

# Engineer's Report

December 19, 2018

**Edina Stream Stabilization Project:** Phase II of the project reached substantial completion at the end of October. The substantial completion deadline was December 31<sup>st</sup>, so the project was completed ahead of schedule. No new work was completed in November; however, since the bulk of the work was completed shortly before the end of October, not all items had been completely accounted for in the previous pay request. Sunram submitted a pay request in the amount of \$6,816.90 for work Phase II work completed through October 31, but not billed until November. The work completed for this pay application is summarized below, including work approved under Change Order #2 which totaled \$2,080.00:

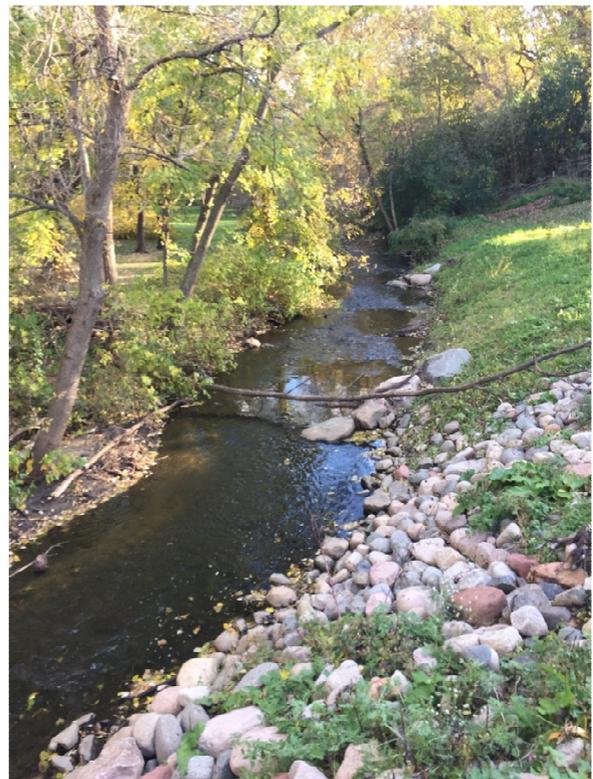
- Installing erosion control blanket in Reach 12.
- Hourly use of an excavator and operator to clean up debris that accumulated during high flows during construction (Change Order #2).
- Hourly use of a laborer to remove accumulated gravel that was transported from upstream during high flow events and deposited in an area that was already graded and stabilized. The deposited gravel was causing new bank erosion (Change Order #2).
- Removal of miscellaneous debris from the Wolff property within the work area (Change Order #2).

The overall construction costs are close to the budgeted amount. After the 2-year vegetation maintenance period is complete, the total project cost is projected to be \$483,202.20, which is \$10,590.20 (2%) greater than the bid amount of \$472,612.00. Two change orders account for \$6,120 of the additional project costs, with the remainder due to additional quantities needed during construction, which, in turn, were partly due to the flooding experienced during construction.

Photos from Phase I construction are included below to show some vegetation establishment after the first year of growth.



**Rock vanes and new vegetation in Reach 6 (Phase I).**



**Graded banks with rock vanes, riprap, and new vegetation in Reach 10 (Phase I).**

**Normandale Lake Water Quality Improvement Project:** In early-November, Rachel Contracting installed a shortened portion of the upstream pipe, which was fitted with a special flange adaptor that will allow connection to the remaining piece of pipe once the lake bottom sediments freeze sufficiently to extend heavy equipment out to the low spot in the lake. Change Order #4 for \$11,523.05, which covers the cost of the flange adaptor and additional costs for mobilizing the backhoe again later this winter to install the remaining section of the pipe, was submitted by Rachel and administratively approved.

Pay Request #4 has been submitted by Rachel in the amount of \$47,955.50, which covers work completed through the end of November. Barr is recommending payment of the pay application.

On November 19, 2018, Barr, District, and City of Bloomington staff met with MDNR to discuss citizen concerns regarding the success of turtles over-wintering in the deepest portion of Normandale Lake (near the outlet) given the shallow water levels anticipated in this area throughout the winter months. At the meeting, MDNR staff provided additional information on turtle wintering behavior and environmental conditions that are key to turtle survival, which include maintaining liquid water conditions and maintain oxygen levels. As follow-up, District and City of Bloomington staff are considering installation of a small deicing system (similar to those used at marinas to keep the dock area from freezing) to maintain a small area of open water and promote oxygenation of the water column.



Upstream end of the new 36-inch HDPE bypass pipe.



