

# Engineer's Report

June 10, 2020

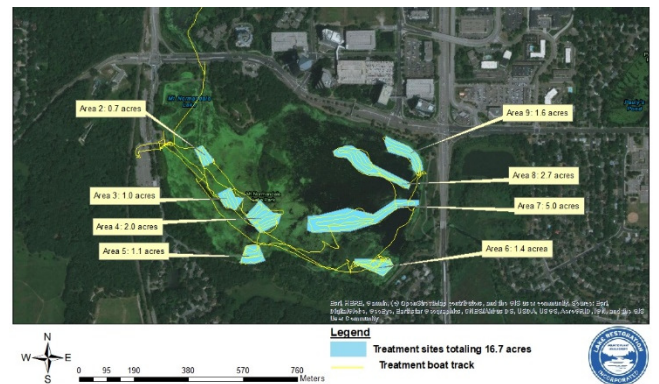
## Normandale Lake Water Quality Improvement Project:

An herbicide treatment of Normandale Lake and an upstream portion of Nine Mile Creek was conducted on May 8, 2020 to further reduce the curly-leaf pondweed (CLP) remaining following the winter of 2018-2019 lake drawdown. Water quality monitoring of Normandale Lake has begun, and will continue throughout the 2020 summer months. This year, we are monitoring water quality at the lake inlet, in addition to the typical monitoring location in the deepest portion of the lake near the outlet, to get a better understanding of nutrient cycling as water moves through the lake system.

District staff are working with Carp Solutions on monitoring carp activity in Normandale Lake. In recent weeks, Barr has assisted District staff in considering modifications to the monitoring schedule proposed by Carp Solutions based on results of electrofishing surveys conducted this spring indicating an abundant population of young-of-year carp.



Photo of May 8, 2020 diquat herbicide treatment of Normandale Lake.



Map showing track of approximate boat route during May 8, 2020 herbicide treatment.

## Edina Stream Stabilization Project:

Barr staff completed the as-built drawings for Phases I and II. A project maintenance agreement between the District and City of Edina has been finalized.

On May 19, 2020 Barr staff met with three property owners that live adjacent to the creek north of West 70<sup>th</sup> Street to discuss some erosion concerns on their properties. Barr staff will work with District staff to determine any future actions resulting from these site visits.

## Discovery Point Restoration:

Barr has been coordinating with Landbridge Ecological for the Discovery Point landscape management for 2020. Landbridge conducted on-site management of garlic mustard, bittercress, and other exotic species during the month of May. In mid-June, Landbridge will continue to conduct invasive species management activities and will be installing additional plants to screen the parking lot.



#### **Discovery Point Building Addition:**

The request for quotes for the reconstruction of the northwest rain garden and site improvements associated with the ongoing building addition has been sent to five landscaping contractors with quotes to be provided by June 12<sup>th</sup>. The landscaping work is scheduled to begin the first week of September, after completion of the addition construction, with completion by the end of October. A recommendation for the selection of a contractor is anticipated at the June Board meeting.



#### **Bush Lake Shoreline Vegetation Management:**

2020 Shoreline vegetation management activities commenced on May 14, 2020. Landbridge Ecological performed spot mowing and herbicide treatment on cool-season weed species during three site visits (5/14, 5/27, 5/29). Barr coordinated with Landbridge to prioritize the management of weed species and optimize the timing of specific management activities.

Following the initial vegetation management activities, Barr reviewed the treated areas and coordinated follow-up actions to be performed by Landbridge. Barr will continue to monitor management activities performed and make recommendations based on the site conditions throughout the summer of 2020.



**Vegetation along the shoreline of Bush Lake.**



**Vegetation along the shoreline of Bush Lake.**

### **BMP Retrofits on Nonprofit Sites- Final Design and Construction:**

Construction continues on the nonprofit BMP retrofit sites. Sunram completed the two raingardens at St. Edwards Catholic Church in Bloomington following the redesign to make the gardens narrower. During initial excavation of the Chapel Hills Church raingarden we encountered heavy clay soils. Since this site did not include an underdrain in the design, construction is on hold until a redesign to include an underdrain is finalized. While continuing to work with church representatives and adjacent homeowners association to finalize a plan, we also plan to perform infiltration testing to confirm soil conditions are not conducive to infiltration. Except for Chapel Hills Church in Edina, four out of five raingardens are substantially complete and awaiting installation of mulch and plantings. Sunram is working to address several punchlist items prior to planting and restoration. Planting is anticipated to be nearly complete at the four sites within the next week, with construction at Chapel Hills to follow once the redesign and change order is finalized.



