Engineer's Report

February 10, 2021

Normandale Lake Water Quality Improvement Project:

Barr staff presented the Normandale Lake 2020 monitoring results at the District's February 4, 2021 board workshop. NMCWD will be hosting a community meeting on February 18, 2021 regarding the Normandale Lake Water Quality Improvement Project. Preparation for the meeting is underway, in which Barr staff will be co-presenting with District staff.

Barr staff reviewed the Carp Solutions *2020 Normandale Lake Report*. Comments on the carp management recommendations and the future need and potential options for a fish barrier were provided to District staff.

Discovery Point Restoration and Building Addition Rain Garden and Landscape:

Project construction scheduling and planning is underway to begin the last phase of Discovery Point Restoration. Minnesota Native Landscapes will be removing buckthorn and some select trees in the northern portion of the parcel. District staff has coordinated an agreement with the City of Eden Prairie for work on their side of the parcel boundary. Advance notice of any required trail closings will be provided to nearby residents to ensure a safe working environment as the trees and buckthorn are removed.

Rain garden construction and restoration of the area disturbed during construction of the building addition will take place in the spring of 2021.

Bush Lake Shoreline Vegetation Management:

No new activities.

Edina Stream Stabilization Project:

There were no new construction/maintenance activities associated with the project. We have received a pay request (Pay Request #9) from Sunram for release of the remaining retainage for Phase 1 of the project in the amount of $2,900.01. We are working with Sunram to obtain the project close out documentation required by the contract documents. We are recommending payment of Pay Request #9, which will be provided to Sunram upon receipt of the required project close out documentation.

For the last several months we reported that Landbridge had provided a cost estimate for extending their maintenance work for an additional six months into 2021 to line-up with the completion of the maintenance work for Phase 2 of the project. The cost estimate received on September 6th was reviewed and we requested that the cost provided be revisited. The revisited cost received was reviewed and we requested that Landbridge again revisit their cost to come more into line with the original bid cost received for the project. We have not yet received this information. We are discussing options available with the District Administrator including having the supplemental maintenance work completed by another contractor.

Lake Level Management Plans for Arrowhead and Indianhead Lakes:

A draft report on this study was provided to the District and Edina staff for review on February 9, 2021. The report addresses the model used, how the model was matched to lake level data, and the important findings of the modelling work. Options for lake level management to protect the low homes from flooding in a 100-year return frequency precipitation event are included, as is discussion on the effects of pumping water from the lakes to downstream Nine Mile Creek.

