

Item 5A.
BCWMC 4-18-19



7800 Golden Valley Road
Golden Valley, MN 55427

April 9, 2019

Ms. Laura Jester
BCWMC Administrator
Keystone Waters, LLC
16145 Hillcrest Lane
Eden Prairie, MN 55346

Subject: Decola Ponds B and C Improvement Project, City Project #18-06
90% Design Plans

Dear Laura:

Enclosed, please find Barr Engineering's correspondence dated April 9, 2019 along with the 90% design plans for the Decola Ponds B and C Improvement Project. These items are being submitted for consideration at the BCWMC meeting scheduled for April 18, 2019.

If you have any questions regarding the enclosures, please contact me at 763-593-8034.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Oliver".

Jeff Oliver, P.E.
City Engineer

Enclosures

C: Eric Eckman, Development and Assets Supervisor

4/9/2019

Mr. Jeff Oliver, P.E.
City Engineer
City of Golden Valley
7800 Golden Valley Road
Golden Valley, MN 55427

Re: 90% Design Plans - DeCola Ponds B & C Improvement Project Golden Valley Project 18-06

Dear Mr. Oliver:

Attached please find the 90% design plans for the DeCola Ponds B & C Improvement Project. The 2019 DeCola Pond B & C improvement project (BC-2, 3) will be funded by several sources including the Minnesota Department of Natural Resources Flood Damage Reduction Grant, the BCWMC's ad valorem levy (via Hennepin County) for CIP projects, and funding from Hennepin County and the City of Golden Valley. Per the cooperative agreement between the City of Golden Valley and the BCWMC, the city is to construct the project and the plans and specifications are subject to approval by the Commission. Also, per the agreement, the 90% design plans for this project must be submitted to the BCWMC for review and approval. If the attached 90% plans meet the city's approval, we recommend submitting them, along with this letter, to the BCWMC for inclusion in the meeting packet for their April 18, 2019 meeting. Barr staff will present the 90% plans to the BCWMC at the meeting and answer any questions from the BCWMC.

The remainder of this letter presents information about the feasibility study, the design features of the project, and approval/permitting needs.

Feasibility Study Summary and Selected Project

The City of Golden Valley's *DeCola Ponds B and C Improvement Project Feasibility Study* (Barr Engineering, May 2018) examined the feasibility of three different concepts for the expansion of flood mitigation volume, water quality volume, and habitat improvement in the area around DeCola Ponds B and C, including the area to the north within a permanent drainage and utility easement on the Dover Hill property and in the Pennsylvania Woods Nature Area owned by the City of Golden Valley. This project will reduce flood elevations at the low point on Medicine Lake Road and increase pollutant removal by the DeCola Ponds, which ultimately drains to Bassett Creek.

The three concepts included:

- 1) Concept 1 – Maximize flood storage
- 2) Concept 2 – Maximize tree preservation
- 3) Concept 3 – Hybrid alternative of Concept 1 and 2

The feasibility report recommended the implementation of Concept 3, which intended to balance development of flood mitigation volume with tree preservation. The feasibility report estimated that project implementation (Concept 3) would reduce the 100-year flooding at the low point on Medicine Lake Road so that it is passable by emergency vehicles and reduce 100-year elevations on DeCola Ponds A, B, C, and D by 0.5 foot. The project would remove accumulated sediment in DeCola Pond B and further reduce the annual total phosphorus load to Bassett Creek by 9.0 pounds per year. Additionally, the concept would restore 2.7 acres of wetland and upland habitat in the Pennsylvania Woods Nature Area.

At their May 2018 meeting, the Commission approved the final feasibility study for this project, supporting implementation of Concept 3, and the Commission ordered the project at their August 2018 meeting. Design began in early October 2018, after the MnDNR flood mitigation grant was fully executed with the City of Golden Valley.

Design features – 90% plans

The project design is underway. An environmental assessment worksheet (EAW) process was conducted using 30% design for Concept 3 from the feasibility study. The EAW public comment period was from December 17, 2018-January 16, 2019. Minor comments were received from the Minnesota Pollution Control Agency, the Minnesota Department of Natural Resources, Metropolitan Council, the State Historic Preservation Office, and the Minnesota Department of Transportation.

