

# Engineer's Report

November 13, 2018

**Edina Stream Stabilization Project:** Phase II of the project reached substantial completion at the end of October. Previous wet weather in September had slowed progress; however a dry stretch through much of October allowed crews to continue working and complete the project without any additional delays. The substantial completion deadline was December 31<sup>st</sup>, so technically the project is completed ahead of schedule. A pay request for Sunram for Phase II work has been submitted in the amount of \$279,570.85 for work completed through October 31. The work completed for this pay application included:

- Finish excavating a new channel and filling the old channel on Reach 12.
- Excavation of an off-channel pond, with inlet and outlet channels on Reach 12.
- Installing a new storm sewer extension to connect an existing storm sewer to the new Reach 12 channel (Change Order #1 from original contract documents)
- Installing riprap, root wads and rock vanes for bank protection on Reaches 14 and 15.
- Installing and maintaining erosion control measures.

Despite the delays due to wet weather in September, the project was completed on schedule. The construction costs came in almost exactly on budget; however the change order to add a storm sewer extension increased the overall budget by \$3,840 (0.8%). Photos from construction are included below.



Duck swimming in new off-channel pond in Reach 12.



Graded banks with log vanes in Reach 13.



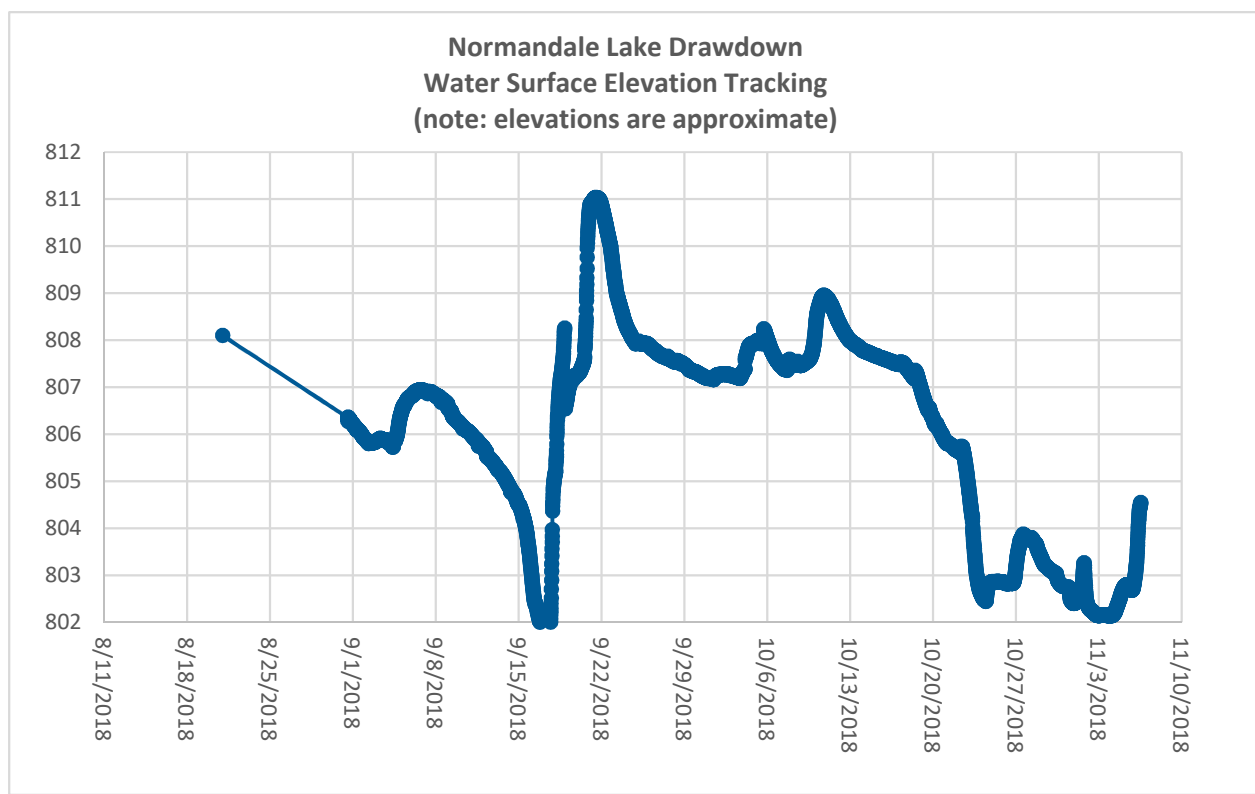
Rock vanes providing bank protection in Reach 14



Reach 15 graded banks, cross vane, and outlet protection

**Normandale Lake Water Quality Improvement Project:** As indicated in the October Engineer's Report, Rachel Contracting installed the manhole and downstream portion of the new 36-inch HDPE bypass pipe system in early-October. Upon installation, the downstream portion of the new 36-inch bypass pipe system was utilized to continue drawing down the lake level, in addition to the existing 18-inch bypass pipe. The pumps were also used, at times, to accelerate the drawdown so the upstream portion of the new 36-inch bypass pipe system could be installed.