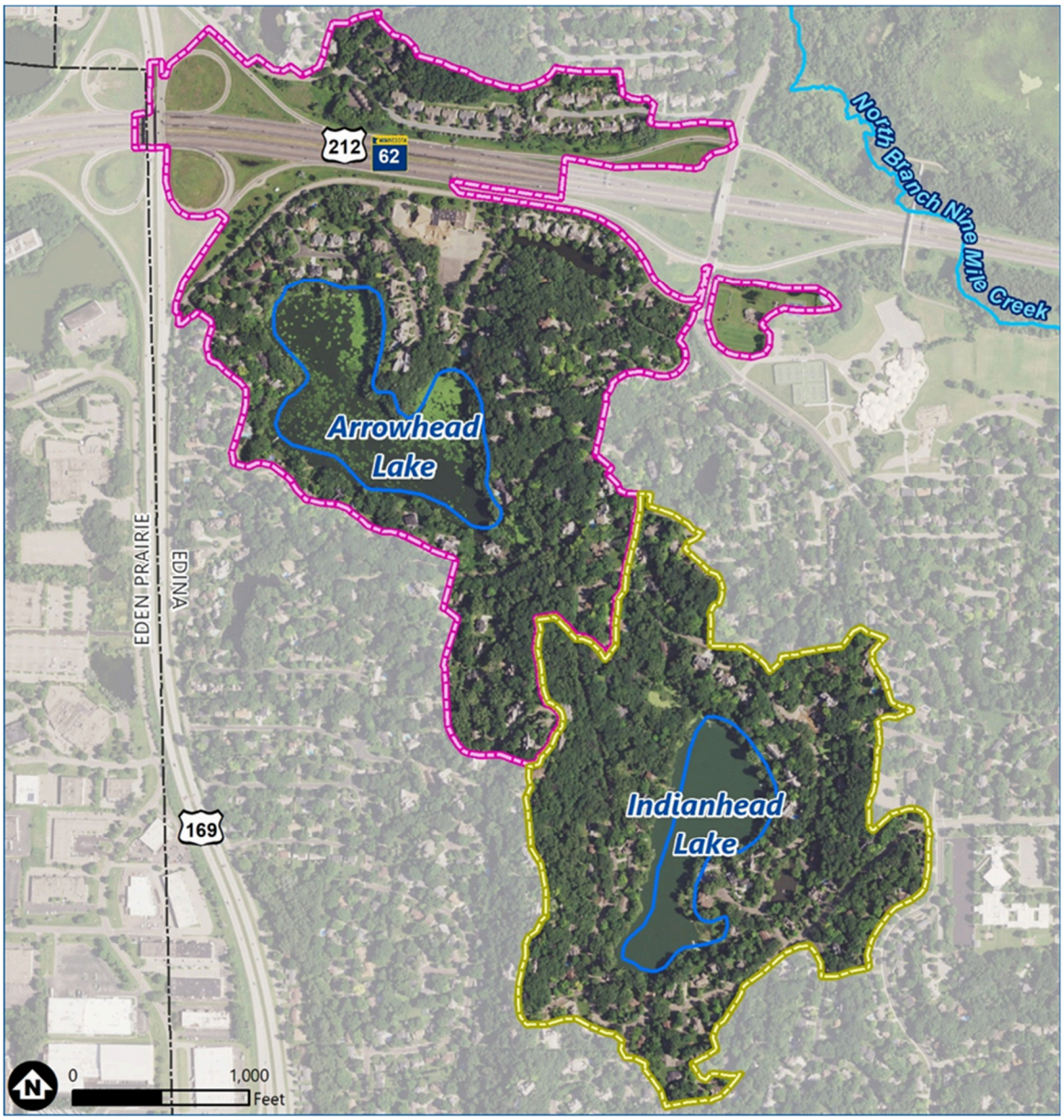
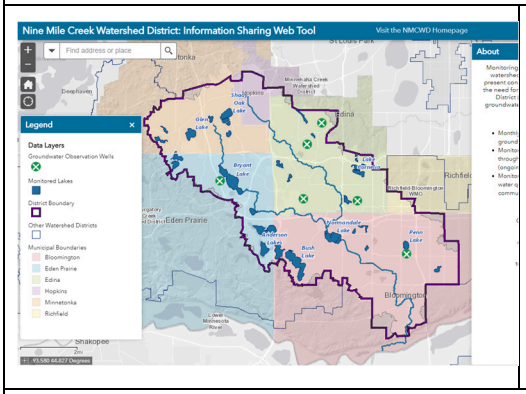


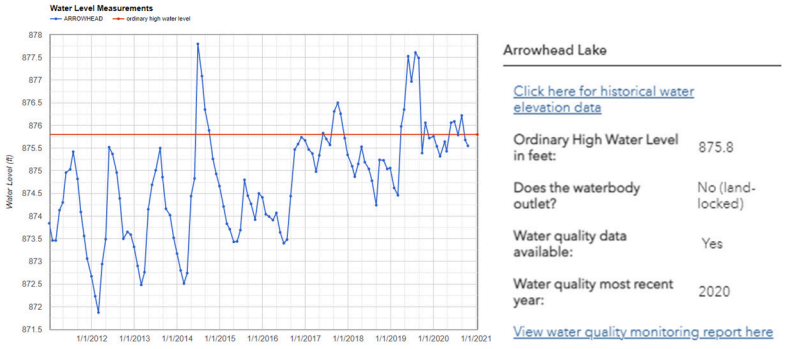
Figure from the draft report showing the watersheds to Arrowhead and Indianhead Lakes, two landlocked lakes in southwest Edina. Although in close proximity to the North Branch of Nine Mile Creek, water pumped from these lakes would flow south to the South Branch of Nine Mile Creek.

