

Item 5B.
BCWMC 1-20-22
Plan set online



7800 Golden Valley Road
Golden Valley, MN 55427

January 12, 2022

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

Subject: DeCola Ponds SEA School-Wildwood Park Flood Mitigation Project
City Project 20-27; BCWMC CIP Project BC-2,3,8,10
50% Design Plans

Dear Laura:

Enclosed please find Barr Engineering's correspondence dated January 12, 2022 along with the 50% design plans for the SEA School-Wildwood Park Flood Mitigation Project. These items are being submitted for consideration at the BCWMC meeting scheduled for January 20, 2022.

Please call me at 763-593-8034 if you have any questions regarding the enclosures.

Sincerely,

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

Jeff Oliver, P.E.
City Engineer

Enclosures

C: Eric Eckman, Environmental Resources Supervisor

1/12/2022

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

**Re: 50% Design Plans - SEA School-Wildwood Park Flood Mitigation Project Golden Valley
Project 20-27**

Dear Mr. Oliver:

Attached please find the 50% design plans for the SEA School-Wildwood Park Flood Mitigation project. The project (BCWMC CIP project BC-10) 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 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 50% design plans for this project must be submitted to the BCWMC for review and approval. If the attached 50% 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 January 20, 2022 meeting. Barr staff will present the 50% 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 BCWMC's *SEA School-Wildwood Park Flood Mitigation Project Feasibility Study* (Barr Engineering, June 2021) examined the feasibility of three different concepts for the modification to the DeCola Pond D outlet, diversion of runoff away from DeCola Pond E, expansion of flood mitigation volume, increasing water quality treatment, and habitat improvement in the area around Wildwood Park owned by the City of Golden Valley and the northern drive area at the SEA School property, owned by Robbinsdale Area Schools. This project will significantly reduce flood elevations on DeCola Pond D, slightly reduce flood elevations on DeCola Ponds E & F, and increase pollutant removals from watershed runoff, which ultimately drains to Bassett Creek.

The three concepts developed during feasibility included:

- 1) Concept 1 – Underground Storage with a Stream
- 2) Concept 2 – Open Water
- 3) Concept 3 – Wet Meadow

The feasibility report recommended the implementation of Concept 3, which includes installing a vegetated iron-enhanced sand filter to provide additional water quality treatment of runoff diverted to the project area, and the creation of two wet meadow areas and a higher prairie area for the storage of 8.5 acre-ft of flood waters. The feasibility report estimated that project implementation (Concept 3) would reduce the 100-year flooding on DeCola Pond D by 2.8 feet, eliminating the risk of flooding at all homes on this pond during the 100-year event. Although the project only slightly reduces the 100-year peak flood elevation on DeCola Ponds E and F, it has a more significant impact during smaller, more frequent events like the 10-year event. The project further reduces the annual total phosphorus load to Bassett Creek by 4.1 pounds per year. Additionally, the concept would restore 2.3 acres of wetland and prairie habitat in the SEA School/Wildwood Park area along with 0.7 acres of restored turf grass.

At their June 2021 meeting, the Commission approved the final feasibility study for this project, supporting implementation of Concept 3, and the Commission ordered the project at their September 2021 meeting. Design began in early October 2021.

Design features – 50% plans

The project design is underway. In addition to comments from the City of Golden Valley staff, SEA school facilities staff, and the public during the feasibility study, the 50% design incorporated recent comments and direction from City of Golden Valley based on the overall design and SEA School facilities staff as it relates to the drive realignment and maintenance needs. The 50% design has generally preserved all of the components identified as part of Concept 3, which are being refined as part of the final design process. The 50% design plans are also being used to start the permitting process (discussed in the following section).

The table below compares the flood mitigation volume developed, the increase in total phosphorus removal, restored wetland and prairie areas by the project, as presented in the feasibility study and the 50% design plans.

	Flood Mitigation Volume Developed	Additional Total Phosphorus Removal	Restored Wetland and Prairie Area	Restored Turf Area
Feasibility Study (June 2021)	8.5 acre-ft	4.1 lb/yr	2.3 acres	0.7 acres
50% Design Plans	8.1 acre-ft	4.0 lb/yr	2.2 acres	1.1 acres

The current 50% design results in slightly less flood mitigation volume (0.4 acre-ft) due to some design modifications based on further conversations with SEA School facilities and Golden Valley staff. The discussion below of the main components of the 50% design notes these changes. However, we identified opportunities to regain some of that flood storage volume with minor grading changes that will be addressed as we move toward 90% design.

