



## Memorandum

**To:** Bassett Creek Watershed Management Commission  
**From:** Barr Engineering Co.  
**Subject:** Item 5A – Consider Approval of 90% Design Plans for 2021 Main Stem Lagoon Dredging Project (2021 CIP Project BC-7) -- BCWMC June 16, 2022 Meeting Agenda  
**Date:** June 8, 2022  
**Project:** 23271860.00

### **5A Consider Approval of 90% Design Plans for 2021 Main Stem Lagoon Dredging Project, Golden Valley (2021 CIP Project BC-7)**

#### **Recommendations:**

- 1) Consider approval of 90% drawings
- 2) Authorize Commission Engineer to continue design, permitting, and coordination with BCWMC attorney, and bring final design plans and specifications and agreements to a future Commission meeting for approval to bid the project
- 3) Authorize Commission Engineer to perform additional survey in the creek channel between Lagoons E and D, and a verification survey in the lagoons

#### **Background**

The Bassett Creek Watershed Management Commission (BCWMC) is funding the \$2,759,000 "Dredge Accumulated Sediment in the Main Stem of Bassett Creek in Wirth Park Project" (Main Stem Lagoon Dredging Project) (2021 CIP Project BC-7):

- \$2,434,000 funded through a combination of CIP levies collected in tax years 2021 – 2024 and up to \$800,000 in BCWMC closed project account funds,
- Remaining \$325,000 funded through grants – \$250,000 Watershed Based Implementation Funding and \$75,000 Hennepin County Opportunity Grant funding.

Unlike most CIP projects where the BCWMC enters into an agreement with a member city to design and construct the project, the BCWMC is designing and constructing this project, in close coordination with the Minneapolis Park and Recreation Board, the City of Minneapolis, and the City of Golden Valley. At their November 2020 meeting, the Commission approved a timeline for implementation and directed the Commission Engineer to prepare a scope of work for project design and engineering. The Commission approved the engineering scope and budget at their January 2021 meeting.

The Commission Engineer completed the 90% design plans. Pursuant to the approved work scope, the Commission must review and approve the design plans.

## **Selected Project and Design features – 90% plans**

The Commission approved the Main Stem Lagoon Dredging Project Feasibility Study in May 2020 and selected implementation of Alternative 2-all (dredge all three lagoons to 6-foot depth).

This project will remove 39,600 cubic yards (CY) of accumulated sediment from three of seven “lagoons” created along the Main Stem of Bassett Creek in Theodore Wirth Regional Park, between Golden Valley Road and Highway 55 (Figure 1). These lagoons were originally created in the mid-1930s by Civilian Conservation Corps crews. The project will improve flow capacity, floodplain storage, and habitat, and will result in significant water quality improvements by removing an estimated 600 lbs/year of total phosphorus and 156,000 lbs/year of total suspended solids which currently flow downstream through the Bassett Creek Valley and into the Mississippi River.

Based on testing conducted during the feasibility study, the excavated sediment is considered contaminated and must be disposed at a landfill. Despite the higher sediment disposal costs, the project results in a low cost per pound pollutant removal of only \$226/pound of total phosphorus.

The feasibility report for the project formed the basis for the project design, and there are no material differences from the feasibility level concepts. The feasibility report and further project information can be found online at <https://www.bassettcreekwmo.org/index.php?cID=506>.

The 50% design plans for this project were approved in December 2021. Unless otherwise noted, there are no changes from the 50% plans. The primary design features of the proposed work, as shown on the attached 90% plans, include:

- 1) Pond dredging. As noted above, the project will remove 39,600 CY of accumulated sediment to deepen Lagoons D, E, and F to a depth of 6 feet (Figure 1). The project will re-establish an aesthetic and function similar to the original design from the 1930's. Based on concentrations of polycyclic aromatic hydrocarbons (PAH) (as BaP equivalents) and diesel range organics (DRO), sediment in all three lagoons does not meet MPCA guidelines for Unregulated Fill (MPCA, 2012), indicating it is not suitable for unrestricted offsite reuse. In addition, BaP equivalents are above the MPCA Industrial Soil Reference Values (SRV), indicating the sediments are not suitable for reuse at other commercial or industrial properties. Based on the sediment sampling results and MPCA guidelines, the dredged material will require landfill disposal. Pond side slopes will be 4H:1V starting approximately at the normal water level. The intent is to avoid disturbing the existing banks. The design does not incorporate a bench.