Development of Data-sharing Web Map Tool:

The web map is currently live with no new changes. Maintenance of the web map will continue as needed.

The URL for the web map → https://maps.barr.com/NMCWD/NMCWD_InformationSharingApp/index.html





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

Design work continues on the Rosland Park Stormwater Filtration BMP, with a goal of 90% design completion by late-April. Work in the last month included preparing initial construction drawings for existing conditions, erosion control, and traffic control, and continued work on the design of the vault, piping system, lift station, and filter backwashing/maintenance plan.

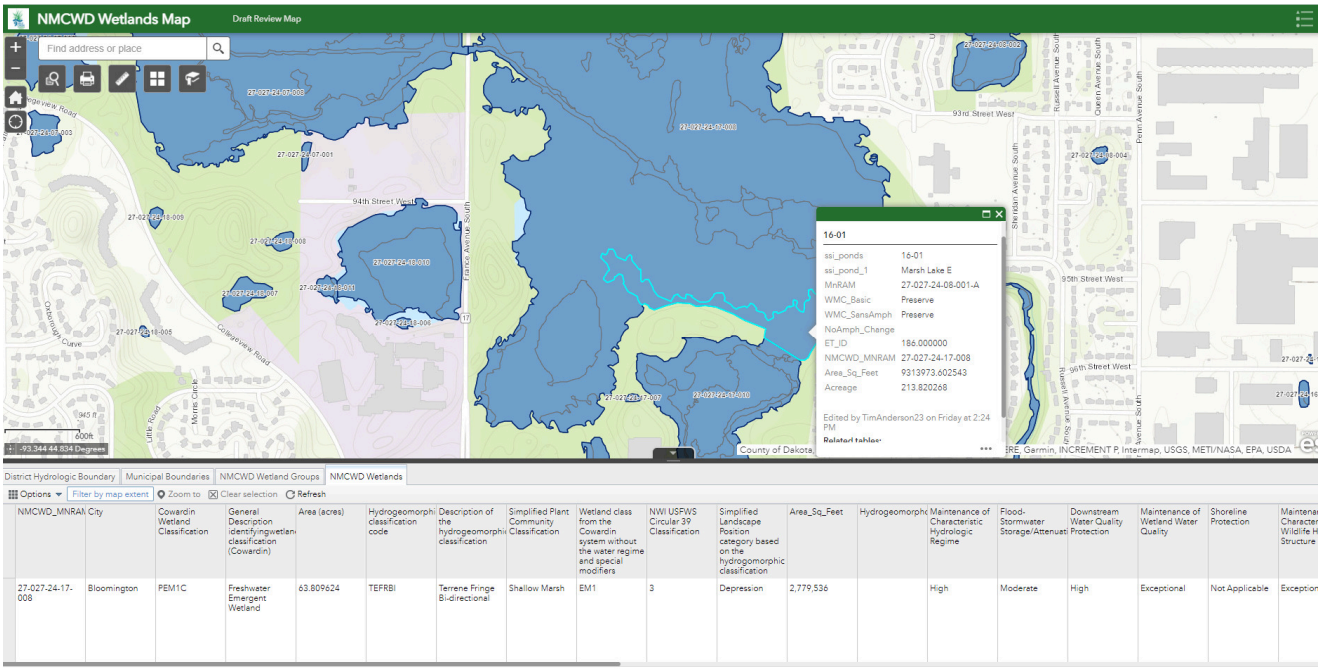
Barr staff met with NMCWD and City of Edina staff from the parks and recreation, public works, and engineering departments on February 5, 2021 to discuss design progress, including discussion about tree removal, vault placement, and filter backwashing discharge.

