



7800 Golden Valley Road
Golden Valley, MN 55427

October 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
90% Design Plans

Dear Laura:

Enclosed please find Barr Engineering's correspondence dated October 12, 2022 along with the 90% design plans for the SEA School-Wildwood Park Flood Mitigation Project. These items are being submitted for consideration at the BCWMC meeting scheduled for October 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

October 12, 2022

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

**Re: 90% Design Plans - SEA School-Wildwood Park Flood Mitigation Project Golden Valley
Project 20-27**

Dear Mr. Oliver:

Attached please find the 90% design plans for the SEA School-Wildwood Park Flood Mitigation project. This project is the third in a series of capital projects designed to reduce chronic flooding in the Medicine Lake Road & Winnetka Avenue Area and DeCola Ponds neighborhood. 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 tax 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 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 October 20, 2022 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 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 K-4th grade School of Engineering and Arts (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 – 90% plans

The 50% plans were approved by the BCWMC at the January 2022 meeting. As presented at the meeting, the 50% design reflected a flood mitigation concept that preserved the existing playground, shade structure, and basketball court and realigned the SEA School driveway to accommodate additional storage. This design was based on feedback received from Robbinsdale Area Schools during the City of Golden Valley planning study as well as the BCWMC feasibility study. The 50% design was presented to the public at a virtual open house on February 3, 2022.

Following review of the 50% design, Robbinsdale Area Schools discussed new plans for capital improvements at the school site and expressed concern about realignment of the north driveway. The City undertook additional engagement with Robbinsdale Area Schools to define a revised solution that meets the flood mitigation needs of the project and the requests of the school. This included preservation of the existing driveway alignment, while shifting the location of the shared playground and shade structure on to the SEA School property to provide additional flood storage within Wildwood Park. This revised 50% design was presented to the public at an in-person open house on June 1, 2022. The flood mitigation project will include the construction of an ADA-accessible path, a concrete pad and new or relocated shade structure, and playground envelope curb and subgrade to replace existing infrastructure removed for the construction of the flood mitigation storage. However, the school district will be leading the design and construction of the playground structure and associated components and is committed to maintaining shared public access to these community assets.

The 90% design reflects all the comments from the City of Golden Valley staff, City Commissioners, Robbinsdale Area School district staff, SEA School Faculty, neighborhood residents, park users, residents along the DeCola Pond D outlet, and the public during the feasibility study, the 50% design and 50%

revised design public open houses, and a more recent 90% design in-person public open house held on September 29, 2022.

The table below compares the flood mitigation volume developed, the increase in total phosphorus removal, and restored wetland and prairie areas, as presented in the feasibility study, the 50% design plans, and the 90% design plans.

	Flood Mitigation Volume Developed	At-Risk Structures (exist/prop)	Additional Total Phosphorus Removal	Restored Wetland and Prairie Area	Restored Turf Area	Total Project Cost (Construction + Engineering)
Feasibility Study (June 2021)	8.5 acre-ft	10 yr: (9/6) 100 yr: (29/19)	4.1 lb/yr	2.3 acres	0.7 acres	\$3.1 million
50% Design Plans	8.1 acre-ft	10 yr: (9/7) 100 yr: (29/19)	4.0 lb/yr	2.2 acres	1.1 acres	\$3.1 million
90% Design Plans	8.5 acre-ft	10 yr: (9/7) 100 yr: (29/19)	3.9 lb/yr	2.1 acres	1.2 acres	\$3.1 million

The current 90% design plans capture the same flood mitigation volume as originally identified during the feasibility study with modifications to the design. The current design results in slightly less annual total phosphorus removal (0.2 pounds) than what was achieved during feasibility due to minor modifications to the filtration basin design.