*(Update - no design change)* A resident provided comments requesting that flattened benches (either aquatic (below the normal water level) or access (above the normal water level)) be considered around the perimeter of the lagoons. We reviewed the various design and permit considerations, and discussed with MPRB (property owner), City of Golden Valley (WCA LGU), and the BCWMC administrator. Based on those reviews and discussions, the BCWMC Engineer does not recommend adding benches to the lagoons.

*(Update – no design change)* A resident provided comments requesting installation of wildlife fencing along Highway 55 to mitigate wildlife crossing the highway due to disruptions from this project (specifically related to otters). We reviewed the request and discussed with MPRB staff. Highway 55 is roughly 2,000 feet south of the project site. The animal traffic patterns to cross Highway 55 noted by the resident were direct access from the adjacent natural areas, and along the railroad passing under Highway 55. Due to the relatively large distance between the southernmost portion of the dredging project and Highway 55, we determined (and MPRB staff agreed) that any wildlife temporarily displaced by the dredging project would have significant adjacent natural areas to occupy and move around the project site, and that the construction activities would not force any wildlife to cross Highway 55 in lieu of their current travel patterns. MPRB staff noted that Highway 55 may need better wildlife crossings, but that any improvement should be undertaken by the Minnesota Department of Transportation.

*(Update – potential design change)* We performed our survey/bathymetry of the lagoons in September 2019, as part of the feasibility study; at the time of construction, this survey will be over 3 years old. Because the creek is a dynamic system, it is possible that additional deposition may have occurred since the survey. To improve the accuracy of our dredging quantity estimates and potentially avoid any contractor disputes, we recommend performing an updated topographic/bathymetry survey of the lagoons to verify existing grades. We would perform this survey prior to final design and we would include any updates to the dredging quantity in the final plans, specifications, and cost estimate. No additional budget is needed to perform this survey.

- 2) Construction access for Lagoons E and F will be from Theodore Wirth Parkway, and for Lagoon D will be through the creek channel between lagoons E and D, passing under the Plymouth Ave bridge.

*(Change from 50% plans)* The Grand Rounds trail, which was planned as the access for Lagoon D dredging, crosses onto BNSF railroad property along Lagoons D and E. Through discussions with MPRB we confirmed that there is no existing easement or access agreement between MPRB and BNSF. Based on MPRB preference to avoid trail impacts from construction, unrelated MPRB negotiations with BNSF, and discussion with MDNR staff, we elected to modify access to Lagoon D to use the creek channel between Lagoon E and Lagoon D rather than the trail. As part of this design change, we need to collect additional survey data between Lagoon E and Lagoon D (ideally during low water levels). Using the survey results, we will prepare detailed design information related to this access route and will add it to the plans for the bid package (i.e., at 100% design). No additional budget is needed to perform this survey. Discussion on permitting-related impacts of this change can be found in the MDNR permit section below.

- 3) Restoration. Construction access points would be restored to existing conditions either as turf grass or matching existing buffer vegetation. There is a narrow strip around the lagoon perimeters that would be seeded with a wetland mix (or other appropriate native seed mix) and covered with erosion control blanket. With the exception of construction access, construction will not disturb the existing vegetative buffer around the ponds, so the design does not include buffer restoration.

*(Change from 50% plans)* We are currently in discussions with MPRB staff about converting a turf grass area near Lagoon F to a pollinator lawn. We assume that costs of the installation and a specified establishment and maintenance period would be included in the project costs. The proposed pollinator lawn area is shown on the 90% restoration plan (pending MPRB approval).