During the week of October 22nd, water levels in the lake dropped below elevation 804, at which point Rachel Contracting began constructing a temporary earthen ramp extending out into the lake to provide solid ground for pipe installation. At an elevation of approximately 804 feet they encountered extremely soft sediments preventing them from extending the earthen ramp further toward the low spot in the lake (approximately Elevation 800), and thus preventing them from installing the full section of pipe. Barr staff worked closely with Rachel to discuss and consider alternative approaches to pipe installation given the softer than anticipated sediments and resulting inability to reach out as far as necessary to install the full pipe. Ultimately, it was decided that Rachel would install a shortened portion of the upstream pipe so the pipe could be installed (and site conditions restored) while ground conditions remain unfrozen. The pipe, installed on November 2, 2018, was fitted with a special flange 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. The revised pipe installation approach, is expected to increase the contract price by approximately \$8,000; NMCWD staff approved the changed approach, but a specific change order for this work has not yet been submitted by Rachel Contracting.



**Normandale Lake Water Quality Improvement Project (continued):**

A pay request has been submitted by Rachel in the amount of \$77,490.15, which covers work completed through the end of October. Barr is recommending payment of the pay application. The pay request includes Change Orders #2 and #3 for \$1,210.00 and \$8,179.00, respectively. Change Order #2 reflects the import and installation of 1.5" rock under the manhole structure to provide additional support due to poor soil conditions encountered. Change Order #3 reflects several items, including 1) changes in turtle fencing quantities for installation of 1,082 lineal feet of fencing along the east side of Normandale Boulevard to prevent potential turtle passage across Normandale Boulevard in the spring and 183 lineal feet of additional turtle fencing required along the perimeter of the lake and creek channel; 2) changes in sediment log quantities for installation of additional sediment logs (wood mulch bags) to close and prevent gaps in the turtle fencing along the perimeter of the lake and creek channel; and 3) inclusion of 150 feet of "moving water" flotation silt curtain, installed in the creek channel downstream of the new 36-inch pipe. The flotation silt curtain was shown on the design drawings in the Contract Documents but was not included as a specific pay item under the Outlet Bypass section of the bid form.



**Soft sediments encountered at edge of construction access ramp extended into Normandale Lake.**



**Installation of upstream portion of 36-inch HDPE bypass pipe.**



**Partially dry lake bed and remaining water in low area near outlet of Normandale Lake.**



**Nine Mile Creek flows through partially dry lake bed at upstream end of Normandale Lake**

**Bush Lake Outlet Project:**

On October 17<sup>th</sup> a cool-season grass spray and woody invasive/volunteer foliar spray was conducted around the entire shoreline buffer, excluding the Izaak Walton League property. Target sprayed species included reed canary (Phalaris arundinacea), buckthorn (Rhamnus), and sandbar willow volunteers (Salix exigua).

A follow-up management visit focused on cutting and stump treating woody invasives/volunteers are scheduled to occur this fall. Another selective treatment should occur in the spring of 2019 targeting reed canary grass, followed by invasive herbaceous control in specific areas in late spring.



**Buffer zone going dormant November 10, 2018.**

**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. Progress on the project over the past month has included developing and modeling future BMP implementation scenarios to assess the effort required to attain water quality goals for the lakes. We anticipate a meeting with Lake Cornelia and Lake Edina residents in early-December to discuss the results of the lake modeling analyses and to provide information on potential lake and watershed management strategies for the lakes based on preliminary modeling results.

**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):** 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. An overview of the study was presented to the Board of Managers at a meeting on August 15, 2018. Since the meeting, Barr staff have reviewed and discussed the feedback received from the Board and staff and will be sharing a compiled list of deliverable options (e.g., specific maps, data layers, and/or data summaries) with the NMCWD Administrator for further discussion.

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

- Review of revised WCA no-loss applications for the Braemar Boulevard sediment removal and Rabun pond projects in the City of Edina
- Review and application processing of wetland delineations for the Southwest Metro Transit Bus Garage and 7120 Gerard Drive, both in the City of Eden Prairie.
- Conduct Technical Evaluation Panel site reviews of two wetland replacement sites within the Braemar Golf Course in the City of Edina.
- Provide NMCWD rule information to Dennis Rodacker at the Minnesota Board of Soil and Water Resources in response to his inquiry of local wetland ordinances regarding In-Lieu Fee planning.

**Status of Permitted Construction Projects:** Barr staff completed the monthly inspections of permitted sites. An abbreviated version of the monthly inspection report is provided for the Managers review. Of the 163 sites inspected between October 29<sup>th</sup> and November 2<sup>nd</sup>, the inspection report provided for Manager review includes information for approximately 25 sites where either specific concerns were noted for follow-up or the site has been fully restored and will be removed from the permit inspection list. The full inspection report is available upon request.