

Engineer's Report

June 12, 2019

Normandale Lake Water Quality Improvement Project:

Rachel Contracting has completed site restoration, re-stabilizing and restoring the disturbed areas near the lake outlet. The temporary weir located in the inlet channel to the lake remains in place. The contract documents call for the weir to be removed between June 15th, when the MnDNR's exclusion period for fish spawning and migration expires, and June 30th, the specified substantial completion date. However, flows in Nine Mile Creek continue to be higher than normal, which increases the likelihood of causing diminished water quality during removal of the temporary weir. We are in discussion with Rachel Contracting to extend the substantial completion deadline to mid-to late-summer so that removal of the temporary weir can occur upon return to more "typical" baseflow conditions.

Pay Request #7 was submitted by Rachel in the amount of \$19,051.84, which covers removal of turtle fencing, seeding, site restoration, erosion control blanket and other miscellaneous work items. Barr is recommending payment of the pay application.

Rachel also submitted Change Order #6. The contract documents specify installation of 240 lineal feet of 36-inch HDPE pipe to serve as a bypass pipe. In fall 2018, only 170 feet of the 36-inch HDPE pipe was installed due to the soft sediments encountered. At the time, the NMCWD decided to forego installation of the remaining 70 feet of 36-inch HDPE pipe and the 36-inch flared end section (FES) to avoid potential negative impacts to turtles overwintering in this area. This change order, in the amount of \$17,325.12, reflects the purchase of nonrefundable materials (the uninstalled portion of the bypass pipe), return of the uninstalled flared end section, and costs to remove the items from the site. Although this change order increases the contract price at this time, a credit will be given when a final project change order for quantity underruns is completed, resulting in an overall savings for the line items related to installation of the 36-inch HDPE and flared end sections. A copy of the change order is included with this report. Barr is recommending approval. Payment for this change order will be included in a future pay request from Rachel Contracting.



Restoration of disturbed areas at bypass pipe and manhole location (photo taken May 28, 2019).



High water levels downstream of Normandale Lake outlet following wet period and heavy rain on Memorial Day (photo taken May 28, 2019).

Normandale Lake Water Quality Improvement Project (continued):



High flows over Normandale Lake outlet structure following wet period and heavy rain on Memorial Day (May 28, 2019).



Photo of baby turtle found near the Normandale Lake outlet (photo taken May 28, 2019).

Nine Mile Creek Watershed District 60th

Anniversary Story Map: Design team members (District and Barr staff) have begun finalizing the Story Map. Utilizing the content outline that has been created, GIS specialists at Barr have created several draft versions of the web based map while additional content is being gathered and arranged within the map. Video interviews have been taped with several folks associated with the watershed district. Those videos are being edited for inclusion in the map for a multimedia outreach experience. The map will be made public prior to the 60th anniversary events being scheduled for this summer.



Former Board member Corrine Lynch discusses her time with the District and why she believes it is important for local community members to understand the role of the District in their quality of life.

Edina Stream Stabilization Project: Phase II of the project reached substantial completion at the end of October. The substantial completion deadline was December 31, 2019 so the project was completed ahead of schedule. Barr worked on a maintenance plan to establish clear roles for the District and the city of Edina for addressing future maintenance needs. Barr has also discussed a few isolated erosion areas and maintenance items with landowners, the contractor, and Administrator Anhorn.

Bush Lake Outlet Project: No new activities.

BMP Retrofits on Nonprofit Sites- Final Design and Construction: Final design has been completed on three of the Non-Profit BMP sites identified by the 2017 BWSR Clean Water Fund grant the District received. Rain garden designs have been finalized for St. Edwards Catholic Church and Oak Grove Presbyterian Church in Bloomington and Good Samaritan Church in Edina. As previously directed by the Board, the project will go out for quotes mid-June with construction set to take place over the summer and fall. A final cost estimate has been included for Board review as Resolution 19-01 at the June Board meeting. Contractors that have a proven record of construction of rain gardens and other similar BMPs will be invited to submit quotes, due on June 25th.