- 4) Previous BCWMC Main Stem stream restoration project. The construction will avoid the previous stream restoration project as much as possible. There will be minor impacts due to the change in construction access through the channel between Lagoons E and D. We will modify the design plans to show the location(s) of the stream restoration area, with direction to the contractor to avoid these areas during construction.

*(Update – no design change)* A site visit is planned if/when water levels in the creek are low enough to inspect the extent and condition of previous stream restoration features. We will add any necessary revisions to the 100% plans.

- 5) Streambank erosion repairs. The minor erosion on the streambanks identified in the feasibility study at the upstream end of Lagoon E (riprap repair) and along the left bank of Lagoon D (live stakes) are relatively small and will be repaired as part of the larger dredging project. These improvements are shown on the 90% plans.

## Opinion of cost

The table below summarizes our opinion of costs, based on the 90% design plans:

**Table 1 Opinion of Cost Summary – Deepen ALL Lagoons to 6 Feet**

Description	Unit	Estimated Quantity	Unit Price	Extension
Mobilization / Demobilization	LS	1	\$160,000.00	\$160,000.00
Erosion & Sediment Control	LS	1	\$20,000.00	\$20,000.00
Control of Water / Dewatering	LS	1	\$70,000.00	\$70,000.00
Remove and Dispose Dredged Material at Landfill	CY	39,600	\$50.00	\$1,980,000.00
Natural Bank Stabilization	LF	100	\$56.00	\$5,600.00
Riprap Bank Stabilization	CY	20	\$150.00	\$3,000.00
Restoration	LS	1	\$5,000.00	\$5,000.00
Construction Subtotal				\$2,243,600.00
Construction Contingency (10%)				\$224,360.00
<b>Construction Total w/ Contingency</b>				<b>\$2,467,960.00</b>
<b>ESTIMATED ACCURACY RANGE</b>	<b>-10%</b>			<b>\$2,020,000.00</b>
	<b>+20%</b>			<b>\$2,693,000.00</b>
Engineering				\$238,000.00
MPRB Parkway Permit Type IV Fees				\$20,000.00
<b>Total w/ Engineering &amp; Permit Fees</b>				<b>\$2,725,960.00</b>

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The 90% design estimated project cost shows an increase of \$18,960 over the 50% design cost (\$2,707,000). Most of the increase is due to an increase in the assumed cost of control of water / dewatering. We also elected to include construction contingency in the estimate until we complete our verification survey of dredging quantities. The 90% total estimated project costs, including design, engineering, and permitting fees, are within the overall project budget.

## Stakeholder Engagement

We continued coordination and outreach during design, and are planning for additional engagement through final design and during construction of this project. Our coordination efforts include the following groups:

1. Project stakeholders: BCWMC Commissioners, BCWMC staff, Minneapolis Park and Recreation Board, City of Golden Valley and City of Minneapolis, and Loppet Foundation.
2. Public – we will coordinate with the project stakeholders (especially MPRB) to reach two subsets of the public to inform them about the project:
  - a. Neighborhood residents – This will include outreach to nearby neighborhood associations (Harrison, Bryn Mawr, Northside Residents Redevelopment Council) and articles in neighborhood newsletters and local newspapers about the project and links to the MRPB webpage, which will include an option to sign up for automatic email updates.
  - b. Park users, including winter (skier) users and users during other seasons - This will include coordination with the Loppet Foundation and signage in the park with QR codes directing the public to webpages. Both BCWMC and MPRB will maintain a project webpage with timely updates, especially during construction. As noted above, the MRPB webpage will include an option to sign up for automatic email updates.

## Approvals/permit requirements

In addition to BCWMC approval of the plans, the following permitting and approvals are required for the project.

- 1) Minnesota Wetland Conservation Act (WCA) Approval – The City of Golden Valley is the Local Government Unit (LGU) for this location and is responsible for administering WCA for the Project. On behalf of the BCWMC, we submitted a permit application requesting a no-loss wetland determination to the LGU on April 13, 2022. The LGU reviewed the permit application materials and approved the project under the WCA no-loss criteria 8420.0415 (H) on May 5, 2022. No further WCA permitting is required.
- 2) US Army Corps of Engineers (USACE) permit (Section 404 Permit and Section 401 Certification) – On behalf of the BCWMC, we submitted a joint permit application to both the LGU and the USACE on April 13, 2022. The USACE indicated the project would fall under a USACE Nationwide Permit if the project can be performed through excavation only (i.e., no grading or filling). The USACE is currently reviewing the permit application materials.