Excavation, placing planting soil, and preparation for splash block installation for raingarden #1 at St. Edward's Church in Bloomington.



Splash block assembly, curb and pavement installation completed at Good Samaritan Church in Edina, ready for planting.



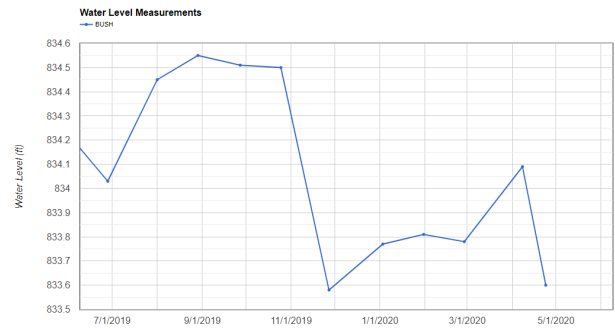
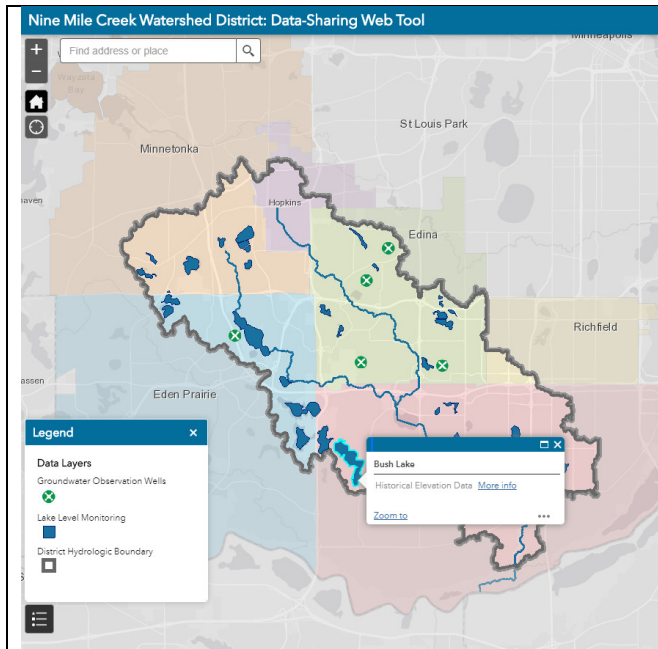
Raingarden site work completed at St. Luke's Church in Bloomington, flagged and ready for planting.



Raingarden site work completed at Oak Grove Church in Bloomington, ready for planting.

### **Development of Data-sharing Web Map Tool:**

Development of the data-sharing web map tool continues. The charting tool has been connected to the mapping application, and drafts of the tool have been deployed to Barr's web servers for testing. The GIS database containing historical water levels is complete. Development and testing continues on the display and charting capabilities of the overall tool.



#### 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.

Minor revisions to the draft report are underway. A revised copy will be shared with the City of Eden Prairie to solicit feedback.



#### Lake Cornelia and Lake Edina Water Quality Improvements: Aluminum Treatment

HAB Aquatic Services Inc. conducted an alum treatment of Lake Cornelia in mid-May. HAB mobilized on May 20, 2020 and set up holding tanks for alum and sodium aluminate in the parking lot near the Edina Aquatic Center (Rosland Park). Treatment at North Lake Cornelia was completed on May 21, 2020. For the treatment of South Cornelia, HAB staged their equipment on City of Edina property at an access point on Laguna Drive. Treatment of South Cornelia was completed on May 22, 2020. Barr staff provided oversight and pH monitoring on both days.

HAB submitted an invoice for the amount of \$81,844.97. Based on review of required documentation submitted, HAB completed the application in accordance with the contract documents and the desired aerial aluminum application and we are recommending payment. See Barr's post-treatment memo dated June 8, 2020 for additional information.

Water quality monitoring of Lake Cornelia has begun and will continue throughout the 2020 summer months.



Photo of treatment barge pulling from shoreline at South Cornelia.



Photo of HAB treatment barge on South Cornelia (photo courtesy of Larry Olson).