District Office (Discovery Point): On May 30th, several dozen volunteers installed 750 flowering native perennial plugs into the Phase 2 restoration area at Discovery Point. This area was seeded last fall and appears to be growing robustly after our wet cool spring. The shrubs and trees planted in this area are warranted until the fall and despite some deer browse appear to be establishing nicely.



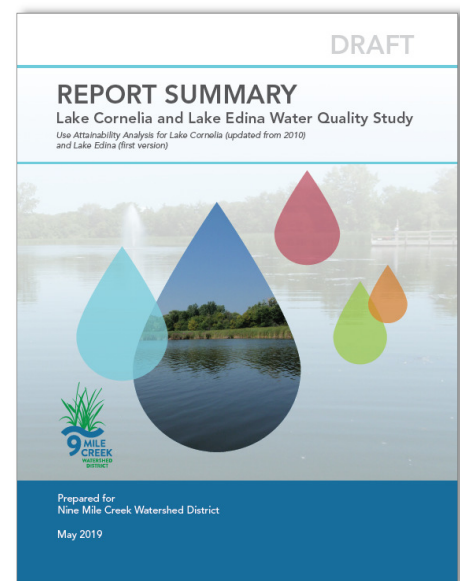
Community volunteers installed 750 herbaceous plugs in the Phase 2 Discovery Point Restoration area.

Lake Cornelia and Lake Edina Use Attainability Analysis (UAA):

Barr has completed the draft Use Attainability Analyses (UAAs) for North and South Lake Cornelia and Lake Edina. The full report (draft) and a report summary (draft) are available for review. A summary of the findings of the study will be presented at the June 19, 2019 NMCWD Regular Board Meeting.

The study is an in-depth assessment of the water quality of Lake Cornelia (North and South) and Lake Edina, as well as a review of the overall lake ecosystems. Through watershed and in-lake modeling, sources of phosphorus were identified and quantified. The models were then used to predict the potential improvements in lake water quality resulting from various in-lake and watershed management practices. Costs for the evaluated management practices were estimated and used in conjunction with the lake modeling results to conduct a cost-benefit analysis and identify the most cost-effective lake management practices for further consideration by the NMCWD and City of Edina.

Barr and District staff met with the City of Edina staff on June 5, 2019 to discuss the conclusions and recommendations of the study. Preliminary feedback from the City regarding the proposed management activities was supportive. Pending Board approval, the District intends to begin implementation of the recommendations in 2019, including conducting an alum treatment of Lake Cornelia in the fall and beginning further feasibility analysis of other recommended capital projects.



A summary of the Lake Cornelia and Lake Edina Water Quality Study report has been prepared to provide an easy-to-read overview of the conclusions and recommendations from the study.

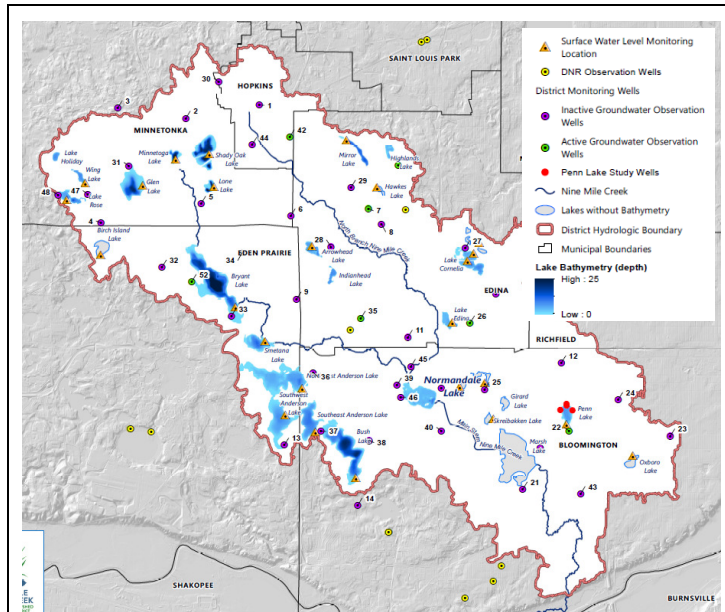
Pentagon Park Stormwater Management (in partnership with the cities of Edina and Bloomington): No new activities.

