July 2013 version

Environmental Assessment Worksheet

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at:
http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.
Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.
Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. Project title: Fountain Lake Restoration Project

2.

Proposer: Shell Rock River Watershed District	**RGU:** Shell Rock River Watershed District
Contact: Dan DeBoer	**Contact:** Brett Behnke
Title: District Chair	**Title:** District Administrator
Address: 214 West Main Street	**Address:** 214 West Main Street
City, State, ZIP: Albert Lea, MN 56007	**City, State, ZIP:** Albert Lea, MN 56007
Phone: 507-391-3984	**Phone:** 507-377-5785
Fax: Not Applicable	**Fax:** Not Applicable
Email: Not Applicable	**Email:** Brett.Behnke@co.freeborn.mn.us

4. *Reason for EAW Preparation:* *(check one)*

Required:	Discretionary:
☐ EIS Scoping	☐ Citizen petition
X **Mandatory EAW**	☐ RGU discretion
	☐ Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):

Minnesota Rules 4410.4300 Subpart 27A. **Wetlands and Public Waters**

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ATTACHMENTS

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ATTACHMENT 6 – WATER RESOURCES (QUESTION 11)

MDH Figure MDH Well Index Map
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Fountain Lake Warm Water Point-Intercept Survey, July 28, 2016

ATTACHMENT 7 – CONTAMINATION/HAZARDOUS MATERIALS/WASTES (QUESTION 12)

MPCA "What's in my Backyard" Search Map

ATTACHMENT 8 – FISH, WILDLIFE, PLANT COMMUNITIES, AND SENSITIVE ECOLOGICAL RESOURCES (QUESTION 13)

Completed Natural Heritage Information System (NHIS) Data Request Form

5. Project Location:

	CDF Site	Fountain Lake
County:	Freeborn	Freeborn
City/Township:	Bancroft Township	City of Albert Lea / Albert Lea Township
Watershed:	49 – Shell Rock River	49 – Shell Rock River
GPS Coordinates:	43° 41' 43.69"N; 93° 22' 58.71"W	43° 39' 55.00"N; 93° 23' 32.00"W 43° 40' 24.00"N; 93° 22' 50.00"W 43° 39' 27.00"N; 93° 22' 28.00"W
Tax Parcel Number:	13-029-0070 13-029-0110 13-029-0180 Note: new parcel number will be generated as one parcel.	Not Applicable for water body
PLS Location (1/4, Section, Township, Range)	SE1/4, NW1/4; SW1/4, NW1/4 Section: 29 Township: 103 Range: 21	Section (Albert Lea Township): 4,5,6,8,9 Section (Bancroft Township): 32 Township: 102,103 Range: 21

Notes: CDF – Confined Disposal Facility

At a minimum attach each of the following to the EAW:

- *County map showing the general location of the project;*
    - See Attachment 1, Freeborn County Location Map
- *U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); and*
    - See Attachment 1, USGS 7.5 Minute Series Albert Lea East Quadrangle Map
    - See Attachment 1, USGS 7.5 Minute Series Albert Lea West Quadrangle Map
- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan.
    - See Attachment 2, Figure 1, Site Location Map
    - See Attachment 2, Figure 2, Site Layout
    - See Attachment 2, Figure 3, Soil Boring Locations
    - See Attachment 2, Figure 4, CDF Site Development Plan
    - See Attachment 2, Sheet 2, Existing Conditions
    - See Attachment 2, Sheet 3, CDF Site Plan
    - See Attachment 2, Figure 1-1, Site Location (Fountain Lake)
    - See Attachment 2, Figure 2-1, 2009 Bathymetry of Fountain Lake
    - See Attachment 2, Figure 2-2, Sediment Core Locations (Fountain Lake)

6. Project Description:

a. Provide the brief project summary to be published in the EQB Monitor, (approximately 50 words).

The Fountain Lake Restoration Project is a combined Fountain Lake sediment dredging and Confined Disposal Facility (CDF) project located within and 2 miles north of the City of Albert Lea, Freeborn County, Minnesota. Approximately 1.7 million cubic yards of inert lake sediment will be hydraulically dredged and pumped to the 120-acre CDF.

b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities.

General Project Information

Fountain Lake, located in Albert Lea, Freeborn County, MN, covers approximately 521 acres and is central to the City's identity and tourism as a popular destination for boating, swimming, waterskiing, fishing, canoeing, and kayaking. The lake was created by the construction of a dam across the Shell Rock River that was built in 1855 and rebuilt in the early 1900s. Fountain Lake has three bays connected to its Main Bay: Edgewater Bay, Dane's Bay, and Bancroft Bay. Four creeks flow into Fountain Lake: Bancroft Creek (from the north), Goose Creek (from the northeast), Shoff Creek (from the southwest), and Wedge Creek (from the west).

Fountain Lake is a complicated shallow lake system in which climate conditions, external phosphorus loading to the lake and internal phosphorus loading from lake sediment have a significant effect on water quality. Evaluation of water quality data collected in Fountain Lake suggests that the water quality of Fountain Lake is also strongly influenced by the shallow nature of the lake, and low clarity of the lake water throughout the open water season. The maximum depth of Fountain Lake is approximately eight feet, based on a 2009 bathymetric survey

The Shell Rock River Watershed District (SRRWD) was established on June 25, 2003 with the mission of improving water quality in area waterbodies, and implementing reasonable and necessary improvements to water-related and other natural resources within its limits. Since its creation, SRRWD has pursued a comprehensive watershed approach to reduce sedimentation and improve water quality throughout the watershed through implementation of the Shell Rock River Watershed District 10-year Water Management Plan.

In 2005, Albert Lea voters overwhelmingly approved a 0.5% sales tax to fund local water projects. Through this supplemental funding source, SRRWD has leveraged substantial grant and other funding opportunities to improve water quality and decrease sedimentation.

SRRWD samples lakes and streams annually for phosphorus, chlorophyll-a, and other water quality indicators, as well as measuring water transparency. In 2008, Fountain Lake was added to Minnesota's list of impaired waters for an "aquatic recreation" impairment due to nutrient loading (specifically phosphorus) and eutrophication. Historic and ongoing water monitoring has indicated summer average

concentrations for phosphorus and chlorophyll-a (an algae indicator) exceed state standards for shallow lakes.

In 2013, SRRWD developed a TMDL Implementation Plan that provided a comprehensive list of Best Management Practices (BMP) to reduce external phosphorus loads to Fountain Lake. Implemented watershed protection initiatives include tributary creek stabilization, septic system improvements, and rough fish management, including common carp. Carp are bottom-feeding fish whose activities disturb sediments, resulting in cloudy, turbid water and the release of phosphorus into the water column. SRRWD has installed a fish barrier at the Fountain Lake outlet and in three locations on upstream tributary streams to limit the spread and breeding habits of carp. SRRWD is further proposing to develop an integrated pest management strategy for control of common carp in Fountain Lake. SRRWD has greatly improved water clarity in Pickerel Lake through the implementation of similar carp control strategies, including installation of a fish barrier. The proposed strategy for Fountain Lake includes five objectives:

1. Estimate carp biomass in Fountain Lake
2. Assess recruitment sites and history
3. Track adult carp movement patterns and seasonal aggregations
4. Track dispersal of young carp and test effectiveness of an electric barrier to prevent the movement of carp
5. Develop a custom population dynamics model for SRRWD.

