

Engineer's Report

April 8, 2020 (Revised April 13, 2020)

Normandale Lake Water Quality Improvement Project:

The NMCWD plans to conduct a whole lake herbicide treatment of Normandale Lake in the spring of 2020 to further reduce the curly-leaf pondweed remaining following the winter of 2018-2019 lake drawdown. The proposed herbicide treatment will also include the upstream portions of Nine Mile Creek between Norman Center Drive and West 84th Street. The Minnesota Department of Natural Resources (DNR) recently completed a Lake Vegetation Management Plan (LVMP) for these areas, at the request of NMCWD, which authorizes a 5-year variance to perform herbicide treatments greater than 15% of the littoral area to control curly-leaf pondweed.

The NMCWD issued a request for quotes for the 2020 herbicide treatment in late-February. The lowest responsive quote was received by Lake Restoration for \$40,775.00. The NMCWD Board approved award of the contract to Lake Restoration at the March 19, 2020 meeting. Since then, Barr has been working with NMCWD staff and legal counsel to complete the contracting with Lake Restoration.



The proposed herbicide treatment areas are outlined in green in the above figure.

A public meeting to discuss the proposed herbicide treatment was held at the Bloomington City Hall on March 11, 2020. A brief overview of the Normandale Lake water quality improvement project and details of the planned spring 2020 herbicide treatment were shared. NMCWD and Barr staff answered questions received by the attendees. One resident in attendance shared data he collected from the Normandale Lake inlet and outlet in 2019 and posed several related questions. Following the meeting, one of Barr's limnologists reviewed the data and provided comments and interpretation of the data as it relates to the 2018-2019 drawdown and alum treatment and lake management in general. A follow-up meeting with the interested resident has tentatively been discussed.

Barr prepared and submitted an application to DNR for an aquatic vegetation control permit in early-March. Ice out on Normandale Lake occurred around March 30th. A pre-treatment aquatic plant delineation survey will be conducted in the near future for the proposed treatment areas and provided to DNR prior to their issuance of the aquatic vegetation control permit. Daily temperature measurements of Normandale Lake and the creek inflow began this week.

Edina Stream Stabilization Project:

Barr staff completed the as-built drawings for Phases I and II. Work with District staff and legal counsel on the project maintenance agreement between the District and City of Edina continues.

Discovery Point Restoration: Barr has been coordinating with Landbridge Ecological for the Discovery Point landscape management for 2020. During the COVID-19 State of Minnesota Stay at Home executive order issued through April 10, 2020, no on-site restoration management work will take place. However, planning for the work is on-going. The first tasks this year once on-site work commences will be the management of garlic mustard and the refreshing of the landscaping beds around Discovery Point including mulching and cutting back of the prior year's vegetation.

Discovery Point Building Addition: Barr is wrapping up landscaping and site restoration plans associated with the building addition work. The new landscaping will include a rain garden to capture roof runoff and updated native-centric plantings. This work, representing Phase 2 of the project to be bid under a separate contract from the building addition work, will begin immediately after building construction is complete. The project contract documents will be ready for solicitation of quotes by mid-April in order to have contracting completed in ample time prior to the addition construction. Barr is working closely with NMCWD staff and legal counsel regarding the timing of distribution of the request for quotes (RFQ). Building construction is currently set for spring and summer 2020. Landscaping work is likely to begin late summer into early fall 2020.

Bush Lake Shoreline Vegetation Management:

Since the early-2000s, when a pumped outlet was constructed on Bush Lake, the NMCWD has partnered in managing the vegetation along the shoreline to control invasive species and manage the healthy and diverse native plant community. The most recent three-year management contract with Landbridge Ecological has now expired. Barr revised and distributed a Request for Quotations to prequalified contractors to secure a bid for the next three growing seasons (through 2022). Two quotes for the management were received on April 10, 2020. Both firms meet the qualifications required. The lowest quote of \$30,872 was received by Landbridge Ecological, Inc., the same company that had the previous three year contract. Barr recommends that the District contract with Landbridge Ecological, Inc. for the next three year period of Bush Lake shoreline vegetation management.



Vegetation along the shoreline of Bush Lake.



Vegetation along the shoreline of Bush Lake.

BMP Retrofits on Nonprofit Sites- Final Design and Construction:

Contracting with Sunram Construction Co. has been on hold during the COVID-19 State of Minnesota Stay at Home executive order period (scheduled to end April 10th). The Notice to Proceed has yet to be issued. The contractor has indicated they will be ready to work once on-site construction can begin. Construction will begin as soon as possible in the spring and continue through substantial completion after plant warranties are completed in summer 2021.

Development of Data-sharing Web Map Tool:

Design and development of web map has begun, including review and preparation of the historical lake level and groundwater level database.

Smetana Lake Use Attainability Analysis Update:

Barr has completed updating the Smetana Lake Use Attainability Analysis (UAA) to assess current water quality and re-evaluate implementation recommendations from the original UAA study completed in 2003. Results of the study and management recommendations were presented to the NMCWD Board of Managers at the February 6, 2020 special meeting.

The draft report will be shared with the City of Eden Prairie in the upcoming month to solicit feedback.