Rendering of proposed stormwater filtration vault in Rosland Park to treat water from Swimming Pool Pond before it flows to Lake Cornelia.

Wetland Restoration and Protection Opportunity Identification:

Barr staff met with District staff on December 7, 2020 and the District Board on January 7, 2021 to discuss project status and the planned approach for compiling the "best available" wetland data into a GIS database, including functional assessment data, to identify and characterize high quality wetlands throughout the watershed. The report is currently being finalized, including incorporating revisions based on feedback from Managers and staff.

One deliverable prepared as part of the project is a GIS database of compiled information from each city and the results of the GIS assessment. This data layer allows the user to easily access available information on the NWI types and wetland conditions compiled as a part of this study. The relational database allows for easy updating when a city updates their database. The goal of the developed base map was to supply the best available data in an easily accessible format to support District wetland management activities.



A GIS online view of the GIS database developed for District staff that includes assessment outcomes highlighted in the project report, as well as a relational database to city datasets.

This MAC Philanthropies wetland in Eden Prairie is an example of a potential restoration opportunity in a wetland associated with an upcoming project, the City of Eden Prairie Old Shady Oak Road project.

This Cardinal Creek wetland site upstream of Baker Road near Agape Christi (Eden Prairie) is an example of an opportunity to restore the partially ditched/drained wetland, which was previously partially filled for a currently dilapidating parking lot.

Atlas 14 Flood Risk and Resiliency:

In late-January, Barr staff kicked off Phase 2 of the Atlas 14 Flood Risk and Resiliency project. During Phase 2, NMCWD's watershed-wide Xp-SWMM models will be updated to run Atlas 14 mid-century climate change prediction rainfall events, including the 100-year, 24-hour mid-21st century event (10.2 inches of cumulative depth). In addition to modeling climate change prediction rainfall events, the NMCWD Xp-SWMM model will be calibrated utilizing flow and rainfall data collected in recent years from the Watershed Outlet Monitoring Program (WOMP) stations in the watershed, flood risk mapping will be updated, and a number of tasks related to quantifying flood risk will be completed. The complete list of work tasks associated with Phase 2 of the Atlas 14 Flood Risk and Resiliency project is included below:

- Task 1: simulate runoff events (100-year snowmelt, Atlas 14 and mid-21st century rainfall estimates) and identify flood-prone structures and roadways)
- Task 2: update Xp-SWMM model calibration
- Task 3: stakeholder review of Model Results and Flood Inundation Mapping
- Task 4: quantify potential flood damage costs
- Task 5: risk analysis for potential pipe failures or clogging at creek crossings
- Task 6: Develop framework for evaluating potential flood mitigation and/or resilience projects along Nine Mile Creek corridor or in upland areas

A more detailed project schedule was developed, including tentative timing for meetings with the District board and Technical Advisory Committee (TAC). Within the month of February, Barr plans to complete the following tasks:

- Complete development of rainfall depth and distribution input data for simulating mid-21st century rainfall events
- Complete initial model QAQC tasks prior to running the mid-21st century moderate estimate rainfall events and capturing additional surface water runoff
- Begin organization, review, and processing of WOMP flow monitoring and rainfall data to be used for model calibration

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

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

- Reviewing monitoring reports and documentation of project specific wetland replacement sites for previously approved wetland impacts associated with Braemar Golf Course executive course, driving range, and main course redevelopment and Edina Public Schools Creek Valley Elementary Tennis Courts
- Cherokee Trail Drainage (Eden Prairie) – reviewing potential wetland impacts
- West 70th Street (Eden Prairie), Topview Park (Eden Prairie)- review application submittals, prepare and submit WCA Notice of Applications
- Hennepin County Home School Wetland Bank- preparation for and participation in TEP meeting
- Agape Christi, 6500 Baker Road (Eden Prairie)- prepare and submit WCA Notice of Decision for wetland boundary and type approval
- WCA annual reporting and other miscellaneous program administration