recommendation memo.

Scope of Work

Task 1: Desktop Analysis

The project team will complete the following subtasks to characterize the watershed that drains to the ravine. We will use available geographic information systems data and development plans from the City to summarize the following items:

- Delineate the watershed that drains to the ravine, including watersheds delineated from developments within the contributing watershed.
- Estimate peak flow rates using a combination of regression equations and any hydrologic models available from the City or the US Geological Survey.

Deliverable: Summary of watershed characteristics and pollutant loading will be in the feasibility report.

Cost: $1,020

Task 2: Field Reconnaissance Investigation

We will complete a field reconnaissance investigation in late April or early May to document the state of the ravine, the extent of erosion, and, if possible, determine the cause the erosion. We will take photos, estimate the height and length of erosion noticed sites, and assess the accessibility of construction equipment.

Deliverable: Summary of data collected will be included in the feasibility report.

Cost: $1,600

Task 3: Concept Plan and Cost Estimate

We will provide one (1) concept for stabilizing ravine and a concept-level cost estimate. The concept plan will only consider the estimated flows that currently drain to the Highway 101 Shakopee ravine and will not consider larger flows proposed by the City. The cost estimate from this level of concept design will assist the District in determining a cost share for stabilizing the ravine if the City moves forward with the diversion plan.

Deliverable: GIS-based concept plan and cost estimate will be included in the feasibility report.

Cost: $2,920

Task 4: Permitting Requirements

We will determine the required permits and other investigations. This may require consultation with regulatory agencies to determine jurisdictional authority and requirements.

Deliverable: Summary of necessary permits will be included in the feasibility report.

Cost: $940

Task 5: Feasibility Report and Funding Recommendations

We will draft a feasibility report summarizing the findings and recommendations for stabilizing the Highway 101 Shakopee ravine. We will provide a draft report to the District for review. Upon receiving written or verbal comments from the District, we will finalize the report and submit it as a pdf file. Once the report has been finalized, we will draft a memo making a project funding recommendation and submit it to the administrator

Deliverable: Draft report, final report, and Funding Recommendation Memo

Cost: $3,470

Cost Estimate

Task Description	Estimate
Task 1: Desktop Analysis	$1,020
Task 2: Field Reconnaissance Investigation	$1,600
Task 3: Concept Plan and Cost Estimate	$2,920
Task 4: Permitting Requirements	$940
Task 5: Feasibility Report and Funding Recommendations	$3,470
Total:	$9,950

Assumptions

1) The estimated flows to the ravine will only consider the current drainage area to the ravine and will not consider any potential increase in flows from the diversion plan.
2) The City can provide any available hydrologic model that includes the ravine.
3) A new hydrologic model for the watershed will not be developed.
4) The current scope of work will not include additional investigations that may be necessary to complete final design and/or permitting, such as the following:
    a. Topographic survey
    b. Wetland delineation
    c. Cultural/historical investigation
    d. Geotechnical investigation
5) Only one round of comments will be included for the draft report.

If you find this scope and cost estimate to be acceptable, please complete the signature block below and return the executed copy of this proposal to the Consultant as notice to proceed.

Accepted and Agreed to: Ravine Assessment Task Order for the County Highway 101 Shakopee Site

CLIENT
Lower Minnesota River Watershed District

By: _____

Name:_____

Title: _____

CONSULTANT
Young Environmental Consulting Group, LLC

By: _____

Name: Della Nyondi Schall Young

Title: Owner and Principal