The main components of the 90% 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 that integrates vegetation/screening between the iron-enhanced sand filtration trenches, for the removal of particulate and soluble phosphorus.
4. Developing approximately 8.5 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 including a sloped, intermittent stream channel in the north wet meadow and sloped bottom in the east wet meadow to promote better drainage toward the proposed outlet. The intermittent stream channel will provide energy dissipation at

the outlet into the north wet meadow and can also be used as a seating and interactive play area. The restored prairie area located on the south end of the park includes an outdoor classroom, which provides seating along a more vertical slope for additional flood storage and a small open area within the prairie for SEA school students and staff as part of their outdoor curriculum. The interactive seating and play areas and outdoor classroom space is provided to mitigate the lost classroom and play areas impacted by the creation of flood storage throughout the park. All areas restored as turf in the project area are proposed as bee lawns and have a specific community purpose (neighborhood groups, recreation groups, etc) based on stakeholder input.

6. Replacing disturbed trails with an accessible looped walking trail around the site that is above the approximate 10-year flood event elevation, to make the trail more accessible, reduce maintenance needs, provide maintenance access to the stormwater features, and reflect community input. Trails are aligned 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 eliminating the need for salt/chloride treatment, while maximizing flood storage volume. Additionally, the trail alignments and design include access and space needs around the pickleball courts (based on input from Golden Valley parks staff), and consider 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 loss of some significant trees and provide shade in specific locations. We estimated that 49 significant trees, as defined by City of Golden Valley Ordinance, will be removed. The 90% design includes a tree planting plan that meets the City of Golden Valley's goal of replacing significant tree removals at a ratio of at least 1:1, by replacing with 87 trees based on stakeholder input. The City of Golden Valley has already transplanted several trees that were determined to be good candidates for salvaging rather than removing.
8. Maintaining the northern SEA School bus driveway in its current alignment. The driveway will not be realigned with Maryland Avenue, as originally shown in the 50% plans, based on feedback from Robbinsdale Area Schools facilities staff following the 50% design review. To provide the required amount of flood storage, the playground and shade structure locations were shifted to the SEA School property. The flood mitigation project will include the construction of an ADA-accessible path, a concrete pad for the new or relocated shade structure, and playground envelope curb and subgrade to replace existing infrastructure being relocated for the construction of the flood mitigation storage. However, the school district will be leading and financing the design and construction of the playground structure and associated components and is committed to maintaining shared public access to these community facilities. As we finalize plans, we are continuing to 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 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 90% design stage, which means there are minor details yet to be worked out before the design is final and ready for bid. Additionally, the 90% plans have been provided to the residents around the DeCola Pond D outlet and to the Robbinsdale Area School District facilities staff for review and comment; revisions to the plans based on comments received will be incorporated into the design. Any comments received from the BCWMC will also be addressed in the ongoing revisions to 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

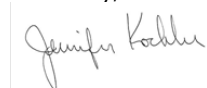
We anticipate that the permitting process could take 2-3 months. We submitted the WCA application materials in early October 2022 to begin the permitting review process, with the permitting anticipated to be complete by December 2022.

Recommendations

We recommend that the city request 1) BCWMC approval of the 90% drawings, and 2) BCWMC authorization for the city to proceed with 100% design, permitting and contract documents and bidding the project when ready.