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- a) State Historic Preservation Office (SHPO) – The USACE initiated consultation with SHPO as part of the Section 404 permitting process. The Commission Engineer previously initiated consultation with SHPO during the Environmental Assessment Worksheet process. During the EAW process, SHPO concluded that there are no known or suspected archaeological properties located in the area that will be affected by this project.
- 3) Minnesota Department of Natural Resources (MDNR) public waters work permit – Bassett Creek is a public watercourse and Lagoon E is a public water (MDNR #27065100P), so the proposed work will require a MDNR public waters work permit. We met with the MDNR area hydrologist to review the project prior to the permit application submittal. We specifically discussed the revised access between Lagoons E and D, and the area hydrologist indicated this would be permissible. At the MDNR’s request, we developed a cover letter and provided an updated plan set as attachments to the application submitted on May 2, 2022. A permit fee of \$3,000 was paid and the 30-day comment period is anticipated to begin in June 2022. The permit is expected to be issued after the BCWMC responds to comments and provides any additional requested information to the MDNR.
- Based on Minn. R. 6115.0201, this permit requires documentation that “A public need for the excavation has been established by local governmental resolution specifying the public interests to be improved or enhanced, except where the project is state sponsored.” The MDNR hydrologist confirmed that the BCWMC Resolution No. 20-06 ordering the project (BC-7) fulfils this requirement.
- 4) Environmental Assessment Worksheet (EAW) – Minnesota Rules Section 4410.4300, Mandatory EAW Categories, Subp. 27A require preparation of an EAW for “projects that will change or diminish the course, current, or cross-section of one acre or more of any public water or public waters wetland.” Based on these requirements, an EAW was required for the project. The City of Golden Valley is the Regional Government Unit (RGU) for preparing the EAW. The Commission Engineer prepared the EAW, the Commission approved the EAW at their October 2021 meeting, and the City of Golden Valley subsequently approved the EAW. As the RGU, the city publicly noticed the EAW and the Commission Engineer submitted the EAW (on behalf of the RGU) to the Minnesota Environmental Quality Board (EQB) for a 30-day comment period on November 24, 2021. Comments on the EAW were received through December 30, 2021. Comments were received from five state agencies and one local resident. The Commission Engineer provided a response to all comments and a Findings of Fact to the RGU. The RGU approved the Findings of Fact and made a negative declaration stating the project does not require the preparation of an Environmental Impact Statement. The [Findings of Fact and Record of Decision](#) was submitted to the EQB on January 19, 2022.
- 5) Minnesota Pollution Control Agency (MPCA) permitting – as currently designed, this project does not disturb more than one (1) acre of upland and therefore would not require a permit or a stormwater pollution prevention plan (SWPPP). However, the design follows the MPCA guidelines for erosion and sediment control. If the scope of construction changes and the one-acre threshold of upland disturbance is exceeded, a SWPPP would be prepared and the contractor would apply for this permit.

- 6) MPRB construction permit – The MPRB requires a construction permit for construction related activities on parkland/parkway; the MPRB Planning Services Division administers the permit process. The contractor will prepare and submit these permit applications after the Notice of Award. This permit represents the contractor’s formal agreement with MPRB for the contractor’s access/use of the site, which includes additional insurance requirements.
- 7) MPRB parkway permit (type IV) – The MPRB requires a separate parkway permit due to the high volume of truck traffic on Theodore Wirth Parkway. As part of this permit, the MPRB requires that a pre-construction and post-construction evaluation of the pavement be performed. The evaluation requires specific pavement testing performed by an independent testing agency. Based on the results of that testing, the MPRB assesses a fee to the project for any deterioration/degraded lifespan caused by construction traffic. After consulting with the BCWMC attorney, we determined that the pavement evaluation costs and associated fees could be invoiced to the BCWMC and paid directly by the BCWMC. The MPRB has a master services agreement with a testing consultant and can administer the pavement evaluations. The estimated cost of testing is \$8,000 (about \$4,000 each for the pre- and post-construction evaluations), and the estimated cost of the fee is \$12,000.