Nine Mile Creek flowing through Normandale Lake near the creek inlet (November 30, 2018)



The deepest area of Normandale Lake, near the outlet, remains partially open as of December 4, 2018.



Nine Mile Creek downstream of Normandale Lake outlet (December 4, 2018).

**Normandale Lake Water Quality Improvement Project (continued):** Following the lake drawdown, the District plans to conduct herbicide treatments to kill the remaining curly-leaf pondweed and an alum treatment to reduce internal phosphorus loading from the lake bottom sediments. During project scoping, the District tentatively planned to conduct the first herbicide treatment and the alum treatment in spring 2019. Upon further consideration, we are recommending that the herbicide treatment be delayed until the spring of 2020 which will allow the District to measure and document the success of the drawdown in reducing the amount of curly-leaf pondweed in the lake (versus the success of the drawdown in combination with the herbicide treatment). This information will be important as the District considers lake drawdown as a management tool in the future. We are recommending that the alum treatment occur in spring 2019, as planned.

**Bush Lake Outlet Project:**



Woody species (willow) within buffer zone – Nov. 10, 2018.

On November 19<sup>th</sup> invasive woody removal targeting sandbar willow, common buckthorn, and tartarian honeysuckle was performed within the management area of the Bush Lake shoreline buffer. Areas managed included the large patch of willow just north of the beach parking lot; the patch was thinned along the north edge to prevent further encroachment northward. Buckthorn and honeysuckle was scouted within the entire management area, with patches removed north of the boat launch, south of the Izaak Walton League property, and near the pump house on the north end of the lake.

**Lake Cornelia and Lake Edina Use Attainability Analysis (UAA):** Barr continues to work on updating the Use Attainability Analysis (UAA) for North and South Lake Cornelia and developing a UAA for Lake Edina. During the past month we have been using the in-lake water quality models to estimate lake response to various management scenarios, including:

- External phosphorus load reduction (watershed BMPs)
- Alum treatment to reduce internal phosphorus loading from lake bottom sediments
- Curly-leaf pondweed management to reduce phosphorus loading from mid-summer die-off
- Fisheries management to improve water clarity by decreasing the amount of carp, goldfish, and bullheads in Lake Cornelia system

Other progress over the past month has included communication with MDNR to seek feedback on preferred fisheries management approaches, compiling cost information for proposed management scenarios, and developing the draft report.

The District, in conjunction with the City of Edina, is hosting a community meeting with Lake Cornelia and Lake Edina residents on December 13<sup>th</sup>. Barr staff will present results of the lake modeling analyses and discuss potential lake and watershed management strategies for each of the lakes.

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

**Cherokee-Chamberlain Drainage System Analysis (in partnership with the city of Eden Prairie):**

Results of the analysis were summarized in a technical memo, which was provided to the City of Eden Prairie January 12, 2018. No response has been received from the City of Eden Prairie.

**District Office (Discovery Point):** No new activities. The Discovery Point Restoration is now stable for the winter. The cover crop that was recently installed as part of the Phase 2 native seeding has germinated just in time as the temperatures have dropped and will be helping to hold the soil through the winter. The entire Discovery Point site will continue to be managed for invasive species through the spring as the recent seedings become established. The next plant installations will take place in the spring of 2019 as another volunteer event will be scheduled as the growing season begins.

**Regional Stormwater Volume Reduction Opportunity Study:** Barr completed a district-wide, screening-level GIS analysis that identified potential sites for infiltration-based volume reduction best management practices (BMPs) within the Nine Mile Creek watershed. Barr staff have prepared a list of deliverable options (e.g., specific maps, data layers, and/or data summaries) to be shared and discussed with the NMCWD Administrator in the upcoming weeks.

**Wetland Conservation Act (WCA) Administration:**

- Prepare and process WCA no-loss approval documents for the Braemar Boulevard and Rabun pond sediment removal projects in the City of Edina.
- Review and process wetland boundary and type approval for the Southwest Metro Transit Bus Garage in Eden Prairie. Review 2006 wetland delineation data to evaluate extent of WCA jurisdiction prior to construction of stormwater pond. Review wetland functional assessment and determine NMCWD wetland management classification.
- Prepare and submit WCA Notice of Application for wetland delineation at 7120 Gerard Drive in Eden Prairie. The comment period ends December 28, 2018.

**Status of Permitted Construction Projects:** Barr staff completed the monthly inspections of permitted sites on November 30, 2018. An abbreviated version of the monthly inspection report is provided for the Managers review (attached). Of the 43 sites inspected, 3 of the sites required corrective action or follow-up. The full inspection report is available upon request.