With the substantial completion of upstream management practices, SRRWD seeks to further improve lake water quality by removing phosphorus-laden sediment through dredging. Fountain Lake has been historically dredged twice before: once from 1940 to 1944 when the dredge "Captain George" removed approximately 1,800,000 cubic yards of sediment, muck, and debris from Fountain Lake; and a second time from 1962 to 1967 when the dredge "Foun-Da-Lea" removed approximately 1,823,310 cubic yards of sediment.

Pursuant to Minnesota Session Laws 2014, Chapter 295, Section 2, subdivision 3, the Minnesota State Legislature appropriated $7,500,000 from the general fund for a grant to the SRRWD for sediment removal and cleanup of Fountain Lake, including engineering, design, permitting, and land acquisition for deposit of removed sediment. On June 13, 2016, Governor Mark Dayton participated in a bill signing ceremony for the project and commentated that he looks forward to Fountain Lake being dredged.

Following substantial comment from the public, the Department of Natural Resources, and the Board of Water and Soil Resources, the SRRWD approved its 2nd Generation Watershed Management Plan dated December 31, 2015 to continue SRRWD's watershed-wide efforts.

The priority goals for the Fountain Lake Restoration Project are to improve lake water quality, enhance aquatic habitat, and improve recreational opportunities. The project goals are further described below:

- Goal 1: Improve Lake Water Quality
    - Dredge accumulated sediment to reduce internal phosphorus loading.
    - Reduce nutrient loads to downstream waterbodies (i.e., Albert Lea Lake and Shell Rock River) by improving water quality within Fountain Lake.

- Goal 2: Enhance Aquatic Habitat
    - Increase water depth to provide wintering holes and summer refuge areas for fish.
    - Improve water clarity to increase aquatic vegetation in shallow areas for improved spawning and juvenile fish rearing habitat.
- Goal 3: Improved Recreational Opportunities
    - Improve water clarity for improved swimming.
    - Increase water depths in areas for improved boating.

Sediment Characteristics

Sediment sampling was performed in Fountain Lake from 2006 to 2015. In general, sediment consisted of organic and clayey silts (i.e., soft deposited sediment) with some localized sand shoals. Collected sediment samples were analyzed in accordance with procedures in Minnesota Pollution Control Agency's (MPCA) guidance document, "Managing Dredge Materials in the State of Minnesota." The guidance document lists laboratory testing parameters and comparison concentrations referred to as Soil Reference Values (SRV). By comparing laboratory results of collected sediment samples to the SRVs, the sediment can be characterized as Tier 1, Tier 2, or Tier 3, which have different management considerations.

All laboratory results for collected sediment samples were below MPCA's Tier 1 SRVs, except for three samples that were between Tier 1 and Tier 2 concentrations for Arsenic or Copper. To be more representative of how sediment will be removed from Fountain Lake, a composite sediment sample was collected and analyzed. All tested parameters from the composite sample were below Tier 1 concentrations. Based on the analytical data collected in compliance with MPCA requirements, the Fountain Lake sediment is categorized as Level 1 Dredge Material. Level 1 Dredge Material is not considered environmentally impacted and is suitable for use or reuse on properties with a residential or recreational use category.

Collected sediment samples were also analyzed by the University of Minnesota Soil Testing Laboratory for evaluation of nutrient requirements for farm and field application. These data indicate dredged sediment could be suitable for beneficial reuse through land application.

Some collected sediment samples were analyzed for various types of phosphorus to help understand the concentrations and forms (or fractions) of phosphorus within the sediment. Mobile and organic phosphorus concentrations generally contribute most to internal lake phosphorus loading. Sample results indicate that phosphorus concentrations in the top several feet of lake sediment are generally higher than concentrations deeper within the lake sediments. This information will be considered during design of dredge areas to minimize internal loading potential and maximize water quality improvements to Fountain Lake.

Additional information on Fountain Lake sediment sampling and characterization is included in the attached May 2014 Draft Fountain Lake Restoration Preliminary Engineering Report (Attachment 3).

Sediment Dredging Process

Sediment dredging will decrease internal phosphorous loading and provide areas of deeper water as an additional benefit for improved fish habitat and recreation. Approximately 1,000,000 to 1,700,000 cubic yards of sediment are proposed for removal through hydraulic dredging. The hydraulic dredging process removes sediment by cutting into accumulated sediment on the lake bottom, mixing the sediment into a slurry with lake water, and removing the slurry through a network a temporary pipes and pumps to an upland sediment management area located away from the lake. A temporary pipeline will extend from the

dredging equipment in the lake to the sediment management area. The maximum temporary pipeline length is anticipated to be approximately 20,000 ft and will include a combination of in-water and overland routes. Sediment removal areas and depths continue to be designed with consideration for phosphorus removal, lake use, and aquatic habitat. Sediment removal will target identified deposited sediment and will not extend into the natural lake bottom.

Sediment Management Process

To support sediment removal from Fountain Lake through hydraulic dredging, an upland sediment management area is necessary to separate the lake water and deposit the sediment. The U.S. Army Corps of Engineers and the dredging industry refers to these locations as Confined Disposal Facilities (CDF). A CDF is one or more engineered settling ponds or basins where dredge slurry is pumped to allow sediment to separate from the water through gravity settling. Clarified water accumulated in the CDF is returned to Fountain Lake by overflowing into an existing adjacent drainage ditch and Bancroft Creek. The proposed CDF site for Fountain Lake dredging is agricultural land located approximately one mile north of Fountain Lake's Bancroft Bay, north of Interstate 90 and east of County Highway 20. The dredging program is anticipated to be a multi-year process.

Up to three separation and basins (Cells) are proposed to be constructed on agricultural land purchased by SRRWD. Cell 1 will be constructed first, and Cells 2 and 3 will be constructed later as the dredging project progresses and additional storage capacity is required. The earthen embankments creating the cells will be up to a maximum height of 25 ft and will be constructed using existing on-site soil. Existing soil will not be removed from the site. Up to approximately 20 ft of settled dredged sediment will be stored within the constructed settling basins. Potential future uses of the CDF cells following the completion of dredging include returning the land to agricultural use, excavating the settled sediment for beneficial reuse as topsoil, or creating natural habitat. A CDF Project Plan was submitted to BWSR and MNDNR for review and comment. Following receipt of their comments, SRRWD formally established the project and authorized district staff to obtain bids, request approvals, and progress the project. The Establishment Order Resolution is included in Attachment 3.

c. Project magnitude:

Total Project Acreage	Up to ~640 Acres
CDF Site	Up to ~160 Acres
Fountain Lake Dredging	Up to ~480 Acres
Linear project length	
Dredge Pipeline Route	Up to ~20,000 ft from Fountain Lake to CDF
Number and type of residential units	0
Commercial building area (in square feet)	0
Industrial building area (in square feet)	0
Institutional building area (in square feet)	0
Other uses – specify (in square feet)	0
Structure height(s)	
CDF Embankments	Up to 25 ft
CDF Water Discharge Structure	25 ft

d. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The Fountain Lake Restoration Project purpose is to reduce internal phosphorus loading to Fountain Lake by removing bottom sediments through dredging, which will lead to reductions in average and maximum summer total phosphorus concentrations, reduction in the magnitude of phytoplankton concentrations, reduction in average chlorophyll-a concentrations, and increased average and maximum summer water clarity. Beneficiaries to the project include all lake users and residents who recreate, fish, or use Fountain Lake in any manner. Improving conditions in Fountain Lake will also improve downstream conditions.