We met with MPRB staff and worked through most remaining comments on construction access, parking, and use/restoration of the parkway and trails; we included the resulting revisions in the 90% plans. We are still coordinating with the BCWMC attorney and MPRB real property administrator regarding a formal access agreement for the BCWMC/Engineer. We understand that this MPRB/BCWMC agreement will require formal MPRB approval. This process is estimated to take approximately 2 months, and would start after completion of 100% plans.

- 8) City of Golden Valley stormwater management permit – The City of Golden Valley requires a Stormwater Management Permit for land-disturbing activities that remove soils or vegetation, including but not limited to clearing, digging, dredging, draining, or filling. This project exceeds the thresholds that trigger this permit. We will prepare and submit this permit application. The city requires preservation or maintenance of native or natural vegetation buffers along streams and around wetlands. Since 50% design, we coordinated with the Golden Valley staff and confirmed that, as long as the buffers are not disturbed, the existing buffers meet their requirements. Lagoons E and F will have some buffer disturbance and will be restored in-kind. Golden Valley staff indicated that, where feasible, they would like to see buffers expanded or improved. The potential addition of a pollinator lawn (above) is a result of this request from Golden Valley staff.

## Schedule

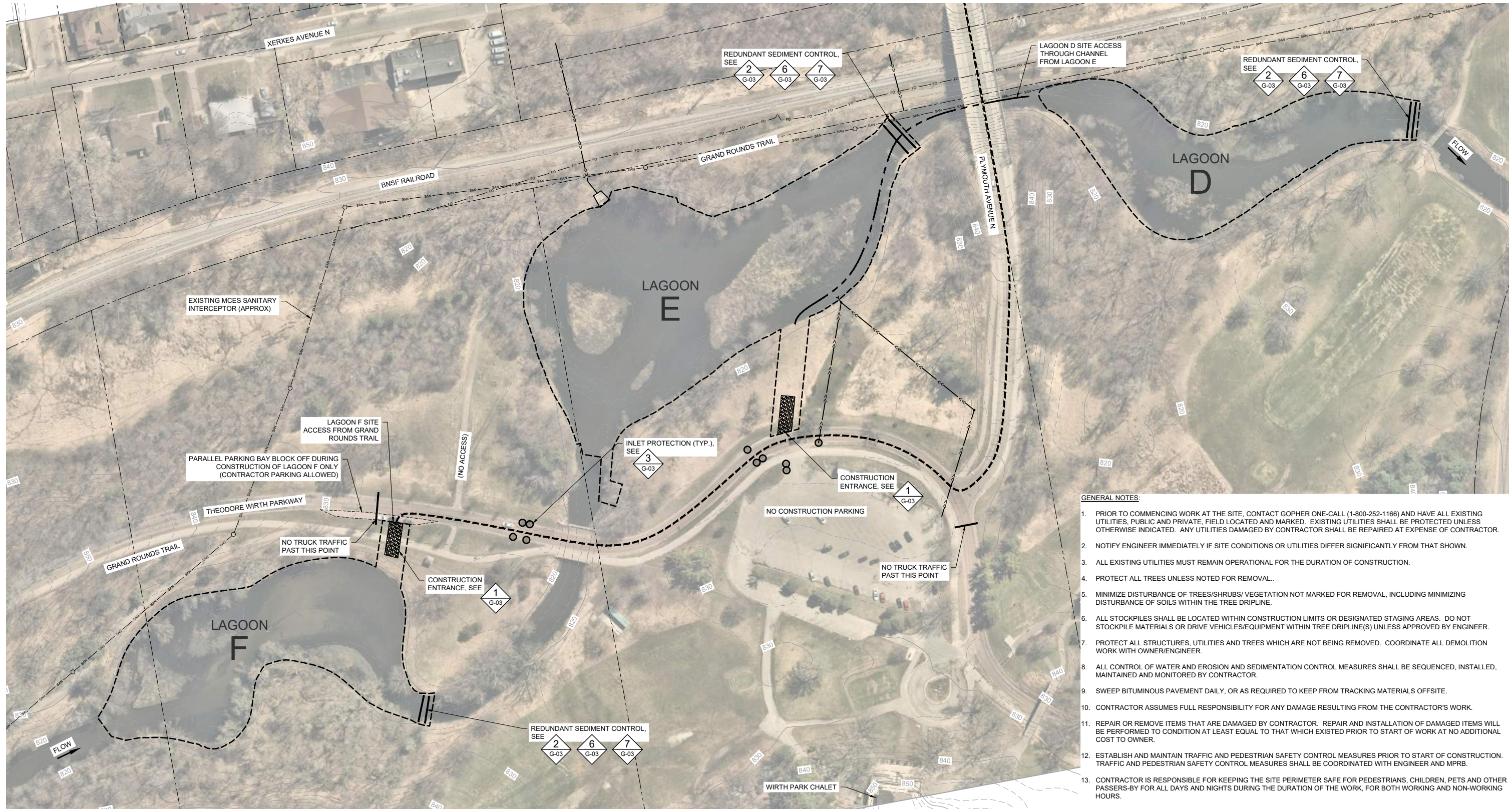
Dredging of all three lagoons (D, E, and F) is planned for winter 2022-2023. The table below summarizes the anticipated schedule.