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

90% design

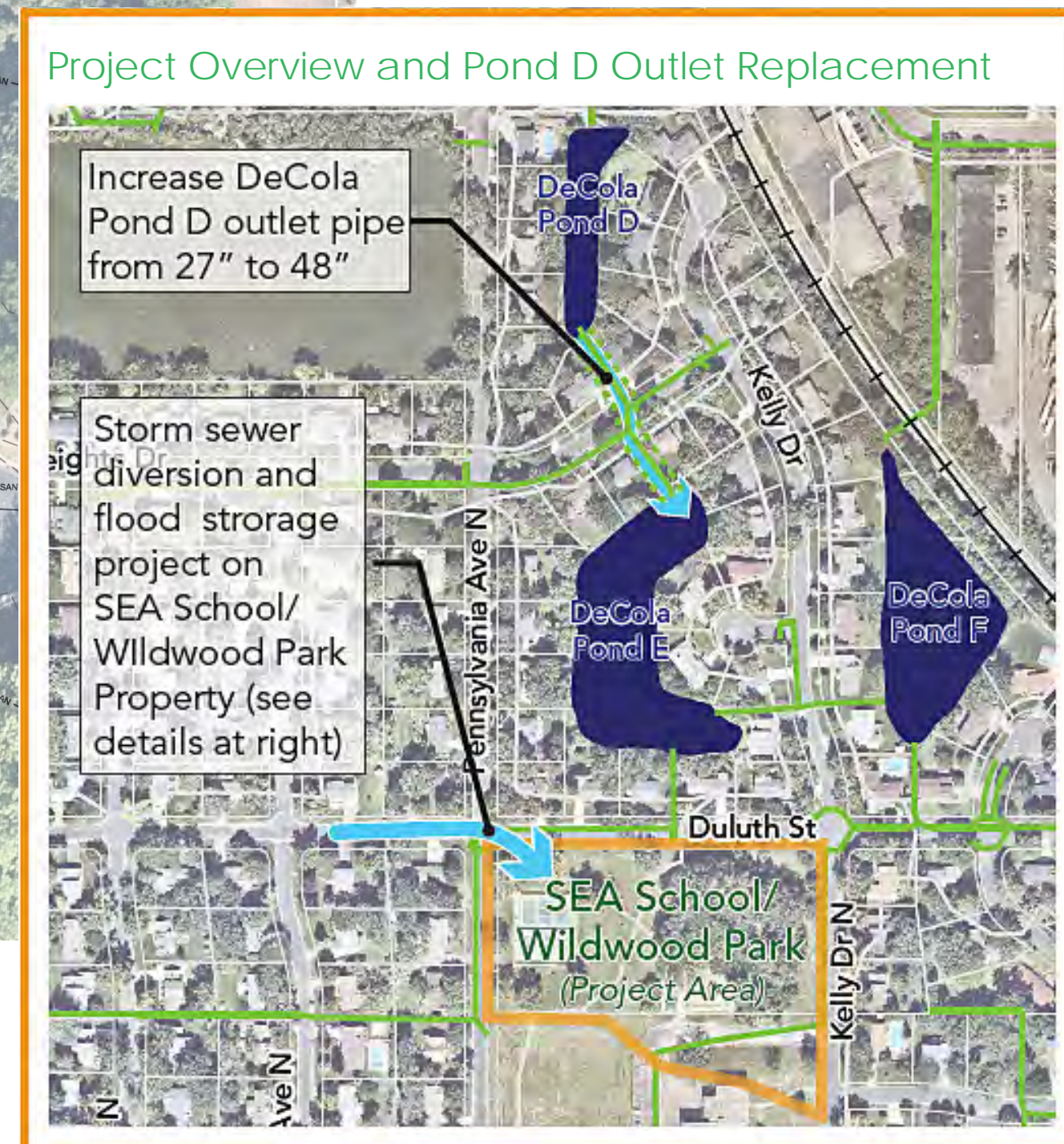
Total project cost (-10%/+15%) = \$3.1 million (estimated construction cost = \$2.6 million)



SEA School & Wildwood Park Flood Mitigation Project 90% Design Plan

LEGEND

- Preserved Woodland
 - Existing Footpath
 - Natural Surface Path
 - Proposed Paved Trails
 - Proposed Concrete Pad
- Proposed Vegetation**
- Perennial Plantings
 - Wet Meadow Seeding + Planting
 - Prairie Seeding + Planting
 - Turf Seeding
 - Tree Planting
 - Screening Planting



Design summary

- Additional flood storage created:**
8.5 acre-feet
 - Improved water quality:**
Additional 3.9 lbs/yr phosphorus removed
 - Restored wetland and prairie habitat:**
2.1 acres total
 - Restored turf area:**
1.2 acres total
 - Tree replacement:**
49 significant trees removed
87 trees replanted
(meets replacement goal of 1:1)
 - Reduction of flood level on ponds:**
- | DeCola | 10-Yr | 100-Yr |
|--------|--------|--------|
| D | - 0.4' | - 3.0' |
| 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 |