As noted above, Fountain Lake is currently listed on the MPCA Impaired Waters List for an "aquatic recreation" impairment due to excess nutrients. In 2012, SRRWD worked incorporation with the MPCA to perform a Total Maximum Daily Load (TMDL) Study to determine pollution reduction strategies for Fountain Lake. The TMDL Study indicated that approximately 65 percent of the annual phosphorus loading to Fountain Lake is from internal sources (e.g., phosphorus release from lake bottom sediment). This accumulated phosphorus in sediment can be released into the water column through wind, wave, and rough fish action, decreasing water quality. The remaining 35 percent of the phosphorus load is from external sources (e.g., urban stormwater, tributary inflows, wet and dry deposition). Therefore, external load reductions alone will not lead to compliance with state water quality standards; rather, internal loading must be reduced to meet the TMDL load allocation requirement.

As described in SRRWD's approved Watershed Management Plan, "2014 Second Generation Water Management Plan," one of the identified priority issues is the removal of nutrient rich sediments from lakes with impaired water quality. Previous investigations and studies have sampled sediment and water from Fountain Lake over several years. A 2014 Preliminary Engineering Report (Attachment 3) determined that a significant nutrient source to Fountain Lake is internal phosphorous loading from lakebed sediment. The Preliminary Engineering Report incorporated comprehensive modeling analysis to evaluate the impacts of dredging on water quality in Fountain Lake. The Delft 3D modeling software was used to simulate the complex hydrodynamic and biological processes that occur within the Fountain Lake system. The model uses climate, external water and water quality inputs, lake bathymetry, and lake sediment chemistry to predict how water moves, how constituents transform, how chemistry changes, and how some biota (e.g., phytoplankton) respond to all these inputs.

The attached May 2014 Preliminary Engineering Report (Attachment 3) and modeling results concluded that dredging and deepening Fountain Lake could result in improved water clarity. The modeling verified that deepening the lake could bring about more pronounced thermal stratification (e.g., longer periods of thermal stratification, a larger zone of thermal stratification, and fewer periods of complete mixing throughout the water column). Greater periods of thermal stratification result in less time that the water column is completely mixed, reducing the portion of lake volume suitable for algal growth and resulting in a notable reduction in algal concentrations. Lower algal densities result in increased water clarity. Water quality benefits resulting from dredging Fountain Lake include:

- Reductions in average and maximum summer total phosphorus concentrations
- Reductions in the frequency and magnitude of phytoplankton blooms (chlorophyll a)
- Notable reductions in the average chlorophyll a concentrations
- Increased average and maximum summer water clarity (as measured by Secchi disk depths)

A secondary goal is to restore bathymetric diversity in Fountain Lake that historically provided deeper water to improve over-winter habitat for fish and quality fishing opportunities. The project will increase available aquatic habitat needed to sustain diverse fish populations that the effects of sedimentation have reduced. Benefits also include increased aquatic plant growth in shallow areas and increased invertebrate communities.

e. Are future stages of this development including development on any other property planned or likely to happen? **X Yes** □ No

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

As described in the project summary, the objective is to remove 1,000,000 to 1,700,000 cubic yards of sediment from Fountain Lake. The three sediment separation ponds at the current CDF site have a sediment storage capacity of approximately 1,275,000 cubic yards. To achieve the larger sediment removal, a future project stage will develop additional land into one or more CDF cells. The project stage described in this EAW is anticipated to span approximately 5 years. Future project stage(s) are anticipated to occur after the work described in this EAW is completed.

f. Is this project a subsequent stage of an earlier project? □ Yes **X No**
If yes, briefly describe the past development, timeline and any past environmental review.

7. ***Cover types:*** *Estimate the acreage of the site with each of the following cover types before and after development:*

Cover Type	Before	After	Cover Type	Before	After
Wetlands	13.6	6.0	Lawn/landscaping	0	0
Deep water/streams	480	480	Impervious surface	0	0
Wooded/forest	0	0	Stormwater Pond	0	0
Brush/Grassland	10	27	Other (describe)		
Cropland	137	40	Sediment CDF	0	87.6
			TOTAL	**640.6**	**640.6**

8. ***Permits and approvals required:*** *List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

The following agencies have roles reviewing and permitting aspects of the proposed project:

Unit of Government	Type of Application	Status
BWSR	Project Plan Review	Submitted/Comments Received
Federal Aviation Administration	Hazard Determination for proximity to Albert Lea Municipal Airport.	Completed. No Hazard Determination
Freeborn County	Conditional Land Use Permit for CDF site.	Submitted/Under Review
MNDNR	Dam Safety Permit for design and construction of CDF cells.	Submitted/Under Review
MNDNR	Project Plan Review	Submitted/Comments Received
MNDNR	Public Waters Work Permit for dredging within Fountain Lake.	Preparing Application
MNDNR	Water Appropriations Permit for hydraulic dredging process.	Preparing Application
MNDOT	Right-of-Way Access Permit for temporary placement of dredge pipeline through existing culvert under Interstate 90.	Preparing Application
MPCA	Construction Stormwater General Permit (NPDES) for ground disturbance of more than 1 acre.	Preparing Application
MPCA	Notification to Manage Dredged Material for management of dredged sediment.	Preparing Application
USACE/MPCA	Clean Water Act Section 401 Discharge / 404 Clean Water Joint Permit for return water from CDF to Fountain Lake.	Preparing Application Submitted/Under Review
Freeborn County	Minnesota Wetland Conservation Act Permit for wetland assessment, impacts, and mitigation.	Submitted/Under Review
Local Agencies	Access Agreements and Permits as may be necessary for the work.	To be completed as identified and needed.

Notes: BWSR: Minnesota Board of Water and Soil Resources
MNDNR: Minnesota Department of Natural Resources
MNDOT: Minnesota Department of Transportation
MPCA: Minnesota Pollution Control Agency
USACE: United States Army Corps of Engineers.

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19

9. Land use:

a. Describe:

i. *Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.*

The area associated with the dredging portion within Fountain Lake is currently open water and will remain open water throughout the project and at project completion. With 15.43 miles of shoreline along Fountain Lake, over 71% of the lakeshore has land use classified as urban and industrial (i.e., approximately 12 linear miles). Refer to the Attachment 4, SRRWD Figure – Land Use Around Fountain Lake. There are two public boat landings: North Edgewater Bay and Brookside Boat Landing. The City of Albert Lea annually rents 300 dock easements each spring on City-owned shoreline property. The City maintains eleven parks adjacent to Fountain Lake, including Edgewater Bay, Bancroft Bay, City Beach Park, and Fountain Lake Park on the south end of Main Bay. Fountain Lake can be viewed from numerous walking and vehicle routes totaling over 7 miles (Refer to Attachment 4, SRRWD Figure – Roads and Walking Paths Around Fountain Lake)

The area associated with the CDF is currently zoned by Freeborn County as agricultural and is actively farmed. Surrounding land use is primarily agricultural with some residential. The CDF site is directly east of County Highway 20 and north of Interstate 90. Albert Lea Municipal Airport is approximately 0.5 miles to the southeast. There are 22 residential properties within 0.5 miles of the site. There are delineated wetlands that are proposed to be altered and mitigated through replacement.