Tasks and milestones	Estimated Schedule
Design – complete 50% plans and opinion of cost for Commission review and approval and agency permitting	Approved at December 2021 Commission meeting
Permitting	Ongoing through Spring/Summer 2022
Public engagement (Inform) and communications with stakeholders	January 2022 through construction
Design – complete 90% plans, specifications, and opinion of cost for Commission review and approval	June 2022 Commission meeting
Design – complete 100% plans specifications, and opinion of cost for Commission review and approval/authorize project to go out for bids	August 2022 Commission meeting
Bidding	September/October 2022
Commission meeting to award the bid	October 2022 Commission meeting
Construction	Winter 2022 – 2023
Record drawings, final restoration, project closeout	Spring/Summer 2023

## Recommendations

- A) Consider approval of 90% drawings
- B) Authorize Commission Engineer to continue design, permitting, and coordination with BCWMC attorney, and bring final design plans and specifications and agreements to a future Commission meeting for approval to bid the project.
- C) Authorize Commission Engineer to perform additional survey in the creek channel between Lagoons E and D, and a verification survey in the lagoons.





**GENERAL NOTES:**

1. PRIOR TO COMMENCING WORK AT THE SITE, CONTACT GOPHER ONE-CALL (1-800-252-1166) AND HAVE ALL EXISTING UTILITIES, PUBLIC AND PRIVATE, FIELD LOCATED AND MARKED. EXISTING UTILITIES SHALL BE PROTECTED UNLESS OTHERWISE INDICATED. ANY UTILITIES DAMAGED BY CONTRACTOR SHALL BE REPAIRED AT EXPENSE OF CONTRACTOR.
2. NOTIFY ENGINEER IMMEDIATELY IF SITE CONDITIONS OR UTILITIES DIFFER SIGNIFICANTLY FROM THAT SHOWN.
3. ALL EXISTING UTILITIES MUST REMAIN OPERATIONAL FOR THE DURATION OF CONSTRUCTION.
4. PROTECT ALL TREES UNLESS NOTED FOR REMOVAL.
5. MINIMIZE DISTURBANCE OF TREES/SHRUBS/ VEGETATION NOT MARKED FOR REMOVAL, INCLUDING MINIMIZING DISTURBANCE OF SOILS WITHIN THE TREE DRIPLINE.
6. ALL STOCKPILES SHALL BE LOCATED WITHIN CONSTRUCTION LIMITS OR DESIGNATED STAGING AREAS. DO NOT STOCKPILE MATERIALS OR DRIVE VEHICLES/EQUIPMENT WITHIN TREE DRIPLINE(S) UNLESS APPROVED BY ENGINEER.
7. PROTECT ALL STRUCTURES, UTILITIES AND TREES WHICH ARE NOT BEING REMOVED. COORDINATE ALL DEMOLITION WORK WITH OWNER/ENGINEER.