Lake Cornelia and Lake Edina Water Quality Improvements:

Aluminum Treatment

HAB Aquatic Services Inc. is currently scheduled to conduct the alum treatment of North and South Lake Cornelia between May 10, 2020 and May 31, 2020. The City of Edina plans to conduct an herbicide treatment targeting curly-leaf pondweed in Lake Cornelia in late-April or early-May. Barr coordinated with City of Edina staff on behalf of NMCWD to ensure that the City’s request for quotes (RFQ) for curly-leaf pondweed herbicide treatment required the selected herbicide applicator to complete the application in Lake Cornelia before May 10, 2020. There is currently some uncertainty regarding whether the herbicide treatment will occur as planned due to the COVID-19 pandemic and uncertainty around extension of the State of Minnesota’s Stay at Home executive order. If the herbicide treatment does not occur this spring, the alum treatment would likely be delayed until the fall of 2020, which may require renegotiation of contract terms. Barr and District staff will continue to work closely with City of Edina staff regarding the herbicide treatment.

Lake Cornelia and Lake Edina Water Quality Improvements:

Feasibility Study

At the September 18, 2019 regular meeting, the Board approved a scope of work for Barr to complete a preliminary engineering/feasibility study to further evaluate the other water quality improvement practices recommended in the UAA study for Lake Cornelia and Lake Edina. The feasibility study includes the following tasks:

Task	Description of Task
1A	Stormwater Treatment BMP in Rosland Park- Conceptual Design Evaluation
1B	Stormwater Treatment BMP in Rosland Park- Feasibility Analysis/Preliminary Design
2A	High-level Evaluation of Other Stormwater Treatment/Phosphorus Reduction BMPs in the Lake Cornelia and/or Lake Edina Watershed
3	Curly-leaf Pondweed Management
4A	Promoting a Healthy Predator Fish Population
4B	Evaluating Other Fishery Management Strategies
5	Final Report, Presentation, and Public Hearing

Task 1B- Barr has continued to refine the conceptual design of the proposed filtration treatment vault. The proposed BMP concept includes pumping water from Swimming Pool Pond to the stormwater BMP. A primary design objective is to optimize the pumping of water, trying to balance the amount of water treated by the stormwater BMP with an acceptable amount of impact (lowering) to upstream water levels. The extent, duration, and frequency of lowered water levels will likely affect MN DNR permitting requirements and support from upstream landowners. To help characterize potential impacts of lowered water levels to upstream properties, Barr staff developed a long-term continuous XP-SWMM model of Lake Cornelia and the upstream waterbodies (including Swimming Pool Pond). The continuous model, based on 35 years of precipitation data, has been used to help evaluate how much of the water that flows through Swimming Pool Pond will be diverted to the BMP for treatment (versus flowing directly to Lake Cornelia) under various pumping conditions (pumping rates and on/off triggers). Results will be shared with District and City of Edina staff in the near future.

Under the proposed BMP concept design, stormwater from Swimming Pool Pond will be pumped into the above-ground vault, then flow down through filter media to remove pollutants prior to being discharged to downstream Lake Cornelia. As previously discussed, the proposed BMP concept design will include an option to have several separate filtration chambers so the effectiveness of multiple filtration media can be tested. Barr staff have been further evaluating potential media and will include recommendations in the feasibility report.



Sketch of proposed BMP concept for a stormwater feature in Rosland Park to treat runoff prior to reaching Lake Cornelia.

Task 2A- Barr staff have also evaluated additional stormwater treatment/phosphorus reduction BMP opportunities in the Lake Edina watershed. We developed high-level conceptual designs for retrofitting two sites with infiltration-based stormwater BMPs: the Lynmar Basin (currently a turfed stormwater detention area) at Hazelton Road and Lynmar Lane and Cornelia Elementary/Cornelia School Park located at 72nd Street and Cornelia Drive.



Aerial image of the Lynmar Basin, located at Hazelton Road and Lynmar Lane in the Lake Edina watershed.



Aerial image of Cornelia School Park, located at 72nd Street and Cornelia Drive in the Lake Edina watershed.

Barr staff have also continued progress in evaluating other potential lake management activities that are part of the ongoing feasibility study, including a high-level feasibility analysis of a lake drawdown to manage curly-leaf pondweed in Lake Cornelia, analysis of aeration options for Lake Cornelia, and a literature review regarding goldfish management in shallow lakes. Information on these activities will be included in the feasibility report.

Pentagon Park Stormwater Management: No new activities.

Regional Stormwater Volume Reduction Opportunity Study: No new activities.

Lower Valley Stabilization:

Work on the two maintenance and repair locations in the most downstream section of Nine Mile Creek in Bloomington has been substantially completed. City of Bloomington staff continue to monitor the site, as needed.

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

Work administering the WCA and NMCWD wetland rule in the past month included:

- Reviewing previous wetland information and responding to questions regarding the Three Rivers Park District trail near Hwy 169
- Responding to a report of unpermitted activity at 4918 Shady Oak Road
- Responding to a report of sediment release to a wetland during the Southwest LRT project construction, coordinating safe site review for essential activities, and conducting a site review.
- WCA administration, including gathering and providing information on wetland at 5241 Lochloy Drive.
- Miscellaneous program administration.