There are two proposed temporary dredge pipeline routes depending on which portion of Fountain Lake is being dredged. For work in Bancroft Bay, Main Bay, and Dane's Bay, the pipeline route will primarily be submerged or floating within Fountain Lake until Bancroft Creek. From Bancroft Creek, the pipeline route will be overland adjacent to the Albert Lea Municipal Airport until Interstate 90 where the pipeline will cross through an existing culvert and then along the existing unnamed drainage ditch to the CDF site. For work in Edgewater Bay, the pipeline will be primarily overland through vacant grassland. Road crossings will be coordinated with the City of Albert Lea at Edgewater Drive, Itasca Rd, and Richway Dr through installation of new culverts or directional boring. Land use along the proposed pipeline routes is primarily open water and grassland. Access agreements with be obtained as needed for the temporary pipeline routes, and no changes to existing land use or cover types are proposed.

Refer to following figures in Attachment 4 for existing land use in the project area:

- Figure 2-8, Fountain Lake Watershed Land Use
- Figure 2-9, Dredge Material Dewatering and Disposal Screening Information
- SRRWD Figure, Land Use Around Fountain Lake
- SRRWD Figure, Roads and Walking Paths Around Fountain Lake
- Figure 1, Proposed Dredge Pipeline Route
- Figure 2, Proposed Dredge Pipeline Route Details

ii. Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.

Planned land use for Fountain Lake is unchanged from the existing use. Short-term land use at the CDF site will be separation and placement of sediment during dredging of Fountain Lake. Long-term land use at the CDF site is not yet determined, but is anticipated to include one of the following options: return the land to agricultural use; excavate separated sediment for beneficial reuse as topsoil; or convert to natural habitat. The location of the CDF is not known to be within any comprehensive plan related to land use. The Fountain Lake dredging project is part of SRRWD's "2014 Second Generation Water Management Plan" that was prepared in accordance with Minnesota Statutes and Rules, and reviewed and approved by the state Board of Water and Soil Resources. Additionally, the project has been presented to the Freeborn County Planning Commission to obtain a Conditional Land Use permit.

iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

The location of the proposed CDF is currently zoned by Freeborn County as agricultural. The project has been presented to the Freeborn County Planning Commission to obtain a Conditional Use Permit to construct and operate the CDF. There are delineated wetlands and 100-year and 500-year floodplains associated with Bancroft Creek overlaying part of the proposed CDF site that will be mitigated if disturbed.

b. Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

The project is compatible with nearby land uses, zoning, and plans. Lake dredging will maintain existing uses within the lake. During dredging, equipment is anticipated to include the dredge(s), temporary pipeline(s), booster pumps, and support boats. Lake users may notice increased signage on the lake, but the dredge(s) and temporary pipeline(s) will be relatively stationary during use within well-defined work areas. Due to the size of the lake, recreational users are expected be able to avoid work areas and not be affected by the dredging equipment.

The use of the CDF site will be permitted by the Freeborn County Planning Commission through a Conditional Land Use permit. Typical earth moving equipment is expected during construction of the CDF cells. Following construction, the CDF will operate passively through gravity flow and will have little activity except for inspections and periodic routine maintenance. The constructed embankments will be seeded with grass in accordance with state standards and the interiors of the CDF cells will have a water surface during active dredging and a soil surface when dredging is complete.

c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.

During lake dredging, signage and public notices will be implemented to notify lake users of areas of active dredging to be avoided. Dredge pipelines will be managed to minimize interference with lake users through common methods such as sinking the pipeline to the lake bottom and identifying floating pipelines with buoys and signage.

The CDF site has been designed to integrate with existing topography such that the constructed embankments will blend into existing terrain to the greatest extent possible. The proposed land cover of grass and soil matches surrounding land cover of grass and agricultural fields.

10. Geology, soils and topography/land forms:

a. Geology - Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.

A geotechnical investigation was performed at the CDF site from March through May 2016. The investigation included 40 soil boring, 7 excavated test pits, and 11 groundwater surface piezometers. Standard penetration tests and split spoon samples were collected using a hollow-stem auger drill rig. Investigation locations consisted of the following types:

- **Berm Foundation Borings:** These borings were located along anticipated alignments of CDF cell berms to evaluate foundation soil conditions to support slope stability and consolidation analyses.
- **Berm Borrow Source Borings:** These borings were located in anticipated excavation areas for obtaining soil material to construct CDF berms. Borings evaluated soil types for use in berm design and slope stability analyses.
- **General Investigation Borings:** These borings were located throughout the anticipated CDF cell construction areas to evaluate soil conditions and identify subsurface stratigraphy.
- **Piezometers:** Following completion of 11 borings around the site perimeter, the borings were converted to temporary piezometers (i.e., water table wells) to evaluate the depth of groundwater below ground surface.

The generalized subsurface profile beneath the CDF site is primarily sandy lean clay (i.e., glacial till) overlain by varying thicknesses of organic clay (i.e., topsoil). Layers of sand were encountered in a few borings with no apparent consistent pattern of thickness or depth/elevation. Along the anticipated south berm alignments of Cells 2 and 3, soft organic deposits were encountered, described as "peat", "muck", and "swamp deposits." Laboratory testing and additional investigation in this area indicated the soft deposits are not wide spread and can be accommodated through construction methods.

Based on MPCA guidance and resources (https://www.pca.state.mn.us/water/karst-minnesota, karst in Freeborn County can be encountered at approximately 50 to 100 feet below ground surface (bgs) in the area of the CDF site. Based on geotechnical investigation soil borings, karst was not encountered in any of the borings, which were completed to depths up to 24 feet bgs. CDF cell construction will not excavate soil deeper than the completed borings, indicating that karst will not be encountered.

b. Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational

activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

NOTE: For silica sand projects, the EAW must include a hydrogeologic investigation assessing the potential groundwater and surface water effects and geologic conditions that could create an increased risk of potentially significant effects on groundwater and surface water. Descriptions of water resources and potential effects from the project in EAW Item 11 must be consistent with the geology, soils and topography/land forms and potential effects described in EAW Item 10.

