

Engineer's Report

November 10, 2021

Lake Cornelia and Lake Edina Water Quality Improvements- Rosland Park Stormwater Filtration BMP

Pember Companies Inc. has made good progress on construction of the Rosland Park Stormwater Filtration BMP since they began on September 30, 2021. Construction tasks completed over the last month include the installation of the reinforced concrete for the vault, insallation of the concrete and nyloplast structures and associated storm sewer pipe, directional drilling of storm sewer pipe, pond sediment/debris clean out, and shoreline restoration. Barr continues to coordinate with Pember on shop drawing and material submittals and schedule changes.

Barr received Pay Application #2 from Pember for \$185,230.57 for work completed through October 28, 2021. The pay application includes sediment/erosion control measures, removals, vault and pond sediment excavation, storm infrastructure insallation (structures, pipes), and reinforced concrete installation. Barr is recommending payment of Pay Application #2.



Installing rebar for the vault walls to prepare for pouring concrete.



Wall framing and concrete pouring of vault walls



New outlet pipe to North Cornelia installed for treated water from the filtration vault



Pump and metering manholes installed

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Lake Cornelia and Lake Edina Water Quality Improvements: *Lynmar Basin Stormwater Retrofit Concept Plan*

A feasibility analysis scope was approved at the September Board meeting and work is underway to complete that work this fall. The feasibility study will include soil borings and infiltration capacity analysis and additional engineering analysis to optimize basin sizing to maximize cost/benefit ratio. If the project is ordered by the District upon completion of the feasibility study, construction document preparation and bidding would take place over the winter of 2021/22 and spring 2022. Construction is anticipated for 2022.

Haugo Geotechnical Services has been contracted to perform investigative soil borings to allow for analysis of potential groundwater impacts and confirm infiltration rates. Soil borings are tentatively planned for late this week. Upon receipt of the soil boring results, Barr staff will proceed with the groundwater analysis and optimization of basin sizing. While the delayed timing of soil borings resulted in the project being somewhat behind schedule, we anticipate having a project report completed by late-December.



The final Lynmar Basin stormwater retrofit concept design has been summarized in a report document, including the estimated costs and potential water quality and flood improvements.

Non-Profit Sites Stormwater BMP Retrofit Project

Barr received Pay Application #2 from Sunram Construction for \$6,900.00 for work completed through October 29, 2021. The pay request, which is the final project payment, is for completion of the rain garden maintenance and establishment work item. We are recommending approval of Pay Request #2, with payment to the contractor contingent upon receipt of all close-out documentation, as described in the project contract documents. A copy of the pay application is included as a separate item on the November 17, 2021 board meeting agenda.

Engineer's Report

November 10, 2021

Arrowhead Lake and Indianhead Lake Use Attainability Analysis/Water Quality Study

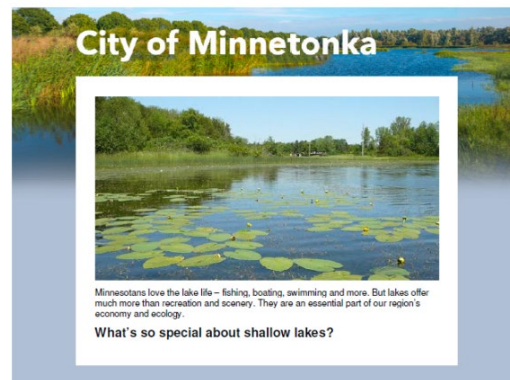
Activities for the Arrowhead Lake and Indianhead Lake Use Attainability Analyses (UAA) updates are progressing. Barr has completed the existing conditions in-lake model calibrations and has gained insight on nutrient loading concerns. In October, Barr finalized the analysis of proposed in-lake best management practices, which include management of internal sediment loading, watershed nitrogen management, and street sweeping. Opportunities for other external management practices are limited in the Arrowhead and Indianhead Lake watersheds since they are highly residential and fully developed.

Holiday-Wing-Rose Chain of Lakes Use Attainability Analysis/Water Quality Study

Activities for the Holiday-Wing-Rose Chain of Lakes Use Attainability Analysis (UAA) Update are progressing. Barr has completed the existing conditions in-lake model calibrations and has gained insight on nutrient loading concerns. In October, Barr finalized the analysis of proposed in-lake best management practices, which include management of internal sediment loading, watershed nitrogen management, street sweeping, and the possible installation of a filtration vault near the Lake Holiday outlet. Opportunities for other external management practices are limited in the Holiday, Wing, and Rose watersheds since they are highly residential and fully developed.