The EAW comments have been considered and incorporated into the 90% design plans for Concept 3 from the feasibility study. The 90% design has preserved all of the components identified as part of Concept 3, which are being refined as part of the final design process. The 90% design plans are also being used for the environmental permitting process (discussed in the following section).

The table below compares the flood mitigation volume developed, the increase in total phosphorus removal, additional open water area, and restored wetland and upland areas by the project, as presented in the feasibility study and the 90% design plans.

	Flood Mitigation Volume Developed	Additional Total Phosphorus Removal	Additional Open Water Area	Restored Wetland and Upland Area ¹
Feasibility Study (May 2018)	22.0 acre-ft	9.0 lb/yr	1.9 acres	2.7 acres
90% Design Plans	23.9 acre-ft	10.8 lb/yr	2.0 acres	3.2 acres

1 – The restored wetland and upland area as reported in the feasibility study (2.7 acres) included proposed bituminous trail through the restored area (~0.35 ac). The total restored wetland and upland area, not including the bituminous trail, for Concept 3 in the feasibility study was 2.35 acres. The restored wetland and upland area in the 90% design, including the proposed bituminous trail and concrete bench pads through the restored area (~0.30 ac) is 3.2 acres. The total restored wetland and upland area, not including the bituminous trail and concrete bench pad areas, for the 90% design is 2.9 acres.

Similar to the feasibility study, the main components of the 90% design include:

1. Lowering the normal water level (NWL) of DeCola Ponds A, B, and C from 893.8 ft MSL to 893.5 ft MSL to provide additional flood mitigation volume without needing to excavate that volume. This, in addition to the proposed excavation, will develop approximately 23.9 acre-ft of flood

mitigation volume below the existing 100-year flood elevation. This effort includes modifying the DeCola Pond C outlet structure and overflow to lower the NWL while increasing the overflow elevation of the berm on the south end of DeCola Pond C (to increase the flood storage in DeCola Ponds A, B, and C). The modified outlet will also prevent the accumulation of debris on the inlet pipe which is currently a major maintenance issue for the City.

2. Installing a 14' x 4' box culvert that will connect the Liberty Crossing flood storage features to the expanded storage in the Dover Hills and DeCola Ponds B and C areas.
3. Developing a sediment forebay in the permanent easement on the Dover Hills area to develop water quality treatment volume, improve ease of maintenance, enhance water quality in downstream locations, and to allow lowering the normal water level of DeCola Ponds A, B, and C to increase flood storage capacity, while preserving or increasing the water quality treatment provided by the DeCola Ponds system. The current grading plan, including maintenance access and inclusion of a bituminous trail around the forebay, results in a slightly higher water quality treatment volume than what was estimated during the feasibility study. The estimated total phosphorus removal based on the 90% design features is approximately 10.8 lbs/year.
4. Increasing the DeCola Ponds B and C open water area, and increasing associated water quality treatment volume through expanding contours below the NWL and dredging accumulated sediment in DeCola Pond B. The proposed expansion does not change the overall depth of the existing ponds, but will provide additional water quality treatment volume and provide additional aquatic habitat for fish, macroinvertebrates, and macrophytes.
5. In addition to increasing the open water areas, expanding the flood and water quality storage around DeCola Ponds B and C allows for the opportunity to create and restore other wetland habitat. For design, we assumed that floodplain/wetland habitat would be established below elevation 899.0 (equivalent to about the 10-year flood elevation), and restored upland habitat would be created in all disturbed areas above this elevation. This upland area will serve as a buffer to the wetlands. Based on the City of Golden Valley's wetland management classification for these ponds (Manage 2/3) the average buffer should be at least 25 feet. However, the project is not proposing new development that will increase imperviousness on the site with the exception of the replacing/realignment of the bituminous trails and installing bench concrete pads in the project area. The trail realignment and concrete pads will add 0.11 acres (~4,790 square feet) of impervious area, however the first phase of the project (Liberty Crossings) reduced impervious by 6,987 square feet. Per the BCWMC requirements, trails and sidewalks are exempt from BCWMC water quality performance standards, but buffers should be provided for trails and sidewalks where possible.
6. Preserving trees on the large knolls between DeCola Ponds A, B, and C, and preserving screening trees along the west, east, and south side of DeCola Pond B and along north and east side of DeCola Pond C. Tree removal is expected within project disturbance limits. However, areas will be restored with native vegetation. At the 90% Design level, it is estimated that 223 trees and 432 shrubs will be planted in the disturbed area. Approximately 2.9 acres will be restored with native wetland and upland seeding.