Topographic relief and surface water drainage at the CDF site is primarily to east/southeast towards an existing private drainage ditch that flows southeast to Bancroft Creek. Ground surface elevation at the site ranges from approximately 1,220 ft to 1,260 ft. The maximum elevation of constructed CDF cell berms will be 1,251 ft, which is below surrounding existing ground elevations. Site soils will be excavated and relocated on site for use to construct CDF cell embankments. Estimated quantities of soil for CDF cell construction are the following:

CDF Cell	Estimated Construction Soil Quantity
1	~200,000 Cubic Yards
2	~175,000 Cubic Yards
3	~150,000 Cubic Yards

Based on the geotechnical investigation, laboratory testing, and engineering analysis, site soils are suitable for construction of the CDF cells. Soil will be relocated to the cell berm alignments, conditioned by drying or water addition to achieve a specified density through compaction with construction equipment. The berms will be constructed in 1-ft vertical increments with compaction and quality control testing on each 1-ft level.

Eleven soil types are mapped at the CDF site. The three most prevalent soil types are Glencoe clay loam, Webster clay loam and Hamel loam. These account for over 58% of the soils in the CDF site. For classifications and limitation of the site soil types, refer to Attachment 5 for a USGS NRCS Unified Soil Classification Map.

11. Water resources:

a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.

i. Surface water - lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.

Dredging activities will take place within Fountain Lake, which will require a Public Waters Work Permit from the MNDNR. Additionally, Lake Dredging will be coordinated with MNDNR Fisheries personnel during periods of fish migration and spawning to identify areas within Fountain Lake that can be dredged without negatively affecting fish. Fountain Lake is an MPCA impaired water body for an "aquatic recreation" impairment due to nutrient loading, which is the purpose for this proposed project.

For the CDF site and Fountain Lake, a review was conducted for surface waters within one mile of the site that are special or impaired for one of the project-related parameters (i.e., phosphorous, turbidity, dissolved oxygen, and aquatic biota impairments) using MPCA's online tool (Construction Stormwater Special and Impaired Waters Search, http://pca-gis02.pca.state.mn.us/csw/index.html). The search and review indicated the following within one mile of the CDF site:

- Impaired Steams: Bancroft Creek 07080202-507; Wedge Creek 07080202-531; Shoff Creek 07080202-516
- Impaired Lake: Fountain Lake 24-0018-01; Albert Lea Lake 2400014-00; White Lake 24-0024-00.
- Impaired Wetland: None
- Trout Stream: None
- Trout Lake: None
- Lake Trout Lake: None
- Trout Lake and Lake Trout Lake: None
- Wilderness River ORVW: None
- Mississippi River ORVW: None
- Recreational River ORVW: None
- SNAORVW: None
- MPCA Fen: None
- DNR Fen: None

Refer to Attachment 6, Figure 2 – Current Site Description, for water resources within one mile of the CDF site.

ii. *Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.*

Groundwater at the CDF site was monitored through the installation of temporary monitoring piezometers as shown on Figure 3 – Soil Borings (Attachment 2). Groundwater flow is to the east towards an existing drainage ditch that flows southeast to Bancroft Creek and then south to Fountain Lake. Depth to groundwater ranged from approximately 25 ft to less than 5 ft below ground surface. Areas of higher elevation (e.g., hills) had greater depth to groundwater than areas of lower elevation. Development of the CDF site will be restricted to work above the groundwater table. Clarified water within the CDF will be removed through the overflow weir outlet structure and will be regulated through a USACE/MPCA Clean Water Action Section 401/404 joint permit. Interaction between water within the CDF and groundwater is not considered to be significant due to the fine grained nature of existing site soils and of the sediment to be deposited in the CDF.

The CDF site is not located within any Minnesota Department of Health (MDH) wellhead protection areas. There are no private wells located on the CDF site; nearby private wells are shown attached MDH well index map.

- Refer to Figure 2-9 (Attachment 4) Dredged Material Dewatering and Disposal Screening Information for MDH Wellhead Protection Areas.
- Refer to Attachment 6 for an MDH Well Index Map for private wells near the CDF site.

b. *Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.*

i. Wastewater - For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.

1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.

2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.

3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.

No wastewater treatment or discharge will occur with this project. Lake water that is pumped to the CDF site to transport dredged sediment will be returned to Fountain Lake once sediment has sufficiently settled and the water is clarified. Lake water discharged from the CDF will be regulated by a USACE/MPCA Clean Water Act Section 401/404 joint permit. This permit will establish monitoring parameters that have to be achieved and maintained to allow discharge of water from the CDF back to Fountain Lake.

ii. Stormwater - Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

Stormwater at the CDF site will be managed in accordance with a site Stormwater Pollution Prevention Plan and an MPCA General Permit for stormwater discharge from construction sites. The quantity of stormwater flow will remain unchanged following CDF development, and flow direction will be maintained east/southeast to the existing drainage ditch. A 25-ft wide buffer zone of natural vegetation will be maintained between CDF construction and the existing drainage ditch.

During CDF site construction, erosion prevention and sediment controls will be constructed, installed, and maintained in accordance with standard practices from the MPCA manual on Protecting Water Quality in Urban Areas and the Stormwater Compliance Assistance Toolkit for Small Construction Operators. Required best management practices (BMP) will be implemented including a stabilized construction entrance and perimeter silt fence. Silt fence and the 25-ft buffer strip are intended to prevent stormwater from washing soil from disturbed areas off site. Following completion of CDF construction, disturbed surfaces will be seeded with grass for long-term stabilization. The CDF clarified water outlet locations will be stabilized with stone energy dissipaters to prevent erosion at the discharge location.

iii. Water appropriation - Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

The project will not use surface water or groundwater for construction activities, and will not use wells or connect to a municipal water supply. Water from Fountain Lake will be temporarily removed through the hydraulic dredging process to transport sediment to the CDF site. Following sediment settling within the CDF settling ponds, clarified lake water will be returned to Fountain Lake via the existing drainage ditch and Bancroft Creek. No net loss of water from Fountain Lake is anticipated; however, a Water Appropriations Permit will be applied for with the MNDNR. Lake water discharged from the CDF will be monitored as required by a USACE/MPCA Clean Water Act Section 401/404 joint permit.

iv. Surface Waters

a) *Wetlands - Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed, and identify those probable locations.*

Fountain Lake

Fountain Lake is approximately 521 acres in size and is categorized as a shallow lake by MPCA standards (i.e., lakes shallower than 15 foot max depth or greater than 85% of lake area considered to be littoral). All of Fountain Lake is considered littoral habitat, meaning that plants can grow due to suitable habitat characteristics including shallow depths, available nutrients, sufficient light penetration, and substrates that allow the plants to take root. Proposed work will involve removal of varying thickness of accumulated sediment from the bottom of the lake. All proposed work is designed to improve function, increase flow, restore habitat, and reclaim excess nutrient rich sediment. The wetland will remain the same type and size. No compensatory wetland mitigation is expected since the type and size of wetland are remaining the same. Refer to Attachment 6 for an aquatic vegetation survey was performed in July 2016.

Confined Disposal Facility

Phase I – CDF Cell 1

Wetland delineation identified three wetlands (Wetland #1, #2, and #3) within or directly adjacent to the proposed CDF Cell 1 (Refer to attached Sheet 2 – Existing Conditions). Wetland #1 was identified as a Type 2 Fresh (Wet) Meadow wetland associated with the riparian corridor of the agricultural drainage ditch on-site. Wetland #2 was identified as a 2 Fresh (Wet) Meadow wetland measuring 0.1 acres.