Similar to the feasibility study, the main components of the 50% design include:

1. Upsizing the outlet from DeCola Pond D to a 48" RCP with design and restoration in coordination with impacted property owners and City maintenance staff.
2. Diverting runoff from Pennsylvania Ave and Duluth Street toward the water quality treatment and flood storage in the SEA School-Wildwood Park properties, including pretreatment of flows prior to the iron-enhanced sand filtration basin.
3. Providing an iron-enhanced sand filtration basin, considering a design that integrates vegetation/screening between the filtration trenches, for the removal of particulate and soluble phosphorus.
4. Developing approximately 8.1 acre-feet of flood storage, with an overflow berm and extended detention outlet in the northeast corner of the project area, discharging to the storm sewer system at the corner of Duluth Street and Kelly Drive.
5. Incorporating a low wet meadow habitat area and exploring opportunities to promote better drainage toward the proposed outlet including grading and potentially incorporating an intermittent stream channel to promote drainage. The 50% design incorporates a slope to the bottom of the basins, rather than flat bottoms, that result in some loss of flood mitigation storage. As we proceed toward 90% design, we will evaluate and adjust the bottom slope to regain storage volume.
6. Replacing disturbed trails with an accessible looped walking trail around the site that is above the approximate 10-year flood event elevation or higher, to make the trail more accessible, reduce maintenance, and provide maintenance access to the stormwater features. We shifted these trails to align with the back of curb along Duluth Street and Kelly Drive, based on conversation with city staff to improve safety by reducing ice dam potential and chloride treatment while maximizing flood storage volume. Additionally, the trail alignments and design incorporate an east-west trail connection from Kelly Drive to the park interior (i.e., the playground), includes access and space needs around the pickleball courts (based on input from Golden Valley parks staff), and considers future safe routes to school alignments along Kelly Drive (based on direction from Golden Valley engineering staff). The cost of these park features will be paid for by non-BCWMC project funds.
7. Restoring a variety of habitat types and replanting trees to mitigate significant tree loss and provide shade in specific locations. The 50% design does not include a tree planting plan, but we have begun conversations with city staff about tree loss mitigation, replacement and locations, with the goal to reuse/relocate as many trees as possible and replacing significant tree removals at a ratio of approximately 1:1.
8. Realigning the northern SEA School Driveway with Maryland Avenue. Based on comments from SEA School facilities staff the drive alignment now includes a larger turning radius for bus service and an adjacent walk/trail in the bus loading area, which impacted grading and slightly reduced the flood mitigation volume available in the prairie area. We will continue to coordinate design with SEA School staff and evaluate specific items as we move to 90% design. We will also continue to work with City staff and adjacent residents to mitigate any impacts created by the

driveway realignment. Additionally, we will investigate phasing construction in this area to minimize impacts to SEA School access and operations.

9. Preserving key park features, including the pickleball courts, the playground area, the wooded knoll, the sledding hill, and open turf areas for various recreation activities and gathering (e.g., the northeast corner of the park).

The drawings are at a 50% design stage, which means there are several details yet to be worked out before the design is final and ready for bid. Additionally, the 50% plans will be provided to the residents around the DeCola Pond D outlet and to the SEA School facilities staff for review and comment to further inform the 90% design development. Any comments received from the BCWMC will also be addressed in the 90% design 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:

- MPCA Construction Stormwater General Permit
- 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 the permitting process could take 2-3 months. As a result, we will submit the permit applications in mid-February to begin the permitting review process, with the permitting process anticipated to be complete by May 2022.

Recommendations

We recommend that the city request 1) BCWMC approval of the 50% drawings, and 2) BCWMC authorization for the city to proceed with design, permitting and contract documents and bring 90% design plans to a future Commission meeting.