### 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:

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

Barr's efforts in the past month have focused on compiling the refined conceptual design of the proposed filtration treatment vault, watershed BMPs at Cornelia Elementary/Cornelia School Park and the Lynmar Basin, curly leaf pondweed management strategies, literature-based goldfish management strategies, and aeration options into a cohesive feasibility study report. The report outlines alternatives (as applicable), and collaboration between the District and City of Edina in developing the recommended stormwater treatment BMP alternative. The report also includes cost estimates and a recommended water quality improvement approach that draws from all evaluated tasks. Barr staff will share results of the feasibility analysis with the NMCWD Board of Managers at the June 17, 2020 meeting. As a next step, following Board feedback at its June meeting, Barr will work with NMCWD staff and legal counsel to begin developing a cooperative agreement between NMCWD and the City of Edina.

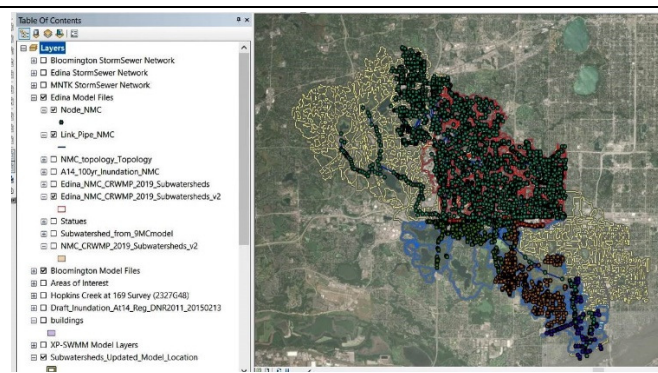
### Lower Valley Stabilization:

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.

### Atlas 14 Model Updates:

At the May 20, 2020 regular meeting, the Board approved a scope of work for Barr to complete updates to the NMCWD's watershed-wide Xp-SWMM model, including incorporating recent Atlas 14 updates completed by the cities of Edina, Richfield, Bloomington, and Minnetonka and review and revising model inputs (e.g., watershed divides and storm sewer information) for Eden Prairie and Hopkins (as needed).

We have begun compiling data for the 2020 Atlas 14 model updates and will be requesting additional data and use of models from the respective cities in the upcoming week.



GIS screenshot of subwatershed divides and storm sewer for portions of the watershed.

### Wetland Restoration and Protection Opportunity Identification:

During development of the NMCWD 2017 Water Management Plan, the NMCWD Board of Managers, local cities, and other stakeholders identified wetland protection as an important issue and identified the following specific priority issues/opportunities related to wetland protection:

- Inventorying and assessing wetlands within the Nine Mile Creek watershed for function and value.
- Preserving the quality of existing wetlands and protecting high quality wetlands.
- Seeking opportunities to restore degraded wetlands.
- Improving wetland health by promoting diversity and abundance of native aquatic species and improving habitat.

In 2020, the NMCWD budgeted for a wetland restoration and protection opportunity study as a first step to 1) compile the best available information regarding wetlands within the Nine Mile Creek watershed, 2) use that information to identify high-value wetlands and/or wetlands with rare and high-quality wetland biological communities in the watershed, and 3) identify the highest-priority opportunities for wetland restoration or protection. Barr staff have kicked off the effort and will begin compiling an inventory of "best available" wetland information, based on the latest National Wetland Inventory (NWI) data, wetland information (delineations and/or function and value assessment information) received through the NMCWD permitting program, and information available from the cities within the watershed. We plan to meet with NMCWD staff to refine portions of the scope in upcoming weeks.

**Regional Stormwater Volume Reduction Opportunity Study:** No new activities.

**Pentagon Park Stormwater Management:** No new activities.

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

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

- preparing for and conducting a site review of 6109 St Johns in Edina
- reviewing Pioneer Rd/Excelsior Blvd Minnetonka wetland information and estimating wetland management classification
- reviewing desktop information documentation regarding an incidental wetland determination for Presbyterian Homes at 9889 Penn Ave in Bloomington
- Reviewing desktop information for potential wetland at Crosstown Circle and Flying Cloud Drive in Eden Prairie
- meeting with Three Rivers Park District to discuss permitting for TH169 underpass
- reviewing wetland application for the Trileaf MIN Daisy Cell Tower site in Edina, preparing and submitting WCA Notice of Application, and providing comments to applicant's agent
- Miscellaneous program administration.