City of Minnetonka staff recently prepared and distributed an educational email communication on shallow lakes, including information regarding their unique characteristics and benefits. The communication also included a link to a recently-developed Shallow Lakes story map. NMCWD staff assisted the City of Minnetonka with the story map content. The story map can be viewed here: [What's so special about SHALLOW LAKES? \(arcgis.com\)](https://arcgis.com)

From: City of Minnetonka <CityofMinnetonka@public.godaddy.com>
Sent: Friday, October 29, 2021 1:01 PM
Subject: Why we care about shallow lakes



Email communication blast from the City of Minnetonka regarding shallow lakes and their unique characteristics and benefits.

Edina Streambank Stabilization – Phase 2

Sunram has submitted Pay Request #8 for final payment of the work associated with Phase 2 of the Edina Streambank Stabilization project. The pay request is for \$18,876.98 which includes \$6,750.00 for the completion of the 2-year warranty period for vegetation establishment and \$12,126.98 for the remaining retainage being held for the project. We are recommending approval of Pay Request #8, with payment to the contractor contingent upon receipt of all close-out documentation, as described in the project contract documents. A copy of the pay application is included as a separate item on the November 17, 2021 board meeting agenda.

Engineer's Report

November 10, 2021

Bush Lake Shoreline Vegetation Management

No new activities this month.

Atlas 14 Flood Risk and Resiliency, Phase II

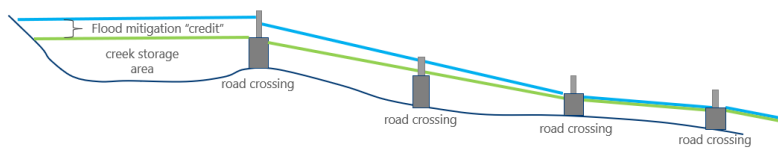
Comments provided by representatives of all municipalities and Hennepin County public on preliminary 10-, 100-, and 500-year model result mapping (i.e., stakeholder review comments) were incorporated throughout the month of October. As previously discussed, several model update requests were received that were beyond the original scope (e.g., incorporation of plans for newly completed developments, etc.). Coordinating with the NMCWD Administrator, a plan was developed to incorporate these requests, including a minor shift in project schedule. QA/QC of results related to stakeholder comment incorporation is nearing completion, and we remain on track with the adjusted schedule.

In addition to finalizing the modeling, Barr completed development and high-level testing of an updated methodology to quantifying flood damage costs, which is more-directly based on FEMA depth damage function (DDF) methodology. We will evaluate this methodology further once we have final results and mapping completed.

A brief project update was provided to the NMCWD Board at the October 26th regular monthly meeting. In addition to sharing the updated schedule above and brief project update, Barr also led a discussion summarizing common strategies used to mitigate flood risk (e.g., volume control and volume storage projects, conveyance projects, etc.) and barriers to implementing flood risk reduction projects. Board comments provided during this discussion are currently being incorporated into planning and scoping of Phase 3 of this project. Next steps include finalizing model results and generating final inundation area and structure impact mapping, computing flood damage cost estimates, and developing a draft Phase 3 scope for Board review. We are currently reviewing several grant funding opportunities for Phase 3 work. We anticipate that a meeting with the NMCWD's Technical Advisory Committee will be scheduled for early-December.

Barriers to Flood Risk Reduction- Transfer of Flood Risk

- What can be done to help accommodate increased flow rates to the creek system?
 - Identify projects within the creek corridor that reduce flood elevations
 - Use flood elevation reductions as flood mitigation "credits" or "bank" to accommodate future conveyance increases?



Excerpt from October 26, 2021 presentation to NMCWD board summarizing potential approach to address a common barrier to implementing flood risk reduction (risk-transference). The image shows how large-scale floodplain projects may be used to create stage "credits" or "bank" downstream to allow for smaller-scale, local flood mitigation projects to utilize additional creek capacity created by regional projects.

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November 10, 2021

Wetland Conservation Act (WCA) and NMCWD Wetland Rule Administration

Work administering the WCA and NMCWD wetland rule in recent weeks included:

- McCauley Trail, Edina – preparing and submitting the WCA Notice of Decision for wetland boundary and type approval
- Blue Stem, Eden Prairie –responding to questions
- Three Rivers Bryant Lake culvert –responding to questions
- Willow Creek Road Improvements, Eden Prairie –preparing and submitting WCA Notice of Decision for wetland boundary and type approval
- Interlachen Country Club, Edina –preparing and submitting WCA Notice of Decision for wetland boundary and type approval and conducting TEP site review
- Other miscellaneous program administration