8. ALL CONTROL OF WATER AND EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE SEQUENCED, INSTALLED, MAINTAINED AND MONITORED BY CONTRACTOR.
9. SWEEP BITUMINOUS PAVEMENT DAILY, OR AS REQUIRED TO KEEP FROM TRACKING MATERIALS OFFSITE.
10. CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ANY DAMAGE RESULTING FROM THE CONTRACTOR'S WORK.
11. REPAIR OR REMOVE ITEMS THAT ARE DAMAGED BY CONTRACTOR. REPAIR AND INSTALLATION OF DAMAGED ITEMS WILL BE PERFORMED TO CONDITION AT LEAST EQUAL TO THAT WHICH EXISTED PRIOR TO START OF WORK AT NO ADDITIONAL COST TO OWNER.
12. ESTABLISH AND MAINTAIN TRAFFIC AND PEDESTRIAN SAFETY CONTROL MEASURES PRIOR TO START OF CONSTRUCTION. TRAFFIC AND PEDESTRIAN SAFETY CONTROL MEASURES SHALL BE COORDINATED WITH ENGINEER AND MPRB.
13. CONTRACTOR IS RESPONSIBLE FOR KEEPING THE SITE PERIMETER SAFE FOR PEDESTRIANS, CHILDREN, PETS AND OTHER PASSERS-BY FOR ALL DAYS AND NIGHTS DURING THE DURATION OF THE WORK, FOR BOTH WORKING AND NON-WORKING HOURS.
14. PROVIDE A CONTINUOUS, ACCESSIBLE, AND SAFE PEDESTRIAN WALKWAY THAT MEETS ADA AND MN MUTCD STANDARDS IF WORKING IN A SIDEWALK AREA, AND TRAFFIC CONTROL PER MN MUTCD REQUIREMENTS FOR THE WORK IN THE PUBLIC RIGHT OF WAY AREA.
15. COORDINATE ALL WORK AND SITE ACCESS WITH ROADWAY WEIGHT RESTRICTION REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING TEMPORARY ACCESS PERMITS, IF REQUIRED.

**1 PLAN: SITE ACCESS, REMOVALS, AND EROSION CONTROL PLAN**



CADD USER: Patrick E. Brockamp; FILE: M:\DESIGN\23271860\_00\23271860\_G-02.DWG; PLOT SCALE: 1:3,849; PLOT DATE: 08/02/22 4:13 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: **PATRICK E. BROCKAMP**

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_ LICENSE # 54931

REVIEW	11/23/21	12/09/21	05/02/22	06/08/22			
BID							
CONSTRUCTION RECORD							
RELEASED TO/FOR	A	B	C	D	0	1	2
DATE RELEASED							

**BARR** Engineering Co.  
 4300 MARKETPOINTE DRIVE  
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 MINNEAPOLIS, MN 55435  
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Scale	AS SHOWN
Date	06/08/2022
Drawn	ADB2
Checked	PEB
Designed	BARR
Approved	PEB

**BASSETT CREEK WATERSHED MANAGEMENT COMMISSION**  
 GOLDEN VALLEY, MINNESOTA

**MAIN STEM LAGOON DREDGING PROJECT**  
 GOLDEN VALLEY, MINNESOTA

**SITE ACCESS, REMOVALS, AND EROSION CONTROL**

BARR PROJECT No. 23/27-1860.00	
CLIENT PROJECT No.	
DWG. No. G-02	REV. No. D

**FIGURE 1**  
 90% DRAFT  
 FOR REVIEW