Wetland #3 was identified as a Type 2 Fresh (Wet) Meadow wetland measuring 0.9 acres. The proposed construction of CDF Cell 1 will permanently impact 0.9 acres of Wetland #3.

The minimization plan includes configuring the proposed CDF Cell 1 grading plan to minimize wetland impacts. The proposed wetland impacts associated with CDF Cell 1 construction are within Wetland #3. Existing vegetation includes reed canary grass, scouring rush, green bulrush, and softstem bulrush. The wetland impacts would occur in a wetland with low function and value as determined by the Minnesota Routine Assessment Method (MnRAM) data (Refer to the table below).

The site plan takes into account quality of the wetland located within project limits. The existing wetland is influenced by existing agricultural runoff and tillage. Moderate hydrophytic vegetation diversity and low wetland function and value are all observed within 0.90 acres. Proposed filling or grading of this low functioning wetland area is necessary for CDF Cell 1 to effectively manage Fountain Lake dredged material. The remaining wetlands (Wetland #1 and Wetland #2) are anticipated to maintain pre-construction wetland function and value.

The total proposed permanent wetland impact associated with CDF Cell 1 construction is 0.90-acres of existing wetlands (i.e., Wetland #3) to allow for proper construction and operation of CDF Cell 1 for placement of dredged material from Fountain Lake.

Phase II – CDF Cells 2 and 3

Wetland delineation identified four wetlands (Wetlands #4, #5, #6, and #7) within or directly adjacent to the proposed CDF Cells 2 and 3 (Refer to attached Sheet 2 – Existing Conditions). Wetland #4 was identified as a Type 2 Fresh (Wet) Meadow measuring 8.4 acres. Wetland #5 was identified as a Type 2 Fresh (Wet) Meadow wetland measuring 1.26 acres. Incidental Wetland #6 was identified as a manmade pond measuring 0.83 acres. Wetland #7 was identified as a Type 1 Seasonally Flooded measuring 2.10 acres. The proposed construction of CDF Cells 2 and 3 will result in the permanent impact of 6.65 acres in a portion of Wetland #4, and all of Wetland #5, and Wetland #7.

The minimization plan includes configuring the proposed project grading plan for CDF Cells 2 and 3 to minimize wetland impacts. The proposed wetland impacts are within Wetlands #4, #5, and #7. Existing vegetation includes reed canary grass and scouring rush. The wetland impacts are proposed in low function and value wetland areas as determined by the MnRAM (Refer to the table below). The site plan takes into account quality of the wetlands located within project limits. The existing wetlands are influenced by existing agricultural runoff. Low hydrophytic vegetation diversity and low wetland function and value are all observed within existing wetlands. Proposed filling or grading of this low functioning wetland area is necessary for the CDF Cells 2 and 3 to effectively manage sediment dredged from Fountain Lake. The remaining undisturbed area of Wetland #4 is anticipated to maintain pre-construction wetland function and value.

The total proposed permanent wetland impact for the area of CDF Cells 2 and 3 is 6.65-acres of existing wetlands. Impacts are proposed to Wetlands #4, #5, and #7 to allow for proper construction of detention berms and placement of dredge spoils.

Phase I and II: Off-Site Direct Wetland Replacement

The wetland impacts are located within the limits of Freeborn County, MN. Mitigation of wetland impacts will occur through off-site direct wetland replacement at the South Industrial Park Wetland Mitigation Site and Fountain Lake Wetland Bank located within the same county (Freeborn), major watershed (49-Shell Rock River), and wetland bank service area (8). A MnRAM assessment of the South Industrial Park Mitigation Site and Fountain Lake Wetland Bank concludes that the wetland is a high quality wetland with exceptional values. SRRWD will replace the proposed wetland impacts at a 2:1 ratio.

CDF SITE PHASE I and II MnRAM ASSESSMENT OF EXISTING WETLANDS AND MITIGATION SITES								
Wetland Function Name	**Wetland #1**	**Wetland #2**	**Wetland #3**	**Wetland #4**	**Wetland #5**	**Wetland #7**	**South Industrial Park Wetland Replacement Site**	**Fountain Lake Wetland Bank**
Floristic Integ/Diversity	Low	Low	Low	Low	Low	Low	Exceptional	Exceptional
Hydrology - Characteristic	Low	Low	Med	Low	Low	Low	High	High
Flood Attenuation	Med	Med	Med	Med	Med	Low	Med	High
Water Quality-- Downstream	Med	Med	Med	Low	Low	Low	Med	Med
Water Quality-- Wetland	Low	Low	Med	Low	Low	Low	Exceptional	Exceptional
Shoreline Protection	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Habitat Structure	Med	Low	Med	Med	Low	Low	High	High
Fishery	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Amphibian Habitat	Low	Low	Low	Low	Low	Low	Med	Med
Aesthetics	Med	Low	Low	Low	Low	Low	Exceptional	Exceptional
Commercial use	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

b) *Other surface waters- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.*

Fountain Lake will be physically altered as described in the project summary through the dredging of accumulated soft sediment from the lake bottom. This will deepen areas of Fountain Lake and result in a changed lake bottom surface from current conditions. Alteration to the lake shoreline is not anticipated as dredge areas will not extend directly adjacent to the shore. The hydraulic dredging process generally has a low potential for generating excessive turbidity at the dredging location since sediment is removed directly from the lake bottom. BMPs will be employed during sediment dredging to minimize turbidity potential. The project is not anticipated to change the number or type of watercraft on Fountain Lake during or after dredging.

Predictive Water Quality Simulations

Short-term and long-term predictive simulations were performed to evaluate potential effects of dredging on Fountain Lake water quality. These predictive simulations incorporated many interrelated mechanisms that affect water quality and clarity of Fountain Lake. The modeling indicated that implementing BMPs in the upstream watershed alone would not be sufficient to meet MPCA water quality standards in Fountain Lake. The modeling concluded that management of external and internal lake phosphorus is necessary to approach the shallow lake nutrient standards for this region of the state.

Predictive modeling summarized in the May 2014 Draft Fountain Lake Restoration Preliminary Engineering Report (Attachment 3) concluded that dredging and deepening Fountain Lake could result in improved water clarity. Deepening the lake could allow for more pronounced thermal stratification (i.e., longer periods of thermal stratification, larger zones of thermal stratification, and fewer periods of complete mixing throughout the water column). Greater periods of thermal stratification result in less time that the water column is completely mixed, reducing portions of lake volume suitable for algae growth. Lower algae densities result in increased water clarity. Predicted water quality benefits resulting from dredging Fountain Lake include:

- Reductions in average and maximum summer total phosphorus concentrations.
- Reductions in the frequency and magnitude of phytoplankton blooms.
- Increased average and maximum summer water clarity.