- Replacing disturbed trails with ADA-compliant trails to preserve maintenance access, park use and improve walking trail opportunities. Several alternative materials for the trails were evaluated based on comments from the 50% presentation to the Commission. Below is a table showing a comparison of various attributes of each material. Based on initial cost, snow removal, ADA compliance, and maintenance, bituminous asphalt was determined to be the best fit for this project.

Table 1: Trail Material Comparison

Trail material	Total Cost	Durability	Snow Removal	ADA compliance	Maintenance requirements	Permeability
Bituminous Asphalt	\$29,000	High: ~20 year lifespan	Easy	Compliant	Short-term (every 2 years): Sealcoat/crack filling	Impermeable
Permeable Pavers	\$223,000	High: 20-30 years lifespan	Medium	Compliant, needs increased maintenance to stay that way	Regular Maintenance (more than once a year): Periodic vacuuming, especially in heavily vegetated areas	Highly Variable
Decomposed Granite (DG)	\$66,000	Low: 3-5 year lifespan	Difficult	Not Compliant	On-going maintenance (yearly or more often): occasional maintenance to replace loose granite and cracked surfaces	Low to Medium
Decomposed Granite (DG) with stabilizer	\$86,000	Low: 3-5 year lifespan	Medium	Compliant, needs increased maintenance to stay that way	On-going maintenance (yearly): organic-lock is self healing, typically add water and rework ruts	Low to Medium
Crushed Lime Rock	\$10,000	Low: 3-5 year lifespan	Difficult	Not Compliant	On-going maintenance (yearly and after storms): High ongoing maintenance-uneven wear, ruts and washout/runoff	Low to Medium

- Educational signage is being developed for the project by the City and signs will likely be installed at each of the two bench locations. BCWMC and other project partners will have their logos included on the signage.

The drawings are at a 90% design stage, which means there are details yet to be worked out before the design is final and ready for bid. Any comments received from the BCWMC will be addressed in the final construction drawings.

Approvals/permit requirements

In addition to BCWMC approval of the plans, other permits/approvals will be required for this project. Other permitting and reviews include the following:

- U.S. Army Corps of Engineers Clean Water Act Section 404 Permit
- MnDNR Public Waters Work Permit
- MnDNR Appropriations Permit for construction dewatering
- MPCA 401 Water Quality Certification
- MPCA Construction Stormwater General Permit
- Compliance with the MPCA's guidance for managing dredged material, including the Notification to Dredge form
- Compliance with the MPCA's guidance for managing contaminated material and debris-containing fill
- Compliance with the Minnesota Wetland Conservation Act (WCA)
- City of Golden Valley Right-of-Way Permit
- City of Golden Valley Stormwater Permit

We anticipate that dewatering will need to start at the beginning of September 2019 to address MnDNR concerns about turtle hibernation and survivability before excavation can begin. We also anticipate that the permitting process could take 6 months. The permitting process is currently underway; the MNDNR MPARS application was submitted February 26, 2019 and the Minnesota Joint Permit Application (for USACE and WCA Impacts) was submitted February 27, 2019. These applications are currently under evaluation and permits are pending.

Recommendations

We recommend that the city request 1) BCWMC approval of the 90% drawings, and 2) BCWMC authorization for the city to proceed with final plans and contract documents.

If you have any questions, please contact me at 952-832-2750 or kleuthold@barr.com.

Sincerely,



Kurt Leuthold, P.E.
Vice President