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

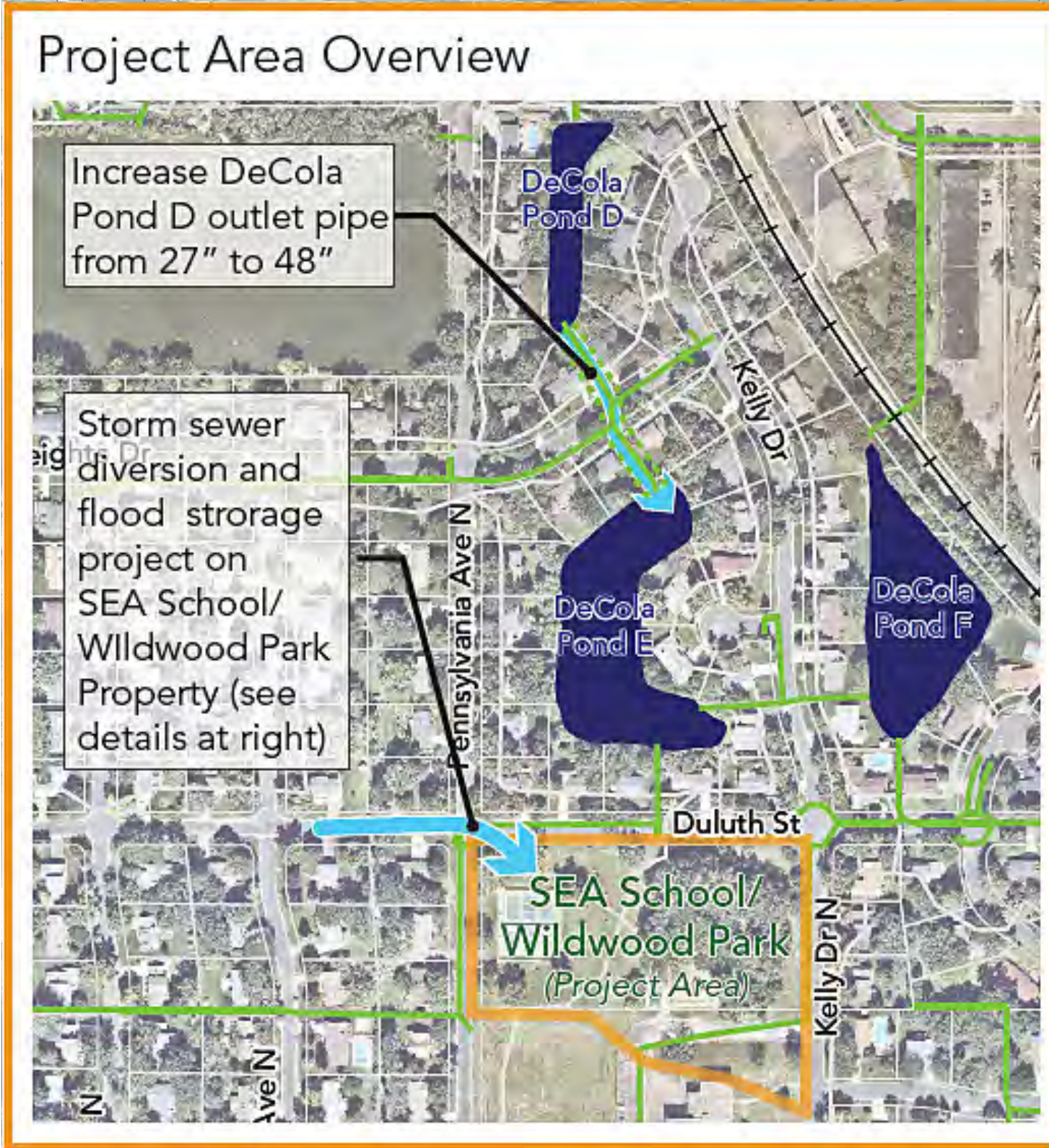
Sincerely,



Jennifer Koehler, P.E.
Senior Water Resources Engineer

50% design

Total project cost (-10%/+20%) = \$3.1 million (estimated construction cost = \$2.6 million)



SEA School-Wildwood Park Flood Mitigation Project 50% Design Plan

- LEGEND**
- Preserved Woodland
 - Existing Paths
 - Proposed Site Feature
 - Proposed Paved Trails
 - Proposed Concrete Pad
- Proposed Vegetation**
- Turf
 - Filtration Basin
 - Wet Meadow
 - Prairie Habitat
 - Tree Planting
 - Screening Planting

Design summary

Additional flood storage created:
8.1 acre-feet

Improved water quality:
Additional 4.0 lbs/yr phosphorus removed

Restored wetland and prairie habitat:
2.2 acres total

Restored turf area:
1.1 acres total

Significant tree removal:
50 trees total (replacement goal 1:1)

Reduction of flood level on ponds:

DeCola	10-Yr	100-Yr
D	- 0.4'	- 2.9'
E,F	- 0.7'	- 0.1'

At-risk flooded structures (existing/proposed):

DeCola	10-Yr	100-Yr
D	0/0	10/0
E,F	9/7	19/19