12. Contamination/Hazardous Materials/Wastes:

a. Pre-project site conditions - Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

No existing contamination or potential environmental hazards have been identified within or near the CDF site. No existing contamination or potential environmental hazards have been identified within Fountain Lake. Potential hazards near Fountain Lake are shown on the attached MPCA "What's in my Backyard" search map (Attachment 7). Sediment samples collected from Fountain Lake were analyzed in accordance with procedures outlined in MPCA's guidance document "Managing Dredge Materials in the State of Minnesota." All laboratory results for collected sediment samples were below MPCA's Tier 1

soil reference values (SRV), except for three samples that were between Tier 1 and Tier 2 concentrations for Arsenic or Copper. To be more representative of how sediment will be removed from Fountain Lake, a composite sample was collected and analyzed that included sediment from the locations exceeding Tier 1 concentrations. All tested parameters from the composite sample were below Tier 1 concentrations. Sediment with concentrations below Tier 1 SRVs is categorized as Level 1 Dredge Material. Level 1 Dredge Material is suitable for use or reuse on properties with a residential or recreational use category.

b. *Project related generation/storage of solid wastes - Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.*

No solid waste will be generated or stored. General trash associated with daily activities will be managed in trash cans and dumpsters that will be serviced weekly.

c. *Project related use/storage of hazardous materials - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.*

During construction at the CDF site, potential materials that may be stored include fuel, oil, and other fluids for equipment maintenance. A staging area is designated for storing these materials. Storage will occur in appropriate containers and spill kits will be available. Following CDF construction, no material storage is anticipated during CDF operation.

During dredging, potential materials that may be stored include fuel, oil, and other fluids for equipment maintenance. These materials will be stored on land in appropriate containers. As needed, materials will be transported to the dredging equipment in appropriate containers. Transport boats and dredge equipment will be equipped with spill kits.

d. *Project related generation/storage of hazardous wastes - Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.*

The project will not generate or store hazardous waste.

13. Fish, wildlife, plant communities, and sensitive ecological resources (rare features):
Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

Fountain Lake is a shallow lake of approximately 521 acres and has a tributary watershed of approximately 62,700 acres. The lake was created by the construction of a dam across the Shell Rock River built in 1855 and rebuilt in the early 1900s. Four creeks flow into Fountain Lake: Bancroft Creek

(from the north), Goose Creek (from the northeast), Shoff Creek (from the southwest), and Wedge Creek (from the west). Agriculture is the primary land use within the Fountain Lake watershed based on 2001 land cover data with minor areas of urban, upland, wetlands, and forests (Refer to attached Figure 2-8, Fountain Lake Watershed Land Use). There are several parks along the shoreline of the lake including Edgewater Bay, Bancroft Bay, City Beach Park, and Fountain Lake Park on the south end of Main Bay. The lake is used mainly for recreation and sport fishing. Little to no aquatic vegetation has been observed in Edgewater and Main Bay. Bancroft Bay has the least amount of development on the lake and is the only portion of the lake with substantial aquatic vegetation and other fish and wildlife habitat. Refer to the attached July 2016 aquatic vegetation survey for Fountain Lake (Attachment 6).

a. *Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-____) and/or correspondence number (ERDB _____) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.*

A Natural Heritage Information System (NHIS) database search was performed by Barr Engineering Company (Barr) in July 2016 under its license agreement (LA-674) with MNDNR. The database was queried to determine if any state- or federally-listed species would be affected by the proposed project in Fountain Lake or at the CDF site. These features will be considered during design of dredging areas, staging areas, sediment management areas, and dredging pipeline corridors and outfalls. A formal database search was submitted in July 2016. A copy of the July 11, 2016 NHIS request is included in Attachment 8.

2-Mile Radius of Fountain Lake

Within a two-mile radius of Fountain Lake, there are the following known records of sensitive natural features/species:

- Colonial waterbird nesting area in Albert Lea Lake. This would likely not be affected by work within and near Fountain Lake unless there were significant changes to the water quality that then flowed into Albert Lea Lake.
- Blanding's turtle (Emydoidea blandingii, state-listed threatened).
- Tuberous Indian plantain (Arnoglossum plantagineum, state-listed threatened). This is an upland prairie species found along a nearby railroad corridor.

No native plant communities are mapped within two miles of Fountain Lake or the CDF site. The nearest sites are near the southeast portion of Albert Lea Lake.

The Tuberous Indian Plantain is anticipated to have potential to exist; however, this species was not observed during an aquatic vegetation survey was performed within Fountain Lake in July 2016 (Attachment 6).

The Blanding's turtle has potential to exist in the project area, but is not anticipated to be negatively impacted. Predominant habitat is described as calm, shallow waters with rich, aquatic vegetation, but the species is highly adaptable. Conservation efforts should seek to minimize habitat fragmentation that could cause the Blanding's turtle traverse hazardous areas, such as roadways, to migrate to nesting sites and

between wetlands. The proposed project will not create additional fragmented habitat. The MNDNR Blanding's turtle fact sheet and illustration flyer will be provided and made available to personnel involved in project construction.

Additionally, the U.S. Fish and Wildlife Service lists the northern long-eared bat as a threatened species occurring within freeborn county. This species is not anticipated to be encountered due to its predominant habitat in caves and upland forests.

There are several different Sites of Biodiversity Significance mapped by the MNDNR within 2 miles of the proposed project; however, all are identified as "Below the minimum biodiversity significance threshold." These sites would not be considered sensitive resources. Fountain Lake and the CDF site are not located in mapped Sites of Biodiversity Significance.

b. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

Lake Dredging will be coordinated with MNDNR Fisheries personnel during periods of fish migration and spawning to identify areas within Fountain Lake that can be dredged without negatively affecting fish.

c. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.

Lake dredging will generally not occur within approximately 30 ft from shore where sensitive ecological resources may reside. The MNDNR Blanding's turtle fact sheet and illustration flyer will be provided and made available to personnel involved in project construction.

14. Historic properties:

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

A preliminary database search was performed in July 2016 through the State Historic Preservation Office (SHPO) for a search radius of 1 and 5 miles surrounding Fountain Lake and the CDF site. The search indicated that there are no known historic structures, archeological sites, and/or traditional cultural properties within Fountain Lake or on the CDF site.

15. Visual:

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

Lake dredging will not alter the scenic views or vistas of Fountain Lake. During dredging, visual aspects of the project will include the dredge, temporary pipeline, and booster pumps. The pipeline may be sunk to the lake bottom to minimize visibility and interference with lake users. Booster pumps are generally placed every one mile along the pipeline route. Dredging is anticipated to occur during daytime hours, and bright overnight lights are not expected.

The CDF site is an existing agricultural field that does not contain scenic views or vistas. CDF construction will alter the topography, but will maintain natural surfaces such as grass, soil, and water. During construction, visual effects will include construction equipment and exposed soil, which is similar to the existing agricultural use.

16. Air:

a. *Stationary source emissions - Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.*

The project will have no stationary source emissions, as defined by federal, state, or local regulations.

b. *Vehicle emissions - Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.*

Vehicle emissions will be limited to construction equipment during CDF construction and dredging. Equipment will be maintained and operated as recommended for minimized impacts to air quality. This will include minimizing idling and performing regular maintenance. During CDF operation, no vehicle emissions are expected.

c. *Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.*

Lake dredging and CDF operation will not generate dust and is not expected to generate odors. During CDF construction, dust generation is possible from disturbed soil surfaces. Water trucks will be used to spray and moisten dry exposed soil to minimize off-site dust.

17. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

CDF Construction: During CDF construction, noise is anticipated to be generated from earthwork equipment (e.g., bulldozers, excavators, and scrapers). Types of noises will be engine noise and back up alarms. Noise will be limited to a maximum of 12 hours per day (e.g., 7 AM to 7 PM), six days per week unless otherwise restricted by local ordinance. No sensitive receptors have been identified. Noise levels will be in accordance with OSHA standards and local ordinance. Construction noise is anticipated to be similar to large agricultural equipment that has previously worked on the CDF site and will continue to work on surrounding land.

CDF Operation: No sources of noise are anticipated during CDF operation. Dredge material pumps will be located away from the site and the CDF will operate by gravity flow.

Dredging Operation: During dredging, noise is anticipated to be generated from the dredge and booster pumps. The type of noise will be engine sounds typical of heavy machinery. Noise will be limited to a maximum of 12 hours per day (e.g., 7 AM to 7 PM), six days per week, unless otherwise restricted by local ordinance. Fountain Lake is surrounded by residences, businesses, and a hospital that may notice the noise when the dredge is located close to shore, therefore the project will implement a maximum noise limit that must be maintained at the shoreline. Noise levels will be in accordance with OSHA standards and local ordinance. Booster pumps are anticipated to be located every mile along the pipeline route to the CDF site. The dredge and booster pumps will employ mufflers to decrease noise levels, and additional measures can be implemented if needed, such as noise barrier walls around the pump engines. Fountain Lake surrounding land use is primarily urban (Refer to attached SRRWD Figure, Land Use Around Fountain Lake). With the predominant urban land use and on-water recreation with speedboats, continuous ambient noise is not uncommon and that added noise associated with dredging operations is not anticipated to be significant.

Noise levels for typical construction equipment that may be used during CDF site development or sediment dredging are listed in the table below. Noise levels are listed for receptors 50 ft from the noise source. Perceived noise levels decrease within increasing distance of the receptor from the noise source.

Noise Source	Noise Level at 50 ft from source (Decibels)
Pickup Truck	55
Generator	70
Pumps	77
Backhoe	85
Dozer	85
Warning Alarms	85

Source: Federal Highway Administration, Construction Noise Handbook (www.fhwa.dot.gov)

For comparison, the table below lists noise levels for common household events and appliances.

Noise Source	Noise Level at typical distance from source (Decibels)
Normal Conversation	55-65
Vacuum Cleaner	84-89
Lawn Mower	88-94

Source: Noise Pollution Clearinghouse Online Library (www.nonoise.org)

18. Transportation

a. *Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes*.

Minimal traffic is anticipated to be associated with CDF construction and dredging during phases of mobilization/demobilization and normal operation.

CDF Mobilization/Demobilization: There is no existing parking at the proposed CDF site. The site will be accessed off County Highway 20 by constructing a gravel entrance, access road, and parking area. There is sufficient area within the CDF site limits for anticipated site vehicles, and parking will not occur on or along County Highway 20. During mobilization and demobilization semi-trucks will deliver construction equipment to the site and construction personnel will use personal vehicles. Both mobilization and demobilization are anticipated to occur over approximately 2-4 weeks and have less than 25 vehicles per day. During active construction of CDF cells, traffic is anticipated to include personal vehicles for site personnel and limited commercial deliveries. The CDF site is located within one mile of the Albert Lea Municipal Airport. A project review was conducted by the Federal Aviation Administration for potential impacts to air traffic. On February 2, 2016, the FAA issued a determination of no hazard to air navigation for the CDF site.

CDF Operation: During operation, the CDF site will be accessed by construction personnel to perform inspections of the CDF cells and to perform maintenance. Personnel will access the CDF site using personal vehicles. Operation will occur daily and is anticipated to have less than 5 vehicles per day.

Dredging Mobilization/Demobilization: Mobilization and demobilization of equipment is anticipated to occur from existing boat launches or from areas coordinated with the City of Albert Lea. Parking will occur in designated parking spots, if available, or in areas that do not interfere with existing traffic. Dredge equipment will be mobilized and demobilized from Fountain Lake using a portable crane. Edgewater Bay and Main Bay are anticipated to be accessed using existing boat launches and will not interfere with traffic. Danes Bay and Bancroft Bay will be accessed from adjacent roadways that are close to the shoreline. Mobilization from roadways will implement necesasry traffic controls and will not result in long-term disruptions to traffic. Yearly mobilization and demobilization are anticipated to occur over approximately 2-4 weeks each and have less than 25 vehicles per day.

Dredging Operation: During dredging operation, traffic is anticipated to be limited to project personnel and deliveries. SRRWD will coordinate with the City of Albert Lea to designate an area adjacent to the

lake for a dredging construction office where construction traffic can meet and park. Daily personnel are anticipated to be less than 10 with intermittent deliveries as needed for construction.

b. *Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW. Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (available at: http://www.dot.state.mn.us/accessmanagement/resources.html) or a similar local guidance*,

The project is expected to have minimal impact on traffic and no traffic improvements are necessary. The CDF site will have construction traffic during mobilization and demobilization of equipment to construct the CDF cells. The site will be accessed through a constructed gravel access road onto the site from County Highway 20. On-site soil will be used to construct the CDF cells; therefore, dump trucks will not be needed to deliver soil to the site. During normal construction and operation of the CDF, traffic is anticipated to include personal vehicles for project personnel and limited commercial vehicles for deliveries.

The dredging portion of the project will have limited traffic associated with mobilization and demobilization of equipment. Locations for accessing the lake are anticipated to be from existing boat launches or areas coordinated for use with the City of Albert Lea. Impacts to normal traffic during mobilization and demobilization are anticipated to be minimal. During normal dredging operations, traffic is anticipated to include personal vehicles for project personnel and limited commercial vehicles for deliveries.

At no time is traffic associated with either dredging or CDF construction or operation anticipated to exceed 250 vehicles per hour or 2,500 vehicles per day.

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

During construction of CDF cells, County Highway 20 will be cleaned with equipment such as a street sweeper to maintain the road clean and free of dirt that might be tracked from the site.

19. Cumulative potential effects: (Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items)

a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

Cumulative potential effects are expected to be minor, if any. The geographic scale for the potential accrual of cumulative effects on various natural and physical resources would be the Shell Rock River watershed. The timeframe scale for the potential accrual of cumulative effects on various natural and physical resources would be the expected five-year lifespan of the proposed Project.

b. *Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.*

There are no reasonably foreseeable future projects that may interact with the environmental effects of the proposed Project. Future project stage(s) are anticipated to occur after the work described in this EAW is completed; however, no basis of expectation has been laid for any future project stages.

c. *Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.*

There are no similar sediment dredging projects occurring within the geographic scale identified in Question 19a (the Shell Rock River watershed). Moreover, there are no similar projects, for which a basis of expectation has been laid, projected to occur within the five-year anticipated life of the proposed Project. Therefore, with no other projects to contribute to cumulative effects on natural or physical resources within the same geographical or temporal scale of the proposed Project, there is no potential for significant cumulative effects.

Question 19 addressed in responses to Questions 9-18.

20. Other potential environmental effects: If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

RGU CERTIFICATION. *(The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature _____ Date August 1, 2016

Title Administrator