Regional Stormwater Volume Reduction Opportunity Study: No new activities.

Groundwater/Surface-Water Interaction Study and Assessment of Surface Water Vulnerability to Changes in the Groundwater System: Barr is evaluating how groundwater and surface water interact across the Nine Mile Creek watershed and then will use that data to identify surface waters and wetlands that may be particularly sensitive to changes in the groundwater system.

Understanding how changes in the groundwater system may affect surface water levels, stream flow, and water quality is an important component of long-term planning and protection of water resources in the Nine Mile Creek watershed. How connected, or disconnected, surface waters are to the groundwater system affects how they may respond to seasonal changes (drought), long-term climate change, or anthropogenic stresses (groundwater pumping).

Barr has nearly completed compiling pertinent information from a variety of sources, including groundwater and lake level data that NMCWD has collected for decades and water balance information from past UAA studies. Information from the recently-updated Geologic Atlas for Hennepin County, which is a major upgrade from the previous Hennepin County geologic atlas from 1989, will also be used in the groundwater/surface-water interaction study. Preliminary study results will be available in July.



This map shows locations of available data throughout the watershed. Historic lake and groundwater level data collected by NMCWD will be used, along with lake bathymetry, geologic information, groundwater modeling and other data, to evaluate groundwater/surface water interaction throughout the Nine Mile Creek watershed.

Wetland Conservation Act (WCA) and NMCWD Wetland Rule Administration:

- Follow-up on report of unpermitted wetland fill at 6571 Pinnacle Drive in Eden Prairie. A site visit concluded that the activity did not result in a WCA violation and did not trigger a NMCWD permit. We advised the landowners to install additional erosion protection measures to protect the adjacent wetland.

Change Order No. 6

**Normandale Lake Drawdown Project
Nine Mile Creek Watershed District**

Date of Issuance: June 19, 2019
Owner: Nine Mile Creek Watershed District
Barr Engineering Project No.: 23/27 1645.00
Contractor: Rachel Contracting Inc.
Engineer: Barr Engineering Co.

The Contractor is hereby directed to make the following changes in the Contract Documents for the Normandale Lake Drawdown Project.

1. Addition of Contract Pay Item for purchase of nonrefundable materials, removal of items from project site, and return of flared end section

Description: The following pay item, quantity, and unit price will be added to the contract documents:

Item 106	Description	Unit	Quantity	Unit Price
JJ	Purchase of nonrefundable materials, removal of items from project site, and return of FES	LS	1	\$17,325.12

Reason for Change: The contract documents specify installation of 240 lineal feet of 36-inch HDPE pipe to serve as a bypass pipe. In fall 2018, only 170 feet of the 36-inch HDPE pipe was installed due to the soft sediments encountered. The NMCWD decided to forego installation of the remaining 70 feet of 36-inch HDPE pipe and the 36-inch flared end section (FES) to avoid potential negative impacts to turtles over-wintering in this area. This change order reflects the purchase of nonrefundable materials and costs to remove the unused materials from the project site and return the flared end section.

Change in Contract Price: The Contract Price is increased by \$17,325.12, which reflects the costs for purchase of nonrefundable materials (70 lineal feet of 36" HDPE SDR 17 and one 36" flared end section), removal of these items from the project site, and return of the flared end section. Although this change order increases the contract price at this time, a credit will be given when the final change order for quantity underruns is completed, resulting in an overall savings for the line items related to installation of the 36-inch HDPE and flared end sections.

Change in Contract Time: There will be no change in the Contract Time.

Recommended By: _____


Janna Kieffer (Engineer)

Date: _____

6-4-19

BARR ENGINEERING CO.

Submitted By:

[Handwritten Signature]

(Contractor)

Date:

6.5.19

RACHEL CONTRACTING, INC.

Approved By:

Randy Anhorn (Administrator)

Date:

NINE MILE CREEK WATERSHED DISTRICT